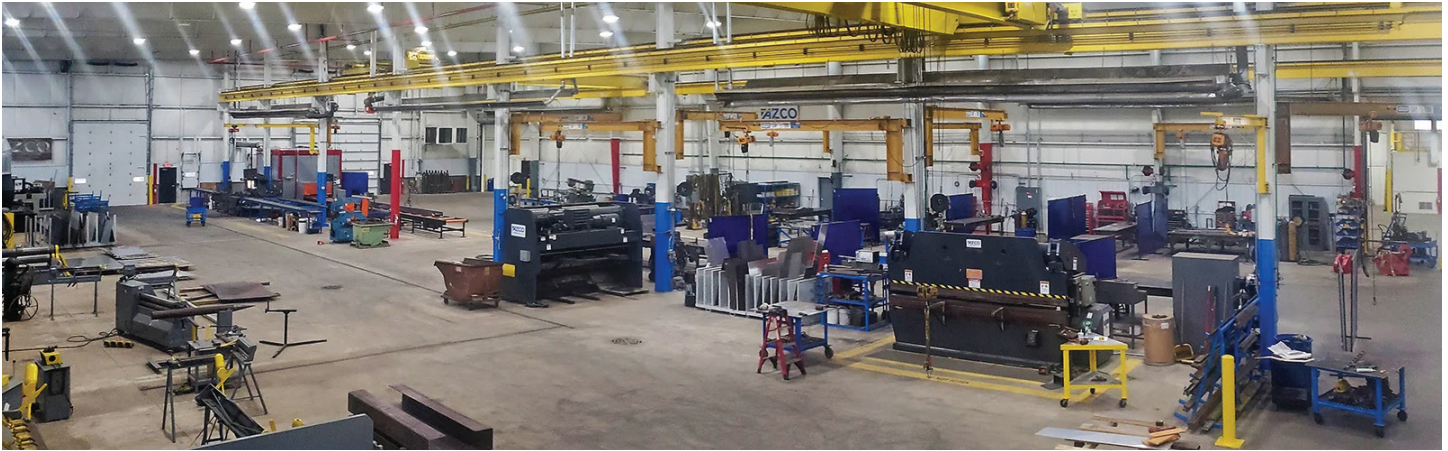


SERVICE FEATURE

Prefabrication and Modular Construction Are Redefining How Facilities and Structures Get Built

Prefabrication and modular construction of metal components are making construction sites safer while delivering higher quality, better cost control and the ability to control critical path scheduling.



Advanced equipment such as beam cutters, robotic automation and hydraulic materials conveying systems are only part of the story in the ongoing evolution of the prefabrication and modular construction industry. Streamlined processes and efficient just-in-time scheduling are completing the circle and delivering unprecedented opportunities for improved safety, quality, and cost and schedule control.

Understanding the Benefits

Prefabrication is a tried-and-true method of manipulating and assembling metal structures for large-scale projects in a climate-controlled and now highly automated environment. This approach is ideal for tanks and vessels, secondary steel and platforms, as well as projects with repeatable aspects, such as modular units and substations, or even solar energy arrays requiring manufacture and assembly of thousands of identical components.

No matter the structure created, prefabrication and modular construction of metal components and equipment offer key advantages.

- **Safety:** Prefabrication reduces on-site worker-hours by shifting work to an indoor, controllable environment. The well-lit, climate-controlled environment provides an obvious advantage over conventional construction methods that may call for hundreds of components and materials to be assembled on-site, often at great heights or in potentially hazardous outdoor conditions.
- **Speed:** Highly efficient processes of welding, cutting, bending, assembling, sandblasting and painting elements of steel structures in a controlled shop environment can greatly compress overall project schedules. This speed is partly attributable to advanced equipment and technology that automates labor-intensive aspects of the process.



Figure 1: The plasma cutter cuts, copes, notches and splits beams much faster than traditional methods, reducing labor timelines and allowing more projects to be processed through AZCO's prefabrication and modular construction shop.

- **Quality:** With specialized workers concentrating on linear, highly defined production processes, variability of any components can be eliminated, assuring that each piece meets stringent specifications.

Prefabrication and Modular Construction Take the Industry Full Circle

Prefabrication has historically been a method in which production and assembly of certain components or materials were outsourced to subcontractors or original equipment manufacturers, who would fabricate specified components and preassemble them in modules or skids. These materials would be safely secured off-site until needed at the project location.

Though the construction industry has in recent times opted for highly skilled trades to install components on-site, the industry is now moving back toward having more components

prefabricated and often preassembled in controlled environments. The cost, precision, quality and safety of prefabrication is making this decision an easy choice for owners and general contractors.

Expanding and Improving to Maximize Value

AZCO is among the leaders in the movement toward prefabrication and modular construction. With 90,000 square feet of available pipe, metal and electrical prefabrication shop space and highly skilled teams of sheet metal workers, pipefitters, welders, electricians and other skilled trades working together on complex assemblies, AZCO is helping lead this concept toward even greater relevance.

The metal prefabrication and modular construction shop at AZCO, part of the Burns & McDonnell family of companies, offers streamlined processes and consistent quality for projects across a wide array of industries. The shop space features two 10-ton cranes serving two bays with 20-foot hook-to-floor clearance. Each bay focuses on a specialty, from plate and structure processing to prefabrication structural steel assembly. A third bay is used for blasting and painting and final assembly of skids and components. The shop includes additional flex space to accommodate oversized structures without disrupting other processes. With three large-scale overhead doors at both the front and back of the shop, materials and finished products can now flow seamlessly in and out of the facility on semitrailers.

Focused on continuous improvement to meet client needs, AZCO has invested in state-of-the-art equipment to accelerate prefabrication and modular construction speeds. An advanced

Key Markets Poised to Benefit From Prefabrication and Modular Construction

- Food and beverage
- General manufacturing
- Power generation
- Refinery and petrochemical
- Transmission and distribution
- Water

Expanding and Improving to Maximize Value Metal Prefabrication Facility Equipment

- Accupress model 725012 press brake
- Accushear hydraulic squaring shear
- ALLtra HG16-10S with Hypertherm XPR300 VWI HD plasma bevel station
- EG model 1550/4 (5-foot) power roll
- HEM model VT 120 HA-60 automatic vertical high-speed production band saw
- Marvel model Hercules S330/2 horizontal band saw
- Miller welding machines, including aluminum welding capabilities
- Prodevco PCR42 advanced robotic CNC, structural steel plasma cutter
- ROUND0 Size PS255/10 digitally operated pinch-type roller
- Tennsmith SR48P 4-foot x 3-inch diameter roll

Certifications

- American Institute of Steel Construction (AISC - Prefabrication)
- American Society of Mechanical Engineers (ASME)

robotic structural steel plasma cutter cuts, copes, notches and splits beams and more — while reducing traditional manual labor timelines by more than 75%. Two plasma cutting stations, one with a bevel-cutting feature, are also on the shop floor to streamline metal plate processing.

Technology platforms are also integrated with shop processes to further build out efficiencies. AZCO has invested in software to automate the design process for shop-built tanks and code vessels. Tekla PowerFab is used throughout the shop to provide material control and real-time status updates for users. From drafting to scheduling to pricing, PowerFab serves as a convenient platform, allowing users to track the movement, progress and specific details of each project's progression throughout the prefabrication process.

Backed by broad capabilities and a safety-focused culture, the prefabrication and modular construction shop at AZCO can meet client needs quickly and safely.

About AZCO



AZCO is a heavy industrial construction and prefabrication solutions provider building the critical infrastructure that keeps communities and industries thriving. Part of the Burns & McDonnell

family of companies, we work with more than 750 union craft labor across the country, using an integrated approach to deliver more advanced controls and predictable outcomes. Learn how we are designed to build at azco-inc.com.