



# Prefab Buildings Initiative



Property  
Development  
Leaders Summit

Kelowna, British Columbia, Nov 6-7

Progress Report v.1 2024



# FORWARD

As demand for housing continues to grow in Canada, innovative homebuilding techniques can help build more homes faster and sustainably.

Through our Platform to decarbonize the construction sector at scale, the National Research Council of Canada supports advancements in new technology and manufacturing, such as innovations in prefabricated building systems and others, to help increase productivity and housing supply in the construction sector.

Advanced manufacturing in the construction sector can provide fast and cost-effective building solutions, while supporting enhanced quality control, energy efficiency and environmental sustainability. Through initiatives like the Prefab Buildings Initiative, the NRC is working alongside industry partners to bring new prototypes and manufacturing capabilities to market, helping to meet Canada's housing needs while continuing to support sustainable, scalable development.

Yasir Sultan, PhD  
Executive Director,  
Build Environment Climate Change Initiatives  
National Research Council Canada /  
Conseil national de recherches Canada

# At Issue

## Supply & Demand

The housing crisis in Canada is intensified by a significant gap between housing supply and demand, which continues to grow due to constraints in the construction sector.

## Economics

Challenges in the current market make it difficult for developers to secure investments, limiting their ability to initiate new housing projects.

## Materials & Labour

Rising material and labour costs place additional financial strain on developers, making traditional construction methods less viable, further reducing new housing starts.

## Barriers to Innovation

Slow adoption of innovative building technologies in the construction sector hampers efforts to address housing shortages efficiently and sustainably.

## Slow to Adapt

Developers and investors are increasingly concerned about the sustainability of traditional construction methods, which are not keeping pace with the growing demand for affordable housing.

## Public/Private

## Partnerships

Collaborative efforts are needed to overcome regulatory and market barriers, but the construction sector's slow pace of innovation remains a significant obstacle to addressing Canada's housing crisis.

## Building Prefabrication Defined

Building prefabrication is the process of manufacturing building components off-site in a controlled factory environment, then transporting them to the construction site for rapid assembly.

## Rapid Development

Prefabricated buildings offer a promising solution to help address Canada's housing shortage by enabling faster construction.

## Skilled Trades

Shifting construction labour into factories allows for a controlled environment that increases productivity, reduces weather-related delays, and enhances quality control.

## Project Cost

Factory-built systems can lower overall project costs, improve performance and affordability, and help mitigate the impact of rising material and construction expenses, providing a buffer against market fluctuations.

## Lean Construction

Utilizing manufactured components like building envelopes, interiors, and mechanical systems allows developers to streamline construction processes.

## Innovation at Work

Prefabricated, mixed-use residential buildings can be delivered as turnkey solutions, efficiently meeting diverse housing demands in growing communities.

*"Matt Concrete welcomes collaboration with the Prefab Building Initiative as an opportunity to more quickly deploy its innovative sustainable concrete wood based panels in high quality, and sustainably designed buildings."*

Randy Orr, Matt Concrete

*"Mass timber and prefabrication aren't just building methods; they're the blueprint for a sustainable future – where strength meets precision, and innovation meets responsibility."*

Derek Johnson  
Mass Timber Services

# Opportunity

# PROGRAM OVERVIEW

The **Prefab Buildings Initiative** introduces a strategic approach to the national housing challenge through performance manufacturing and construction optimization. The PBI will enhance the capabilities of the prefabrication industry and foster collaboration among manufacturers, designers, and engineers to deliver highly efficient building solutions.

The PBI will create a robust network of manufacturers, each specializing in specific systems within a building. This decentralized approach allows for the delivery of 80-90% of building components, ready for on-site assembly. The primary goal is to move beyond single-family homes to multi-unit housing models and other building types (hotels, existing building retrofits, senior residents, etc) thereby addressing a broader range of housing needs.

## Current process for housing prefabrication

- Large central, factory
- Big overhead burdens
- Economic challenges
- limited to single-family homes



## Innovation through PBI

- Development through collaboration
- Network of specialized manufacturers
- Multi-unit projects to fit a variety of site options
- On-site construction optimization

## PBI Strategic Objectives

- 1. Advanced Manufacturing Integration**  
 Identify and integrate the latest innovations in manufacturing from across the supply chain.
- 2. Design Prototypes for Replication**  
 Establish a collection of multi-unit housing models that can be replicated adapted on properties across Canada. This standardization helps in maintaining consistency and quality.
- 3. Establish Partnership Opportunities**  
 Create development opportunities with property owners to establish a project supply chain, streamline the construction process, and reduce costs.
- 4. Technology Verification**  
 Work with suppliers to support rigorous technology testing, monitoring, and verification procedures to maintain high standards of quality and efficiency.
- 5. Scheduling & Coordination**  
 Develop an efficient scheduling process to coordinate on-site assembly, ensuring that the transition from factory to site is seamless and timely.
- 6. Market Awareness & Communications**  
 Implement a comprehensive strategy for market awareness, including communications and publications, to promote the benefits and successes of the PBI prefabrication strategy.

## Case Study: Cost Analysis

The Prefab Buildings Initiative is committed to conducting a comprehensive cost analysis comparing traditional construction methods with prefabricated, in-factory component manufacturing. This analysis will evaluate every stage of the construction process, from material procurement to labour and project delivery, to determine the financial benefits and efficiencies of prefabrication.

By focusing on full project costing, the PBI aims to ensure that prefabricated building systems can consistently meet budget targets while delivering high-quality, sustainable housing solutions. This critical assessment will provide developers with clear, data-driven insights to make informed decisions and confidently adopt prefabrication as a cost-effective, scalable alternative to traditional construction methods.

*Kalesnikoff's clients have found it effective to use standardized design details in their buildings to achieve shorter build cycle, cost certainty, and reduced costs. By utilizing prefabricated walls and mass timber floor plates the quality of the building increase, as they are working with a manufactured products built in a quality controlled environment. The speed at which these can be assembled on site create a positive return to the clients, reduce on site labour, and allow owners to generate revenue sooner, with high quality building system.*

*Devin Harding, Kalesnikoff Mass Timber*

# 1st Annual Property Development Leaders Summit

Nov 6-7, 2024 Kelowna, BC

- Suppliers Luncheon
- Keynote Main Event
- B2B Networking Sessions

Special appreciation to:

- National Research Council
- Ridge North America
- UnitiWall Corporation
- Leader Lane Developments

The **Prefab Buildings Initiative (PBI)** is a newly established collaborative, dedicated to accelerating the adoption of innovative construction solutions through performance manufacturing and advanced technologies.

By collaborating with government agencies, manufacturers, and property developers, we have launched the PBI through a national Summit, specifically to turn strategy into action.

Together with our industry partners, we will design a series of prototype buildings that can be replicated on properties across Canada.

*"The Summit in Kelowna provided an exciting forum for Canada's leading minds in sustainability and real estate development to connect with government partners to advance timely building solutions."*

Tim Neeb  
NEEB Engineering Inc.

# Summit Outcomes, Opportunities & Next Steps

*"The Property Development Leaders Summit showcased the incredible, transformative potential within our industry where visionary leaders came together with shared purpose. UnitiWall is proud to be at the forefront of this movement, driving forward-thinking, sustainable solutions for building construction on a global scale. The strategic partnerships and connections forged at this Summit elevate our mission and align with our vision of creating a world where sustainable, high-performance buildings are the new standard. We're not just answering today's demands; we're setting a powerful foundation for a legacy of innovation and environmental responsibility that will shape the future of construction."*

John Sopta  
Unitiwall Corporation

We had tremendous success with our first Property Development Leaders Summit, which was driven not only by the growing demand for innovative housing solutions but also by the engaging format, prime location, and the exceptional efforts of our event planning team. The enthusiasm and positive feedback from attendees have sparked discussions about making this Summit an annual event – some participants even suggested holding it quarterly! Hosting an annual Summit would create a dynamic platform to explore emerging business opportunities, showcase advancements in construction technologies, and deepen understanding of the PBI strategy for addressing Canada's housing challenges.

Over the coming year, our targets and deliverables for the Prefab Buildings Initiative include the design and development of replicable prototype buildings, supported by government-funding, and the establishment of strategic partnerships with property developers and manufacturers across the country. The Summit will serve as a pivotal event to report on these milestones, introduce new technologies, and foster collaborations that drive the adoption of prefabricated construction solutions. By making the Summit an annual tradition, we aim to strengthen the momentum of the PBI, expand its reach, and create a unified approach to revolutionizing Canada's construction industry.



## The Diligent Mind

Q1 2025 – the PBI will formalize an advisory council and committees.

PBI members will be eligible and invited to participate.

## Action!

Build PBI Awareness with provincial and municipal agencies

Introduce the "essential services" building concept.

## Action!

Host a series of Industry Roundtables for leaders to strategize new opportunities for building prefabrication across the marketplace.

## The Game Changer

Partnering with the PBI offers developers a unique chance to innovate while minimizing financial risk. Government grants through PBI cover costs for applying its cutting-edge prototype designs to projects. These grants support advanced prefabricated construction methods, streamlining processes, reducing timelines, and enhancing sustainability –without upfront adoption costs.

By collaborating with the PBI, developers can leverage funding to pioneer scalable housing solutions and address the rising demand for affordable, energy-efficient communities.

## The Creative Effort

Dec 2024 – Designers, engineers, and manufacturers will come together in Toronto to develop out prototype buildings.

Q1 2025 – The PBI team will begin a series of design charrettes in partnership with selected developers to custom fit a prototype design to their site.

Q3 2025 – plan to break ground on our first PBI project.

## Action!

Host a public sector forum. Representatives from across government agencies will be invited to explore a new prefab housing solution for Canada.

## The Storyteller

A comprehensive marketing strategy will build market awareness around the benefits of prefab, encouraging industry-wide adoption.

Success stories from PBI projects will showcase system quality, reliability, and efficiency.

[ Infographic summary of the Prefab Building Initiative's program strategy for housing development. ]



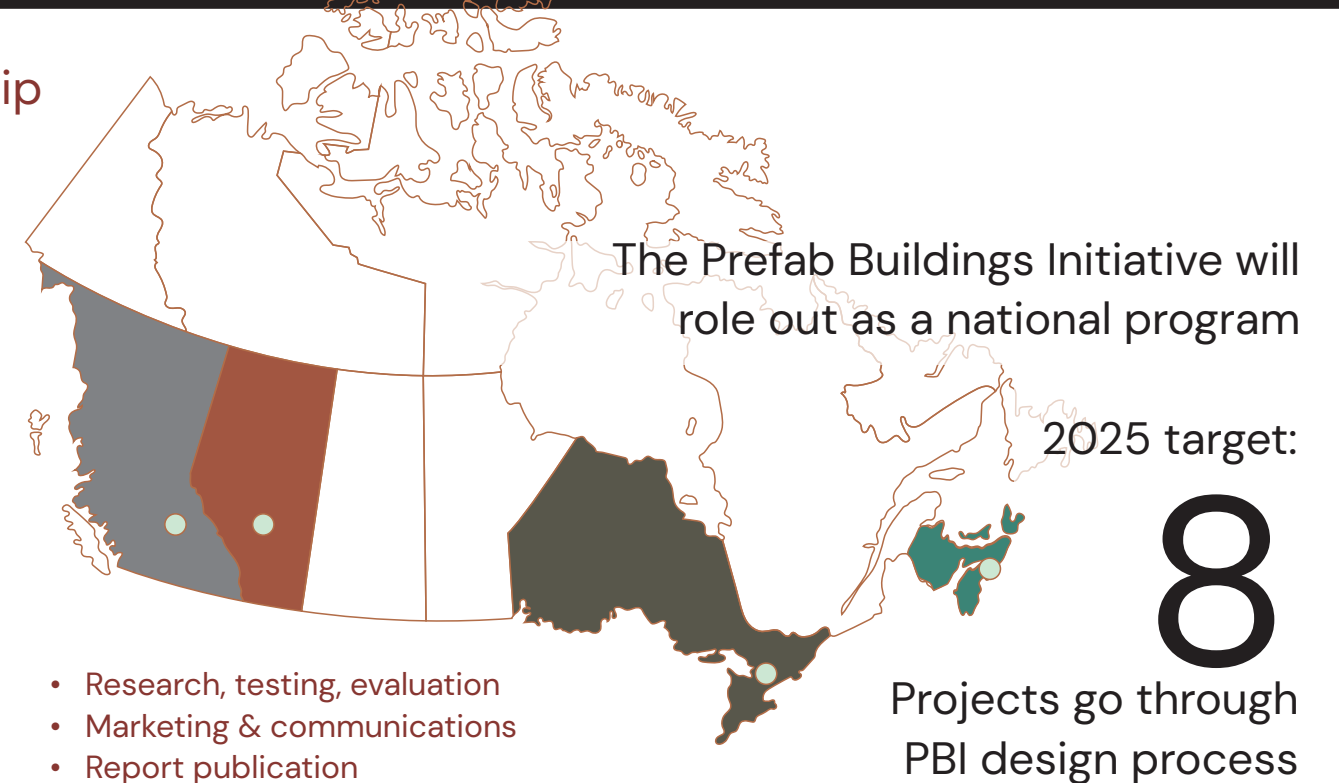
# Project Development

# Market Transformation



Public/Private Partnership  
for program delivery

Program  
Expansion  
Strategy



Innovation and  
design process

\$ **0**

Up-front cost  
to developers

## Real Estate

- Investments
- Land Acquisition
- Municipal Zoning
- Portfolio Management
- Sales & Marketing



## Design/Build

- Design Process
- Budget & Costing
- Permits & Inspections
- Construction
- Trades & Suppliers

Project  
Delivery  
Model

## Development Options through Collaboration

1. Construction Optimization  
*Contracted for project construction, developer maintains 100% ownership*
2. Joint Venture Development Partnership  
*Development partnership for complete project delivery and added resources*
3. Mutual Fund Trust – Finance Participation  
*Project becomes part of an established REIT for investor participation*

# ACKNOWLEDGEMENTS

On behalf of the Prefab Buildings Initiative, we extend our heartfelt thanks to the incredible professionals, partners, and thought leaders whose dedication and expertise made the 2024 Property Development Leaders Summit a resounding success. Your contributions have been invaluable in fostering meaningful discussions, driving innovation, and shaping the future of property development in Canada.

## Planning

Jennifer Hopkin  
Hilarie Hildebrandt

## Engagement

Chuck Cullen  
Eva Weston

## Coordination

Braeden Hildebrandt  
Jackson Maccubbin  
Ronan Woodroffe

## Participating Companies

Ace Marketing Group  
Acera Insurance  
Arthroto  
Empacta  
Integrity consulting  
Cormode & Dickson  
Stormwell  
BPWood  
Firm6  
SSAQS  
Unitiwall  
Ridge North America  
Cetana Group of Companies  
Hildebrandt Contracting & Development  
Precision Capital Partners  
National Research Council of Canada  
Southern Interior Construction Association  
Beem Credit Union  
Mitsubishi Canada  
Argus Properties  
WLF Strategic Development Consultants  
Central City Management & Developments  
Lake Valley Homes  
Troika Group  
Shaw Communications  
Command Industries Inc  
City of Kelowna  
Sparks Planning Group  
Paragon Wall Systems  
Central Okanagan Economic Dev. Commission

International Timber Frames  
Okanagan Collage  
Scius Advisory  
Kontrol Technologies  
Diamond Back Group  
Simpson Strongtie  
Tradecraft consulting  
Align West Homes  
Blue Collar group  
Leader Lane Developments  
Stretch Construction  
Enform Architects  
Remax Kelowna  
Lakepoint Capital  
W.I.T.S. Metal Fab  
Rohe Homes  
Lorval Developments  
Core Insurance  
Hilti Canada  
PacifiCan  
MotoMeru Strategies  
Tri Properties  
Victaulic  
Mass Timber Services  
William Wright  
Paradigm Panels  
Lakepoint Capital  
Innocept Developments  
Traine Construction & Developments  
University of British Columbia – Okanagan

## 2024 Summit Sponsors



© 2024 Prefab Buildings Initiative (PBI). All rights reserved. This market report and its contents are protected by copyright and may not be reproduced, distributed, or shared in any form without the prior written consent of the Prefab Buildings Initiative. Unauthorized use of this material is strictly prohibited. For permissions or inquiries, please contact Andrew Bowerbank – [andrew@innovatepbi.com](mailto:andrew@innovatepbi.com)





[www.innovatepbi.com](http://www.innovatepbi.com)