

# Contractor's Longevity Serves the Gulf Coast

For more than 100 years, family-owned Boh Bros. Construction Co. has shaped the region surrounding its New Orleans home base through heavy civil and concrete bridge work that connects the region

by Monica Schultes



Boh Bros. Construction Co. has a 160-acre facility that includes 4200 ft of waterfront along the Gulf Intracoastal Waterway. On the Lake Pontchartrain Causeway project, this waterway access gave the company an advantage while constructing complete safety shoulder segments. The components were cast and assembled at the facility, and then loaded onto self-propelled modular transporters (SPMTs), which were rolled directly onto barges. The assemblies were erected from the barges using SPMTs and without impacting travelers on the causeway. All Photos: Boh Bros. Construction Co. LLC.

The long history of Boh Bros. Construction Co. is rare in the construction industry and is a testament to their commitment to New Orleans and southeastern Louisiana. The company's longevity is also a reflection of its management, according to Jeff Plauche, senior vice president of preconstruction and development. This family-owned company has lasted from generation to generation thanks to a philosophy of service to the community, customers, and coworkers.

In the wake of Hurricane Katrina in 2005, it was all hands on deck, 24 hours a day, to restore the Interstate 10 (I-10) twin spans over Lake Pontchartrain that had been broken into pieces by the storm surge. Boh Bros. employees worked on emergency repairs to the bridge, despite their own personal losses.

Plauche says, "We try to maintain our reputation of honorably serving our communities." That devotion to the local community was validated as Boh Bros. worked to help restore New Orleans to its former glory. The rapid response also foreshadowed their penchant for alternative project delivery methods.

**"We try to maintain our reputation of honorably serving our communities."**

## Family Values

Boh Bros. considers their employees part of the family. "That is what makes us unique," says Plauche. More than a century ago, the Boh family started a company based on integrity and a

"steady as she goes" philosophy. "We are conservative in our thinking and believe in doing the right thing. Our reputation for a high degree of integrity is paramount."

That attitude has been perpetuated over the years across a workforce whose members often stay with the company for their entire careers. "Funding sources may change and the industries we perform in may vary, but the way we do business never changes," says Plauche.

Although there is tremendous turnover in the construction industry, that is not the case here. Boh Bros. has always been privately held and some years ago started an employee stock ownership plan to recognize the people who are critically important to the success of the company and to reward their loyalty.



Aerial view of the marine deck span installation of the Lake Pontchartrain Causeway, showing tugboats holding the barges in place while the self-propelled modular transporters complete the installation. The new designated breakdown areas address both traffic and safety concerns and were a much-needed addition to the structure. When the bridge was first completed in 1956, the annual traffic count was 200,000; now the bridge carries 12 million vehicles per year.

## Gulf Coast

With strong ties to the gulf region and their auspicious beginnings in New Orleans, Boh Bros. has performed thousands of projects in the area and continues to seek out opportunities close to home. Staying local benefits employees, who can return to their families after work. Building in the region also reinforces the company's areas of expertise. They have extensive knowledge about the intricacies of working along the Gulf Coast. South Louisiana soils are very tricky, and working along multiple waterways presents challenges of variable water depths and weather conditions that can affect construction.

Boh Bros. has invested in their own equipment and typically self-performs 85% to 95% of their work. They have the option of using their own casting yard or partnering with local precasters for bridge components. In addition to Boh Bros.' own precast concrete fabrication shop, the New Orleans operations yard also contains a safety training facility, carpentry shop, piling and marine facilities, and equipment and material storage, and has direct barge access.

Now a major player in bridge construction in the region, Boh Bros.' expertise expanded from municipal and road work to pile driving and bridge work. Their portfolio evolved as their in-house experience grew.

The interstate highway program drove much of that expansion, as did the development of the power industry. "As the entire industrialized world evolved, we did too," explains Plauche. The area south of Baton Rouge, La., is considered a coastal environment and is conducive to concrete bridge construction. As concrete girder technology has developed and longer spans have become more common, concrete can be considered in more long-span project solutions.

The evolution of Boh Bros.' expertise came with experience in the many and varied concrete structures that cross the Louisiana waterways. In all, Boh Bros. has completed three projects on I-10 over Lake Pontchartrain. After their stellar performance in 2005 on the emergency repairs, they completed one

of the two contracts for construction of the elevated I-10 twin spans that are in use today (for details, see the article in the Spring 2011 issue of *ASPIRE*<sup>®</sup>). Recently, they were awarded another major project: Working for the Greater New Orleans Expressway Commission, they completed a \$55 million upgrade to construct new safety shoulder segments along the Lake Pontchartrain Causeway, the longest bridge in the United States.

## CMAR Solutions

Boh Bros. served as the construction manager at risk (CMAR) for the Lake Pontchartrain Causeway project, which included constructing twelve 1008-ft-long safety shoulders, or "safety bays," along the existing bridge alignment.

The CMAR approach expedited the design and planning stages and allowed the project team to resolve key challenges and minimize project risk. Throughout the process, Boh Bros. collaborated on constructability, schedule, and budget to help guide the design. In less than nine months, the project moved from preconstruction to construction, a process that typically takes much longer.

Traffic was a primary consideration. To minimize traffic disruptions, the team opted for precast concrete piles, pile caps, and deck span modules that were manufactured off site. The monolithic deck span modules, or safety bay sections, are composed of a concrete deck and traffic barrier cast onto AASHTO girders at the Boh Bros. facility. With this strategy, lane closures were minimized, simplifying

The Lake Pontchartrain Causeway piles and precast concrete pier caps awaiting installation of the precast concrete shoulder assemblies. The safety shoulder segments were supported by one hundred ninety-two 54-in.-diameter precast concrete piles ranging from 54 to 112 ft in length.





In 2005, Hurricane Katrina tore apart sections of the Interstate 10 twin spans over Lake Pontchartrain. After resurrecting five miles of downed causeway pieces and making emergency repairs in less than 29 days to get one of the bridges reopened, Boh Bros. was awarded the contract for the new, more resilient trestle portion of the Interstate 10 twin bridges.

construction sequencing and greatly reducing inconvenience to the public. The completed safety bays provide a safe haven for stranded motorists to pull off the causeway.

Boh Bros. was a critical part of the preconstruction process and their engineering background enabled the team to provide sound constructability input. Plauche says, "We have a built-in appreciation for how changes impact design. That better enables us to suggest construction solutions that work for both the contractor and designer, maximizing benefits to the owner."

**"We have a built-in appreciation for how changes impact design. That better enables us to suggest construction solutions that work for both the contractor and designer, maximizing benefits to the owner."**

The team procured advance work packages, expediting items that were approved for fabrication before 100% design completion. Before the construction contract was executed, a test pile program was initiated, as was the production of precast, pretensioned concrete girders and concrete cylinder piles. Boh Bros. was ultimately awarded the construction contract, and the company guaranteed the maximum price and schedule duration.

The safety shoulder modules were constructed in an assembly-line process at Boh Bros.' waterfront construction facility, increasing safety and quality. All deck span modules were assembled off site, with precast concrete girders delivered to the yard and a composite deck applied, before the completed units were barged to the bridge.

The CMAR team mentality was critical to the decision to do as much work as possible from the water instead of from the bridge deck. Risk mitigation for the traveling public, cost risk, and safety risk were all addressed before construction started.

### **Waterside Construction**

The most impactful decision for the causeway project was to incorporate accelerated bridge construction (ABC) techniques and fabricate the bridge deck span modules off site, then transport them by barge to the bridge from the Boh Bros. facility. The ABC approach enabled pile driving and precast concrete pile cap construction to be performed concurrently and facilitated construction exclusively using marine equipment. With the piles and caps in place, the crew barged the completed deck units to the site.

"In order to have as little impact on the traveling public as possible, we came up with the modular scheme to install sections coming up from the waterside," explains Plauche. "Using self-propelled modular transporters on barges allowed us to set the completed deck sections with many motorists unaware we were ever there." The

creative project solution was recognized by awards from the Associated General Contractors of America and PCI (PCI 2021 Best Rehabilitated Bridge Award).

"The causeway project is one of the best stories we can tell in the CMAR environment," says Plauche. "We listened to the commission staff, the designer, Volkert, and the owner's representative, Huval & Associates, and truly acted as one team. We met their expectations and exceeded their goals. I know it sounds cliché, but that is the definition of building a project with the least disruption to all stakeholders."

### **Company of Builders**

Plauche sees the CMAR project delivery method as the next step in the company's evolution. "In the future, we see Boh Bros. doing what we do best, employing more innovative methods. We are a company of builders. Many field supervisors have come up through the craft ranks, growing our technical and construction expertise."

Project delivery methods have been slow to change in Louisiana. The traditional design-bid-build approach is a good fit for typical everyday projects, but for those projects with high levels of complexity, multiple stakeholders, or potential funding issues, it makes sense to move toward design-build, CMAR, or construction manager/general contractor project delivery methods.

"We have always helped our clients as a team member working for the good of the project, not adversarial or self-serving," says Plauche. "These

collaborative procurement methods are a natural fit for us and have allowed us to win more projects in the region since their adoption."

As a contractor that performs much of their own work, Boh Bros. can apply years of experience and lessons learned to enhance the owner's experience. "This is how projects should be done. We want to be a builder and integral project team member, not considered just another bidder," explains Plauche.

### Jobsite Technology

With fewer skilled workers to fill the demand, construction companies have to do more with less time, less money, and fewer people. Boh Bros. has adopted innovative methods to mitigate the shortage of skilled laborers in the overall workforce and on their jobsites. In the past, they were able to overcome challenges with huge groups of skilled craftsmen. But with the current and future limits of skilled labor, they have turned to technology and finite level planning. "While our workforce has decreased in number, they have increased in technical ability," explains Plauche.

"We have embraced technology, especially how we communicate among ourselves and with our customers. We are always looking for new ways to make it easier for people in the field." Using technology for field collaboration, Boh Bros. makes use of drones, rugged tablet computers, and ProCore construction management software. "Instead of the old roll of plans, everyone has up-to-date information, just-in-time, all the time," emphasizes Plauche. Being able to share daily logs, photos, comments, and requests for information, and providing clients access to that information, makes all the difference.

**"Instead of the old roll of plans, everyone has up-to-date information, just-in-time, all the time."**

### In-House Expertise

With an in-house engineering and constructability group comes the means to quickly solve shoring, rigging, and other issues that can arise on site. While many of their competitors outsource this service, Boh Bros. has long maintained their own engineering staff. "Our engineering team knows our strengths and capabilities, and the preferences of our field personnel. They can communicate quickly and work to provide custom solutions. I don't know anyone else in the area who does it that way," says Plauche.

### Safety First

Inside knowledge of preferred methods also helps Boh Bros. with their safety record and minimizes their need to develop new techniques for every project. "Everything we do starts with a focus on safety. By planning for safety first, the quality results, productivity, and efficiency follow," says Plauche.

"We prioritize the safety of the traveling public and our own people's safety, and everything flows from that," he adds. Statistically, 2020 was the safest year in the company's long history. Civil construction was deemed an essential industry, and Boh Bros. continued work unabated despite COVID-19 restrictions.


"During the pandemic, we were able to keep all of our people working,"

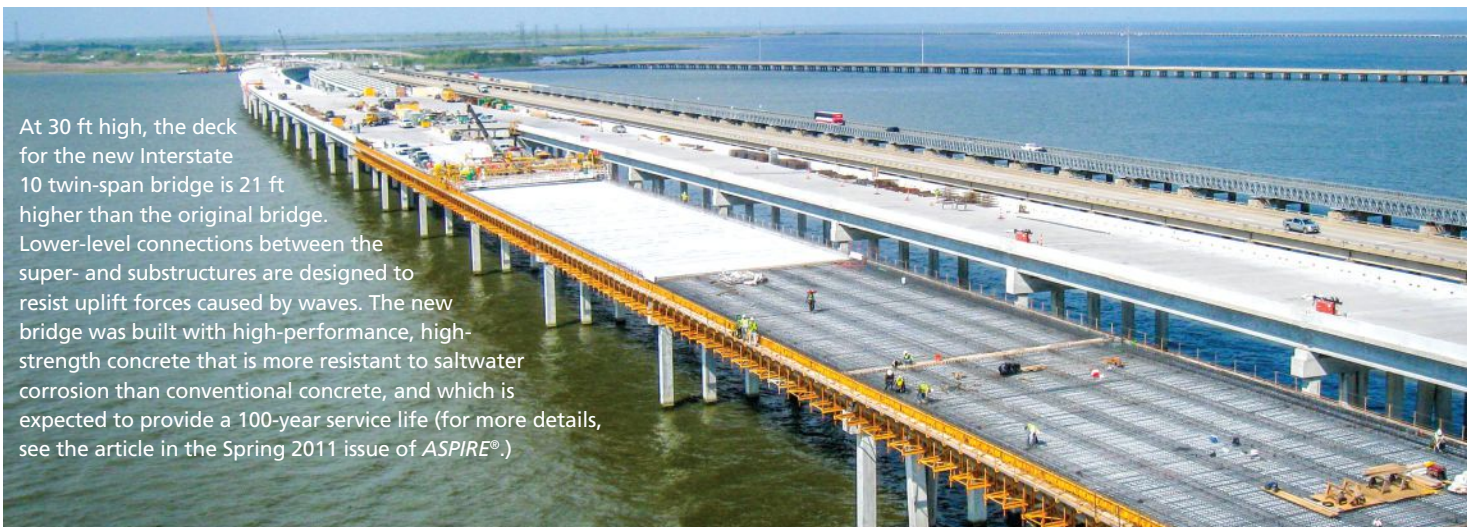
### Boh Bros. Construction Co.

Boh Bros. Construction Co. is a family-owned, third-generation construction company based in New Orleans, La. Their work includes heavy civil construction, piling, marine, utilities, paving, and site work. Since 1909, the company has had a lasting impact on the bridges and byways that connect the Gulf Coast. They demonstrate that building infrastructure not only supports commerce and commuters but also is the backbone of the community.

The family name is ubiquitous with construction in the New Orleans metropolitan area. Through the decades, Boh Bros. has weathered the good times and the bad, transforming the state's bridge system, constructing the Ernest N. Morial Convention Center, and completing numerous post-Hurricane Katrina repairs, including rebuilding the Interstate 10 twin spans. Through their commitment to quality work and public involvement, the company has earned the respect of its peers, clients, and community.

says Plauche. "Despite another layer of safety planning, we were quick to adapt and keep workers safe and healthy. The challenges posed by the pandemic helped combat complacency and reinforced existing strategies."

Boh Bros. has worked for the past century to complete projects while staying dedicated to the team environment. Plauche says, "While we can share a thousand pictures of bridges throughout our rich history, we want to emphasize our future moving forward with innovative project delivery methods and technology." 



At 30 ft high, the deck for the new Interstate 10 twin-span bridge is 21 ft higher than the original bridge. Lower-level connections between the super- and substructures are designed to resist uplift forces caused by waves. The new bridge was built with high-performance, high-strength concrete that is more resistant to saltwater corrosion than conventional concrete, and which is expected to provide a 100-year service life (for more details, see the article in the Spring 2011 issue of *ASPIRE*®.)