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Can Robots Solve Labor Crunch?

Meghan Stromberg, Senior Editor
08/01/2003



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Berokh Khoshnevis, an engineering professor at the University of Southern California, thinks he just might have a solution to three critical housing issues: lack of skilled labor, low construction quality and job-site injuries. His answer? Robots.

Picture this: an apparatus that squirts building material (such as adobe or concrete) in a thin layer while automated trowels near the nozzle smooth and shape it almost simultaneously. That's Contour Crafting, a process that uses a computer-guided robot to extrude and layer construction material until complete interior and exterior hollow walls emerge according to a computer-aided design plan. The machine then fills the hollow walls, all while traveling along an overhead gantry.

In a paper he co-authored with USC professor George Bekey, Khoshnevis explains his dream of applying it to housing: "Contour Crafting is a recent layered fabrication technology that has a great potential in automated construction of whole structures as well as subcomponents. Using this process, a single house or a colony of houses, each with possibly a different design, may be automatically constructed in a single run, imbedded in each house all the conduits for electrical, plumbing and air conditioning."

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