Generating interest in precast

Sarah Fister Gale

As a young man, Richard Miller wanted to build things, so he thought he should become an architect. "I thought architects made buildings," he says.

Fortunately, his high school physics teacher invited a civil engineering professor to speak to the class about the work that engineers do. It was a pivotal moment for Miller. "I knew then that I wanted to be an engineer," he says.

He earned a civil engineering degree from Cleveland State University, and then moved to Evanston, Ill., to pursue his masters and doctorate degrees in structures and materials at Northwestern University. During this time, he spent a year in the nuclear power industry.

In 1989, he finished his PhD and took a position as an assistant professor of civil and environmental engineering at the University of Cincinnati in Ohio.

Shortly after he arrived at University of Cincinnati, the Ohio Department of Transportation reached out to the civil engineering department asking for help with a deteriorating box girder bridge. The girder had been designed to allow water to flow through a gap left in the structure, but the material was deteriorating and they weren't sure it was safe.

At Northwestern, Miller had taken a single class in prestressed concrete and had worked briefly in the Center for Science and Technology of Advanced Cement-Based Materials, so the senior faculty handed him the project. "I had no real idea what to do with it," he says. The course at Northwestern was largely theoretical. But one of his new colleagues put him in touch with Ohio/Indiana PCI (now PCI Central Region), which helped him figure it out.

The group connected Miller with a precasting plant that had built a testing frame for their own girders, and they let him use it. Miller's first interaction with PCI led to a careerlong collaboration. "One thing just led to another, and I just kept doing precast work," he says. "Things just snowballed from there."

Miller started attending conferences, conducting research in the precast concrete industry, and supporting PCI educational efforts. In the early days, he recalls working on the Student Education Committee with Bud Hilgeman of Concrete Technology (later acquired by High Concrete), who believed that providing prestressed concrete education at universities was vital for the indsutry's success. Hilgeman said that if students don't learn about prestressed concrete in school, they may never learn about it.

"If professors recommend a course or career path, students will take that advice seriously," Miller says. "Bud was laying the groundwork at PCI that education is really important for the success of the industry."

Miller has sought ways to engage students with the precast concrete industry and with PCI by helping launch the Big Beam Contest, where students work with a PCI producer member to build a precast, prestressed concrete beam. The program helps get students excited about working with prestressed concrete. "It's a sneaky way to get them to spend time with producers and learn about the practical issues," he says.

Over the years, Miller has been the principal investigator on several precast, prestressed concrete bridge projects. He is a PCI Fellow and has received PCI's Daniel P. Jenny Fellowship, the Wandmacher College of Engineering Teaching Award, and the PCI Distinguished Educator Award, which recognizes distinguished educators who have made significant contributions to the precast, prestressed concrete industry.

He has served on or chaired many PCI committees and is currently chair of the Journal Advisory Committee and vice chair of the Technical Activities Council. He continues to oversee the Big Beam Contest.

"It's been a win-win for me," Miller says. "I have done a lot of work to help PCI, and PCI does a lot of work to help me."

His involvement with PCI helped him secure grants, find partners for projects, and attract industry leaders to speak to his students. "The work I did with PCI got my name out there, and it helped me get funds for new research."

Miller says he is eager for things to get back to normal. He would like to see more students attending PCI conferences, participating in Big Beam, and securing internships and co-op assignments in the industry. To do that, PCI members need to seek more opportunities to interact with students before they graduate.

In an era where every company is fighting to attract new hires, Miller says that this kind of early engagement will create a funnel of talent that will support the future of the industry. "If you can get into the schools and get students interested in precast," he says, "they are more likely to consider employment with you when they start looking for work."