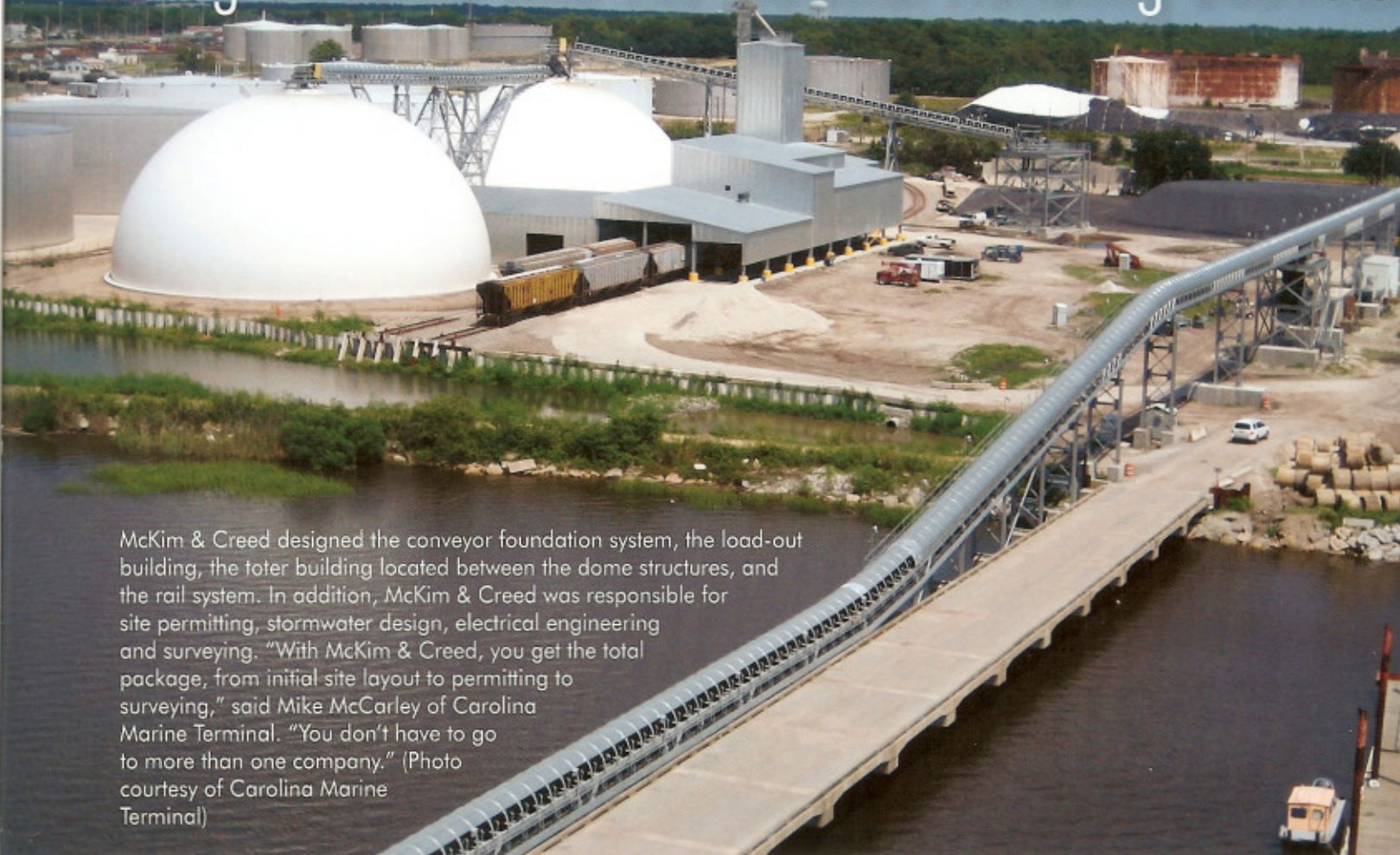


Diving Headfirst Into The Material Handling Business



McKim & Creed designed the conveyor foundation system, the load-out building, the toter building located between the dome structures, and the rail system. In addition, McKim & Creed was responsible for site permitting, stormwater design, electrical engineering and surveying. "With McKim & Creed, you get the total package, from initial site layout to permitting to surveying," said Mike McCarley of Carolina Marine Terminal. "You don't have to go to more than one company." (Photo courtesy of Carolina Marine Terminal)

Mike McCarley and Kevin Walker do not wade into new business ventures. Instead, they dive in headfirst. And their plunges have taken them from a small retail dive shop to owning and operating the only privately-funded material handling facility of its type in the United States.

McCarley and Walker first dived into business together in the 1970s when they bought Undersea Sales, a retail dive shop in Wrightsville Beach, North Carolina. From there they immersed themselves in the heavy marine construction business, eventually buying

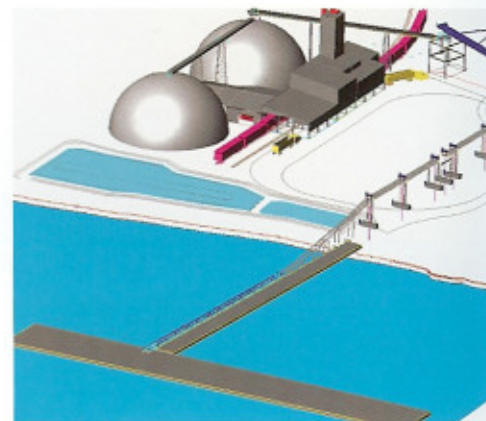
Atlantic Diving & Marine Construction. That venture led to the establishment of an affiliate company, Carolina Marine Terminal, located on the shore of the Cape Fear River.

This summer, McCarley and Walker completed an expansion of the rail, truck and barge terminal, which handles coal; urea, a chemical used in fertilizer; chromium ore, used in wood preservatives; and salt. That expansion, according to Walker, brings material handling into the 21st century.


"Each ship contains 30,000 to 50,000 tons of product," said McCarley. "Ships cost \$20,000 a day, so we need to unload them fast." The expanded facilities enable them to do just that.

Situated on the terminal's newly-expanded dock is a state-of-the-art crane capable of unloading 1,000 tons of bulk product per hour. An enclosed conveyor system transports the product to

Bill Egan, PE, project manager with McKim & Creed, developed this 3-D model to help determine the best scenario for siting structures on a constrained site rife with underground utilities. Mike McCarley and Kevin Walker used the model to illustrate the project for their investors.



continued on next page



McKim & Creed provided topographic surveying services for the dock, dolphin, buildings, pavement and security fencing, and located anchor placements for the new facilities, shown here under construction. The surveying accuracy "amazed me," said Mike McCarley, co-owner of Carolina Marine Terminal. "They did a fabulous job for us," added Kevin Walker, also a co-owner of the company. (Photo courtesy of Carolina Marine Terminal)

Material Handling continued from page 3

a warehouse, open-air storage areas and two 15,000-ton concrete domes. A high-speed load-out system loads trucks and rail cars. "We can get a truck out in 15 minutes from the time it hits the scales," McCarley said.

McKim & Creed provided permitting, surveying and structural, electrical and civil engineering services for the expansion project. Surveyors furnished topographic surveying for the dock, dolphin, buildings, pavement and security fencing for the design phase and, as the project progressed, provided the construction staking and as-built surveys

of the rails, domes and conveyors. Civil engineers developed a site plan that fit the new infrastructure into the geometric constraints of the site. Structural engineers designed the conveyor foundation system, the load-out building, and the rail system. Electrical engineers wrote the programming that allows the terminal's two conveying systems to communicate.

Bill Egan, PE, the McKim & Creed project manager who oversaw the expansion, has worked with McCarley and Walker since they ventured into the material handling business 15 years ago. "Bill has been with us since the inception of this idea," said McCarley. "He's seen all



Shown here is the Carolina Marine Terminal site prior to construction. (Photo courtesy of Carolina Marine Terminal)

the different ideas we've pursued."

In the future, McCarley and Walker anticipate a significant expansion of Carolina Marine Terminal. "It's exciting for us to come to work and build something," said McCarley. They always know the next project is only a dive away. ♦



Shown here is the same site after construction. The expansion, completed in July 2006, features an enclosed conveyor system, two 15,000-ton concrete domes, and a high-speed rail and truck load-out system. Each of the domes is 70 feet high with a diameter of 140 feet. They are used to store urea, a chemical found in fertilizer. (Photo courtesy of Carolina Marine Terminal)



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McKim & Creed has been named by Engineering News-Record magazine as one of the Top 500 Design Firms and one of the Top 200 Environmental Firms in the U.S.



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