

CRSI Reinforces Its Services and Programs

The Concrete Reinforcing Steel Institute develops standards, technical publications, and design aids with emphasis on industry certifications, education programs, and support for members and others in the steel-reinforced concrete industry.

by Craig A. Shutt

After a brief time away, Dr. Danielle Kleinhans returned to the Concrete Reinforcing Steel Institute (CRSI) in November 2017 as president and chief executive officer (CEO). Having previously worked at the organization for five years beginning in 2011, she understood the organization. Since returning, she has worked with staff to bolster and upgrade technical and engineering services for members as well as the engineers, designers, consultants, owners, and others who work with its members.

"I saw it [the job of president/CEO] as an opportunity to step into a leadership role in the industry and use my technical background and familiarity with the group to advance its mission," she says. "It felt like coming home. I'm very excited about how we can expand our programs, especially in educational areas."

Expanding Certification

One of CRSI's key initiatives for advancing educational efforts comes through its certification programs for members' products. "We've beefed up our approach by creating national standards for the certification processes," Kleinhans explains.

The association has long offered certification for members' epoxy-coating plants and recently began offering certification for fabricators of epoxy-coated reinforcement. In 2018, CRSI added certification for fabricators of stainless steel reinforcement.

"There is interest in stainless steel reinforcement from DOTs [departments of transportation], which makes it more visible to all owners," Kleinhans says. The stainless steel certification standard varies from epoxy-coating standards in several ways, she notes. The stainless steel standard focuses on avoiding contamination from carbon steel in the fabrication process, whereas epoxy-coating standards focus on handling procedures to avoid damage to the protective coating.

The certification programs help specifiers ensure they receive a high-quality product regardless of their choice. "Everyone wants answers as to which reinforcing steel is best for their project," Kleinhans says. "I know it's frustrating to hear that it [the best choice] depends on the application, but that's the reality. We want to ensure specifiers understand what the products can do so they can invest for the most cost-effective impact. The goal for all of our certification programs is the same: to produce a quality product that meets specific needs."

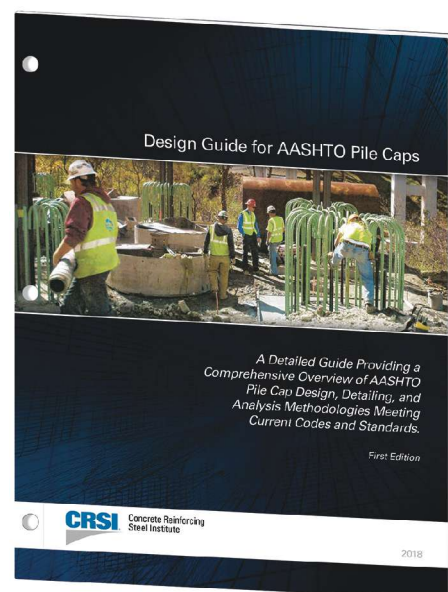
'Everyone wants answers as to which reinforcing steel is best for their project.'

Publications

CRSI produces a variety of publications associated with its research efforts and publishes updates on a regular basis.

CRSI

Concrete Reinforcing Steel Institute



Manuals produced by the Concrete Reinforcing Steel Institute (CRSI) offer technical information of interest to professionals in the industry. Photo: CRSI.

The most recent title, *Design Guide for AASHTO Pile Caps*, offers details on the analysis, design, and detailing of reinforced concrete pile caps in accordance with the 2014 edition of the American Association of State Highway and Transportation Officials' *AASHTO LRFD Bridge Design Specifications*. (See the article on this new publication in the Fall 2018 issue of *ASPIRE*®.)

"Some of our publications are geared to member needs, but others focus on what engineers need to know," Kleinhans says. "We are constantly looking for



Prefabricated reinforcing cage for bridge column in seismic region with very heavy reinforcement. The Concrete Reinforcing Steel Institute's certification standards for epoxy-coating plants, fabricators of epoxy-coated bars, and fabricators of stainless steel reinforcement help ensure quality products. Photo: Dimension Fabricators Inc.

feedback on our programs, from both members and owners, especially about what we're missing, so we can meet their needs better." She points out that some member publications also would be of interest to individuals in the engineering community. "They might find it interesting to see what it takes to turn their engineering drawings into field drawings."

The array of titles that may be of interest to bridge designers includes the *Manual of Standard Practice*, *High-Strength Reinforcing Bars*, and *Corrosion Resistant Steel Reinforcement: Summary of Test Methods*.

One of Kleinhans's favorite manuals is *Vintage Steel Reinforcement in Concrete Structures*, which presents information and photos of types, styles, and material properties of steel reinforcing bars and mesh used throughout history. "It's fascinating to look back at what has been used in the past, and the manual aids forensic engineers in determining the age and type of construction used on a bridge that is being inspected or evaluated for repair or replacement."

Apps and e-Learning

CRSI's education efforts expanded in 2018 with the introduction of its first application for smart phones. The association's pocket-sized guide for reinforcing bar sizes and diameters was digitized so it can be referenced at the job site.

"We're starting our app program with baby steps," Kleinhans explains. "We want to make our resources more useful and dynamic." Its technology plan includes apps that offer calculations on amounts of reinforcement and similar aids. "We're looking at the basics of what we can provide to get us started."

Another CRSI service is Rebar U (www.rebar-u.org), an e-learning web portal. Launched in January 2017, Rebar U serves as a home for CRSI's growing collection of publicly available e-learning courses and webinars for continuing education and professional development. Several self-paced courses are free to all visitors, while on-demand and live webinars are free for corporate members. The live webinars typically run bimonthly.

CRSI HONORS Bridges

CRSI's efforts also involve its design awards program, which for 40 years has recognized innovative reinforced concrete structures throughout North America. In 2013, the program was revised as the CRSI HONORS Design and Construction Awards. It singles out concrete projects that are distinctive not just for their design or achievement but also for the specific ways that reinforced concrete was used to improve the appearance, sustainability, and durability of the structure.

The winning entries, which are selected biannually and include various building types and bridges, are promoted by the CRSI via university lectures, regional seminars, and other means. "Our goal is to find projects that can inspire prospective clientele as well as students and young professionals seeking to become tomorrow's design and construction leaders," Kleinhans explains.

Two bridges received awards in 2018. The first award winner was the Interstate 90 Dresbach Bridge over the Mississippi River near La Crosse, Wisc., which

consists of twin 2593-ft-long structures. Each features a four-span, 1667-ft-long, cast-in-place, post-tensioned, segmental box-girder design built from above by the balanced-cantilever method over the main channel. A six-span, 926-ft-long precast, pretensioned concrete beam unit spans over the east channel. This approach provided uninterrupted commercial and recreational use of the river during construction—a key requirement for the owner, the Minnesota Department of Transportation.

The bridge, which features dual 508-ft-long main spans, was constructed by Ames Construction in Burnsville, Minn., with FIGG in Denver, Colo., as the designer for the main span. The judges said the bridge is “a great example of innovation, durability, and context-sensitive design.” (For more on this project, see the article in the Summer 2016 issue of *ASPIRE*.)

The second bridge to be honored was the Interstate 91 Brattleboro Bridge in Brattleboro, Vt., owned by the Vermont Agency of Transportation. The bridge, also built using the balanced-cantilever method with form travelers, is a 1036-ft-long, three-span segmental, cast-in-place concrete box-girder structure. The design-build team

led by PCL Civil Constructors Inc. in Raleigh, N.C., as the prime contractor and included FIGG in Exton, Pa., as the engineer of record; and Sebago Technics in South Portland, Me., as roadway/general civil engineer. Judges noted that the bridge’s 515-ft-long main span provides “durability and structural features for over 150-year design life—beating the owner’s 100-year design-life requirement.” (For more on this bridge, see the article in the Winter 2018 issue of *ASPIRE*.)

Sustainability Aids

CRSI has completed an environmental product declaration (EPD) for reinforcing bar. Life-cycle assessment (LCA) has become a standardized way of quantifying the environmental impact of a product or system. The EPD, which is created from an LCA, includes information on the environmental impact of raw material acquisition; energy use and efficiency; content of materials and chemical substances; emissions to air, soil, and water; and waste generation.

Reinforcing bar, Kleinhans stresses, is a very sustainable product and helps meet “green” goals. “About 97% of all reinforcing bar is made from recycled steel and scrap products,” she says.

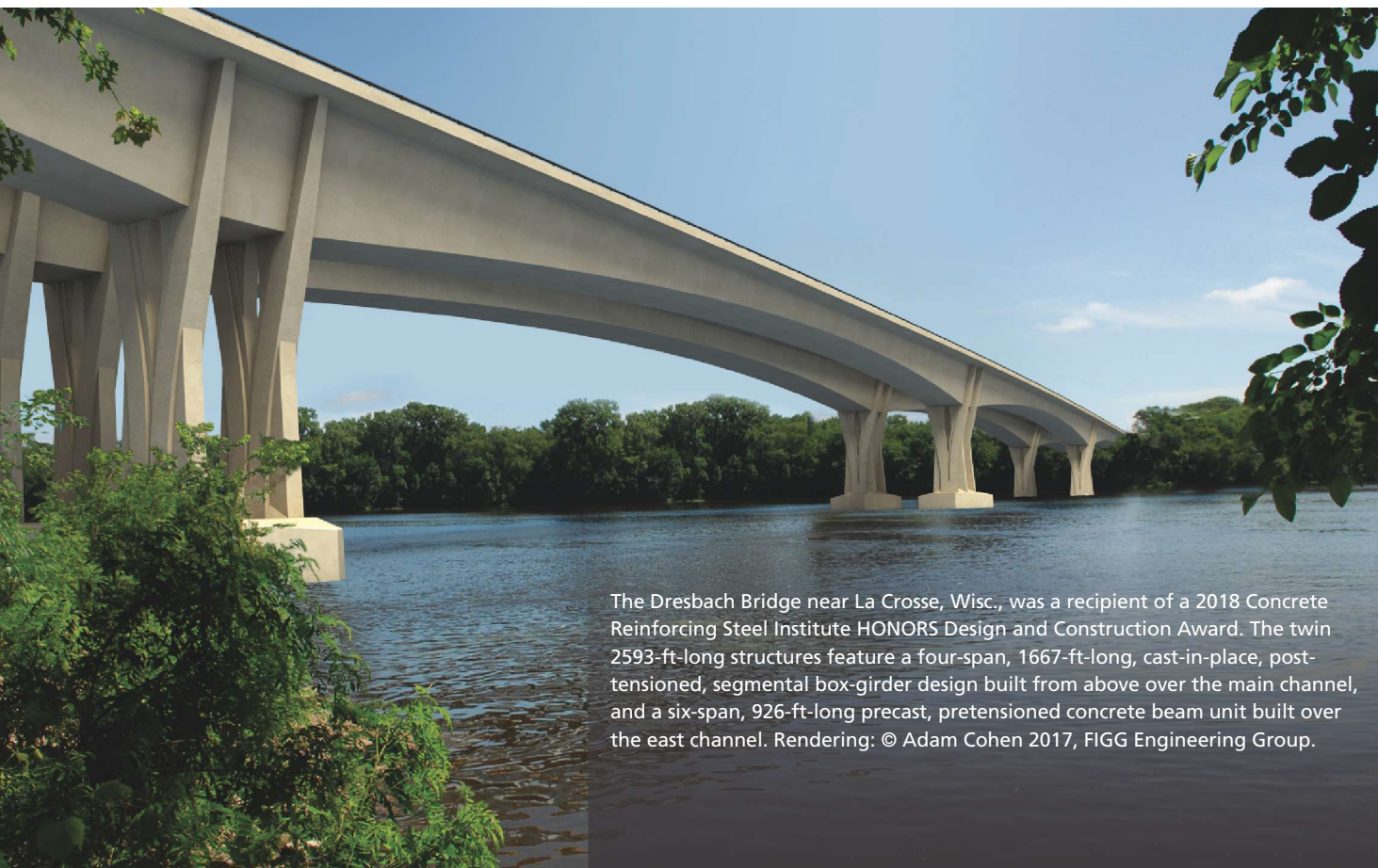
“Because we have such a sustainable product, we want to stay on top of all sustainability documentation and ensure that specifiers are aware of the benefits of using concrete with reinforcing steel.”

Advocacy, Alliances, and Interest Groups

CRSI is also involved in helping craft federal policy through its one-person Washington, D.C., office and its Rebar Political Action Committee (PAC). Launched in 2014, the PAC allows CRSI to support congressional leadership that advocates for the industry’s goals in such areas as transportation funding and resilient construction. “It serves as a tool to help us partner with others in the political arena,” Kleinhans says.

CRSI members also serve on an internal CRSI Government Affairs Committee, which monitors legislation and regulations at the state and federal levels and advocates for the industry. Through this committee, CRSI has issued position communications, letters of support, and opposition statements.

CRSI also works closely with the North American Concrete Alliance, an organization representing various associations involved in the concrete



The Dresbach Bridge near La Crosse, Wisc., was a recipient of a 2018 Concrete Reinforcing Steel Institute HONORS Design and Construction Award. The twin 2593-ft-long structures feature a four-span, 1667-ft-long, cast-in-place, post-tensioned, segmental box-girder design built from above over the main channel, and a six-span, 926-ft-long precast, pretensioned concrete beam unit built over the east channel. Rendering: © Adam Cohen 2017, FIGG Engineering Group.



The Interstate 91 Brattleboro Bridge in Brattleboro, Vt., received a 2018 Concrete Reinforcing Steel Institute HONORS Design and Construction Award. The 1036-ft-long, three-span segmental, cast-in-place concrete box-girder structure features a 515-ft-long main span that was designed for a 150-year service life. Photo: © Adam Cohen 2017, Figg Engineering Group.

industry with the goal of promoting reinforced concrete construction at the federal level, and the Alliance for Concrete Codes and Standards, which coordinates industry positions on provisions and proposed changes under consideration by national codes and standards writing organizations.

"We are trying to encourage more spending on infrastructure, which is sorely needed to replace outdated structures," Kleinhans says. Many legislators want to improve infrastructure, she notes, but there is little consensus on funding sources and how much investment is needed. "We'll continue our efforts to educate legislators and keep them aware of the growing need."

CRSI also operates two interest groups that focus on specific aspects of the industry. The Epoxy Interest Group was formed in 2008 to promote and market fusion-bonded epoxy-coated steel reinforcing bars. The group operates as "an institute within the

institute," Kleinhans says, with its own managing director, steering committee, dues, budget, and website (www.epoxyinterestgroup.org).

The Independent Fabricators Interest Group was established in 2010 to strengthen the business operations and competitiveness of independent fabricators. It operates within CRSI and offers an opportunity for qualified CRSI members to discuss business issues and trends.

Planning for the Future

In addition to providing resources and educational materials for today's engineers and industry professionals, CRSI is looking to nurture future generations of engineers and improve their understanding of reinforcing steel. The CRSI Education and Research Foundation is a nonprofit educational foundation that funds and administers graduate and undergraduate scholarships for architectural and engineering students as well as scholarships and training programs at vocational and technical schools for estimating or detailing reinforcing steel. The CRSI Foundation also works with CRSI's Research and Development Committee to provide support for worthy research projects that advance the reinforced concrete industry. The foundation is currently funding approximately \$150,000 in research programs and offers up to \$30,000 per year in scholarships.

"Our goal is to support students studying subjects that include reinforced concrete," says Kleinhans. "Our members have challenges in finding new employees, and we want to create initiatives that can inform students about the products and alert them to industry opportunities they may be unaware of, so they can have satisfying careers and our members can fill positions."

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Efforts to encourage younger CRSI members are being aided by the

95 Years of Service to the Industry

The Concrete Reinforcing Steel Institute, one of the oldest trade associations in the United States, was founded in 1924 as a technical institute and standards-developing organization devoted to establishing standards and offering resources about steel-reinforced concrete construction.

Each year, approximately 8 million tons of reinforcing steel are efficiently manufactured using scrap steel. It is estimated that the industry affects more than 75,000 people in steel transportation and placement in North America.

CRSI members represent more than 80% of U.S. manufacturers, fabricators, material suppliers, and placers of steel reinforcing bar and related products. Industry professionals involved in research, design, and construction also are members. CRSI members employ approximately 15,000 people in steel production and rebar fabrication at more than 600 locations in 49 states.

Based in Schaumburg, Ill., CRSI operates regional offices in the Northeast (Williamstown, N.J.), Midwest (Rochester Hills, Mich.), Southeast (Tega Cay, S.C.), Greater Southwest (location to be announced), and West (Fairfield, Calif.).

group's "Next Generation Engagement Initiative," which was introduced at CRSI's annual conference in October 2018 in Chicago, Ill. CRSI encouraged its member companies to bring employees who had previously never attended the conference so they could see the programs. CRSI is soliciting feedback from these attendees to find out what they liked and how they think the programs could be improved. "It provides a chance to bring in new blood, new perspectives, that can ensure we are best targeting our audiences' needs today," Kleinhans says.

These and other programs will keep CRSI aligned with industry needs. "These new programs will aid the industry in many ways and provide better understanding about our products and their potential." 