Bricklaying robot can make ergonomic, economic impact on construction sites

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Credit: Construction Robotics

(Tech Xplore)—New York-based Construction Robotics is just what its title suggests. The company is applying robotics to construction sites where technology can assist, rather than replace, human workers.

Their product is a bricklaying robot SAM, which stands for Semi-Automated Mason. The company team believes "there can be significant

improvements to the way the construction industry operates."

Scott Peters, CEO and co-founder, last June introduced the world to his bricklaying robot SAM with a video and this year presented another video, in February, that shows an updated SAM100 OS 2.0.

"SAM100 is faster than ever and running OS 2.0 which now allows soldier course bricks."

Luke Dormehl in *Digital Trends* said it is capable of building walls six times faster than a human bricklayer.

Dormehl went on to say, "SAM is ready and willing to lay 3,000 bricks per day, using its combination of a conveyor belt, robotic arm, and concrete pump. By comparison, a human builder will average around 500 bricks per day."

SAM is capable of laying 3,000 bricks per day? Word travels fast. Reports said the robot will make an entry in the UK later this year. *Futurism* earlier this month reported that Construction Robotics "has announced its entry into the U.K. market later this year as it finalizes negotiations with various construction companies."

While a quick reader reaction may be to sound an alarm bell that workers' jobs will be lost to a robot, the facts about the robot's capabilities indicate the idea is to have SAM help, not replace, humans.

This robot was designed to work side-by-side a mason for onsite masonry construction.

"SAM100 is a bricklaying robot for onsite masonry construction. Designed to work with the mason, assisting with the repetitive and strenuous task of lifting and placing each brick. The mason will continue

to own the site setup and final wall quality, but will improve efficiency through the operation of SAM."

So, we are talking about a collaborative robot, which does the heavy lifting.

"SAM can't completely eliminate the need for masons on work sites just yet, as human assistance is still needed to load bricks and mortar into the system and to clean up excess mortar from joints after bricks have been laid," said *ZeroHedge*.

Stated advantages include both ergonomics and economics. The company lists the advantages: lower health and safety impact on the workforce; an increase in masons' productivity by 3-5x while reducing lifting by 80%+; and labor savings.

Another benefit is that "the machine uses traditional bricks and mortar products, meaning you're not constrained to using specific proprietary products," according to *Architecture & Design*.

The robot is now running 2.0 which allows soldier course bricks.

As pointed out in a number of sites, humans must be part of the process. "A human is also still needed to mix the mud, feed SAM100 with bricks and mortar, and do all the finicky jobs like pointing and brick tying," said *Architecture & Design*.

As long as there is a human supervisor around, you can basically use the robot round the clock, said Mihai Andrei in *ZME Science*.

Automation will come in some shape or form to construction; that appears more than likely, and the roles of human workers are more likely to shift than to just disappear. Andrei said this about the future:

"There are just a few SAMs to go around, and when you consider all the construction sites in the world, the impact that SAM now has is negligible. Also, this is still just the pioneering stages of such projects, but it is a telling sign of what's to come."

More information: www.construction-robotics.com/sam100/