Taking on challenges
in rocket science and precast concrete

Sarah Fister Gale

Paul Mack didn't expect to spend half his career in the precast concrete industry. The Colorado native grew up in his father's auto repair shop, and after a stint in the Air Force, he pursued a mechanical engineering degree at the University of Colorado in Boulder. As soon as he graduated, he landed a lucrative job in the aerospace industry.

For 12 years, he worked as a structural engineer for Martin Co. (now Lockheed Martin) helping NASA engineers meet President John F. Kennedy's call to send a man to the moon. "It was such a far-out goal, I had to be a part of it," he says.

Mack says he loved the uncertainty and innovation in his work, designing things such as launchpads, transporter platforms, and missiles. "If the things we needed didn't exist, we invented them," he says.

NASA triumphantly put a man on the moon on July 20, 1969, but within a few years, jobs started disappearing and Mack knew he needed to make his next move. There were few aerospace-industry jobs in Colorado at the time, and he eventually took a junior role—with a significant pay cut—at a small engineering consulting firm just to stay employed.

His fortune changed a few months later, though, when he ran into an old friend from college who was working with an innovative new material called precast, prestressed concrete. Mack immediately recognized the similarities between the precast concrete industry and aerospace. "It was a new, innovative construction method that appeared to offer challenges as new products and types of structures were developed," he says.

In 1974, Mack joined his old college classmate as the quality control manager for Prestressed Concrete of Colorado (PCC) in Denver, which was later acquired by Stanley Structures. At PCC, Mack helped test double tees alongside his mentor, Jerry Jacques, and Alex Aswad. They determined that it was possible to remove stem mesh along lengths except for 5 ft (7.6 m) at each end. "That was a great money-saving innovation," he says.

It was also during this time that Mack became an active member of PCI, working on committees and attending annual conferences. "It was a wonderful way to get involved in the industry," he says.

In 1979, Mack joined Rocky Mountain Prestress in Denver as director of engineering, where he helped the company become the first in the industry to use computer-aided drafting. It was during this tenure that he also worked on designing a 75 ft (23 m) diameter concrete dome for the Aurora Justice Center. "It was the most challenging projects I ever worked on," he says of the intricate structure. After earning an MBA, he was promoted to vice president of Engineering.

In the 1990s, Mack shifted his focus to parking structures.

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He took a job with Carl Walker Inc. parking consultants in Denver, Colo., in 1994, and later opened his own company, Parking Consultants LLC, in 2006, where he continued to design using precast concrete.

Throughout his career, Mack says he often turned to his PCI colleagues when he faced a challenge or needed help brainstorming new innovations. "Talking to people is the quickest way to learn something," he says. He says that within the PCI community, even competitors were happy to share ideas and best practices because it helped the entire industry improve. "You can't be afraid of helping each other out," he says. "It is what drives innovation." This year, Mack received PCI's Norman L. Scott Professional Engineer Award.

Mack says he worries that the industry has hit a plateau of innovation that is causing it to lose its competitive edge. "We have gotten stagnant in bringing new solutions to market." He says he hopes that the next generation of precast manufacturers will keep pushing the boundaries of what is possible with precast concrete and working together through PCI to ensure that they can continue to demonstrate the cost and quality benefits of precast, prestressed concrete designs. "It is the number one challenge they face."