



JACK MOEHLE



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Spring 2021 (Virtual) Khan Distinguished Lecture

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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JACK MOEHLE

Professor of the Graduate School, University of California at Berkeley, Berkeley, CA

“Performance-based Seismic Design of Tall Buildings”

Thursday, March 11, 2021 – 4:30 pm

Via Zoom ([click here to register](#))

<http://www.lehigh.edu/frkseries>

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.

Jack Moehle is Professor of the Graduate School at the University of California, Berkeley. He teaches and conducts research on subjects in structural engineering with emphasis on earthquake engineering and reinforced concrete. He is the author of over 350 publications, including a book on earthquake-resistant design of concrete buildings. He is active in professional practice, providing consulting and peer review for major projects including tall buildings, urban transportation systems, and regional infrastructure projects. He has been a member of the American Concrete Institute's Building Code Committee since 1989 and was chair during 2014-2019. He is an Honorary Member of the Structural Engineers Association of Northern California and a Fellow of the American Concrete Institute, the American Society of Civil Engineers/SEI, and the Structural Engineers Association of California. He has received numerous awards, including the George W. Housner Medal from the Earthquake Engineering Research Institute in 2020. He is an elected member of the U.S. National Academy of Engineering and of the Academia de Ingeniería de México.

Performance-based Seismic Design of Tall Buildings. Performance-based seismic design of tall buildings in the western United States began in earnest shortly after the turn of the 21st century. Although even the first designs were subject to independent peer review, there were no guidelines or accepted criteria for how to conduct and review a performance-based design, with the result that similar buildings were often designed to satisfy distinctly different criteria. Guidelines and building code provisions were soon developed to improve uniformity in design approaches and to foster the adoption of the performance-based approach. This lecture will review the development of performance-based seismic design of tall buildings, document a typical design application, and summarize results of over a decade of experience in tall building designs.

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.*"



1 PDH will be awarded to eligible attendees for each lecture

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