

**Volumetric Modular Construction:
Understanding Contractual and Professional
Exposures in the Delivery Process**

July 16, 2025

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AIA CES INFORMATION

**Volumetric Modular Construction: Understanding
Contractual and Professional Exposures in the
Delivery Process**

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Agenda

- Why is off-site construction becoming a major change in the design and construction industry?
- What are some of the legal and practical challenges in moving to a decentralized construction process?
- How do the new AIA Volumetric Modular Construction documents position the architect to profit from the increased use of modular construction?

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Definition of Off-Site Construction

Off-site construction is the planning, design, fabrication and assembly of building elements at a location other than their final point of assembly onsite. And integrated planning and supply chain optimization strategy characterizes off-site delivery.

Definition by the Off-Site Construction Council of the National Institute of Building Sciences

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McKinsey & Company Report


- Modular construction can deliver projects 20 to 50% faster than traditional methods and carries a potential cost savings of up to 20%.
- The challenges are in design, manufacturing, technology, logistics and assembly and the ability to integrate “product” assemblies with on-site construction activities.
- The goals are to achieve repetition and scale which usually means housing or hotel projects and accessibility to site from production facility. (In Finland, Sweden, and Norway 45% of housing construction is produced off site.)

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McKinsey & Company Report

The maturing of digital tools has radically changed the modular construction proposition

- Coordination of the design information directly with the processes within the production facility.
- Use of BIM to directly reach global supply chain infrastructure for ease of ordering, tracking and manufacturing.
- The optimization of the logistics of just-in-time delivery onsite from the production facility.
- Mining advanced analytics to optimize productivity onsite.



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Practical Challenges to Decentralized Construction

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Design Firm Concerns

For the design firms, modular construction requires:

- Different design thinking to account for production efficiencies, opportunities to develop standardization to offer mass customization, and ease of transport and assembly.
- Increased design fees since modular projects currently tend to take longer to design so that they can align with the manufacturing process.
- Design decisions must be “frozen” before production; clients must act on design recommendations early so that changes are minimized.



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Design Firm Concerns

For the design firm modular construction requires:

- An understanding with the client of the design firm's role in monitoring the quality and timeliness of production.
- A role that might extend beyond normal evaluation services:
 - Does the manufacturing process meet quality standards as determined in the contract for construction?
 - Are there any delay issues in the production that might affect timely delivery?
 - Who coordinates if several facilities are creating interrelated elements of a project?



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Scenarios for Design Firms

- Designing Modules for a Specific Project
- Designing a Prototype for Multiple Projects
- Creating a Performance Specification for a Module
- Designing a Module with Royalty Payments when Used on Separate Projects
- Involvement in the Design, Production, and Sale of Units for Projects by Others



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Volumetric Modular Construction Agreements

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Why Modular Contracts

- The majority of construction in the United States (and the rest of the world) is, and has been, site-built construction.
- Modular construction is a paradigm shift away from traditional, site-built construction.
- Modular construction is an emerging trend in our industry.
- Modular construction has many legal nuances
 - modular subcontractor has major responsibilities during design;
 - permitting;
 - multiple sites (manufacturing facility, staging site, project site) leads to more complex responsibilities for safety and supervision;
 - expectation of an advance payment.




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Types of Modular




Volumetric Modular




Pods/Kit of Parts



Complex Prefab Panels







Simple Prefab Panels



Prefab MEP/Single Trade

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Volumetric Modular Construction Agreements



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Design Assist

▪ The Modular Subcontractor provides information on the requirements for, and constraints on, the Modules

▪ materials,


▪ overall dimensions and weight,

▪ locations and type of connections,

▪ other design parameters

▪ The Modular Subcontractor and CM provide constructability reviews and time requirements for procurement

HERE
TO
HELP



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Delegated Design

New Delegated Design Provisions


Architect identifies Delegated Design Services

Construction Manager/Modular Subcontractor prepares submittals

Architect specifies performance and design criteria

Architect reviews submittals

Construction Manager/Modular Subcontractor signs and seals the delegated design; Architect signs and seals the Construction Documents



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Intertwined Roles of the Parties

Design Reviews

Meetings

Align Architect's Vision, Ensure Coordination, and Mitigate Construction Challenges



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Permitting


VMC projects may pose permitting challenges

- The Modular Work may be performed at multiple sites

The Architect, together with the Construction Manager, contacts governmental authorities required to approve the Construction Documents and Final Module Design Documents

The Architect responds to design requirements imposed by AHJs, except to the extent they relate to the design of the Modules

The Architect compiles the submission to the AHJ



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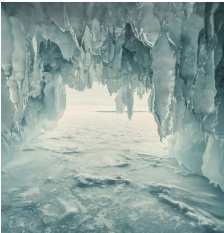
Design Freeze Date


What is the Design Freeze Date (DFD)?

- "[m]ilestone date when the Architect, Construction Manager, and Modular Subcontractor consider the design of the Modular Work to be fixed as to major components, configuration, and size."

Who determines the DFD?

Who bears the time and cost-impact of changes after the DFD?





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Architect's Services vs. Fees

VMC projects require the Architect to frontload the performance of many services during the Pre-Design and Design phases.

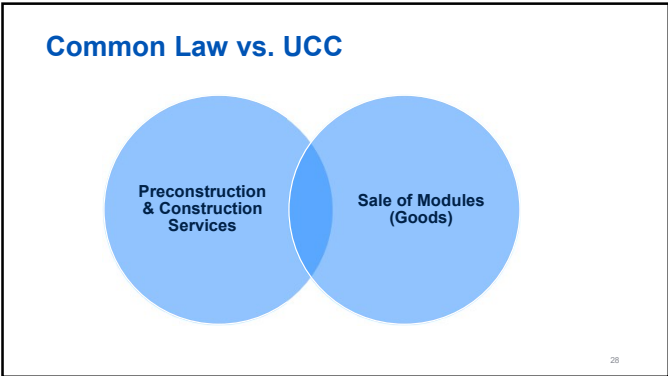
- Architect performs services that may traditionally be considered Construction Phase services during early phases of the project
- Fees for early phase services should reflect the increased scope of work

Unique VMC Supplemental Services

- Help with selection of the Modular Subcontractor
- Evaluating the Modular Work at the Modular Facility or Staging Site



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Products Liability

- Product liability broadly refers to the legal responsibility for injury or damage resulting from the use of a product.
- Construction modules might be considered as products
- Product liability applies strict liability in tort; not liability based on negligent performance
- But:
 - Services do not constitute products, and fee should be based upon the services
 - The Architect delegates the design of the Modules to the Modular Subcontractor
 - The Architect should ensure that the Modular Subcontractor provides adequate warnings/instructions about risks associated with the Modules

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Professional Liability Insurance Coverage of Exposure for Negligent Performance

III. DEFINITIONS

Wrongful act means an error, omission, or other act that causes liability in the performance of professional services for others by the Insured or by any person or entity, including joint ventures, for whom the Insured is liable.

Professional services means those services that the Insured performs for others on behalf of a Named Insured in the Insured's practice as an architect, engineer, interior designer, land surveyor, LEED® green building program consultant, landscape architect, construction manager, scientist, or technical consultant.

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arising out of any actual or alleged sale or distribution of goods or products by the Insured, or by others under license from the Insured. This exclusion does not apply to furniture, furnishings or equipment created or modified specifically for a client in connection with the Insured's professional services for that client or to software created or modified specifically for a client in connection with technology based services for that client;



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■ GUIDE TO

AIA Volumetric Modular Construction Documents



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- Designing for Volumetric Modular Construction is not the same as specifying prefabricated components on a project.

- Using owner or contractor provided contract forms could lead to heightened standards of care, warranties, or product liability exposures or perils such as in the transport to a project site or storage in a staging area – so use the carefully crafted AIA VMC documents.
- VMC is a cooperative effort that involves high levels of design assist and delegated design situations, so prepare for an evolution in the role of the architect.

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