

Building in code

Sarah Fister Gale



S. K. Ghosh shook up the precast concrete industry when he set out in the 1980s to develop provisions for seismic codes and standards that supported the use of precast concrete. Thanks to his unwavering efforts, architects and builders can use precast concrete just as easily as other building materials.

“In this country, you can’t build anything without a construction permit, and you can’t get that permit unless the authorities are satisfied that your building plans are in compliance with the applicable building code,” he says. “Without these codes being neutral to favorable, precast concrete would not have been able to compete for these projects.”

Ghosh’s path to precast concrete began in India, where he received a bachelor’s degree in civil engineering. “At that time in India, that is what you studied.” A year after graduation, he began graduate studies at the University of Waterloo in Canada, where he received a master’s and PhD in structural engineering.

In 1974, the Portland Cement Association in Skokie, Ill., offered Ghosh a job that evolved to include responsibilities for overseeing codes and standards for the cement industry. A few years later, after leaving briefly to teach at the University of Illinois–Chicago, Ghosh returned to PCA and resumed his crusade to get precast concrete approved for seismic zones. “It was my job to look after the concrete industry’s interest in codes,” he says, “and I found that precast was at a distinct disadvantage for no good reason.”

The codes and standards at the time stated that designers could use precast concrete in seismic zone construction projects only if they could prove that a precast concrete structure copied the strength and toughness of a comparable monolithic reinforced concrete structure (emulative design). “It could be done, but it created a lot of problems in getting approvals,” Ghosh says.

Ghosh spent the next several years championing changes in codes and standards to help level the playing field for precast concrete. In the early 1990s, he was appointed chair of the Concrete Subcommittee of the committee that updates the *NEHRP Recommended Seismic Provisions for New Buildings and Other Structures*, a document that forms the basis of seismic design provisions in U.S. codes and standards. Ghosh used this position to initiate efforts that led to the 1994 NEHRP provisions adding options in an appendix to the concrete chapter for the use of precast concrete elements in moderate to high seismic applications.

The appendix eventually moved into the main body of the NEHRP provisions and the options expanded in scope. Adoption into codes and standards ensued. The most comprehensive provisions to date for the use of precast concrete structures are in *Building Code Requirements for Structural Concrete (ACI 318-11)* and *Commentary (ACI 318R-11)*.

It took years of continuous effort, but in the end Ghosh’s hard work paid off, leading to many beautiful buildings using precast concrete elements in seismic zones.

Ghosh saw this fight for fair treatment of precast concrete simply as part of his job, but he’s happy he was able to help PCI members move the industry forward.

“I participate in a number of groups and organizations. PCI is the place where I find the most people really coming together with a common purpose,” he says.

“It is not easy to find an organization that does so much for an industry as PCI.”

He notes that one of the most valuable aspects of PCI is that it brings together tradespeople and professionals. “That combination makes it more powerful than any trade or professional group could be on its own,” he says.

Ghosh finds the close-knit community of PCI inspiring, and he hopes future industry leaders continue to participate and build the legacy that its members have created. He also hopes the next generation will be able to weather this difficult economic time by continuing to focus on excellence.

“Times today are tough, and professionals need to be better than ever to beat out their competition,” he says. “To do that they need to stay educated, connected, and abreast of the trends.”

He says that staying connected with PCI will help them achieve that goal. ■