R. Shankar Nair

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.

Fazlur Rahman Khan

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.

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ATLSS

Spring 2013 Khan Distinguished Lecture Series

The Fazlur Rahman Khan Distinguished Lecture Series honors Dr. Fazlur Rahman Khan's legacy of excellence in structural engineering and architecture

***Initiated and Organized by* PROFESSOR DAN M. FRANGOPOL**

The Fazlur Rahman Khan Endowed Chair of Structural Engineering and Architecture
Department of Civil and Environmental Engineering, ATLSS Engineering Research Center, Lehigh University
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R. Shankar Nair

Senior Vice President **exp** US Services Inc., and Past Chairman CTBUH, Chicago, IL

"The Evolution of the Skyscraper"

Friday, February 15th, 2013 – 4:10 pm

Location: Sinclair Lab Auditorium, Lehigh University, 7 Asa Drive, Bethlehem, PA

http://www.lehigh.edu/~infrk/

R. Shankar Nair, Senior Vice President exp US Services Inc., Chicago, IL: Shankar Nair has more than 45 years of experience in structural engineering as a practicing structural designer, researcher, author, and lecturer. His work has focused on structural engineering for large architectural and civil engineering projects, including the longest tied-arch bridge span in the world and many high-rise buildings. Dr. Nair has worked for Teng and Associates and its successor firm **exp** since 1995 in Chicago, and before that was a principal at RTKL Associates in Baltimore and Alfred Benesch and Company in Chicago. His work has garnered numerous awards, including four AISC "Prize Bridge" awards and six annual "Most Innovative Structure" awards from the Structural Engineers Association of Illinois. Dr. Nair chairs the AISC Committee on Specifications and is a past chairman of the Council on Tall Buildings and Urban Habitat. He was elected to membership in the National Academy of Engineering in 2005. Dr. Nair has a Ph.D. in civil engineering from the University of Illinois at Urbana-Champaign and is licensed to practice engineering in 44 states.

The Evolution of the Skyscraper: The presentation will outline the history of the skyscraper — the invention of the safe passenger elevator, which made tall buildings usable; the invention of the metal-framed structure, which made them economical; the rapid increase in height from the 10-story Home Insurance Building in 1885 to the 102-story Empire State Building just 46 years later; the stagnation in height for many years even as structural materials and techniques improved rapidly; the present surge in super-tall buildings; and trends for the future. All of these developments will be explored with a particular emphasis on the fundamental engineering principles driving the evolution of these structures. Though presented primarily from a structural engineering perspective, the presentation should be accessible to anyone interested in tall buildings.

FAZLUR RAHMAN KHAN (1929 - 1982) One of the foremost structural engineers of the 20th century, Fazlur Khan epitomized both structural engineering achievement and creative collaborative effort between architect and engineer. Only when architectural design is grounded in structural realities, he believed — thus celebrating architecture's nature as a constructive art, rooted in the earth — can "the resulting aesthetics … have a transcendental value and quality." His ideas for these sky-scraping towers offered more than economic construction and iconic architectural images; they gave people the opportunity to work and live "in the sky." Hancock Center residents thrive on the wide expanse of sky and lake before them, the stunning quiet in the heart of the city, and the intimacy with nature at such heights: the rising sun, the moon and stars, the migrating flocks of birds. Fazlur Khan was always clear about the purpose of architecture. His characteristic statement to an editor in 1971, having just been selected Construction's Man of the Year by *Engineering News-Record*, is commemorated in a plaque in Onterie Center (446 E. Ontario, Chicago): **"The technical man must not be lost in his own technology. He must be able to appreciate life; and life is art, drama, music, and most importantly, people."**

Please contact the Khan Chair office at 610-758-6123 or Email: infrk@lehigh.edu with any questions.