David Billington

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. For more information on Fazlur R. Khan please visit: http://www.fazlurrkhan.com

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.

PRINCETON UNIVERSITY

LEHIGH UNIVERSITY

2011 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

The September 9, 2011 Distinguished Lecture is Organized by
Professors Maria Moreyra Garlock and Sigrid Adriaenssens, Princeton University

David Billington

Princeton University, Gordon Y.S. Wu Professor of Engineering, Emeritus; Professor of Civil and Environmental Engineering, Emeritus; Lecturer with the rank of Professor in Civil and Environmental Engineering

"Personal and Professional Recollections of Fazlur Khan"
Friday, September 9th, 2011 – 4:30 pm – 5:45 pm

Location: Princeton University, Olden Street, Princeton, NJ – Friend Center Auditorium 101
Reception & Exhibit: 5:45 pm – 6:30 pm – Friend Center Lobby & Library
Driving & Parking Directions and Campus Map on Website: http://www.lehigh.edu/frkseries

Please RSVP to Leslie J. Ladick at 610-758-6123 or Email: ljl2@lehigh.edu.

David Billington – Princeton University, Gordon Y.S. Wu Professor of Engineering, Emeritus; Professor of Civil and Environmental Engineering, Emeritus; Lecturer with the rank of Professor in Civil and Environmental Engineering: David Billington graduated from Princeton University in 1950 with a degree in basic engineering. He then won a Fulbright Fellowship and spent two years in Belgium to study post-war innovations in bridge and pre-stressed concrete structural design. He began in 1952 to work as a designer of structures for Roberts and Schaeffer Company, consulting engineers in New York City. In 1958 he began lecturing at Princeton University. He was a lecturer for two years before officially joining the faculty in 1960. He has remained on the Princeton faculty ever since. David Billington has won many prestigious awards and honors, such as Dexter Prize for the best book in 1979 from the Society for the History of Techonology for Robert Maillart's Bridges; in 1985, he was elected to the Executive Council of the Society for the History of Technology; in 1986, he was elected to the National Academy of Engineering, and the History and Heritage Award from the ASCE. He has served as an Andrew D. White Professor-at-large at Cornell University from 1987-1993. In 1990, he received the Dana Award for Pioneering Achievements in Education. The Carnegie Foundation for the Advancement of Teaching named him New Jersey Professor of the Year in 1995 and he was named one of five top educators in Civil Engineering since 1874 by the Engineering News Record in 1999. In 1998 he was elected as Fellow of the American Academy of Arts and Sciences. In 1999, he was elected Honorary Member of the ASCE. He holds an Honorary Doctorate in Humane Letters from Union College (1990), an Honorary Doctorate of Science from Grinnell College (1991), and an Honorary Doctorate of Engineering from Notre Dame University (1997). He was the 2003 recipient of the Director's Award for Distinguished Teaching Scholars. The Director's Award is the highest honor bestowed by the National Science Foundation for excellence in both teaching and research in science, mathematics, engineering, and technology. In 2006 David Billington was named the Walter L. Robb Senior Engineering Education Fellow of the National Academy of Engineering and in 2008 he was awarded the Distinguished Award of Merit from the American Council of Engineering Companies. His research includes design and rehabilitation of bridges, thin shell concrete structures, tall buildings, and concrete dams; detailed studies of the major structural engineers such as Robert Maillart, Felix Candela, Eugene Freyssinet, Gustav Eiffel, Othmar Ammann, Anton Tedesko, Fazler Khan, Heinz Isler, and Christian Menn; and the history and aesthetics of structures and the transformation of American society by engineering. He has also been involved in curating exhibitions in the Princeton University Art Museum, and the study of Politics and Engineering of Large-Scale Dams.

Personal and Professional Recollections of Fazlur Khan:
In 1961 searching for a new structures appointment at Princeton, I phoned Chester Siess for his best student. He responded "Fazlur Khan" so I called him but he preferred design to teaching. In the late 1960's two submitted papers of mine on aesthetics of structures were harshly critiqued and turned down. I later learned that the critic was Fazlur Khan (he was correct in his review). Finally in 1971 I met him and invited him to Princeton where he lectured on April 11, 1972. He told me of his deep interest in Robert Maillart's structures and agreed to write a paper comparing Maillart's bridges to his own buildings for our Maillart conference. Khan's elegant presentation together with those of Christian Menn and Felix Candela convinced me of a tradition in structural art. Khan returned to Princeton several more times, one of those being only a few weeks before he died. This presentation will present such personal and professional recollections of Fazlur Khan, who became a good friend and colleague of mine through these experiences and others that I will share. I will also reflect on the influence Khan had on others as discussed in a memorial session that Myron Goldsmith and I organized at the ASCE October 1983 convention in Houston (which led us to edit a book devoted to Khan and published by the Council of Tall Buildings and Urban Habitat at Lehigh in 1986).

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."** For more information on Fazlur Rahman Khan please visit: http://www.fazlurrkhan.com