



**MARK G. STEWART**

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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## 2024 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  
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### MARK G. STEWART

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**"Risk-Based Thinking for Extreme Events:  
What Do Terrorism and Climate Change Have in Common?"**

**Thursday, May 2, 2024 – 4:30 pm EDT**

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

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

**Mark G. Stewart** is a Distinguished Professor of Civil Engineering, and Director of the Centre for Built Infrastructure Resilience at the University of Technology Sydney. He is an international leader in risk assessment, public policy decision making, and protective infrastructure for extreme hazards. He has applied risk assessment and probabilistic methods to a wide range of infrastructure/engineering systems, including terrorism and climate change. His ideas have been presented in four seminal books and many scientific and engineering papers, and has brought engineering and scientific expertise into the public policy domain. He is Editor-in-Chief of *Structural Safety*, a Fellow of the Australian Academy of Technology and Engineering, and President of the International Association of Protective Structures.

**Risk-Based Thinking for Extreme Events: What Do Terrorism and Climate Change Have in Common?** Terrorism and climate change debates are often characterised by worst-case thinking, cost neglect, probability neglect, and avoidance of the notion of acceptable risk. This is not unexpected when dealing with extreme events. However, it can result in a frightened public, costly policy outcomes, and wasteful expenditures. The presentation will describe how risk-based approaches are well suited to infrastructure decision-making in these uncertain environments. The concepts will be illustrated with current research of risk-based assessment of climate adaptation engineering strategies including designing new houses in Australia subject to cyclones and extreme wind events. It will be shown that small improvements to house designs at a one-off cost of several thousand dollars per house can reduce damage risks by 80-90% and achieve billions of dollars of net benefit for community resilience – this helps offset some the predicted adverse effects of climate change for a very modest cost. The presentation will also highlight that there is much to be optimistic about the future, and in the ability of risk-based thinking to meet many challenges.

**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  
(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.