

# HOUSE OF DESIGN, LLC INTEGRATING INNOVATIVE, UNIQUE ROBOTIC SYSTEMS APPLICATIONS WITH SOLIDWORKS SOLUTIONS

## Case Study



House of Design leverages SOLIDWORKS mechanical design, electrical schematics and product data management (PDM) software solutions to collaboratively invent the processes that drive robotics systems, reducing cycle times, improving quality, and saving the customer money in the process.

### **Challenge:**

Efficiently and cost-effectively develop and implement ABB Robotics systems integration for unique and innovative manufacturing and assembly operations.

### **Solution:**

Implement SOLIDWORKS Premium design and analysis, SOLIDWORKS Electrical Schematics Standard 2D electrical design, and SOLIDWORKS PDM Professional product data management software solutions.

### **Results:**

- Doubled annual gross sales year over year past three years
- Grew number of employees from two to 80 in seven years
- Automated workflows and downstream processes
- Improved quality and reliability of design data with PDM

House of Design, LLC is a leading ABB Robotics systems integrator that specializes in efficiently and cost-effectively designing, manufacturing and implementing robotic systems for innovative, unique applications, such as a robotic system that automatically assembles wooden trusses. Founded by two mechanical engineers—CEO Shane Dittrich and COO Ryan Okelberry—House of Design is committed to advancing manufacturing through the implementation of state-of-the-art robotic and industrial automation tools that boost quality and productivity while reducing costs.

Since its establishment in 2012, House of Design has provided engineering consulting and robotic systems and machine-vision integration services for a range of industries, including aerospace, precision-machined components, medical devices, electronics and contract manufacturing. Through its partnership with ABB Robotics, House of Design relies on its partner's robotics hardware and programming and simulation software—ABB RobotStudio®—as key pillars of its robotics system integration work. However, because integrating these robotic systems always requires the design and implementation of additional mechanical equipment, electrical systems, controls, fixtures and tooling, the company needed a 3D CAD system to design additional system components and assemblies, according to COO Okelberry.

"We use two key pieces of software for our robotic systems integration work: SOLIDWORKS® for mechanical design and ABB RobotStudio to program the robots," Okelberry explains. "While the fact that RobotStudio cleanly imports native SOLIDWORKS files initially attracted us to SOLIDWORKS, we also believe that SOLIDWORKS software is very intuitive and requires a shorter

learning curve. That belief has been borne out as some of our people that had used other CAD software in the past—like Creo®—were able to quickly pick up and use SOLIDWORKS."

House of Design chose to standardize on SOLIDWORKS solutions—implementing SOLIDWORKS Premium design and analysis software, and later adding SOLIDWORKS Electrical Schematics Standard 2D electrical design and SOLIDWORKS PDM Professional product data management (PDM) software solutions. "We chose SOLIDWORKS because dollar for dollar, it's the best 3D CAD out there. When you consider the additional integrated solutions like Electrical and PDM, we get the most bang for our buck with the SOLIDWORKS development environment," Okelberry says.



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**— Ryan Okelberry, Chief Operating Officer**

## **TAPPING MECHANICAL AND ELECTRICAL DESIGN TOOLS**

Although House of Design uses ABB Robotics hardware exclusively, the robots have no capability or intelligence unless they are integrated within a manufacturing process and programmed to fulfill specific roles. The company uses SOLIDWORKS 3D mechanical design and SOLIDWORKS Electrical Schematics design solutions to collaboratively invent the processes that drive the robots, reducing cycle times, improving quality and saving the customer money in the process.

"While we buy all of our robots from ABB, the robots represent just one part of our custom automation systems," notes Engineering Manager Tony Lancaster. "We add value by using the robots to invent new manufacturing processes through the design, fabrication and installation of all of the ancillary equipment, mechanical controls, interface tools and operational software. Because we can use integrated SOLIDWORKS tools to collaboratively create our mechanical designs and electrical schematics, we are able to develop our value-add systems as efficiently and cost-effectively as possible."



## IMPROVING DATA QUALITY, AUTOMATING WORKFLOWS VIA PDM

As House of Design grew and added staff, the volume of projects and related design data prompted the company to add the SOLIDWORKS PDM Professional product data management system to its initial SOLIDWORKS implementation in 2017. With SOLIDWORKS PDM Professional, the company has formalized and automated its development workflows as well as those of additional downstream functions.

"While SOLIDWORKS Workgroup PDM served the early needs of the company, we needed a more capable solution as management started to scale the organization," explains Software Application Engineer Ron Grover. "This was critically important to improve the quality and reliability of our design data by incorporating revision controls while still maintaining a collaborative development environment. We're using the automated workflows in SOLIDWORKS PDM Professional extensively, including a half dozen different workflows to automate back-end business processes, such as project management and accounting."

## MAINTAINING AND SUPPORTING GROWTH

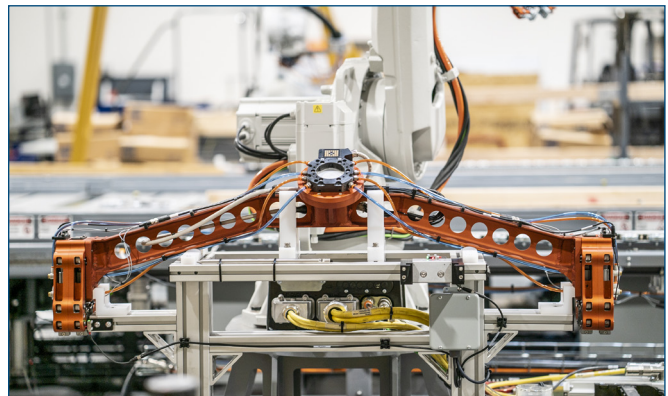
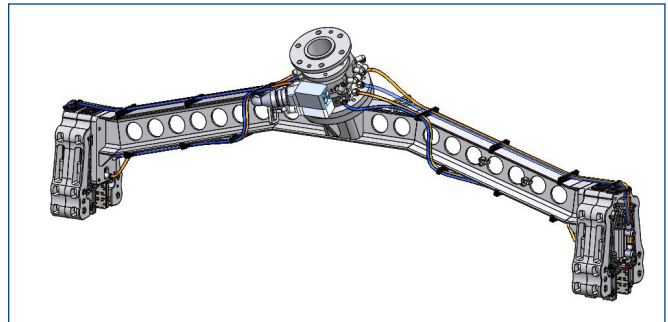
With SOLIDWORKS solutions, House of Design has been able to maintain and support rapid growth in its business and product development effort. The company has grown from its initial two employees to a staff of 80 professionals and has doubled its annual gross sales year over year the past three years.

"What sets us apart is that we are committed to one robot brand—ABB—and use SOLIDWORKS solutions to add our expertise in robotic systems integration to extend the power of robotics to new production applications," Okeberry stresses. "We often don't know how to handle an application without virtually designing the system in SOLIDWORKS first and then simulating its motion with RobotStudio. Many of our clients have never seen the level of robotics automation or innovation that we can provide. That's why if an application is unique or challenging, it's time to call the House of Design."

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