

Selecting the right MMC system

Free Modern Methods of Construction Guide



INTRODUCTION

Thank you for downloading our introductory guide to Selecting the right MMC system for your project. Whether you're exploring Modern Methods of Construction (MMC) for the first time or planning your project this guide will help you to understand some of the systems available and additional factors that can form part of your decision-making as you turn visions into reality.

You maybe asking what makes Dynamic Build Group experts in MMC? Well, we have 20+ years of heritage in accelerating the delivery of innovative, energy-efficient and sustainable homes and buildings with self builders and developers to the likes of Devon Council and Mears Group.

With completed projects ranging from bespoke single dwellings to standardised classrooms and large-scale residential developments to complex learning departments, we understand the challenges and opportunities of MMC.

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SYSTEM SELECTION

HOW WE CAN HELP

- **Academy**
- **Supply**
- **Build**

2D & 3D BUILD SYSTEMS

Modern Methods of Construction (MMC) is now widely utilised in the construction industry, offering innovative techniques that improve efficiency, sustainability and quality.

The systems are designed to save time, lower the environmental impact of construction and reduce whole life costs.

In this guide, we explore a selection of MMC systems highlighting their benefits, considerations and real-world applications.



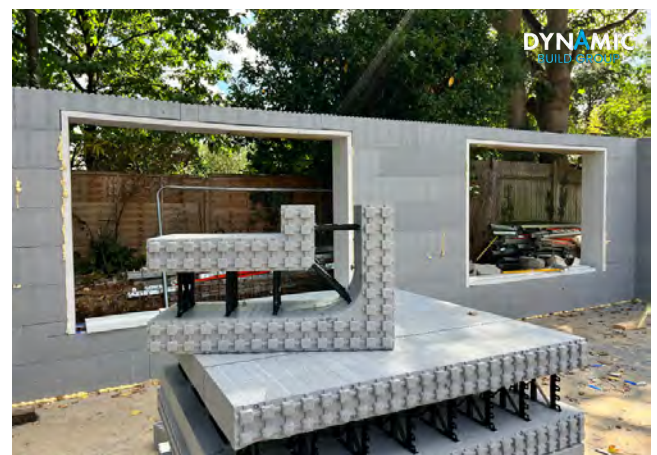
SIPs



Timber Frame



Volumetric Modular



ICF

SIPS

What are SIPs?

Structural Insulated Panels (SIPs) is prefabricated sandwich panel made up of a rigid foam core sandwiched between two structural facings, usually oriented strand board (OSB).

Where is it used?

SIPs are commonly used in external walls and roof structures providing both the insulation and structural support. They are particularly popular for residential homes, schools and small commercial buildings where speed of build and energy efficiency is critical.

History and current use:

SIPs have been used since the 1930s in early experimental forms but became more widely adopted in the 1970s due to the growing interest in energy-efficient construction. Today, they are extensively used in passive house construction, custom homes, and extensions where superior thermal performance is required.

Advantages

1. Energy efficiency: Exceptional thermal and airtightness performance.
2. Speed of construction: Prefabrication allows faster onsite assembly.

Considerations

1. Cost: Higher upfront cost at the start of projects compared to traditional materials
2. Specialised labour: It is advised that experienced teams install SIPs

Dynamic Build Group Example

We optimised SIPs for a high-performance custom home, creating an airtight, thermally efficient superstructure. This can reduce energy bills by up to 80% and cut construction time by 40%.



Dynamic Build Group - SIPs custom build during installation



Dynamic Build Group - External finishes of the project

TIMBER FRAME

What is Timber Frame?

Modern Timber Frame is a construction method using a prefabricated timber panel of load-bearing timber studs and beams, typically filled with insulation and clad with sheathing materials like oriented strand board (OSB).

Where is it used?

Timber frame systems are primarily used in residential homes, schools and small commercial projects. They're especially popular in low-rise buildings and rooftop extensions due to the speed of build, lightweight and versatility.

History and current use:

Timber framing has a long history, dating back centuries. Its modern use became prominent in the mid-20th century with advances in wood treatments and engineered timber products. It's now a leading choice for sustainable construction.

Advantages

1. Sustainability: Timber is a renewable material, making it eco-friendly.
2. Speed of construction: Prefabricated frames are lightweight and easy to assemble on-site.

Considerations

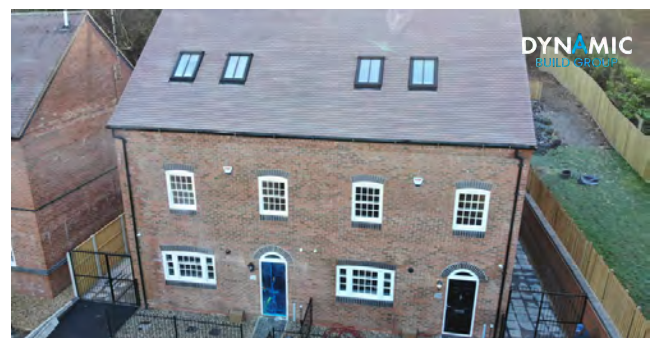
1. High Performance: Achieving low u-values may require additional insulation to be fitted on-site.
2. Specialised labour: It is advised that experienced teams install timber frame.

Dynamic Build Group Example

Our timber frame solution accelerated achieving the weathertight stage by 40% which facilitated the internal works to commence during the traditional local flood season.



Dynamic Build Group - Timber Frame for residential project during installation



Dynamic Build Group - External finishes of the project

VOLUMETRIC MODULAR

What is Volumetric Modular?

Volumetric modular construction involves creating complete modules fully finished rooms or building section offsite in a controlled environment. These modules are transported to the site and assembled into a complete structure.

Where is it used?

Volumetric modular is used in diverse sectors, including education, hotels, retail, student accommodation, healthcare facilities and housing.

History and current use:

Although modular construction concepts have been around since the 1800s, volumetric modular construction became popular in the mid-20th century. Its adoption has grown rapidly in recent years due to its speed and efficiency.

Advantages

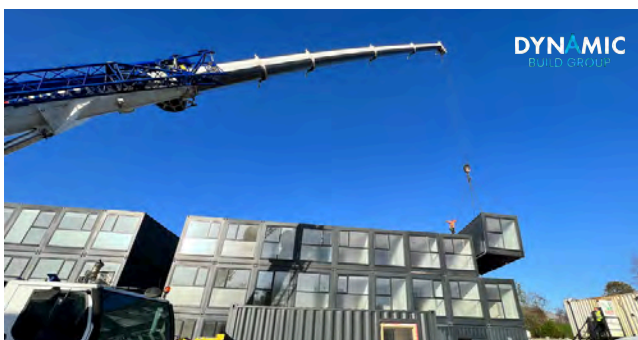
1. Time efficiency: Construction time is significantly reduced as modules are built offsite while foundation work occurs onsite.
2. Quality control: Factory settings ensure precision and minimise defects.

Considerations

1. Transport logistics: Moving large modules can be expensive and logistically challenging.
2. Design constraints: Module sizes are limited by transportation and factory capabilities.

Dynamic Build Group Example

We delivered modular housing for a major housing provider with temporary accommodation for at risk families. The installation of over 200+ modules was completed within a number of weeks showcasing the speed and efficiency of modular construction.



Dynamic Build Group - Modular housing project during installation



Dynamic Build Group - Modular housing project at completion

ICF

What is ICF?

Insulated Concrete Forms (ICF) are hollow blocks made of expanded polystyrene (EPS), woodcrete or other insulating materials, which are stacked onsite and filled with concrete to form a solid, insulated walls.

Where is it used?

ICF is ideal for residential and commercial buildings, especially in areas prone to extreme weather. It's used in walls for superior thermal performance.

History and current use:

ICF systems originated in the 1960s and have become increasingly popular for sustainable construction and resilient buildings.

Advantages

1. Thermal performance: Excellent insulation reduces energy use.
2. Soundproofing: High levels of acoustic insulation.

Considerations

1. Construction pace: ICF IS installed rapidly, but, then requires bracing and a concrete pour.
2. Specialised skills: Expertise in ICF installation is limited when compared to other systems.

Dynamic Build Group Example

We optimised ICF for an eco-friendly custom home, achieving a high-performance envelope with excellent soundproofing on a site with extremely challenging access and space constraints.



Dynamic Build Group - ICF self build project during installation



Dynamic Build Group - External finishes of the project

YOUR PROJECT REQUIREMENTS

Budget

Is your budget aimed at creating a functional space or achieving a high-specification build with premium features?

Type of Building

Will the building system meet the requirements of your build for example the requirements in the residential sector is very different to the demands of the education sector.

Energy Performance?

Are you targeting minimum standards for insulation, airtightness and energy consumption, or maybe your planning for an energy positive home with no energy bills?

Comfort:

What level of comfort do you expect, from basic functionality to advanced systems for clean air and healthy indoor environments, achieving Passivhaus performance?

COMPLIANCE

Product Certification

When building with Modern Methods of Construction (MMC), product certification is a key factor to consider. At Dynamic Build Group, our preference is to work with systems accredited for use here in the UK. Why? Because fully accredited systems provide certainty and reliability with UK-specific standards throughout the lifecycle of the project.

While our team have assisted clients in obtaining warranty and building control approval for systems without UK-specific accreditation, we have also learned that this approach comes with risks during the build and beyond with mortgages, insurances and potential sales.

Systems without UK specific accreditation often make impressive claims about U-values, airtightness or other performance metrics. However, we've found many fail to meet the claimed levels of performance when tested under real-world conditions.

Building Control

Ensure that the system meets all relevant building regulations from the outset. This not only avoids costly delays but supports smooth progress throughout the project lifecycle.

This guide offers a valuable introduction to selecting the best Modern Methods of Construction (MMC) system for your project. However, it's just the beginning MMC is a diverse and evolving field, with countless systems and approaches that can be tailored to meet your goals.

At Dynamic Build Group, we've developed a comprehensive framework to identify the most efficient and sustainable MMC solutions for every unique project. From our learning hub to supply and full project delivery, our expertise ensures you don't just choose an MMC system you choose the *right* one.

ACADEMY

Join the MMC Revolution!

Our Academy empowers you with the skills, knowledge, and connections to deliver understand MMC and deliver projects more efficiently, reduce costs, and increase sustainability.

As a member of the exclusive MMC Academy, you'll unlock insider knowledge, connect with industry-leading experts, access exclusive discounts and gain the tools to master Modern Methods of Construction (MMC)

- ✓ **Resources:** Explore a treasure trove of templates, guides, checklists and more.
- ✓ **Webinars:** Gain valuable insights into real-world applications of MMC.
- ✓ **Masterclasses:** Deep dive into MMC techniques and strategies.
- ✓ **Q&A Sessions:** Get your questions answered directly by industry experts.
- ✓ **Exclusive Discounts:** Save on the costs across our partners and supply chain.
- ✓ **Mentorships:** Step by step guidance and support to help you excel in MMC.

What you will gain from Joining?

- ✓ **Save Time & Money:** Understand how to save time, cut costs and reduce carbon.
- ✓ **Expertise:** Optimise your projects with expert knowledge and best practices.
- ✓ **Confidence:** Learn to navigate the complexities and avoid costly mistakes.
- ✓ **Network:** Access to a like-minded network and proven MMC supply chain and professionals.

Interested in learning more please email gavin@dynamicbuilduk.com

SUPPLY

Our offsite division simplify and accelerate construction projects with our Modern Methods of Construction (MMC) supply and installation service.

- ✓ **Digital Design (DfMA):** advanced design tools to optimise construction and in use operation.
- ✓ **Supply:** leading SIPs, timber frame, ICF and Modular systems tailored to your projects.
- ✓ **Installation:** expertly assembling offsite-manufactured elements on-site.
- ✓ **Project Management:** Coordinating the delivery of the MMC element of your build.

Integrating the supply and installation of MMC into a single package streamlines the construction process, reducing coordination challenges, delays and costs. This approach ensures seamless compatibility between components, improved quality control and faster project delivery with a hassle-free and efficient client experience.

Interested in learning more please email gavin@dynamicbuilduk.com

BUILD

Our construction division transforms projects through an Modern Methods of Construction (MMC) first approach that accelerates and streamlines the entire construction process.

Our approach expertly integrates of MMC, Construction and Technology to deliver faster build times, competitive costs and enhanced sustainability.

- ✓ **Pre-construction**
- ✓ **Project Management**
- ✓ **Cost Management**
- ✓ **Groundworks**
- ✓ **Supply MMC**
- ✓ **Construction Works**

Integrating MMC and construction into a single package with our expert team who understand MMC and construction ensures a cohesive approach, improving efficiency, reducing risk and enabling faster delivery with expert oversight at every stage, from design to completion.

Interested in learning more please email gavin@dynamicbuilduk.com



MMC: ACADEMY | SUPPLY | BUILD | INVEST

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