Paving the way through research

Sarah Fister Gale

For Donald Meinheit, concrete was a part of his life from the time he was a boy in Matteson, Ill. His parents owned a lumber and material supply yard and ready-mixed concrete batch plant. He spent many summers working in the yard, delivering lumber, and batching materials into ready-mixed concrete trucks for customers. "It's where I became aware of what goes into concrete," he says.

Those long hot summers shaped his decision to pursue civil engineering at Purdue University, and later a master's degree in structural engineering from the University of Illinois–Champaign/Urbana.

"There was considerable research being done in concrete at the time, so I took every concrete class they offered," Meinheit says of his education.

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He completed his master's in 1968 and took his first industry job at the Portland Cement Association (PCA). He saw the position as an opportunity to continue his research into concrete and to "work on projects that a typical structural design engineer wouldn't get to do," he says.

In his four years at PCA, he spent much of his time researching and testing load capabilities and other attributes of precast concrete structural elements. His work on precast concrete housing was in response to Operation Breakthrough, a federal program seeking new building methods and products for fabrication to help overcome the housing crisis of that time.

His work at PCA inspired him to teach structural engineering, so he returned to school in 1972, getting his PhD at the University of Texas–Austin. Three years later, he took a faculty position at the University of Notre Dame in Indiana, where he was one of two professors teaching structural engineering. Meinheit's career in academia didn't last long, though he says teaching structural engineering design and behavior was fun. "In the academic world there is a need to publish, and I had difficulty getting research started and publishing, which led me to consider other options," he says.

He began looking at his options in the private sector and discovered that several of his former colleagues and mentors from PCA were now working at Wiss, Janney, Elstner Associates Inc. (WJE). He sent them a resume.

"They weren't advertising for any positions, but I got an interview," he says. A few days later they offered him a job, and he never looked back.

Meinheit stayed at WJE for the rest of his career, retiring in 2006 after 27 years. He was responsible for many initiatives, including laboratory investigations of expansion anchors, a prestressed concrete transit ties quality assurance program, and failure investigations. Although he is retired, he continues to consult on projects and mentor young staff members at WJE on concrete-related problems. "If my experience can assist a project, I make myself available," he says.

Throughout his career and into retirement, Meinheit has been an active member of PCI, and his research helped shape many codes and guidelines used today. He coauthored the *PCI Design Handbook: Precast and Prestressed Concrete* procedures for the design of welded headed stud anchors, and he has been associated with significant design-related work on concrete anchors.

Meinheit says he believes that PCI's dedication to research and development (R&D) helped shape this industry.

"PCI listens to the challenges its members face, and through the R&D fund it helps solve the precast industry's technical problems," he says. "That is a very forward-looking approach."

He hopes the next generation of PCI members keeps pushing the boundaries of precast concrete research and applications.

"Keep asking questions and finding mentors," he says, and more important, take the time to understand how the material works and why.

"It's not enough to know the code," he says. "If you know the limits of the code, you can make better design decisions because you'll know what's too safe and what's pushing the envelope."