Maintaining a tradition

Sarah Fister Gale

Ned Cleland comes from a long line of Virginia-educated engineers. His father, grandfather, and great-grandfather all received civil engineering degrees from Virginia Polytechnic Institute and State University.

Like them, Cleland was determined to be an engineer from a young age, but it came as a bit of a shock to his family when he announced where he would be getting his degree: Rensselaer Polytechnic Institute (RPI) in upstate New York.

"By the time I was ready for college, Virginia Tech had grown from a land grant college to a major university with more than 17,000 students," he says. Cleland was drawn to the smaller and more rigorous academic environment of RPI.

Cleland graduated from RPI with a master's degree in civil engineering and went to work for a small consulting firm, Tom Hanson & Associates, where he got his first taste of precast concrete. Four years later he was offered a job as chief engineer for Concrete Structures, a precast concrete operation that had fallen into bankruptcy and needed a new engineer to take over.

"It was a sink or swim scenario," he says. "I either figured out how to make precast concrete work, or we didn't make payroll."

Cleland spent the next year working 80-hour weeks at Concrete Structures while attending structural engineering courses at the University of Virginia. The long hours wore him out, so when Shockey Brothers, a precast concrete and general contracting firm in Winchester, Va., offered him a project engineering job, he jumped at the chance.

That was 1979, and he's been in Winchester ever since. In 1984, Cleland became the chief engineer at Shockey. In 1985 he launched Blue Ridge Design, a structural engineering firm with an emphasis on reinforced concrete and precast/prestressed concrete. By 1990, he had 42 employees and was working for Shockey as well as other (noncompetitive) customers.

As time went on and Shockey took on new leadership, the management team worried about the potential for conflict of interest, so in 1998 Cleland made the firm a sole proprietorship. Today he works with clients across the industry and keeps the business lean, hiring contract drafters to fill the gaps.

"The problem with hiring a lot of people is that you don't get to do the engineering anymore because you are so busy looking for business," he says.

Cleland also continued his education, commuting several hours each week to take courses at the University of Virginia. The University of Virginia and Virginia Tech play against each other in their final game of the football season on Thanksgiving Day each year. "It still makes for some pretty interesting Thanksgivings," Cleland says. Finally in 1984, after driving an estimated 30,000 miles to and from night school, he received his PhD.

"It was too bad they didn't have online classes back then," he says.

His PhD work included research on secondary effects of reinforced concrete spandrel beams of the type prominently used in prestressed concrete parking structures today. He later referenced that research as chair of PCI's Steering Committee No. 5, Design of Spandrel Beams.

That was just one of the many PCI committees Cleland participated on over the years. Since joining PCI in 1979, he worked on the Parking Structures Committee, the Building Code Committee, the Research & Development Committee, the Industry Handbook Committee, and the Seismic Committee, which he chaired for 14 years. Today he is serving as chair of the Technical Activities Council for the second time. He was elected a Titan of PCI in 2014.

"PCI is the center of all of it...the organization doesn't just focus on marketing or quality control. PCI helps solve the big technical problems that our industry faces."

"PCI is the center of all of it," he says. "The organization doesn't just focus on marketing or quality control. PCI helps solve the big technical problems that our industry faces."

Cleland urges the next generation not just to join PCI but to get actively involved.

"If you want to be at the top and tackle the big issues, you have to work with the people who are already there."