



ALLEN C. ESTES

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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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
Department of Civil and Environmental Engineering, ATLSS Engineering Research Center,
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ALLEN C. ESTES

Professor and Head
Department of Architectural Engineering
California Polytechnic State University
San Luis Obispo, CA

"Architectural Engineering: Does it Have an Identity Crisis?"

Friday, October 11, 2024 – 4:30 pm EDT

Lecture will be live streamed, [must register here for livestream link](http://www.lehigh.edu/frkseries)

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Dr. Allen C. Estes was the Professor and Head of the Architectural Engineering Department at California Polytechnic State University in San Luis Obispo (<https://arce.calpoly.edu/content/people/estes>) for 17 years and recently retired in September 2024. Al joined the Cal Poly faculty in January 2007 after completing a 28-year career as an officer in the U.S. Army Corps of Engineers. He attained the rank of Colonel and served as the Director of the Civil Engineering program at the US Military Academy for 7 years. Prior to joining the West Point faculty, he commanded the 169th Engineer Battalion at Fort Leonard Wood, served as an operations officer during Restore Hope in Somalia, and served in a variety of military engineering assignments around the globe.

Al graduated from West Point in 1978. He obtained Masters Degrees in Structural Engineering and Construction Management from Stanford University in 1987, in Business Administration from Long Island University, in Military Art and Science from the Army Command and General Staff College, and in National Security and Public Policy from the Naval War College. His Ph.D. in Civil Engineering from the University of Colorado was earned in 1997. Al has authored over 60 papers, articles and book chapters on the subjects of structural reliability, life-cycle cost, structural optimization, and engineering education. He serves on several committees with and is an active participant in the ASCE, ASEE, and ABET. He became an ASCE Fellow in 2016, is actively engaged with the Architectural Engineering Institute Academic Council, and is a professionally registered engineer in Virginia.

Architectural Engineering: Does it Have an Identity Crisis? There are currently 26 ABET accredited Architectural Engineering (AE) programs in the United States (along with 7 additional international programs) and their curricular emphases are all very different. Since 2008, the number of accredited AE programs has risen from 18 programs to 26 programs – an increase of 44%, an indicator that universities see the value of these programs. Nevertheless, the American public and many in the industry do not understand what architectural engineers do and how they are distinguished from civil engineers and architects. At the same time, there are 271 accredited civil engineering (CE) programs in the U.S. outnumbering the AE programs about 10 to 1 and they don't seem to have an identity problem, despite many similarities. The CE and AE disciplines overlap considerably in the subdisciplines of structures and construction. The American Society of Civil Engineers (ASCE) is the lead society for both programs and the ASCE Architectural Engineering Institute (AEI) oversees the discipline. This lecture will examine the history of AE in the U.S. and curricular content of the various U.S. programs. It will contrast the CE and AE disciplines and provide evidence and rationale for the AE identity challenge. Finally, recommendations will be provided that could improve the situation.

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 with any questions.