LEHIGH UNIVERSITY | P.C. ROSSIN COLLEGE OF ENGINEERING AND APPLIED SCIENCE

Presentations will be held in Whitaker Lab 303 at Lehigh University
Receptions to precede events starting at 4:10 P.M.

2017 FAZLUR RAHMAN KHAN DISTINGUISHED LECTURE SERIES

Honoring a legacy in structural engineering and architecture

Friday, February 17, 2017
4:30 P.M.

Eugen Brühwiler
Professor and Dr. Structural Engineer,
Swiss Federal Institute of Technology
Lausanne (EPFL)
Lausanne, Switzerland

GETTING MORE OUT OF EXISTING BRIDGES

Novel structural engineering methods and technologies are urgently needed to improve the performance of existing structures, such as bridges, and to avoid the "infrastructure collapse". Limited funding and ever increasing user demands challenge current technologies which are often invasive and not cost-effective. The objective of this lecture is to demonstrate how novel engineering methods and technologies can be implemented in structural engineering with the goal to provide a next service duration to existing bridges. The lecture will be illustrated by application cases including several bridges of high aesthetic and cultural value. History of structures will be highlighted as a basic engineering discipline necessary to develop soft improvement interventions respecting both cultural values and safety requirements.

Friday, March 31, 2017
4:30 P.M.

Lawrence G. Griffis
Senior Principal/Senior Consultant
Walter P. Moore and Associates, Inc.
Austin, TX

DESIGN AND CONSTRUCTION OF COWBOYS STADIUM

If its hole-in-the-roof design defined the old Texas Stadium, the twin monumental steel arches have emerged as the signature element of the new Cowboys Stadium. The arches soar through the interior space of the stadium reaching an apex almost 300 feet above the field and spanning nearly a quarter of a mile – longer than any other roof span in the world. Each end of each arch is secured with a true pin into a concrete abutment foundation that experiences a thrust force of up to 19 million pounds. To the casual observer, the concrete abutment consists of a 25-ft by 11-ft solid concrete thrust block column that launches out of the ground at a 32 degree angle from the horizontal. The real enormity, however, lies hidden below ground as the thrust block column is anchored to a slurry wall box that transfers the thrust into the surrounding soil. This presentation will feature some the design and construction details that went into the project as seen from the perspective of the structural engineer.

Friday, April 21, 2017
4:30 P.M.

Peter A. Weismantle
Director of Supertall Building Technology
Adrian Smith + Gordon Gill Architecture
Chicago, IL

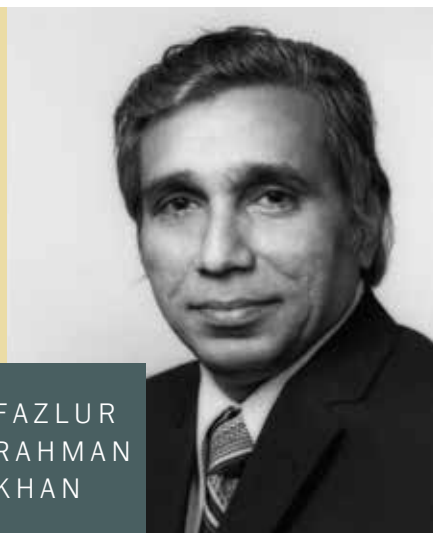
ARCHITECTURAL TECHNICAL DESIGN OF THE NEW GENERATION OF SUPERTALL BUILDINGS

Immediately after the events of September 11, 2001, few would have predicted that we would still be building tall buildings, let alone, very tall buildings. However, in the 15 years that have followed, we have entered what can truly be called the "Era of the Supertall Building". The reasons for this begins with an understanding of the unprecedented trends of globalization, urbanization and sustainability that are the recent factors driving this trend and returns to the factors of economics, ambition and ego that have traditionally driven humanity to reach for new heights. Based on his experience on ground breaking structures such as the current world's tallest building, Burj Khalifa, and the next world's tallest, Jeddah Tower, Mr. Weismantle will discuss approaches that the architectural design professional takes in investigating the special nature of these supertall structures and in developing the enhanced aspects of protection that they require.

ABOUT THE KHAN SERIES

In step with the abounding vitality of the time, structural engineer **Fazlur Rahman Khan** (1929-1982) ushered in a renaissance in skyscraper construction during the second half of the 20th century. Fazlur Khan was a pragmatic visionary: the series of progressive ideas that he brought forth for efficient high-rise construction in the 1960s and '70s were validated in his own work, notably his efficient designs for Chicago's 100-story John Hancock Center and 110-story Sears Tower -- the tallest building in the United States since its completion in 1974.

Lehigh endowed a chair in structural engineering and architecture and has established this lecture series in Khan's honor. It is organized by **Professor Dan M. Frangopol**, the university's first holder of the Fazlur Rahman Khan Endowed Chair of Structural Engineering and Architecture, and sponsored by the Departments of Civil & Environmental Engineering, and Art, Architecture & Design.



FAZLUR RAHMAN KHAN

This lecture series is sponsored by:
Civil & Environmental Engineering:
College of Engineering & Applied Science;
Art, Architecture & Design:
College of Arts & Sciences

SEI ASCE STRUCTURAL ENGINEERING INSTITUTE Lehigh Valley Chapter

1 PDH will be awarded to eligible attendees for each lecture.

www.lehigh.edu/frkseries