

Baker Group is a 650-person, design-build mechanical firm in Des Moines, IA.

# Prefabrication Clears Industry Roadblocks

SPECIAL TO CONTRACTOR

Conversations about the skilled labor shortage have become commonplace. And though high-profile champions like Mike Rowe have given new visibility and importance to the looming challenge that threatens all trade professions nationwide, articles typically bemoan the lack of young people entering the trades while offering few solutions.

The need for qualified technicians isn't the only concern facing the trades, though. Others issues—such as quality of work and the time in which it's completed—are as much a symptom of the first problem as they are challenges in their own right.

Many proactive, growing companies have squared off with the workforce shortage out of necessity, dealing it blows where they can. This often comes in the form of a bolstered recruiting game, or a train-your-own technician approach.

Local advocacy in high schools helps, too, though positive results come gradually as part of a longer-term effort. Some companies implement systems and QC measures that help, to a degree at least.

If Baker Group, in Des Moines, IA, wasn't already a mechanical force to be reckoned with over the past half century, this changed dramatically in early 2017.

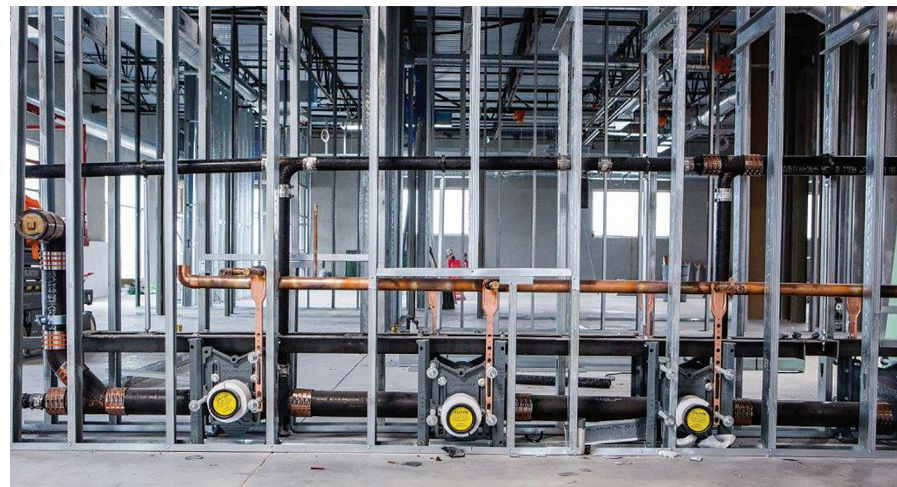
Managers within the 650-person design-build firm, already intimately familiar with the advantages of prefabricating plumbing and mechanical systems offsite, made a bold move to expand their manufacturing space by nearly 150 percent. This, they say, has helped to solve several high-level concerns. [Editor's note: Baker Group came in at #41 on CONTRACTOR's 2019 Book of Giants.]

## Manpower, Quality, Timeline

The decision to expand was made in order to produce higher quality products, in less time, without creating an unrealistic need for additional skilled

manpower.

The firm's new, 144,000 square-foot facility contains offices as well as manufacturing space, and is called Baker Group Advanced Manufacturing. As many as 75 craftsman can work during a single shift.



A premanufactured restroom assembly installed onsite.

## Much of the in-shop sequencing was adapted from the automotive industry.

"We've done prefabrication work since the 1960s," said Rob Cross, operations manager at Baker Group. "We added a large shop in 1998, and since then, we've steadily gained momentum. Our growth necessitated this new expansion last year."

"The dynamic of the entire construction industry today is built on quality and speed," says Tom Wengert, VP of Baker Group's sheet metal business unit. "With this facility, we can prefab systems in a controlled environment, which improves quality while reducing labor costs."

"Additional benefits include increased safety, less congestion on construction sites, less jobsite trash and better scrap material recycling," added Wengert.

While speed and quality are two major advantages to having a large



In 2017, Baker Group expanded their manufacturing space by 150 percent, or 144,000 square feet.



environment to build to specifications and then ship to the job site.

The space features a 10-ton crane, allowing workers to construct large assemblies. By reducing on-jobsite time, this moves the entire construction timeline forward. The approach increases value to clients, and more than doubles Baker Group's production capacity.

It's in this centrally-located, multi-trade space that the various trades come together to assemble systems, sometimes even full mechanical pent-houses. Welders work on framing and dunnage while pipefitters connect boilers, chillers, pumps and other equipment. Electricians wire the components and control technicians prepare everything to plug into a BAS.

"A good example of how we build to exact specifications in the shop can be seen in fabrication of gang restroom assemblies," said Cross. "We can complete an eight-stall bathroom assembly in a little over a day, where it would take nearly a week onsite."

Welders create an angle-iron framework, perfectly centering all the Watts closet carriers. Once assembled, the system is piped and hydro-tested. Waste water is also tested before the assembly is broken into several pieces for deliver to the job.

Baker Group has used the Watts back-to-back wall mounted, floor mounted and single closet carrier configurations for a wide variety of projects.

"We've standardized on the Watts carriers because the fab crews prefer them and they can be rapidly assembled," said Cross. The Watts "industry standard closet carriers" come out

► Turn to Prefabrication, page 40

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► **Continued from page 6**

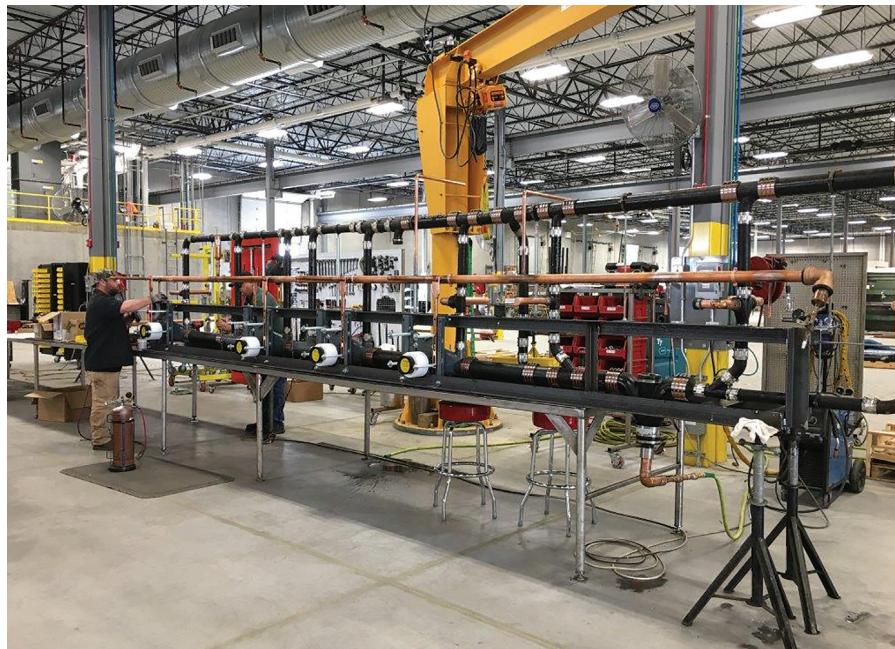
of the box pre-assembled. The carriers feature a patented compression sealed nipple, which provides fast installation without the need for additional sealants. Adjustment is much easier than when threaded nipples are used.

“We never have any trouble with the closet carriers once they’re in the field, and the support we get from Jeff Howe, at Mack McClain & Associates—our manufacturer’s rep agency—is fantastic,” he continued.

Cross has been with Baker Group for 23 years, and the relationship with rep firm Mack McClain goes back as long as he can remember. The firm supplies most of Baker Group’s plumbing components, including toilets, eyewash stations, backflow assemblies, drains and water heaters.

## Still Adding Capabilities

Toilet carriers aren’t the only plumbing systems that Baker Group prefabricates though. Like their ability to



**A Baker Group mechanic prefabricates large gang restroom assemblies at the new Advanced Manufacturing facility.**

assemble boiler and chiller systems off-site, mechanics also build water service entrances, backflow assemblies, pump

skids, pressure reducing stations and water purification systems. Once assembled, these items are broken down



**Baker Group has standardized on Watts closet carriers because the fab crews prefer them and they come out of the box pre-assembled.**

only as far as needed to be palletized, and the kits shipped to the jobsite.

“Every year we add something new to what we fabricate here on site,” Cross says, adding that Baker Group’s mechanical capabilities now include fabrication of ASME-rated vessels and components. “We’re equipped with the skills, knowledge, equipment and space to do this intricate and very strict code welding work.”

“Give us your biggest problem; the answer lies within the body of knowledge our people possess. We’ll find the solution,” he continued.

## Filling the New Shop

While Baker Group Advanced Manufacturing allows the company to provide more capacity with reduced manpower, the need for new hires to fill the shop still requires ongoing effort.

“We’re a big local advocate for the trades,” said Cross. “We visit high schools and technical schools, invite people to take tours or do job shadowing programs. But we still can’t hire fast enough to fill the need.”

Baker Group is one of the largest, most capable design-build contractors in the Midwest, and they take that title seriously.

The content available on their website and YouTube channel speaks not only to potential clients, but also potential employees.

If the company’s dedication to recruiting parallels their insistence on delivering the best solution on time and on budget, staffing the new shop won’t be an unsurmountable task. **G**

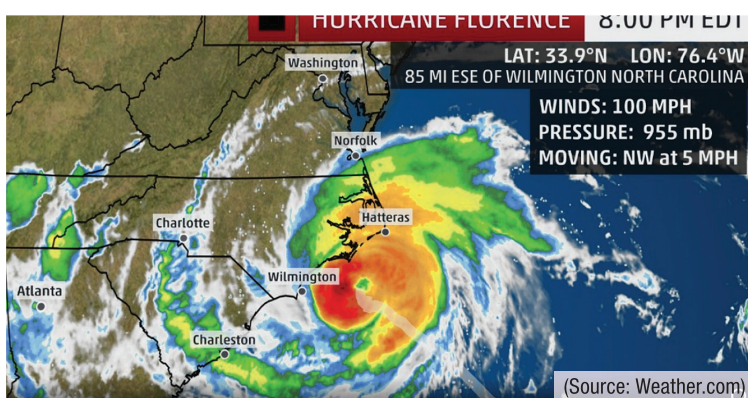
# ICC Releases Natural Disaster Preparedness Guide

WASHINGTON, DC —

Today the International Code Council released a Natural Disaster Preparedness Guide to help communities plan ahead for hurricane season, which begins on June 1. With severe weather occurrences becoming more frequent, preparation is key to protecting the safety of buildings and communities in storm-prone areas. The guide also provides tips for staying safe during and after a hurricane or severe weather.

The National Oceanic and Atmospheric Administration (NOAA) has forecast that the 2019 Atlantic hurricane season will be near normal, with nine to fifteen named storms, including four to eight hurricanes. Of those, two to four are expected to grow to Category 3 or stronger.

Last year’s hurricane season was especially destructive, resulting in more



than \$1 billion in estimated damages. Organizations like the Federal Emergency Management Agency (FEMA) and the Code Council are partnering to ensure that home and business owners have the information they need to minimize damage if strong storms hit their regions.

“While we cannot stop natural disasters from happening, we can help ensure that our communities are prepared and ready to respond as needed,” said Dr. Daniel Kaniewski, FEMA Deputy Administrator for Resilience. “Hur-

ricanes and storms of all sizes can cause significant damage, but communities can mitigate the resulting human and financial toll by taking action before severe storms.”

The Code Council is a member of FEMA’s Resilient National Partnership Network, and the two organizations share a commitment to educating the public about how they can make their communities safer, more resilient and better able to withstand damage caused by hurricanes and other natural disasters.

“Advance preparation, including adopting and enforcing up-to-date building codes, is one of the best ways to protect our homes, schools and businesses from severe weather,” said Code Council CEO Dominic Sims, CBO. “We are proud to partner with FEMA to share this valuable information to aid in natural disaster preparation.” **G**