



» KBD is almost doubling the size of the existing Toyo Tire facility in Georgia.

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STAYING EFFECTIVE

Meeting challenges was a key to finishing the Toyo Tire project – involving a 640,000-square-foot expansion – in Georgia.

BY LIBBY JOHN

Kajima Building and Design (KBD) is about six months away from completing a major expansion to the Toyo Tire North American Manufacturing Inc.

warehouse and manufacturing facility in White, Ga. The company is adding 640,000 square feet to the existing 1-million-square-foot facility, and is

expanding its boiler room, mechanical room, test building, warehouse and manufacturing areas.

Kajima Building and Design – Toyo Tire facility

www.kbdgroupusa.com

- Cost: \$75 million
- Location: White, Ga.
- Scope: 640,000-square-foot expansion

"It is providing several hundred jobs to the community once Toyo finishes fitting out the manufacturing lines."

—Jim Gradwin, project manager

'Once we figured it out, it didn't cause any delay in the execution.'

The final contract date is December, but the schedule has eight turnover dates the company has to follow, Project Manager Jim Goodwin explains. For example, the warehouse expansion was turned over in early June, and deadlines for parts of the manufacturing and prep area are phased over the next six months. "This is not an easy project to build from left to right or from bottom to top with one turnover date," he says. "We manage the multiple turnover dates by being very organized, utilizing good planning and a good project schedule."

"The client needs to receive different parts earlier so they can start the process equipment installation," explained Jeff Stiner, KBD vice president and design/build group general manager. "It is critical that those [deadlines] are scheduled well in advance because as we finish an area within the building, the client can come in with the process equipment to install. It's critical the timing is well-executed."

The company is working to meet all deadlines simultaneously, Goodwin says. "We have to stay organized and focused on a lot of different areas," he says. "We have a great working relationship [with subcontractors and the client]. We have formal weekly meetings, and we conduct numerous on a daily basis. From plant managers to the managers in the boiler room, there is a lot of coordination."

"We believe in an open-book policy, and we share all design and con-

struction details and plans," he adds. "Our work on-site is very transparent and open to the owner. They know when we are doing good or when things are not going as planned. When others know all of the information, there tends to be a good partnership. This philosophy also holds true with our subcontractors."

Overcoming Challenges

The rainy weather has been a major challenge, Goodwin says. "Northern Georgia typically gets rain, but there has been more than usual," he notes, about six inches more than usual.

KBD is unable to perform much work when rain is heavy, he explains. During the rain, the company is focused on keeping the lower foundation from getting too muddy. "We were able to overcome excessive rain by working weekends, using mud-sills in areas of deep pit and foundation work, and de-mucking select areas that were experiencing longer-than-expected drying time," he says.

The foundation system was another major challenge, Goodwin adds. The first phase and geotechnical reports - performed by ECS - showed that the area had poor Karst sub-surface conditions and subsurface voids were present. For example, the rocks were not a uniform level, he says.

The new three-story mixing tower, which is located on the east side

of the building and contains 10,000 yards of concrete, was a heavy structure for the footprint size, Goodwin adds. "It is a lot of weight in an area where the subgrade is not that good," he says.

"We overcame this challenge by utilizing extensive sub-surface exploration through borings and air track tests at every column and equipment support locations," he says. "Also, during pile operations due to all of the sub-surface voids, there was excessive grout pumped through the auger cast piles to improve sub-surface conditions. The foundation design was changed from the first phase to better meet the sub-surface conditions and varying rock depths."

The company spent about two months preparing foundation designs for the project, Stiner adds. "In order for us to prepare for the soil conditions, we spent time with the geotechnical consultants," he says. "We had our in-house structural engineers taking the lead on that as well as [KBD's Japan headquarters providing crucial input]. They were really involved in planning for these conditions."

"Once we figured it out, it didn't cause any delay in the execution," he adds. "It was all

planned out. That was the big advantage, to spend time during the planning stages. It minimized cost and construction schedule impact once we started on site."

The project also is challenging because KBD is working on the north, south and east sides of the facility at the same time, as well as performing work on the parking lot, Goodwin adds. Also, the existing facility is operational 24/7, and the company can only shut down things like utility systems during holidays.

"Since we are adding on to an existing facility, KBD is also expanding utilities like power, natural gas, steam, compressed air and chilled water," he explains. "Tying into these services requires work during holiday shutdowns. We not only have to plan around a large amount of work in a 24-hour period for tie in, but we also have to plan all of the building and support components associated with shutdown work so the area is ready on time in order to perform shutdown work."



« The project team holds numerous meetings to stay efficient on-site.



» KBD's subcontractors and workers are vital to keeping on schedule.

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» The Toyo Tire project is scheduled to be completed in December, but KBD has eight turnover deadlines to adhere to. It says organization and extensive planning are keys to staying on top throughout the process.



Key Subcontractors

- Navigant Consulting – owner's rep.
- Ellis Astin Grading
- Jay-Ton Construction – concrete
- Carter Concrete Structures – concrete
- CMC South Carolina Steel & Dixie Erectors – steel
- Midsouth Roofing
- Seco – siding
- Allsouth Fire Protection
- Cat Plumbing
- Optimech Mechanical
- West Georgia Electric

"When you work in a facility that is open 24 hours a day, seven days a week, you can't have interruptions," he says. "We're [also] working in a mechanical room that can't have downtime. We have to be careful not to interrupt."

"There are numerous small meetings many times a day to keep up with the varied scope of work all around the facility," he adds.

"Planning, organization and coordination help KBD to meet this challenge."

Meeting Needs

Coordination was key on this project, and communication was easy to maintain because KBD strives to establish strong relationships with its clients and subcontractors. "We do everything we can within reason," Goodwin says.

"We believe in sharing all information concerning schedule and construction coordination," he says. "We have the owner sit in our weekly job meetings with the subs. We believe in a lot of on-site coordination."

KBD has worked with all the subcontractors before, he adds. "KBD has a 10-person staff of project engineers, superintendents and project managers on site full time," he says. "If there are issues on site, having adequate management staff on site helps resolve issues in a couple of days or hours, depending on the complexity of the issue."

"This type of on-site coordination also helped in the earlier stages of the project when design documents were not 100 percent complete," he adds.

KBD Specialty

KBD previously has worked with Toyo on the same facility, Goodwin says. In 2007, it completed a HVAC upgrade. "It was very different in nature," he adds.

The company has performed these types of

projects before. "We've done a wide variety of projects – from schools to condos – but this is the company's strong point," Goodwin says. "We've done a lot of manufacturing work like this."

This project is unique because it was an addition to an existing facility, he says. A project of this square footage is typically done on a green field or is a brand-new facility, he explains. "Expansions are usually small scale, but this is doubling the size of the operating facility," he says.

The expanded facility will provide many benefits to the community. "It is providing several hundred jobs to the community once Toyo finishes fitting out the manufacturing lines," Goodwin adds.

Meeting Needs

KBD Group is a part of the Kajima USA family of companies, all of which are under Kajima Corp., a network comprised of offices and employees located worldwide. It provides architectural and engineering design services, design/build, tenant improvement, and general contracting services. It also offers master planning and conceptual design development, real estate and business planning, pre-construction, process management, contract administration and construction management.

The group is comprised of Kajima Associates Inc. and KBD



Construction Services Inc. It works in markets such as distribution and warehousing, telecom, manufacturing, process installation and office and commercial interior improvements, and it has offices in Rochelle Park, N.J.; Memphis, Tenn.; Cincinnati, Ohio; Chicago; Dallas; and Los Angeles. Its headquarters are in Atlanta.

Kajima Corp. was founded in 1840, and it has worked in the United States since 1961.

"KBD seeks to specialize in our client's industry," it says. "Our objective is to understand why they are undertaking the project, not just the what, where and when. Our No. 1 goal is to obtain the client's repeat business. This commitment to provide a lifetime of service is based on

our origins and is systemic throughout the KBD organization.

"Our leadership team offers an unrivaled level of experience in the design and construction industry, trained in architecture, engineering, finance and business administration," it continues. "KBD's management team is committed to ensuring that clients always receive the highest level of service." ♦

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