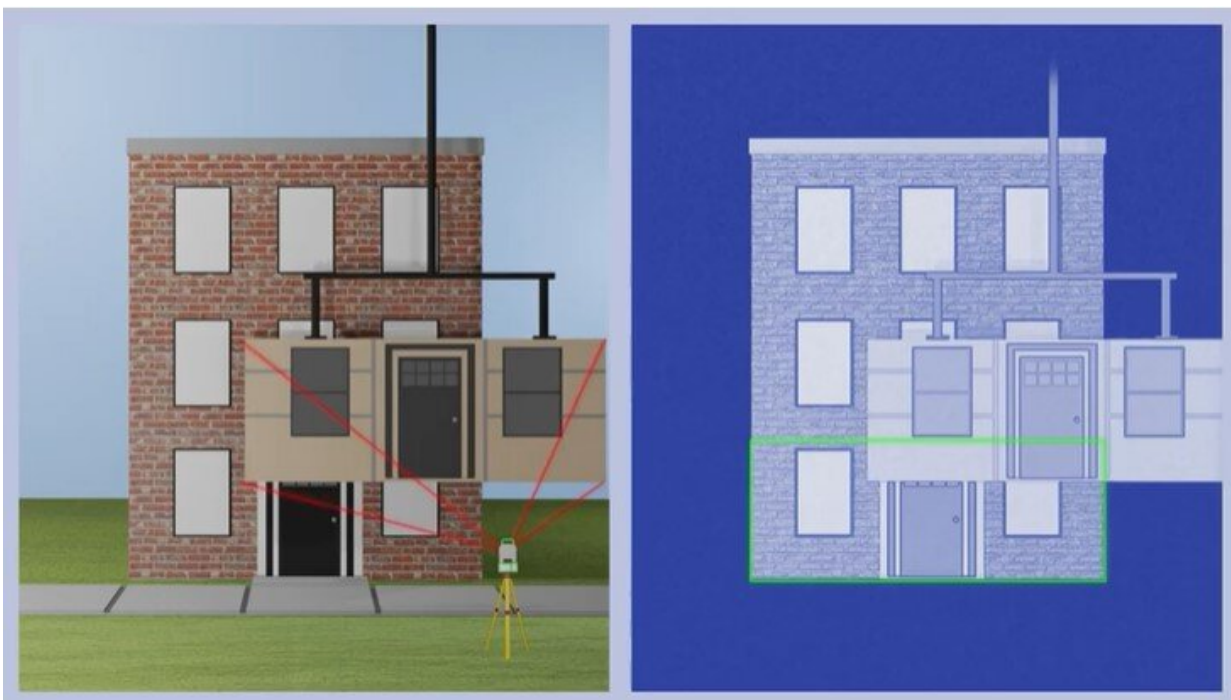


Tool provides accurate measurements and positioning directions for installation of energy-efficient panels on buildings

November 10 2022, by Jennifer J Burke



Credit: Oak Ridge National Laboratory

Researchers at Oak Ridge National Laboratory have developed a tool that provides accurate measurements and positioning directions while installing energy-efficient panels over existing building exteriors. This method will decrease installation time and cost by more than 25%.

One approach to upgrade aging buildings is to increase [thermal performance](#) and lower carbon emissions by fitting prefabricated insulated panels over the envelope—any part of a structure that separates the building's internal and external environment.

ORNL researchers created algorithms to compare panel location during installation with a [digital twin](#) or virtual model. The twin, generated in minutes using a 3D scanner, provides one-eighth of an inch accuracy. An autonomous robotic tracker then generates real-time positioning data for installers to minimize errors and expedite installation.

"This tool gives instant feedback at the jobsite on how to adjust the position and panel orientation to enable airtight and watertight envelopes," said ORNL's Diana Hun. "It's beneficial for new construction, too."

Provided by Oak Ridge National Laboratory

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