

A&Es Turn to CSI for Specialty Engineering, Design, and Fabrication

The Deloitte 2019 Engineering and Construction Industry Outlook recently cited a tight labor market as a key challenge to growth for A&Es. “The impact of not filling job openings and not having the right skill set in the workforce can negatively impact engineering and construction companies in various ways, including not being able to respond to market needs, losing project bids, and failing to innovate.”

To achieve growth goals, A&Es are developing relationships with trusted partners with the capabilities and expertise to take on profitable projects without stretching internal personnel to the breaking point.

Partnering with a company that is equipped to respond quickly with trusted expertise is good business, which is why A&Es turn to CSI for specialty engineering, detailed design, and unique fabrication solutions for client needs in food, dairy, beverage, pharmaceutical, biotechnology, and personal care industries.

CSI has long been a comprehensive problem-solving resource to the processing industry. A&Es of all sizes partner with CSI at various stages of the design/build process to open doors to new or expanded fabrication opportunities.

FOOD, DAIRY, BEVERAGE, PHARMACEUTICAL, AND BIOTECHNOLOGY PROCESSING

Modern processing facilities are continually pushed to increase productivity while producing consistent and safe products. CSI Engineers and Designers work with A&Es at all levels through the design/build process to create new processing systems or improve existing processes in the food, beverage, and pharmaceutical industries.

In some cases, A&Es draw conceptual processing plans and general specifications as part of a building project and

then turn to CSI for detailed designs and fabrication.



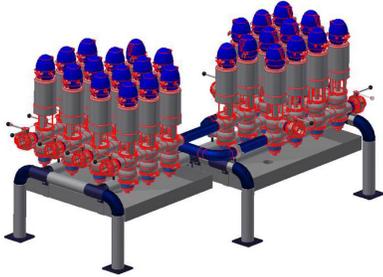
To support A&E goals for speed and precision, CSI design teams use 3D scanning and computer-aided design

USE CASE

A&Es TURN TO CSI FOR NICHE ENGINEERING, DETAILED DESIGN, AND UNIQUE FABRICATION SOLUTIONS FOR CLIENT NEEDS.

(CAD) technology to deliver digital models that take the guesswork out of planning and design. 3D scanning captures three-dimensional images of processing spaces for detailed, accurate floor plans and elevations. Scans include structures, equipment, and manufacturing processes so designers can accurately show how new designs will fit into an existing system. 3D scanning expedites the design process by capturing exact spatial measurements,

equipment dimensions, component relationships and distances—all more quickly and accurately than is humanly possible.



By providing 3D CAD models in many formats, CSI can show key stakeholders how processing designs integrate with structural elements, utilities, and other vital building systems. 3D CAD models also help users visualize maintenance access requirements for system components, and they help ensure a flexible, scalable design to accommodate growth and equipment repositioning.

In other cases, CSI engineers draw on their clean-on-place experience to recommend processing systems that are easy to clean and add considerable value to projects. Expertly designed skids and process modules efficiently combine system components to maximize space and reduce overall system footprint, conserving valuable floor space. Modular system design also reduces overall site time required for field installation and enables relocation or

replication for multiple sites if necessary. CSI specialty engineers understand system needs for equipment and layout, electrical and water needs, and control integration to support quick and effective project execution.

A product recovery system is effective for minimizing product waste during processing and adds significant value to high-volume processing plants that can flush hundreds of thousands of dollars in product during cleaning cycles unless they include well-designed recovery systems.

One A&E firm wanted a product recovery system for their client, a liquor distiller. Because the firm hadn't worked on product recovery before, they turned to CSI for system design recommendations. CSI was able to recommend changes to their original piping and instrumentation diagram (P&ID) to optimize product recovery.

MATERIALS, EQUIPMENT SOURCING AND PRICING

CSI is a trusted distributor of equipment and supplies to the processing industry

As a distributor with 80,000 hygienic SKUs and as a processing system designer and builder, CSI has sustained relationships with OEMs for pumps, valves, fittings, heat exchangers, instrumentation,

parts and supplies nationally and internationally. As a result, A&Es count on CSI to meet exacting equipment sourcing, fabrication specifications, and pricing requirements.

To respond to rapid changes in technologies, or to meet client demands for timely results, CSI can help at any phase of a project, from initial sketches to P&IDs, building footprints, schematics, or detailed designs.

PROJECT MANAGEMENT

CSI handles the details

Project management may be especially helpful to big and small firms: by outsourcing project management to CSI, smaller firms don't have to burden internal personnel with coordination of specialty system design, fabrication methods, testing, or shipping.

CSI project management can also include quoting, seeking best pricing, and determining lead times. The CSI purchasing

AS A RESULT, A&Es COUNT ON CSI TO MEET EXACTING EQUIPMENT SOURCING, FABRICATION SPECIFICATIONS, AND PRICING REQUIREMENTS.

group includes personnel dedicated to bulk, project, and fabrication purchasing; they have the knowledge and experience they need to source the right materials at the best price.

Smaller firms faced with big opportunities have built relationships with CSI with an eye to long-term growth. Without a need for capital expenditures for detailed design or fabrication expertise, smaller firms can partner with CSI to gain expertise without the expense.

Even larger A&Es find that turning to CSI is a cost-effective way to speed delivery of time-sensitive projects without disruption.

FABRICATING RESOURCES

Precision craftwork, exacting specifications

A&Es come to CSI with a range of needs for fabrication expertise. With conceptual

designs and general engineering specifications, CSI can follow the A&E's lead to help meet mechanical and fabrication requirements.

To round out a firm's plans for processing systems, CSI determines the best means of transferring materials through a system for ingredients mixing and batching sequences, to name one example.

Completing initial designs typically includes designing to minimize the system footprint through skid design. With processing space at a premium, systems must be designed to minimize component footprints, which is difficult to achieve without skid designs that factor in temperature requirements, viscosity, and clean-in-place design. CSI analyzes processing needs to determine tank size, locations, piping, and final destinations to determine how best to transfer materials through

the system efficiently while accounting for hygienic needs.

CLEAN IN PLACE

A competitive advantage for A&E clients

CSI has a depth of expertise in clean-in-place (CIP) design and fabrication that is hard to match. Food, beverage, and pharmaceutical processing demands detailed knowledge of compliance regulations and unique fabrication requirements. Meeting demands for system fluid flow rates, for example, includes analysis of pump capacities, pipe volume, pressure and temperature control, valves, and instrumentation.

CIP equipment helps control, monitor, and document cleaning methods essential to hygienic processing. As clean-in-place technologies have become more efficient and cost effective, CIP systems help ensure product safety while adding efficiencies to plant operations.

CSI includes specifications for welding and polishing (finishing) to ensure systems are CIP-able—which is a critical consideration in any sanitary design. Corrosion resistance is another consideration, which CSI can address with specifications for corrosion-resistant alloy fittings and tubing with AL-6XN® alloy and Hastelloy®



C-22® sanitary components. Because CSI stocks super alloys, products can be shipped in a timely manner wherever clients need them.

A PARTNERSHIP THAT SCALES

When CSI partnered with an A&E to advise on transfer panels for a processing system, the project soon required additional sourcing of valve clusters, tubing, custom fittings, and pumps—plus specialty system configurations for uncommon fluid dynamics, temperature monitoring, custom product recovery and CIP requirements. Because they had partnered with CSI, the A&E firm could capitalize on an opportunity that was growing in scale without the additional administrative burden of coordinating with multiple partners for specialty engineering, design, and fabrication.

Opportunities can only be as big as a firm's capacity to meet them. A&Es partner with CSI so they can pursue bigger opportunities with confidence, knowing they

can tap the capacity they need on demand.

When CSI partnered with an A&E to advise on transfer panels for a processing system, the project was so successful that the company went on to add valve clusters, tubing, and pumps—capitalizing on the advantages of working with a single source for a variety of products and services and the efficiencies that come with them. Some projects start small but have opportunities for growth, so firms can feel confident in taking on projects knowing they have the resources they need on demand.

BEATING THE CLOCK

Working with a full-service partner for detail design, specialty engineering, and unique fabrication can mean delivering functioning processing systems between two and four times faster than other methods. Consulting with a partner who can share the vision and intricate system details at the same time can also mean avoiding inflexible designs that take up more space than they have

to and that don't allow for modification or growth.

While all processing systems include some standard components—heating units, pipes, and tanks, for example—each system requires specialized components that must be custom fabricated to meet unique requirements for space, temperature, flow rates, CIP, and a host of other variables. That's why partnering with CSI as early as possible can mean significant savings in time and money.

IN FIRMS LARGE OR SMALL, A&ES TURN TO CSI FOR THE DEPTH AND BREADTH OF RESOURCES THEY CAN COUNT ON FROM A SINGLE, TRUSTED SOURCE.

**ASK OUR TEAM OF DESIGN AND BUILD EXPERTS TO HELP WITH YOUR SANITARY PROJECTS
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ABOUT CSI

Central States Industrial Equipment (CSI) is a leader in distribution of hygienic pipe, valves, fittings, pumps, heat exchangers, and MRO supplies for hygienic industrial processors, with four distribution facilities across the U.S. CSI also provides detail design and execution for hygienic process systems in the food, dairy, beverage, pharmaceutical, biotechnology, and personal care industries. Specializing in process piping, system start-ups, and cleaning systems, CSI leverages technology, intellectual property, and industry expertise to deliver solutions to processing problems. More information can be found at www.csidesigns.com.

