



**TOM O'ROURKE**

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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**THE DEPARTMENT OF CIVIL & ENVIRONMENTAL ENGINEERING**  
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## 2023 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,  
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## **TOM O'ROURKE**

Thomas R Briggs Professor of Engineering Emeritus  
School of Civil and Environmental Engineering  
Cornell University, Ithaca, NY

### **“Next Generation Hazard Resilient Infrastructure”**

**Friday, February 24, 2023 – 4:30 pm**

**Location: Whitaker Lab 303, Lehigh University, 5 E. Packer Avenue, Bethlehem, PA**

*Lecture will also be live streamed, ([must REGISTER HERE for live stream link](#))*

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

**Tom O'Rourke** is the Thomas R. Briggs Professor of Engineering Emeritus in the School of Civil and Environmental Engineering at Cornell University. He is a member of the US National Academy of Engineering, Distinguished Member of ASCE, International Fellow of the Royal Academy of Engineering, Member of the Mexican Academy of Engineering, and a Fellow of the American Association for the Advancement of Science. He authored or co-authored over 430 technical publications, and has received numerous awards for his research. His research interests cover geotechnical engineering, earthquake engineering, underground construction technologies, engineering for large, geographically distributed systems, and geographic information technologies and database management.

**Next Generation Hazard Resilient Infrastructure.** Resilient underground infrastructure can accommodate large ground deformation from earthquakes, hurricanes, floods, adjacent construction, and subsidence. Professor O'Rourke will describe how ten new pipeline and conduit systems have been developed and commercialized using a protocol of large-scale tests and fault rupture experiments. The development and validation of analytical models for the soil-structure interaction of these systems are also described. Examples are used to illustrate the composition and performance of hazard resilient infrastructure. Next steps in the development of this technology are discussed, which include the incorporation of smart sensors.

**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.*”



**STRUCTURAL ENGINEERING INSTITUTE**  
Lehigh Valley Chapter

**1 PDH will be awarded to eligible attendees for each lecture (minimum webinar participation time of 55 minutes is required)**

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