

MEET ROBERT BRUCE

Teaching enthusiasm

K. Michelle Burgess

If it weren't for a visit from a prominent European engineer in the late 1940s, Robert Bruce might not have gone into precast, prestressed concrete; might not have been named fellow of PCI, the American Concrete Institute, and the International Association for Bridge and Structural Engineering; and might not have received the T. Y. Lin Award from the American Society of Civil Engineers just this year.

When Bruce started teaching at Tulane University in New Orleans, La., in 1962, schools did not have classes on precast concrete. More than 40 years later, such courses are part of the standard curriculum at most universities.

Bruce received his BS and MS in civil engineering from Tulane in 1951 and 1953, respectively. This period saw the emergence of many leaders in precast, prestressed concrete, including Gustav Magnel, who spoke at Tulane while Bruce was a student there.

"Magnel described the work in Europe, none of which had been done in America," Bruce says. "Because of his influence, my master's thesis was on prestressed concrete."

Bruce ended up serving as a Fulbright Research Scholar at the Magnel Laboratory at the University of Ghent in Belgium in 1954. His colleagues there had outgoing personalities, were extremely competent, and were enthusiastic about prestressed concrete during its golden age in the United States.

"I came along at exactly the right time to qualify, more or less, as among the second-generation pioneers."

In 1954, Bruce got his first job in concrete and engineering. It entailed developing and marketing prestressed cylinder piles in New York, N.Y., with the Raymond Concrete Pile Co. While there, Bruce participated in the construction of the Lake Pontchartrain Causeway.

"I am proud of my association and contribution to the conceptual design and construction of the Lake Pontchartrain Causeway, still the longest bridge in the world," Bruce says. "It was a milestone in precast, prestressed concrete."

In 1959, Bruce went back to school. He received his PhD in 1962 from the University of Illinois in Urbana. The enthusiasm of the people that he worked with there was infectious.

"There was a feeling that there was no problem that we could not solve in the field of precast, prestressed concrete," Bruce says.

Bruce returned to his hometown of New Orleans after graduating and began a long, fruitful tenure at his alma mater.

"My total teaching time at Tulane was 45 years, during which time I developed and taught an annual course in precast, prestressed concrete."

In his courses, Bruce incorporated field trips to fabrication plants and to precast concrete construction projects.

"For 45 years, I have had students tell me how valuable that field experience is," Bruce says.

Bruce retired in 2006 but still engages in research for Tulane and the Louisiana Department of Transportation and Development. Of his career, he says, "Most of all, I was in the right place at the right time."

Robert Bruce



The family business

"I went into civil engineering because my father was an engineer. He was the finest person I ever knew."

Industry improvements "The most significant improvement to the precast industry has been the standardization and mass production of structural and architectural components, together with a very high level of quality control. The PCI Plant Certification Program has been invaluable in providing the leadership for a nationwide program of quality control."

Upcoming challenges "An upcoming challenge for the precast concrete industry is the initiation of innovative designs that push the envelope while maintaining the attractiveness of precast, prestressed concrete as a reliable and economic construction material."

About the author

K. Michelle Burgess is managing editor of *PCI Journal*. 