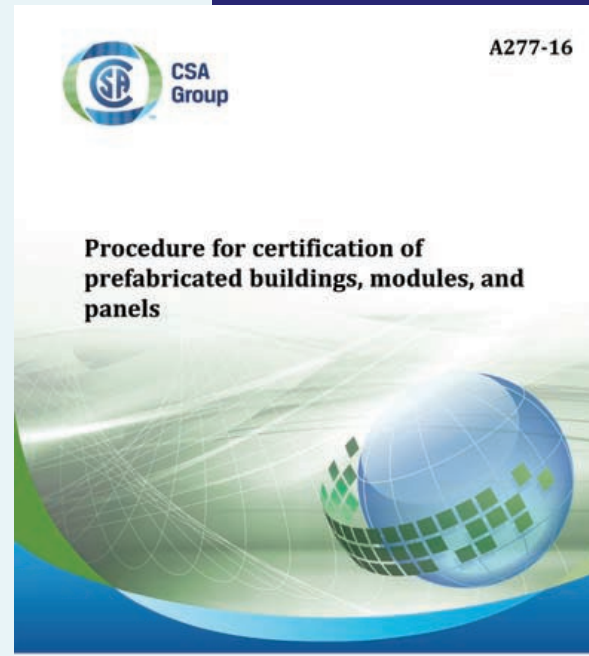


Modular and Factory-Built Construction in Ontario: Codes, Standards, and Practical Realities

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What We'll Cover Today:

- Introduction
- Regulatory and technical landscape for modular construction
- Ontario Building Code considerations
- National and provincial streamlining efforts
- Municipal streamlining efforts
- CSA standards and certification pathways
- Custom vs. repeatable designs
- Tiny homes
- Case Study – Modules manufactured overseas
- Future opportunities and challenges
- Q&A

Presentation Roadmap



Expectations for Today

This is not a deep technical, planning or policy discussion — the focus is on connecting key regulatory, technical, and practical considerations across the modular construction landscape.

The goal is to provide a **high-level**, integrated view that helps builders, developers, architects, and engineers better navigate the modular construction process in Ontario..





Why Modular and Factory-Built Now?

- Housing demand is outpacing supply
- Construction labour and skilled trades shortages
- Push for faster approvals and delivery
- Growing emphasis on quality and cost predictability
- Climate change and sustainability targets
- Government and industry interest in modular and off-site methods as a means of modernizing Ontario's construction sector



Defining a Modular Building



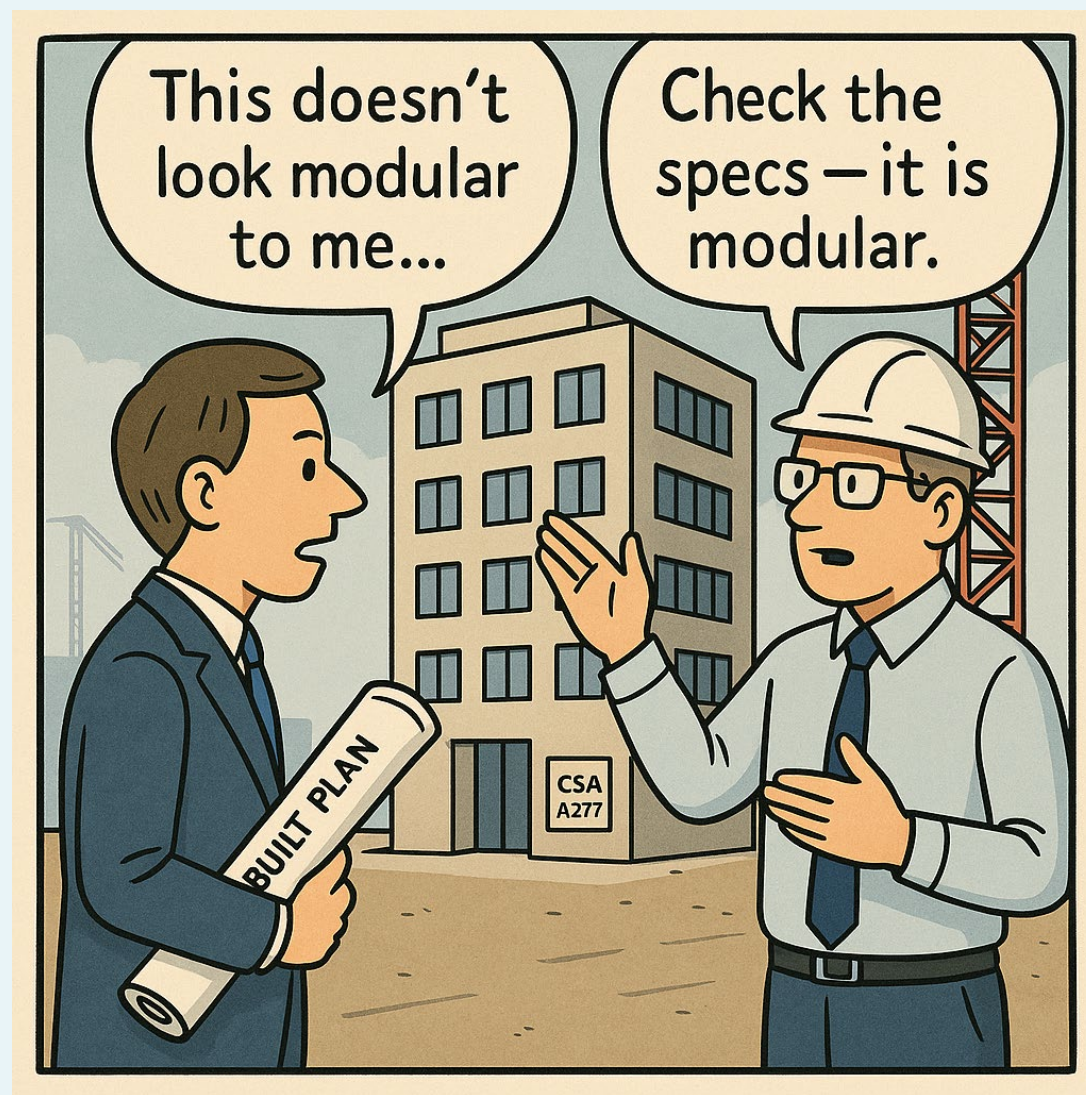
A **modular building** is built using one or more prefabricated, three-dimensional components or modules. It is constructed partially or completely off-site in a manufacturing facility then transported to a property and assembled there, like building blocks.



Introduction

- **Factory-Built Housing:** An umbrella term for homes constructed off-site using industrial methods. Includes mobile, modular, panelized, and kit homes.
- **Modular Homes:** 80–95% built in factory as 3D modules; assembled on-site like building blocks.
- **Panelized Homes:** Flat factory-made panels (walls, floors, roof) shipped and assembled on-site.
- **Kit Homes:** Delivered as pre-cut materials with plans; assembled on-site by builder or owner.
- **Mobile Homes:** Fully built in factory on permanent chassis; designed for transport and potential relocation.
- **Volumetric Construction:** Entire rooms or sections built as finished 3D units and stacked on-site.

<https://www.orea.com/MadeinOntario>

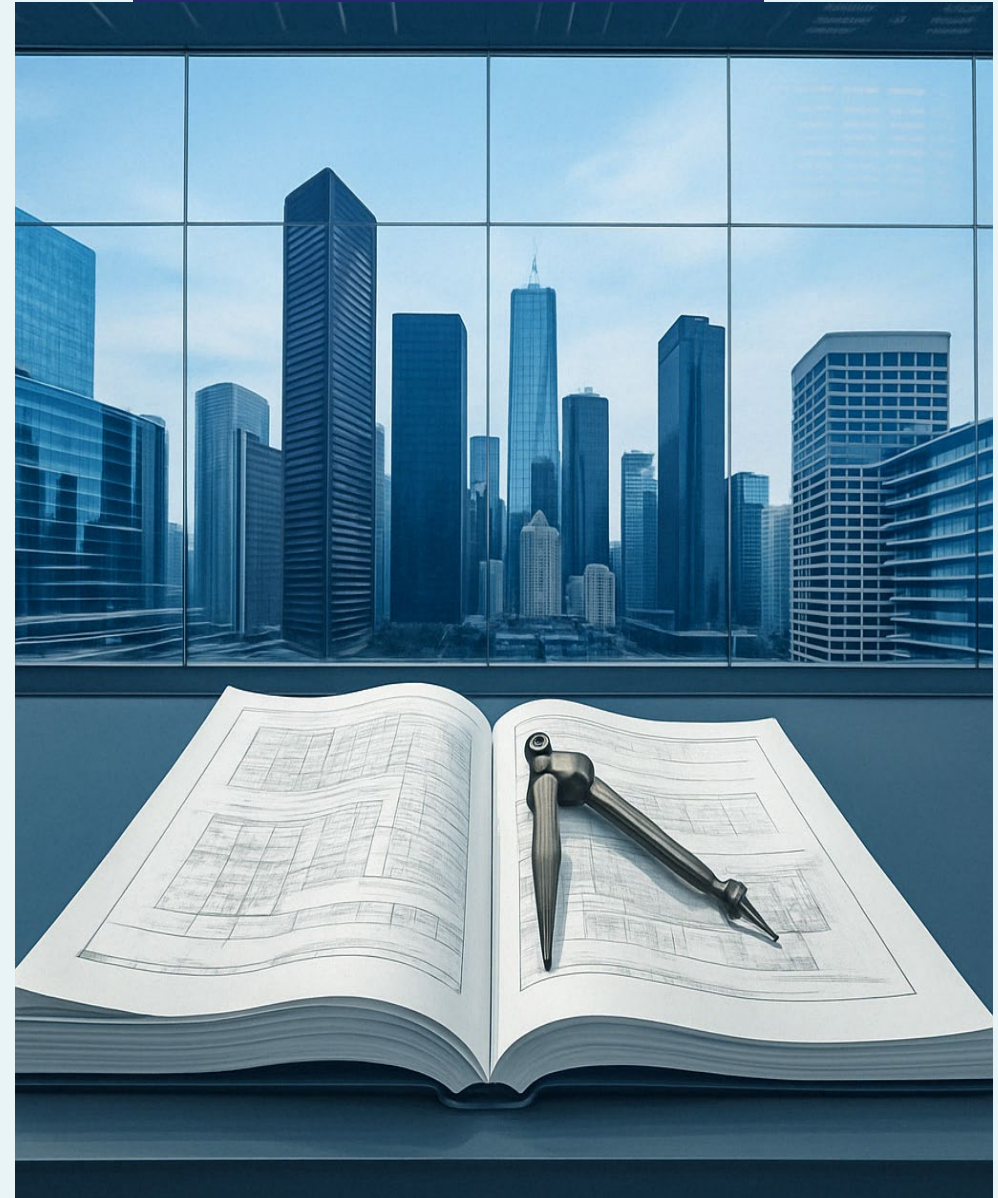


**Ontario Real
Estate Association
(OREA) Report**



Regulatory Framework in Ontario

- **Site Assembled and Factory-Built Buildings:**
 - **Article 9.1.1.9.:** Modular buildings are deemed to comply with the Code if designed and constructed in compliance with:
 - CSA Z240.2.1, “Structural requirements for manufactured homes,” and properly selected energy efficiency option, if the building is constructed in sections not wider than 4.88 m, or
 - CSA A277, “Procedure for certification of prefabricated buildings, modules, and panels.”
 - **Div. C, Section 1.12.:** Modular buildings within the scope of Part 3 are deemed to comply with the Code if designed and constructed in compliance with CSA A277, “Procedure for certification of prefabricated buildings, modules, and panels.”





The Building Permit Application (Ontario):

- When building a modular building, the builder or owner must apply for a building permit from the municipality where the house will be **located**.
- At a minimum, the following must be submitted to apply for a building permit:
 - a completed application form and any other forms and supporting documents requested by the municipality
 - construction drawings (most municipalities require at least two sets of drawings)
 - payment of the building permit fee and other applicable fees
- The permit applicant will need to demonstrate that the project will meet the technical requirements of the Building Code as well as other "applicable laws" listed in the Building Code.





The Building Permit Application (Ontario):

- If the proposed house does not meet local zoning requirements, or other “applicable law, a building permit **cannot** be issued.”
- Both the factory-built modules and the construction activities performed on-site (for example, construction of the foundation, site services, site preparation and grading) must also be covered in the building permit.
- It is beneficial for everyone if the building permit drawings and other information clearly show which parts of the building are to be completed and certified in the factory and which parts are subject to local inspections.





Ministry of Municipal Affairs and Housing

- **Building Materials Evaluation Commission (BMEC)**: Authorizes new and innovative building materials, systems, and designs for use in Ontario.
- **Building Code Commission (BCC)**: Resolves disputes related to **technical** compliance with the Building Code.

For ANY technical questions, contact:
codeinfo@ontario.ca

Ontario's Guide on "building a modular house":
<https://www.ontario.ca/page/building-modular-house>

Canada's Federal Programs Supporting Modular Construction



Supporting Efforts and Programs

1. Rapid Housing Initiative (RHI):

- *Overview:* Launched in 2020 by the Canada Mortgage and Housing Corporation (CMHC), the RHI aims to address urgent housing needs by rapidly creating new affordable housing units, with a strong emphasis on modular construction due to its speed and efficiency.

2. Affordable Housing Innovation Fund:

- *Purpose:* This fund supports innovative housing solutions that can be scaled and replicated, including modular and prefabricated construction methods.

3. Regional Homebuilding Innovation Initiative (RHII):

- *Investment:* The federal government is investing \$50 million over two years (starting in 2024-2025) to support local innovative housing solutions across the country.

4. Housing Accelerator Fund:

- *Objective:* A \$4 billion initiative aimed at incentivizing municipalities to increase housing supply.



5. Canada Green Buildings Strategy:

- *Goal:* To make homes and buildings across the country more energy-efficient, affordable, and resilient to climate change.

6. Housing Design Catalogue:

- *Launch:* In March 2025, the federal government released a catalogue featuring approximately 50 standardized housing designs, including rowhouses, fourplexes, sixplexes, and accessory dwelling units.



**Canada's Federal Programs
Supporting Modular Construction**



Ontario Municipal and Incentive Programs

(contact the municipalities regarding the availability and applicability of the programs)

Development Charge Reductions and Exemptions:

- Ontario's More Homes Built Faster Act, 2022 exempts **non-profit housing developments** from development charges, community benefits charges, and parkland dedication.
- Affordable and select attainable residential units are exempt from development charges, and developments that include this type of housing are subject to reduced community benefits charges and parkland dedication..

Fast-Tracking Approvals:

- The More Homes for Everyone Act, 2022 mandates a 60-day timeline for approval of Site Plan applications.
- Application fee rebates are provided for processes that take longer than the allotted 60 days.
- The Streamline Development Approval Fund assists municipalities in meeting these timelines.

Examples of Municipal Incentive Programs:

- *City of Toronto:* Offers a Development Charges Rebate Program to reduce construction costs for purpose-built market rental housing.
- *City of Barrie:* Provides residential unit incentives, including grants for application and development charges, building permit fees, and tax increment-based funding.
- *City of Sudbury:* Offers development charge reductions/exemptions, building permit fee rebates, and tax increment equivalent grants.



Certification Pathways:

- There are two main inspection sites for modular buildings:
 - one at the factory where the modules are built
 - one at the property where the building is assembled

Modules constructed in a factory must be inspected in the factory to ensure that they meet Building Code requirements by either:

- as a part of a certification process in-house or third-party inspectors accredited by the Standards Council of Canada, or
- building officials from the municipality where the house will be installed, agree to come to the factory to inspect, (or appoint representatives to do so)



Standard	Purpose	Key Focus
CSA A277	Certification of prefabricated buildings, modules, and panels	Factory quality program, in-plant inspections, code compliance at installation site
CSA Z240 MH Series	Manufactured (mobile) home construction standard	Design, construction, transportation, and installation of manufactured (mobile) homes
CSA Z250	Delivery process for volumetric modular buildings	Quality assurance, consistency in manufacturing and site integration
CSA Z251 (<i>in development</i>)	Design and construction of modular buildings	Structural, fire safety, and technical requirements unique to modular construction
CSA Z252	Compliance and approval processes for volumetric modular buildings	Navigating regulatory approvals and ensuring smooth project approvals

Free Training Course:

<https://www.csagroup.org/store/product/2430838ol/>



Certification Pathways under CSA A277

- To meet applicable CSA standards for modules, factories must be accredited by a certification organization that is authorized by the **Standards Council of Canada (SCC)** to perform compliance inspections in the manufacturing facility.
- A house built in a certified factory will have a label, often on the electrical panel, indicating the building code(s) the home meets, as well as that it meets the CSA A277 Standard.



Understanding CSA A277 Certifications:

- Certification under CSA A277 ensures that prefabricated buildings, modules, and panels meet specific quality and safety standards before leaving the factory.
- The process includes:
 - Evaluation and certification of the manufacturer's factory quality program.
 - Regular audits and in-factory inspections to verify ongoing compliance.
 - Ensuring that products are constructed in accordance with the building codes applicable at the installation site.

Recognized Certification Bodies:

- Several organizations are accredited to certify compliance with CSA A277, including:
 - CSA Group
 - Intertek
 - QAI Laboratories

For the complete list contact **CSS** (Certification Bodies Directory)





Custom vs. Repeat Designs

Custom Designs:

- Treated as new designs under Ontario Building Code for every site.
- Requires full application of Part 3 or Part 9 provisions (depending on building size/type).
- May require additional alternative solution approvals if design innovations are used.

Repeat Designs:

- May qualify for pre-approval through modular certification programs (e.g., CSA A277).
- Building officials may request evidence of compliance from the certification body, but project approval is faster.
- Some provinces (e.g., BC) are exploring pre-approved modular plans at provincial or municipal levels.

	Custom Designs	Repeat Designs
Opportunities	Architectural creativity and site-specific optimization	Faster approvals, reduced design costs, easier quality control
Challenges	Longer design and approval timelines, higher upfront cost	Less flexibility to adapt to complex or unique sites





- A tiny home is a small, private and self-contained dwelling unit intended for year-round use, and contains kitchen, dining, living, sleeping and sanitary facilities.
- For a home to be considered a tiny home it must meet the size threshold of a minimum **17.5 m²** (188 ft²) (based on minimum room or combined room sizes in Section 9.5) to a maximum **37 m²** (400 ft²)
- Types of tiny homes:
 - **Factory built tiny homes**
 - Site built tiny homes
 - Tiny homes on wheels
- Effective January 1, 2022, amendments were made to Ontario's Building Code (two-permit system) to address off-site construction of tiny homes where a tiny home is constructed in one municipality but is to be located and occupied in another.



CASE STUDY – Modules manufactured overseas

- **Certification Requirements:**

- All modular units intended for permanent occupancy in Ontario must comply with CSA A277 certification (Procedure for Certification of Prefabricated Buildings, Modules, and Panels).
Overseas manufacturers must work with a recognized Canadian certification body to certify compliance before modules arrive at the port, or,
- Permit applications should be made under the Alternative Solutions path.

Import & Transportation Challenges: Modules are classified as buildings, not just goods—customs documentation must reflect this.

- **Oversized** dimensions may trigger special handling, shipping, and port logistics fees, and raise Highway Traffic Act compliance issues during inland transport.



- **Code Compliance Responsibility:** Ultimate responsibility lies with the Ontario-based applicant (developer or owner) to ensure full compliance with the Ontario Building Code (OBC).
- **Local Authority Approvals:** Even with CSA certification, municipalities may request additional documentation (engineering stamps, shop drawings, etc.) or raise zoning compatibility questions.
- Modules may need **on-site inspections** for final occupancy, particularly for connections, fire separations, and accessibility.
- **Recommendations:**
 - Establish a contractual requirement for CSA A277 certification with foreign suppliers.
 - Engage a third-party inspection/certification body early
 - Coordinate with the municipal Chief Building Official in advance to confirm permit requirements and inspection expectations.

CASE STUDY – Modules manufactured overseas



KEY CHALLENGES

- **Regulatory Inconsistencies:**
 - Variation in zoning, permit processes, and Building Code interpretations across provinces and municipalities.
- **Limited Awareness and Misconceptions:**
 - Persistent biases equating modular with "temporary" or "low quality" housing.
- **Certification Bottlenecks:**
 - Lack of widespread recognition of CSA A277 by all AHJs and confusion over site-built vs. factory-built components.
- **Infrastructure and Logistics:**
 - Constraints in transporting oversized modules due to road restrictions, port handling limitations, and seasonal load limits.
- **Limited Domestic Manufacturing Capacity:**
 - High upfront investment required to scale local production and meet volume demands.



Key Challenges



OPPORTUNITIES

Opportunities

- **Speed and Efficiency:**
 - 20–50% reduction in construction timelines through parallel factory–site workstreams.
- **“Made-in-Canada” Advantage:**
 - Opportunity to develop a national supply chain that boosts local jobs and manufacturing.
- **Green Construction Leadership:**
 - Modular methods reduce waste, improve energy performance, and align with net-zero housing goals.
- **Scalable for Diverse Needs:**
 - Ideal for seniors’ housing, student residences, infill developments, Indigenous communities, and rapid emergency shelter.

Final Takeaways

- Modular construction is no longer niche
- Builders have a key role to play in integrating modular into mainstream development, from early design decisions to contractor partnerships.
- To capitalize on modular opportunities, industry must lead on education, advocacy, and collaboration with regulators and municipalities.
- Ontario builders can drive innovation by engaging with CSA standards, adopting precertified designs, and promoting "Made-in-Ontario" capabilities.

EXPLORE FURTHER:

- 🔗 Toronto's 9-Story Timber Tower to Assemble in 90 Days: [Link](#)
- 🔗 Toronto's Pre-certified Plans Program (modular and housing types): [Link](#)
- 🔗 Modular Building Institute – Industry Best Practices & Reports: [Link](#)
- 🔗 Australian Standards & Guidance for Modular and Off-Site Construction: [Link](#)



Thank you

If you have any questions, please
reach me at:

reza.hessabi@ontario.ca
<https://ca.linkedin.com/in/rezamhessabi>