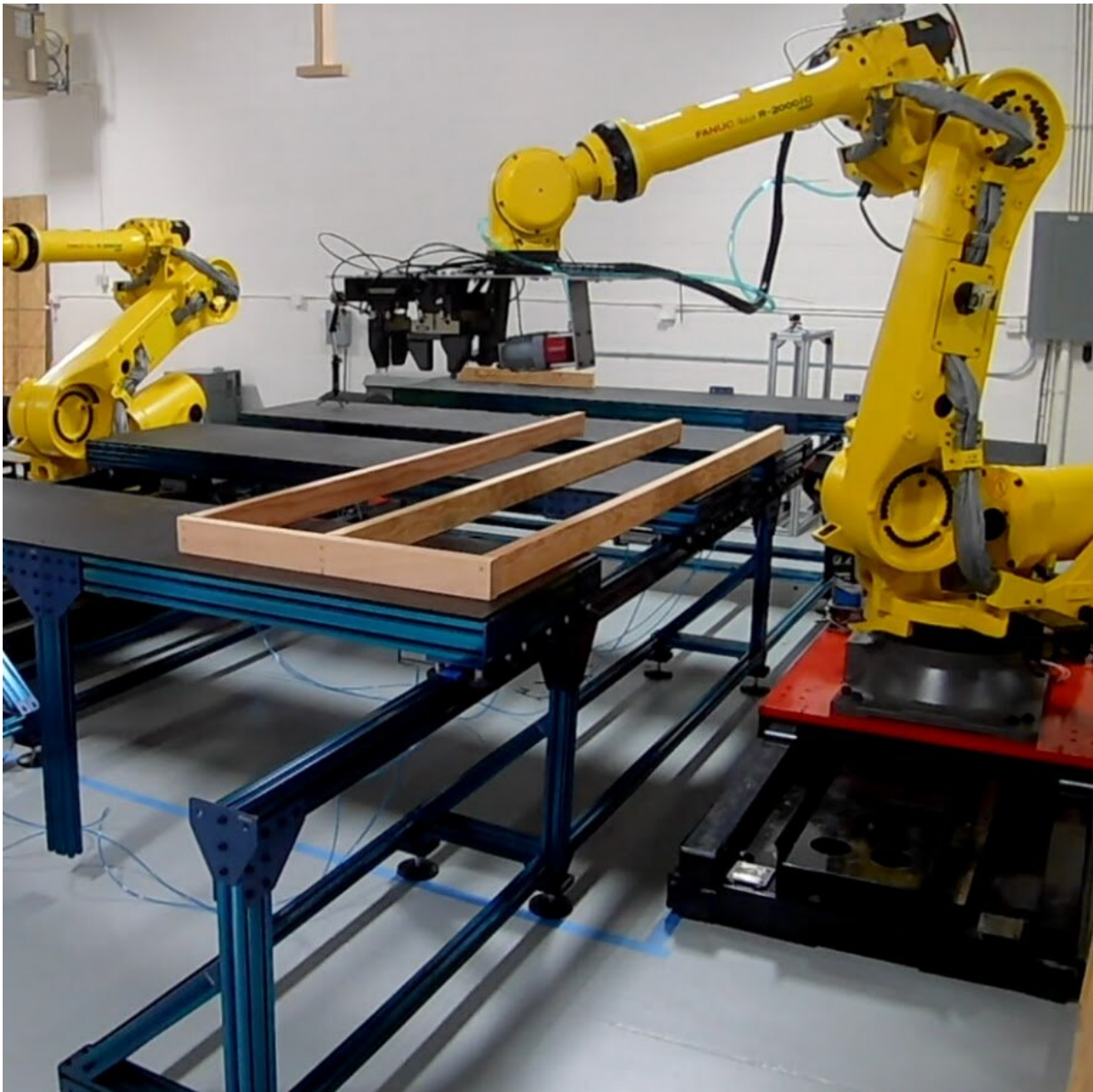


The robots are coming. Company offers solution to labor shortage in housing industry

July 5 2023, by Brian Gordon



Credit: BotBuilt

Meet Axl and Slash. The pair of mechanical arms named after Guns N' Roses members each weigh more than a ton but possess the deftness to nail wood without splitting. "Metallic beasts," is how BotBuilt cofounder Brent Wadas describes his yellow robots.

Founded in late 2020, Durham's BotBuilt seeks to use robotics to make home construction more accessible and expedient.

"The bottom line is that the [housing crisis](#) is here because the [labor shortage](#) is so real," Wadas said. "We have to help humans through augmented labor sources, and the most cost-effective way to do that is through automated techniques."

Under BotBuilt's model, humans still have plenty to do. But assembling interior and exterior wall frames—an often labor-intensive task—is performed exclusively by bots.

Powered by a proprietary software program, the mechanical arms follow 3D layout models to maneuver wood planks and bind them into customized panels. The company then ships these panels to residential construction sites and numbers them to make the assembly easier. With robots doing the heavily lifting beforehand, Wadas said the time to erect a house frame can be winnowed down from weeks or months to hours.

"It's definitely as easy as IKEA," he added.

For workers, do robots come as friends or foes?

Some homebuilders have viewed BotBuilt as "a threat," company co-

founder Colin Devine said, fearing automation will replace their jobs.

The robots do perform tasks humans have traditionally completed on site. Yet both Devine and Wadas stressed this isn't a concern because their simply aren't enough workers.

According to industry group Associated Builders and Contractors, the sector would need to add 546,000 additional jobs in 2023 to keep pace with demand. Robots can fill gaps in labor, Wadas said, and frankly do it more accurately and safely than humans—avoiding common measuring mistakes that can set projects back days or cause injuries.

"They're just better than us at math," he said of his metallic beasts.
"They're faster than us at math."

And by making home building easier, Wadas argued, robots lower the barrier of entry for [construction workers](#) to get into the field.

Today, BotBuilt has a staff of 13. Wadas is an Army veteran, and Devine recently left his Ph.D. program at Duke University to focus on the startup. The third founder, Barrett Ames, is a mechanical design engineer who completed his Ph.D. at Duke.

In 2021, their company participated in Y Combinator, a prominent Silicon Valley startup accelerator that reports to accept fewer than 2% of applicants.

Bringing the BotBuilt model to a community near you

BotBuilt has so far helped build six homes, each with different dimensions. Its robots spend about two weeks on each project. Axl and Slash don't make finished panels; they are stored at the [company's](#) testing facility on Hillsborough Road. Two other mechanical arms, not yet

named, fashion the actual panels at a nearby site.

Scaling this kind of construction has its challenges. Compared to carmakers, which use robots to assemble identical vehicle models, BotBuilt's machines customize different home layouts. Shipping the panels to sites in other states costs time and resources as well.

In the future, Wadas hopes to mobilize the mechanical arms, bringing the robots to construction sites where they can more quickly produce panels for developing communities.

And he doesn't think it'll be too long of a wait.

"In five years, I trust that BotBuilt will become a standard for how building should take place, not only in this country, but for the globe," he said.

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