



A Cross-Sector Collaboration to Reduce the Cost of Housing  
by creating an Innovation Hub for Offsite Construction

**MODULAR CONSTRUCTION INNOVATIONS**  
NCSHA Annual Conference  
October 29, 2020

# Why is Minnesota looking at Offsite Construction?

- Minnesota faces a critical shortage of housing – 300,000 more homes needed by 2030
- Housing costs continue to rise faster than incomes
- Construction industry productivity has been stagnant
- 90% of builders report difficulty in finding skilled labor for their projects





- Held in September 2019; 150 attendees from across the development sector
- Speakers from across the country; attendees developed an action plan for Minnesota
- Report and Action Plan published in June 2020
- Construction Revolution website
  - Presentations & videos from the Summit
  - Recent publications
  - [www.constructionrevolution.io](http://www.constructionrevolution.io)

## THANK YOU TO OUR SPONSORS!



# What is Offsite Construction?



## Typology 1: Components

On the side of the spectrum with low off-site work, Typology 1 includes many conventional site-built structures, so long as they include some prefabricated product such as roofing, flooring, or glazing systems.



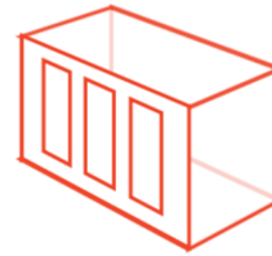
## Typology 2: Panelized

Projects in the panelized typology are approximately **60% complete offsite** and use non-volumetric modular such as floors, roofs, and interior and exterior walls.



## Typology 3: Hybrid

Hybrid projects are a mix of typology 2 and typology 4. Projects in the hybrid typology are made of volumetric modules but are not fully enclosed. Manufacturers may have removed interior walls or ceilings to eliminate superfluous panels.



## Typology 4: Volumetric

This typology defines the most common projects – three-dimensional modules **80% to 90% complete off-site**. Modules arrive on-site without interior or exterior finished.



## Typology 5: Complete

Projects in this typology are also delivered to site as a volumetric module, though in this case the modules are almost complete (90 to 95%) when they arrive on site. These projects require virtually no on-site construction before occupancy.

# What benefits can offsite construction deliver?

- 20 to 50% reduction in construction schedule
- 10 to 20% cost savings
- 60-70% reduction in construction waste
- Increased ability to use sustainable design and materials
- Workforce development opportunities and improved working conditions

## Exhibit F

### Estimated timeline changes

#### Conventional construction schedule



#### Offsite construction schedule





# Mass Production can produce Customized Solutions

- **Standardization** – Consistency in core components and frame allows repeatable, accelerated approach
- **Customization** – Standardized base components allows creativity, design and tailoring of options
- **Education** – With collaborative learning among manufacturers, developers and designers, the right mix can be found for many projects
- **Innovation** – Easier incorporation of new materials & technologies can have environmental and health benefits



# Why don't we see more multifamily projects use offsite construction?

- Manufacturers that can support large scale projects haven't been available – until recently
- Developers and Contractors are uncertain that the time and cost savings will offset their perception of increased risk
- Designers believe modular constraints will keep them from meeting client requirements
- Lenders need to understand both manufacturing and real estate risk
- Local officials are unfamiliar with regulatory process for modular that is already in place



Rise Modular has opened its manufacturing facility in Owatonna, MN and construction of a 30-unit modular project in Minneapolis, MN is underway.



Dynamic Homes completed a three-story, 36-unit modular market-rate and affordable residential project in Cloquet, MN in January 2020, with support from the Cloquet City Council, Planning Commission, and Economic Development Authority.

# Construction Revolution Action Plan

To overcome the current barriers to broader adoption of offsite construction in Minnesota, Construction Revolution moves forward with the following steps:

- **Launch multi-sector innovation cohorts**
- **Develop and promote learning opportunities**
- **Foster local collaboration**
- **Incentivize a series of pilot projects**
- **Attract new modular manufacturers and investors**



The Construction Revolution proposed the launch of multi-sector innovation cohorts, and this proposal was named a Top 25 Finalist for the Ivory Prize for Housing Affordability, a national competition for solutions that are "ambitious, scalable, and feasible."



Prosperity's Front Door identified Rise Modular and the Construction Revolution Summit in its [2020 Minnesota Housing Scorecard](#) as key innovators in cost-saving construction techniques to increase homebuilding.





# CONSTRUCTION REVOLUTION

## Stay in touch with the Revolution

There are many resources and opportunities available to explore the potential of offsite construction. The Construction Revolution website will continue to serve as a hub for these and other resources.

[www.Constructionrevolution.io](http://www.Constructionrevolution.io)