

From carpentry to bridge engineering

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As a young man, Leo Spaans dreamed of becoming a carpenter because he never wanted to sit behind a desk all day. Spaans grew up in Scheveningen, a popular seaside resort in the Netherlands, and after he finished high school he signed on to be an apprentice carpenter. Things were going well, he says, until winter came. That's when he realized that sitting at a desk in a warm office might be a nice alternative to working outside in the bitter cold.

"It changed my philosophy," he says of that first winter.

The next year, he went back to school part time, pursuing the equivalent of a bachelor's degree in engineering, while working for the Dutch engineering firm BVN. The company had a long history of designing with prestressed concrete and led a number of projects in the United States.

Working internationally was a lot more complicated 40 years ago when there were no cell phones or the Internet, he says, so in the mid-1970s BVN sent a team to the United States to lead its efforts there and Spaans signed up.

"I saw how people lived on the East and West Coasts and I wanted that," he says, not realizing that he was headed for Indianapolis, Ind.

Despite the lack of ocean views, Spaans liked life in Indiana. He had only planned to stay for a year but ended up putting down roots. He spent the next seven years working for BVN, which later merged with an Indianapolis engineering firm to become BVN-STS and was then acquired by HDR. He also went back to school at Purdue University in West Lafayette, Ind., where he discovered that most of the technical-school credits he had earned in the Netherlands wouldn't apply to a U.S. bachelor's degree, forcing him to start almost from scratch.

"What should have taken me four years, in the end took me twelve," he says.

He eventually got his degree, though, and in the early 1980s, Spaans and colleague Hubert Janssen left HDR to found Janssen and Spaans, a transportation engineering firm that is still based in Indianapolis today. Spaans drew on his decades of experience with precast concrete to design segmental bridges across the Midwest, using increasingly larger splice-built T girders of up to 350 ft (110 m).

Throughout his career in the United States, Spaans has been a member of PCI, though he prefers not take leadership roles on committees or groups. "There are a lot of smart people at PCI meetings," he says. "I like to listen to what they have to say."

Spaans has contributed significantly to the industry through his work helping the Post-Tensioning Institute develop the *Precast Segmental Box Girder Bridge Manual*, or the green book, an important manual for designing bridge projects. "Every engineer on our team has those manuals in their offices," he says. "If they have a question, they can usually go to the green book to find the answer."

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Spaans says that PCI has become a vital resource for engineers in the precast concrete industry, especially young engineers who often have little exposure to designing with precast concrete.

"You need to get a master's degree then go to work for an engineering firm that specializes in the industry," he says to the next generation of precast concrete engineers.

He says that he hopes they will then spread the word to transportation departments and design and construction firms about the durability, sustainability, and affordability of precast concrete solutions.

Spaans says that in Europe after World War II there was a shortage of steel, which spurred the adoption of precast concrete for housing, buildings, bridges, and other structures, but the United States never went through such a transformation. "There is still a lot of resistance to precast concrete in this country, even today."

He says he would like for PCI members to actively promote the benefits of precast concrete so that they can change the minds of decision-makers and bolster the adoption of precast concrete for major projects. "It's a very important step if we want the industry to grow." 