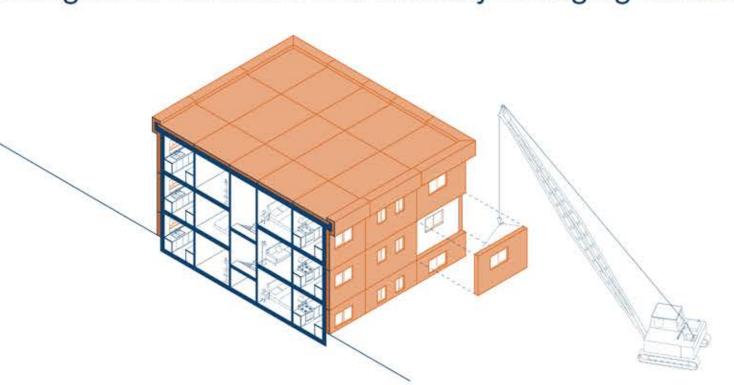
DESIGNING A DEEP ENERGY RETROFIT SOLUTION PROVIDER NETWORK

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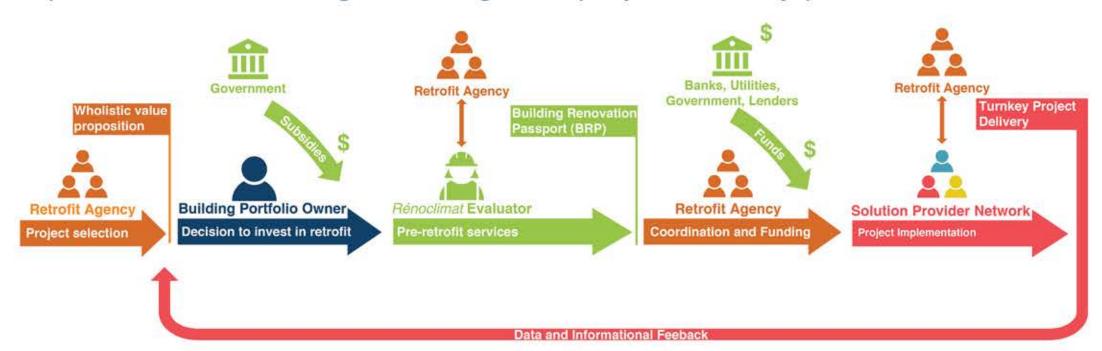
CONTEXT DEPLOYING DEEP ENERGY RETROFITS EN MASSE

Buildings are responsible for nearly 40% of global greenhouse gas (GHG) emissions¹, and in Canada, at least two thirds of buildings that will exist in 2050 are already built². Most of these buildings were constructed prior to the enaction of the energy code and do not perform at a high level in terms of energy efficiency. Overall, undertaking panelized Deep Energy Retrofits (DERs) is the best way to reduce our building sector's GHG emissions while achieving a high degree of resilience in a radically changing climate.

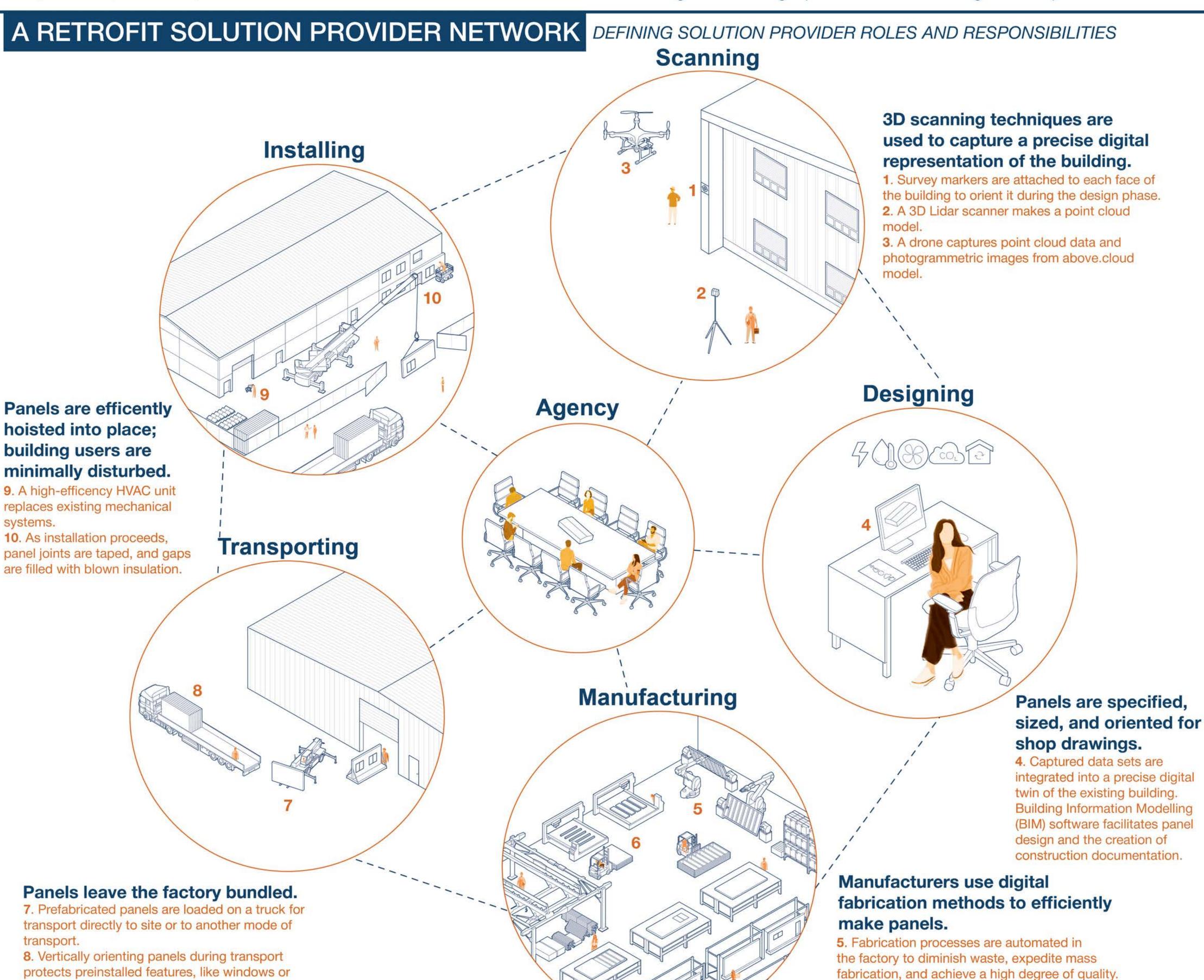


In panelized DERs, a building's envelope is upgraded through overcladding with insulated prefabricated panels. Mechanical systems are replaced with integrated, high-efficency alternatives.

Currently, the capacity for industry to deploy mass DER does not exist in Quebec. Our research indicates that to enact meaningful change, the DER process must be streamlined, affordable and scalable. A centralized Retrofit Agency should coordinate stakeholders through strategically chosen pilot projects to generate market demand for retrofits. A Retrofit Solution Provider Network (RSP) would work with this agency to plan and implement DERs through an integrated project delivery process.



The Agency coordinates project management from conception to implementation. They are represented by the project contractor who is the building owner's single point of contact throughout the process.



ACKNOWLEDGMENTS

I would like to acknowledge Professor Michael Jemtrud for his constant support and guidance. Its his vision that's led the study of Deep Energy

the entire Reconstruct team who have been developing a strategy for mass DER that this research draws from. I'd like to thank Thomas King in particular for his invaluable work on this topic, and he and Gabriel Audra for their contextual graphics used here.

Chair in Architecture **Energy and Environment**

cladding from damage.

Retrofits in Quebec. I'm also indebted to Dr. Frank Suerich-Gulick and

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6. Material processing is expedited by CNC

machines which cuts timber and rigid insulation

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