

CANADIAN 

MODERN **METHODS OF** **CONSTRUCTION** **(MMC)**



MMC DEFINITION SUMMARY



Modern Methods of Construction (MMC) focuses on improving sector **productivity**, quality, and efficiency by integrating **innovative** techniques to shape the future of our cities and communities. MMC includes all forms of Off-site Construction (OSC) such as 3D volumetric modules, 2D structural panels, prefabricated components, and non-structural assemblies. It also includes On-site Construction (OnSC) **innovations**, which focus on **products** that increase site-based **productivity** (building product led site productivity improvements) and **processes** that increase **productivity** (building process led site productivity improvements).

STANDARD BUILDING SYSTEMS FOR CATEGORIES 1 TO 4

Concrete Systems

(e.g., precast concrete, prestressed concrete, etc.)

Steel Systems

(e.g., light-gauge steel (LGS), cold formed steel (CFS), hot-rolled steel (HRS))

Timber (Wood Frame) Systems

(e.g., light wood framing, mass timber (cross-laminated timber (CLT)), glued laminated timber (glulam), etc.)

Composite Systems

Note: In addition to the listed systems, integrated or hybrid systems may also be utilized to meet specific project requirements.

MODERN METHODS OF CONSTRUCTION (MMC) AND INDUSTRIALIZED CONSTRUCTION (IC) IN THE CANADIAN CONTEXT



MMC and IC include a range of approaches aiming to significantly increase productivity in the Canadian construction industry through policy and integration of mechanization, automation, and advanced manufacturing technologies

Modern Methods of Construction (MMC) is a broad term that refers to any innovative building method that improves how we design and construct buildings. It includes both offsite approaches (like prefabricated panels and modular units) and onsite innovations (like digital tools, robotics, or faster assembly methods).

Industrialized Construction (IC) is a more specific approach within MMC. It focuses on applying manufacturing and industrial processes to the construction of buildings and infrastructure — using factories to standardize, automate and scale. IC emphasizes **repeatability, precision, and scalability**.

CANADIAN MMC DEFINITION FRAMEWORK



The Canadian MMC definition framework is primarily adapted from the Modern Methods of Construction (MMC) framework developed in the United Kingdom. To strengthen global alignment, we also reviewed and considered relevant definition frameworks from other leading jurisdictions, including Australia and New Zealand. Wherever possible, the Canadian version maintains consistency with established international categories to support knowledge exchange, labour mobility, and supply chain integration. Adjustments have been introduced where Canadian context—such as building codes, procurement practices, and terminology—requires modification. The result is a seven-category system that provides a comprehensive and future-ready understanding of “Modern Methods of Construction” in building construction, supported by clear and standardized terminology.

This framework covers all forms of off-site construction (OSC) (including volumetric modular, panelized, prefabricated products), on-site process and product-led innovations, and additive manufacturing (AM) elements which can be produced either off-site or directly on-site depending on project needs.

This document was developed by the **Off-site Construction Research Centre (OCRC)** at the **University of New Brunswick (UNB)** to enhance stakeholder education and awareness and provide clarity on the different forms of off-site and on-site construction methods that improve productivity in the sector. This framework is focused on the technical definition of Modern Methods of Construction. While we recognize that various systemic barriers are critical enablers of adoption, these considerations fall outside the scope of this definition framework and are addressed in complementary research and policy workstreams.

WHY DO WE NEED A MODERN METHODS OF CONSTRUCTION (MMC) FRAMEWORK?



Productivity trends in the Canadian construction sector continue to be challenged, affecting all building and infrastructure types, limiting the sector's ability to efficiently deliver projects at scale. In 2025, the University of New Brunswick Off-site Construction Research Centre partnered with the National Research Council of Canada to deliver the Roadmap to Transform the Canadian Construction Industry and followed up with the delivery of the Atlantic Off-site Housing Innovation Strategy. Through consultation with 600+ industry representatives, barriers and opportunities to MMC were identified. The core barriers impeding sector productivity focused on **Policy and Regulatory, Procurement and Contracts, and Finance and Insurance**.

A national MMC framework is an initial step to overcoming these barriers. It is essential to address Canada's long-standing productivity stagnation and meeting the country's housing and infrastructure targets and net-zero goals. A harmonized definition framework standardizes terminology in policy, regulatory, building codes, procurement and contracts, and further helps the finance and insurance sector to create products that enable the country to build at an **unprecedented pace**. The MMC framework supports the efficient and sustainable provision of housing, healthcare, education, and other critical infrastructure across the country, ultimately enhancing the resilience and competitiveness of Canada's construction sector.

This MMC framework is essential to:

- **Accelerate the delivery of housing, healthcare, education and other infrastructure needs.**
- **Standardize communication across jurisdictions and reduce confusion.**
- **Enable better data collection and benchmarking of the current capacity and capability of the sector.**
- **Guide the development of public policy and incentive programs.**
- **Incentivize investment in innovation through business case development and allowing for long-term planning.**
- **Support workforce and skills development for both professional services and trade programs.**
- **Position Canada as an international leader to support trade and export opportunities and enable global knowledge exchange.**

WHO WILL BENEFIT FROM THE CANADIAN MMC DEFINITION FRAMEWORK?



All members of the value chain playing a role in the construction sector will benefit from the adoption of this framework.

CONSTRUCTION INDUSTRY

- General contractors, construction managers and trade contractors have more clarity and reduced risk allowing for workforce planning, supply chain coordinator and project delivery models.
- Developers and real estate firms gain confidence to invest in MMC projects as the framework helps assess cost, speed and quality of the various products and building typologies.
- Manufacturers and suppliers benefit from standardized definitions supporting policy, procurement contracts and regulatory acceptance.
- Architects, engineers and consultants benefit from a better understanding of MMC products and design for manufacturing and assembly (DfMA) and improve clarity on RFPs.

FINANCIAL INSTITUTIONS AND INSURERS

supports the creation of a standardized risk profile and enables the creation of financial and insurance products that specifically support and de-risk MMC adoption.

INDUSTRY ASSOCIATION AND TRADE BODIES

provides clarity to support communication and advocacy efforts.

WHO WILL BENEFIT FROM THE CANADIAN MMC DEFINITION FRAMEWORK?



GOVERNMENT AND REGULATORY BODIES AT ALL LEVELS

- **Policy makers** are supported in funding allocation, regulatory harmonization across all levels of government and provide inspectors and code authorities with clear definitions.
- **Federal government departments** such as Public Services and Procurement Canada (PSPC), as well as provincial infrastructure agencies responsible for the design, construction, and maintenance of public buildings, are supported by providing standardized MMC terminology and clearer pathways to modernized project delivery.
- **Municipalities and housing providers** can meet public infrastructure and new housing obligations under evolving legislation, enabling alternative delivery method that accelerates approvals and compliance.

WORKFORCE ORGANIZATIONS

Helps unions prepare for evolving work environments and encourages safe and equitable workforce transition.

UNIVERSITIES, TRADE SCHOOLS AND TRAINING INSTITUTIONS

supports the structuring and development of curriculum that aligns with skills and competency requirements in practice.

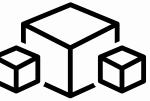
INDIGENOUS GOVERNMENTS AND COMMUNITY HOUSING PROVIDERS

clarifies the potential for MMC solutions to deliver culturally appropriate public infrastructure while also supporting local capacity-building, training, and skills development in construction.

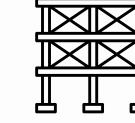
MMC CATEGORIES >>>

Off-site Construction (OSC)

PRODUCTS

1 

VOLUMETRIC (3D)
MODULAR
CONSTRUCTION

2 

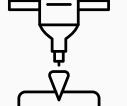
PANELIZED (2D)
STRUCTURAL
SYSTEMS

3 

PREFABRICATED
COMPONENTS
(NON-SYSTEMIZED
PRIMARY STRUCTURE)

4 

NON-STRUCTURAL
ASSEMBLIES AND
SUB-ASSEMBLIES

5 

ADDITIVE
MANUFACTURING
(AM)



On-site Construction (OnSC)

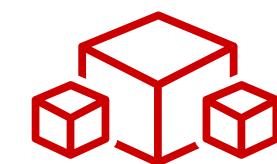
PROCESSES

6 

BUILDING PRODUCT
LED SITE PRODUCTIVITY
IMPROVEMENTS

7 

BUILDING PROCESS LED
PRODUCTIVITY
IMPROVEMENTS

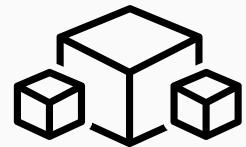


CATEGORY 1

VOLUMETRIC (3D) MODULAR CONSTRUCTION

This method involves creating fully enclosed, box-like units in a factory setting. These modules are transported to the site and assembled to form permanent buildings. The level of factory work can vary, from basic structure-only units to fully finished rooms with interior fittings and exterior finishes.

Note: volumetric (3D) modular buildings sit on a permanent foundation and would be governed by CSA A277-Procedure for certification of prefabricated buildings, modules, and panels.



CATEGORY 1

1a. Structural module only

all interior and exterior work completed on-site.



1b. Module with interior fit-out

a volumetric unit with walls, floors, and basic MEP systems pre-installed, including interior fit-out such as finishes and fixtures.



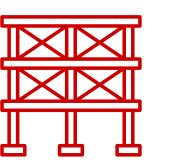
1c. Fully enclosed module

includes interior fit-out, exterior cladding, and roofing.



1d. Structural turnkey module with service pods

includes integrated bathroom/kitchen pods, ready for final connections.

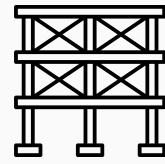


CATEGORY 2

PANELIZED (2D) STRUCTURAL SYSTEMS

Flat structural elements like walls, floors, and roofs are prefabricated in a factory. These panels are then brought to the construction site for assembly. The complexity can range from basic frames to fully insulated and finished panels.

Note: depending on the level of finish in the factory, some panelized (2D) structural systems would be governed by CSA A277-Procedure for certification of prefabricated buildings, modules, and panels.



CATEGORY 2

2a. Structural framing panels

Open-frame wall, floor, stair, or roof panels fabricated off-site and completed with insulation, finishes, and services on-site.



2b. Insulated panel systems

Panels pre-fitted with insulation and internal wall linings (e.g., drywall or sheathing) in the factory.



2c. Fully integrated panels

Panels delivered with factory-installed insulation, interior finishes, exterior cladding, windows, and door openings.



2d. Externally finished panels

Panels delivered with factory-installed exterior cladding to achieve a weatherproof envelope; interior insulation, linings, and services are completed on-site.



CATEGORY 3

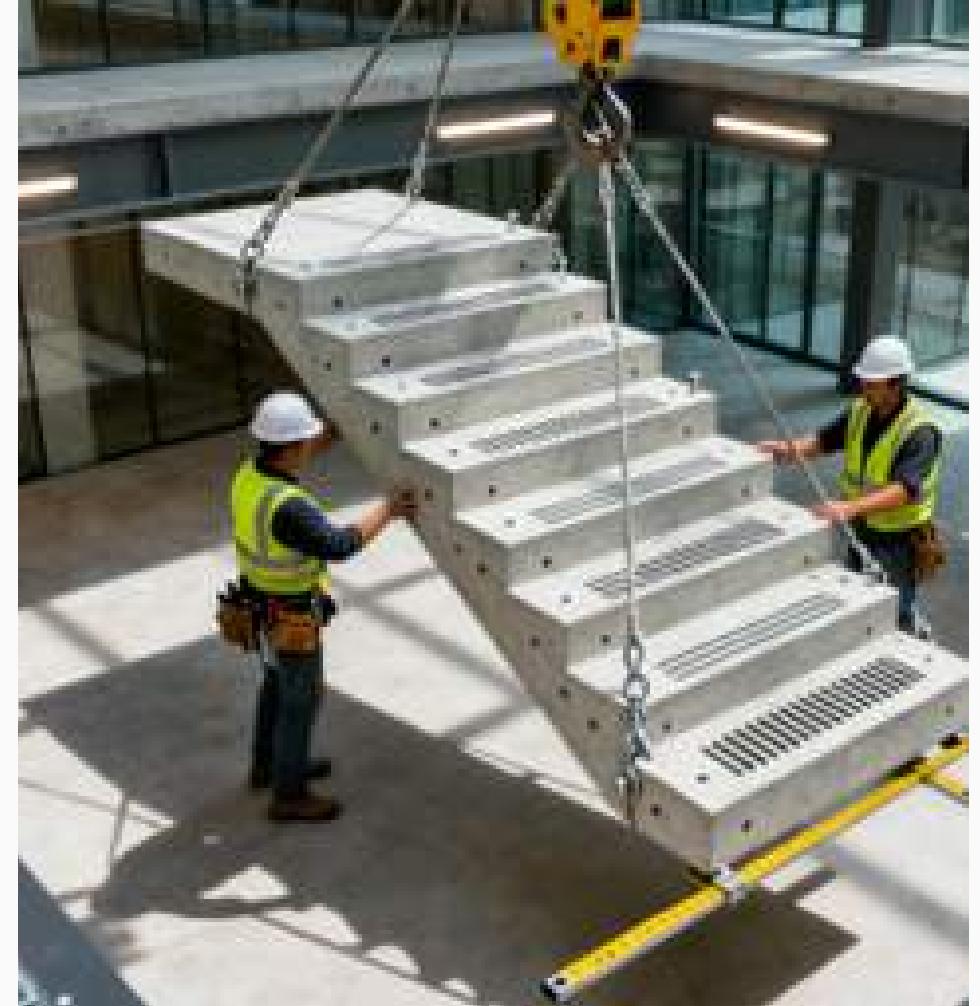
PREFABRICATED COMPONENTS (NON-SYSTEMIZED PRIMARY STRUCTURE)

These are prefabricated building components that support part of the structure but are not part of a full system. They are typically used for foundations, floors, or partial frames and can be combined with other construction systems on-site.

≡ CATEGORY 3

3a. Driven or screw piles

Factory-made foundation elements installed by driving or screwing into the ground.



3c. Non-structural columns, walls , and beams (Individual or integrated assemblies)

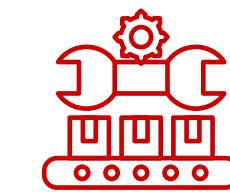
3d. Floor finishes

3e. Prefabricated staircases

3f. Pre-assemble roof structure

Trusses, spandrels



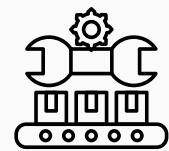


CATEGORY 4

NON-STRUCTURAL ASSEMBLIES AND SUB-ASSEMBLIES

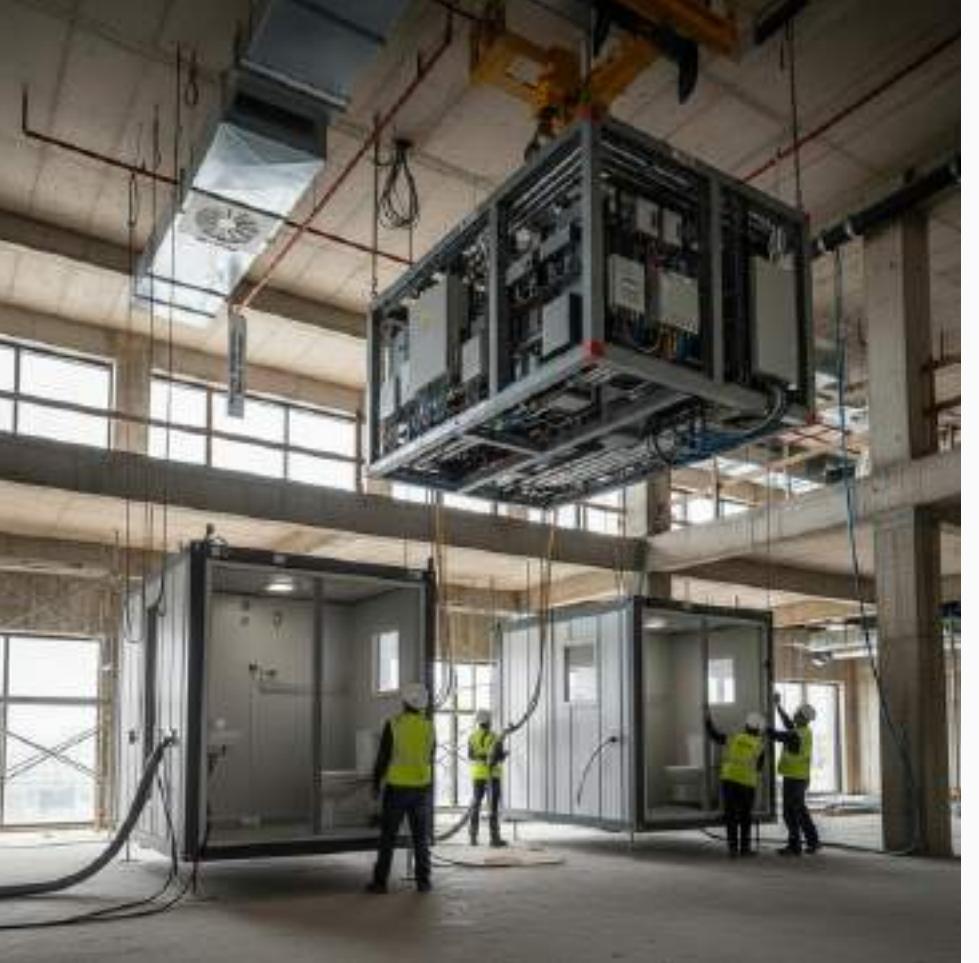
This category includes prefabricated building services components that simplify installation on-site. These do not form the main structure but include parts like bathrooms, utility pods, or pre-installed mechanical and electrical systems.

Note: depending on the level of finish in the factory, some panelized (2D) structural systems would be governed by CSA A277-Procedure for certification of prefabricated buildings, modules, and panels.



CATEGORY 4

**4a. Bathroom and kitchen pods
(individual or combined)**



4b. Non-structural façade assemblies
Glazing, solid cladding, metalwork

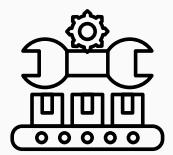


4c. Prefabricated roof sections
Roof cassettes engineered to support their own weight.

4d. In-unit M&E service assemblies
Utility cupboards, service hubs

4e. In-unit M&E distribution assemblies

4f. Infrastructure M&E assemblies
vertical risers / main distribution



CATEGORY 4

4g. Infrastructure M&E assemblies
central plant & equipment



4h. Floor cassettes with horizontal services / finishes added

4i. Partition cassettes with horizontal and vertical services / finishes added

4j. Door sets
pre-hung, finished with ironmongery

4k. Offsite elevators and shafts



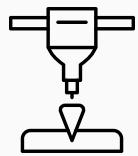


CATEGORY 5

ADDITIVE MANUFACTURING

Often referred to as 3D printing, this innovative technique uses digital designs to fabricate building components layer by layer, either on site or remotely.

Creation of geometrically complex structures that would be difficult or impossible to achieve with traditional methods, while also improving productivity and workplace safety



CATEGORY 5

5a. On-site large-scale printing

5b. Off-site component printing

5c. Hybrid/repair applications





CATEGORY 6

BUILDING PRODUCT LED SITE PRODUCTIVITY IMPROVEMENTS

Improving construction efficiency by developing building materials to be quicker, easier, and safer to install; involving manufacturing building products in larger formats, pre-cut configurations, or with simplified jointing features.



CATEGORY 6

6a. Large-format products

Products manufactured in larger sizes to reduce the number of elements to be handled and installed on-site.

Example: Large-format masonry blocks, jumbo plasterboards, large pre-cut cladding panels.



6b. Pre-cut or pre-sized products

Products manufactured or pre-processed to specific sizes or shapes before delivery.

Example: Pre-cut timber framing kits, pre-cut steel rebar packages.



6c. Simplified jointing or connection systems

Products designed with simplified or integrated connectors to speed up on-site assembly.

Example: Click-in façade systems, self-aligning floor tiles, modular jointing clips.



CATEGORY 7

BUILDING PROCESS LED PRODUCTIVITY IMPROVEMENTS

Improving on-site efficiency through innovative techniques, digital tools, automation, and robotics. Aim to enhance productivity by optimizing skilled workforce utilization, reducing waste, and streamlining workflows directly at the construction site.



CATEGORY 7

7a. On-site mechanization and automation

Robotic and mechanized systems to reduce manual site work.



7b. Digital and data-driven tools

Advanced digital technologies for monitoring, layout, and site optimization.



7c. Advanced prefabrication aids

Supporting prefabricated elements and temporary systems to minimize conventional site work.

7d. Lean management practices

Process-focused methods to improve productivity and reduce waste.

THIS FRAMEWORK IS OPEN TO INTERPRETATION, SUGGESTIONS, AND IMPROVEMENTS.

Please feel free to contact the team
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