

City of Cambridge YEAR IN REVIEW

2021



UW School of Architecture partnership explores tiny homes as a housing option

“Working together we have the opportunity to change the world”

Complex challenges require collaborative solutions. In 2021, the City of Cambridge entered into a research partnership with the **University of Waterloo (UW) School of Architecture** looking at tiny homes as part of a broader affordable housing strategy. Through the partnership, the City benefits from up-to-date information on best practices, requirements and land use considerations related to tiny homes, and addresses a key strategic action of the Cambridge Connected strategic plan: ‘Increase housing options’.

“Tiny homes are a good and viable assist for housing needs of all kinds,” says **John McMinn, Professor in the UW School of Architecture** and **Director of the Grand Studio Design Build program**, “There are many different uses for tiny homes, and they can be a cost-effective solution for adding to the housing supply.”

UW School of Architecture

Twelve students in the Grand Studio Design Build program helped to create the tiny home prototype:

- Jennifer Baohui Chen
- Nini Qi Jia Chen
- Johannah-Gwyneth Del Rosario
- Marc Eugenio
- Niara Alexandra van Gaalen
- Anita Hu
- Ernest Lee
- Lauren Mok
- Max Perry
- Kenneth Siu
- Catherine Zheng
- LeiLei Zhao

While there’s no standard definition of a “tiny home”, they are generally understood to be homes with significantly smaller floor areas than traditional houses and are often smaller than traditional building codes allow. However, innovative new solutions are needed to ensure that housing supply can meet demands locally. Housing is considered to be affordable when a household spends less than 30% of its annual income on housing costs. In the **Region of Waterloo**, there is currently a wait list of more than 7,000 households and wait times for affordable housing are increasing.

“Our team looks at this as one way to provide housing,” says **Martine August, Assistant Professor in the UW School of Planning**, “Housing insecurity has become more visible during the pandemic, and issues of poverty and housing security are more on the public radar. There is a real desire to do something to address it, and this project is one way of responding by creating mobile, tiny homes.”

Located in downtown Cambridge, the **UW School of Architecture’s** project has been collaborative from the start, and leverages the contributions of students, researchers, industry and the city to explore real-world solutions to a complex housing challenge. **Nadir Ansari, president of Isherwood Geostechnical Engineers**, first approached the researchers with an interest in supporting a project that would address housing security. Additional support came from **David Warne**, a graduate of the **UW School of Architecture and VP of design & engineering at Z-Modular** in Waterloo, and **Mitacs**, a non-profit national research organization.



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The research team hired four interns to investigate different aspects of tiny homes, best practices, and housing security. **Poorna Patange** researched locating housing in the region, **Barb Chrysler** looked at the governance of tiny homes communities, **Marco Chow** studied site planning and **Nupur Garg** examined building construction. Students in the **School's Grand Studio Design Build** program then applied that research and design to build a tiny home prototype, as part of a course taught jointly by **McMinn and Associate Professor Adrian Blackwell**.

The result is a fully accessible tiny home prototype that is designed so that it can be clustered around a shared outdoor space. It is about 12'6" x 8'6", with an internal square footage slightly less than 100 square feet and has options for hydro and water availability. The prototype will be available for public viewing in 2022.

"It's very exciting to have this prototype and to move from talking about all these problems towards actually doing something to address them," says August.

"Some communities have authorized the construction of tiny homes in backyards, which can then be used by adult children or other family members," adds McMinn, "It's about public education. If people can relate to the personal needs that tiny homes serve, they can be more open to other uses – such as housing vulnerable populations."

The research team's focus is on housing security and how to use tiny homes as part of the solution.

"Tiny homes are useful in a transitional stage where it is a clear improvement from shelters or encampments," say **Adrian Blackwell, Associate Professor and Associate Director of Research at the UW School of Architecture**, "There are many advantages over the options that are currently available."

"If you have people in precarious situations, it is better to provide more options," adds August, "But tiny homes are not an endpoint solution to the housing crisis."

"The size and mobility of the homes means that they can be used at sites that are vacant or in transition," explains McMinn. Other benefits include their flexibility, energy efficiency and the fact that they are also relatively cheap and quick to develop. That means they can help municipalities and others intervene to provide transitional housing when other options are in short supply.

For the City, the research provides best practices and contemporary real-world understanding that will help to inform a comprehensive approach to providing more attainable housing options in the City of Cambridge. Research can show the community what is possible, but can only go so far. That's why partnerships are critical.

"Research is theoretical, so partners are important for making things happen," says Blackwell. "Working together we have the opportunity to change the world"

Housing in Cambridge

Partnerships like this are important to building strong relationships in the community. This research benefits the City by:

- supporting our strategic priority to increase housing options
- helping to inform a broader conversation around housing of all types
- creating awareness and providing a chance for residents to view a tiny home in person
- providing up-to-date information related to construction, building code, site planning, costing and servicing to inform our work

