

Civil and Environmental Engineering

Structures and Applied Mechanics Seminar Series

Present

Assessment of Vulnerability of Masonry Buildings against Natural Disasters

Speaker:

Sudhira De Silva, PhD

US- SL Fulbright Visiting Scholar

Department of Civil and Environmental Engineering, UConn

Sri Lankan architecture is mainly based on masonry structures since ancient time. Among different types of masonry, un-reinforced masonry (URM) construction is the very widely used construction methodology in Sri Lanka, especially in residential building construction in rural areas. Sri Lanka is becoming more vulnerable to unpredicted minor scale earthquakes in recent past after 2004 Indian Ocean Earthquake and Tsunami. As a result, in recent years in Sri Lanka significant attention has been directed towards existing URM buildings to minimize (and avoid altogether as/if possible) and control catastrophic situation that may happen due possible earthquakes in the future. This talk will discuss the background, application of cost-effective techniques for strengthening/retrofitting URM buildings, and useful findings from the research conducted by the speaker's research team. The studies show that the bamboo strip mesh and ferro-cement seismic wraps/belts around the masonry elements enhanced the dynamic capacities URM structures. These techniques are found to be more attractive to the rural communities. The technology should also be equally applicable to strengthen unreinforced masonry structure in the entire region of South Asian and other regions where URM is used.

Bio: Dr. Sudhira De Silva is a Senior Lecturer, Department of Civil and Environmental Engineering, Faculty of Engineering, University of Ruhuna, Sri Lanka. His research interests include structures using innovative materials, application of re-cycle materials, structural assessments, repair and retrofitting, durability of concrete structures, and bridge management systems. He is currently visiting the Department of Civil and Environmental Engineering, University of Connecticut as a US-SL Fulbright Research Scholar for 6 months (March 15-September 14, 2019). He is collaborating with his host counterpart at UConn, Prof. Ramesh B. Malla of the CEE Department on research topic dealing with understanding of progressive failure of un-reinforced masonry structure subjected to ground motion and developing effective methodology to control their failure.

Friday, April 19, 2019

12:20 – 1:10 PM

Castleman - Room 201