FAMILY FEELING

Kokosing's three generations of family employees keep the construction company focused on synergies that ensure efficient execution of every detail

by Craig A. Shutt

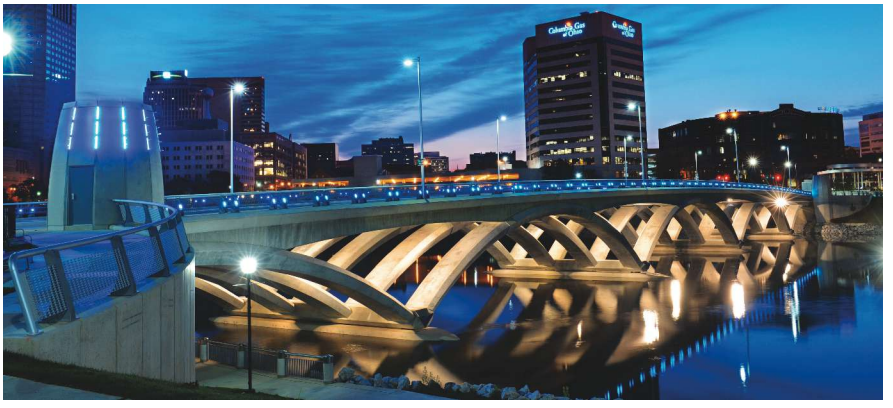
The profile of the Rich Street Bridge features post-tensioned precast concrete rib arches with reinforced concrete piers and abutments. Photo: Kokosing.

Though a large company, Kokosing remains a family organization into the third generation, constructing projects throughout the Midwest that are known for efficiency and attention to detail. That success relies on synergies created among its divisions and companies that allow it to handle projects as diverse as constructing multiple highway intersections or building a signature bridge on schedule and on budget.

"The Kokosing way of business is trying to be the best at everything we do," says Brian Burgett, president and son of founder William Burgett, who started the business in 1951. Those efforts extend to activities such as safety, quality, treatment of employees and customers, and the ways Kokosing uses and maintains equipment. "Our challenge is to be the best. We take on projects other companies look at and say, 'How can you get that done?'"

The Westerville, Ohio–based firm walks the walk on that philosophy. Bridge architect and engineer Fred Gottemoeller of Bridgescape LLC, who has worked with Kokosing through projects undertaken with engineering firm Burgess and Niple, has seen it in action. On the Rich Street Bridge in Columbus, Ohio, Gottemoeller says the firm was called on to construct some unusual designs.

"They did a careful job of figuring out how to give us what we wanted while still doing it profitably," he says. "It was very impressive. A lot of contractors would have thrown up their hands and



The Rich Street Bridge in Columbus, Ohio, was designed as a site to hold celebratory festivals as well as connect a historic neighborhood to the downtown area. Photo: Kokosing.

said they couldn't do it, or they would have just fudged it and done it poorly. But Kokosing plunged right in and did it well even though it took extra effort."

"Going the extra mile is our signature," says Lori Gillett, a third-generation owner and business development manager for Kokosing Industrial. "Kokosing employees love to take on new challenges," she says. "We're a turnkey company. We can do everything from move a mountain to build a stadium. We can do it all."

Divisions Work Together

That capability derives in large part from the company's multiple companies, which cover many market sectors, including industrial, highway, and marine. The company recently combined its Industrial, Marine, and Treatment divisions into Kokosing Industrial to better target those markets, says Burgett.

The synergies created among its Highway and Equipment divisions also ensure smooth access to resources. "Our ability to self-perform the vast majority of the work on our projects is very important to our clients," says Tom Muraski, senior vice president of Kokosing Industrial. "It gives us control over safety, quality, and scheduling."

Bridge projects arise both as a target of the Bridge Group as well as a component of its Highway projects, explains Tom Graf, manager of the bridge estimators and builders. "We are involved in projects coming in from all sources, and I may be the lead or just one part supporting someone else. And that work is seamless between groups. We are one happy family working within one budget. Self-performing our work is a huge part of our success."

'Employees feel like they're part of a family, even as large as we are.'

That synergy is aided by the company's family-oriented environment. "Our turnover is about 1.5%," Burgett says. "Employees feel like they're part of a family, even as large as we are. They like to feel like they're part of something bigger than them."

The Jeremiah Morrow Bridge is the tallest bridge in Ohio at 239 ft above the valley floor, and the first cast-in-place, concrete segmental box-girder structure owned by the Ohio Department of Transportation. Photo: OmniPro Services.

Equipment Needs Grow

Owning equipment and adapting it to each project's needs create efficiencies that improve constructability. That was apparent on the Jeremiah Morrow Bridge in Warren County, Ohio, which consisted of twin 2252-ft, six-span bridges comprising post-tensioned, single-cell, cast-in-place concrete segmental box girders. The variable-depth girders were cast using form travelers.

"The segmental industry has a plethora of specialized equipment that is expanding the ways bridges can be built," says Graf. "We always use whatever equipment and materials will work best." In this case, Kokosing had seen form travelers in a presentation at an American Segmental Bridge Institute convention. The company bought the travelers and had them modified for the project to fit the beam depths, widths, and loadings required.

"It's definitely a specialized piece of equipment, and we hope we'll have the opportunity to use it again," Graf says. "That said, if someone comes to us with a need, we're definitely willing to talk with them about purchasing it and finding other equipment when we need it in the future."

Kokosing's expertise with heavy equipment and new designs aids its use of concrete in many applications. "Cranes are bigger today, so precast concrete pieces can be larger and heavier, from foundations through superstructures," he says. "Mass haulers' capacities also are significantly higher than 30 years ago. The amount of specialized heavy equipment out there is larger."

The firm also taps into its Marine division to provide waterway access when building bridges, although it seldom needs to transport materials to sites by barge. "Those are fun jobs when we can work from the water to construct them," he says.

Signature Bridges Stand Out

The Bridge Group's people thoroughly enjoy opportunities to create signature bridges, which it has been called

The 2252-ft-long, twin six-span structures of the Jeremiah Morrow Bridge in Warren County, Ohio, feature post-tensioned, single-cell box girders. The existing steel truss bridge will be removed now that the two concrete spans are complete. Photo: OmniPro Services.

upon to do on a number of occasions. "There's nothing wrong with large $200 million highway projects with a few bridges," Graf notes. "But the signature bridges are really exciting to build. I love that kind of stuff. They're definitely our favorites."

One such signature bridge was the Rich Street Bridge in Columbus, Ohio, a 568-ft-long precast post-tensioned concrete rib arch with reinforced concrete piers and abutments. The ribbon-arch design used three-dimensional modeling and additional loading to serve as the center for community festivals year round. It was designed to be a transitional art piece, connecting a historic neighborhood with downtown.

The singular success of the design, says Gottemoeller, came in its need to reflect the shape of the Main Street Bridge farther downriver. That three-span, inclined-arch bridge used trapezoidal steel vehicular boxes, the first of its kind in the United States. The construction team for the Rich Street Bridge was tasked with creating a complementary design with only half the budget (about $14 million).

Kokosing's precast concrete supplier fabricated steel forms that replicate symmetrical arches, with 68 pieces cast using only three forms. Concrete closure placements were not difficult, but they were complicated to achieve. Kokosing created forms that made the arches precisely, Gottemoeller says. "That was unusual to get exactly what we hoped for in a situation like this."

"We had very interesting conversations with Fred on the need for complementary designs even though the Rich Street and Main Street bridges were different materials and designs," says Graf. "We were very aware that the two had to work together aesthetically and that attention had to be paid to all the details to meet that goal, even though our budget was much smaller."

Aesthetic design also played a major role in the company's work on the High-Main Street Bridge over the Great Miami River in Hamilton, Ohio. The five-span bridge features deeply haunched, spliced precast concrete girders that produce a Neo-Baroque appearance emulating Hamilton's adjacent War Memorial building. The bridge replaced a narrower 1915 structure and provides wide sidewalks and sweeping views of the river.

Contractors followed guidelines created by the Ohio Department of Transportation, the City of Hamilton, and the Ohio State Historic Preservation Office in compliance with the National Historic Preservation Act for the construction of the High-Main Street Bridge over the Great Miami River. Photo: Kokosing.

"The precast concrete fascia was more complex due to the sidewalks and the overlooks, which turned out very well," says Gottemoeller, who worked on the design. "Kokosing essentially said, 'If that is what you want, we'll give it to you.'" The detailed railings were designed to fit the historical style but also serve as crash protection, requiring more elaborate structural connections. "It took time to get it right, but they did a great job on it."

More Design-Build, P3

Kokosing's attention to detail and complexity works well with the trend toward design-build and private-public partnership (P3) delivery methods. The company is becoming involved in more of those projects. "There's no question that design-build has gained a foothold," says Graf. "The Ohio Department of Transportation is getting more comfortable with that delivery method and is doing bigger projects using it."

So many projects are being done in those formats that Kokosing has a manager devoted strictly to handling alternative-delivery projects. The signature bridges still remain design-bid-build projects, he notes. "It's difficult to do those projects with more complex architecture in other formats. By the time the department of transportation has finished the scope and plans, they're typically 90% designed already."

Kokosing has been involved in a variety of P3 projects, which are typically delivered via design-build methods. "P3 can involve many types of programs, with only some of them including operations and maintenance

To create a Neo-Baroque appearance for the High-Main Street Bridge, Kokosing paid close attention to details such as the lookouts along the sides. Photo: Kokosing.

components," he points out. "The P3 market has a variety of markets and needs." Construction manager/general contractor delivery hasn't come to the fore yet, he adds, as those are typically driven by private owners. "In Ohio, it's somewhat of a novelty at this point, whereas design-build is here to stay."

Concrete Advances

Design-build projects allow Kokosing to maximize its knowledge and talents, giving the firm incentives to stay abreast of concrete developments. "There are new mixtures coming out all the time," Graf says. "It used to be that 9 ksi concrete was out of reach, but we see 7 ksi all the time now and high-performance mixes are everywhere. The 3.6 ksi mix is long gone. The game has really changed. Concrete used to be a simple product, but now it's highly engineered with chemicals to add special benefits of durability or retardation or other amazing things."

High-performance concrete of all types is growing in use, he notes. "We see a lot of high-performance mixes, and each one is different. 'High performance' can mean many things, because it can be used to create almost anything desired. It's a huge topic today on many of our projects."

The 5th Street bridge-replacement project in Montgomery County, Ohio, featured self-consolidating concrete for the decorative concrete parapets to create details that offered a high-quality finish. Approximately 6250 yd^3 of structural concrete were used in the 5th Street bridge-replacement project's pilings, beams, decorative pier ends, and other components. Photo: Kokosing.

Kokosing took advantage of those capabilities on the 5th Street bridge-replacement project in Montgomery County, Ohio, a $6.7 million design for a five-span bridge. It featured 9000 linear ft of reinforced concrete piling, prestressed concrete interior beams, precast concrete post-tensioned exterior beams, decorative pier ends, and decorative parapets. The latter were produced with self-consolidating concrete (SCC).

"SCC is a wonderful product," says Graf. "It flows so well to fit into tight areas and creates intricate shapes, and it looks great when it sets, with a very smooth finish, which reduces rubbing and patching needs. It's a specialty product due to its fluidity and forming needs, but when it's needed, it's a great product."

Kokosing often uses concrete girders in "the sweet spot" of 120- to 160-ft lengths, he notes. "Precast concrete beams are efficient in those lengths and help minimize substructure components. It's getting to the point that any lengths of concrete beams can be created to compete with steel assemblies, and we've seen some of 200 ft. But that 120-to-160-ft length is very efficient for girders and substructures."

New concrete designs also are helping achieve the longer service lives that owners are seeking. The Jeremiah Morrow Bridge was designed with a 100-year service life, with such attributes as more redundancy in strand protection. Kokosing often performs life-cycle cost analysis during its value-engineering reviews to determine what will best help achieve longer life with designs.

As bridge design and construction approaches change, Kokosing will continue to evolve to ensure that its work offers efficient, cost-effective construction. "It's our legacy that our employees work hard," says Gillett. "We're passionate about our work. We do things right the first time. We're hands-on builders."

Three Generations of Owners

William "Bill" Boyd Burgett founded Kokosing Construction in 1951 as William Burgett Builder and Concrete Work after working with a number of construction companies in Ohio. It became Kokosing after he created a working relationship with the first employee, Lester Rinehart. (The name comes from the river near the original headquarters in Fredericktown, Ohio. The Native American word means "wise owl," reflected in the logo's representation of a K fashioned to look like an owl's eye.)

Headquartered in Westerville, Ohio, Kokosing is one of the largest family-owned construction companies in the Midwest. Its primary business lines include industrial, transportation, buildings, pipelines, environmental, and marine work, and it also owns construction material-supply companies. The firm generates more than $1 billion in annual revenue.

EDITOR'S NOTE

The Jeremiah Morrow Bridge was featured in the Winter 2014 issue, the Rich Street Bridge was featured in the Fall 2012 issue, the High-Main Hamilton Bridge was featured in the Fall 2007 issue of ASPIRE.™ *Other Kokosing projects were also featured in profile articles for I-69 Twin Bridges over the Patoka River (Spring 2013) and Fulton Road Replacement (Spring 2009).*