



# Offsite: Fundamentals

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*i*

Course developed by:

**SUPPLY CHAIN SUSTAINABILITY**

**SCHOOL**

With funding from:



In partnership with:



Accreditations:

ACCREDITED CPD CENTRE  
THE CPD STANDARDS OFFICE  
CPD PROVIDER: 60053  
2018 - 2020  
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Where are you personally in the use of MMC?

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Where is your employer/company in the use of MMC?

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# Construction Industrialisation





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*“The challenge the report sets us is to do things differently – to reduce the reliance on building in the same way that we have for decades if not centuries, with its heavy demand for on-site labour.*

*We will not have the labour force to deliver what the country needs by working in those ways.”*

*“Modernise or die”*

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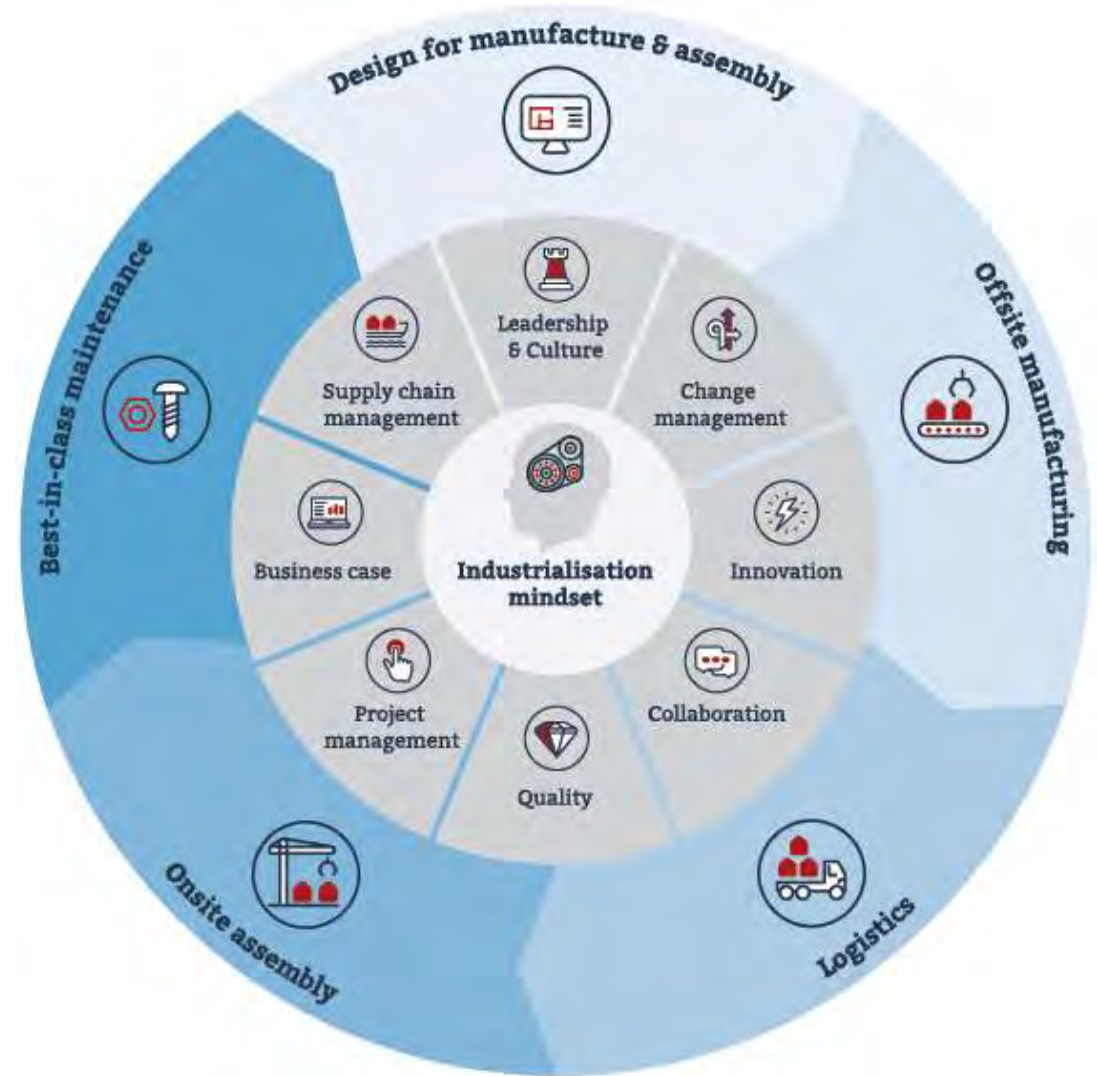
*“The relentless drive to discover how a process is optimally done then doing it exactly the same way every time.*

*Industrialisation drives out waste, automates and standardises **where possible.**”*



# Industrialisation Mindset

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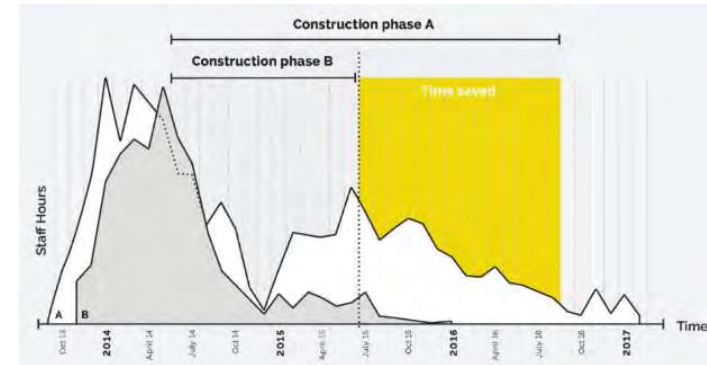
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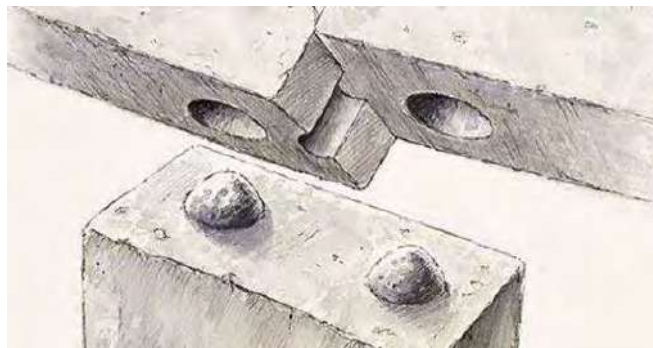


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# Offsite Manufacture

- Timescales
- Product Availability / Market Capacity
- Materials Procurement
- Lead-in Periods (Pre-cast)
- Information Format
- Buildability
- Stock Piling Capacity



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# Logistics

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# Onsite Assembly

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# Maintenance and Operation

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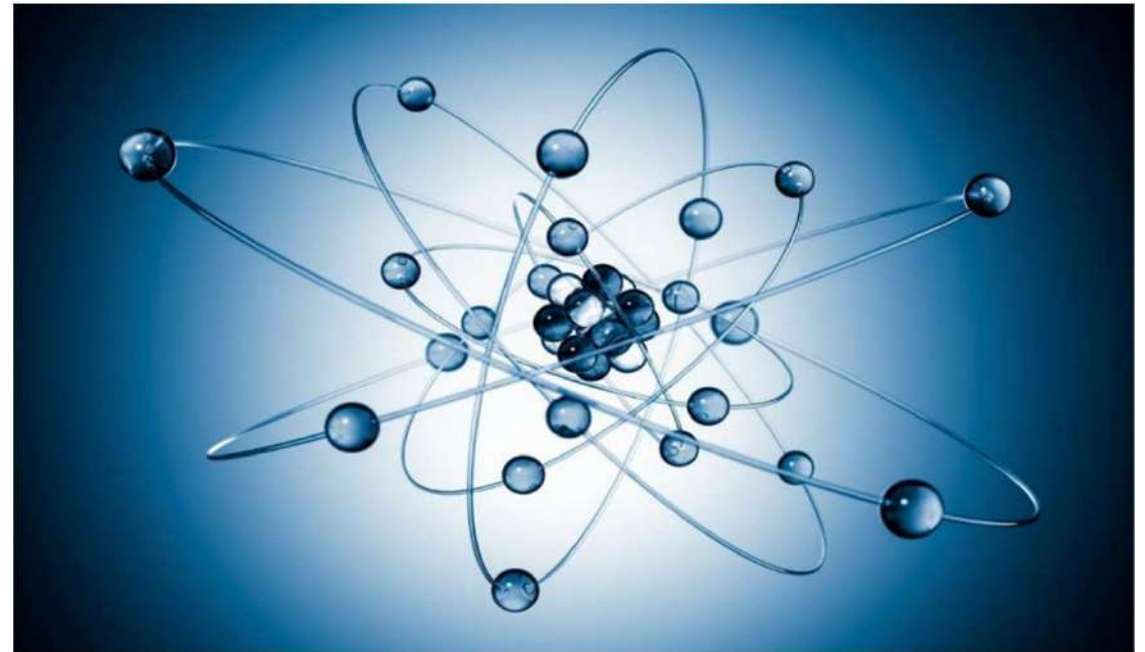






## Other Considerations

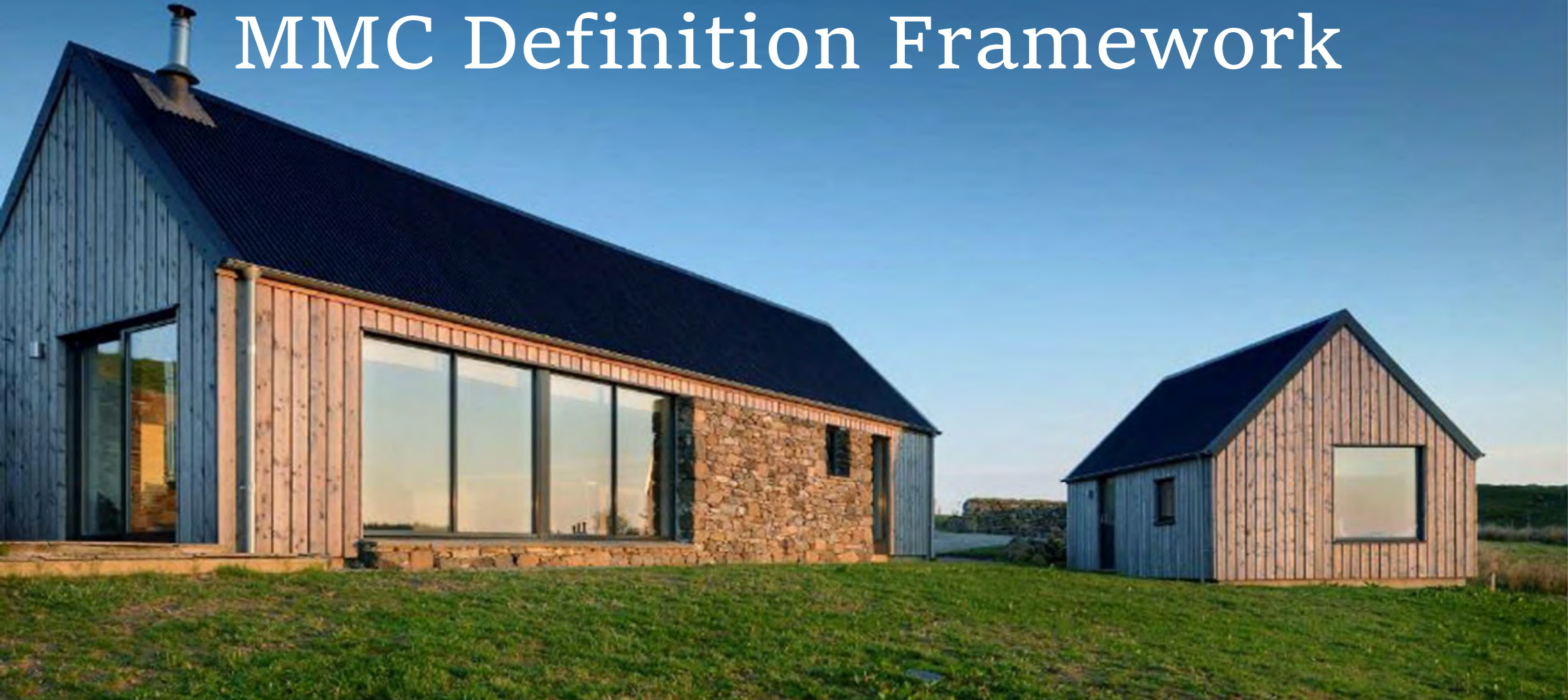
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# MMC Definition Framework



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CATEGORY  
DEFINITION

1   
Pre-manufacturing  
(3D primary structural  
systems)


2   
Pre-manufacturing  
(2D primary structural  
systems)

3   
Pre-manufacturing  
components (non-systemised  
primary structure)

  
MMC  
SPECTRUM

4   
Additive manufacturing  
(structural and non-structural)

5   
Pre-manufacturing  
(non structural assemblies  
& sub-assemblies)

6   
Traditional building product  
led site labour reduction /  
productivity improvements

7   
Site process led site labour  
reduction / productivity /  
assurance improvements

  
PMV ANALYSIS

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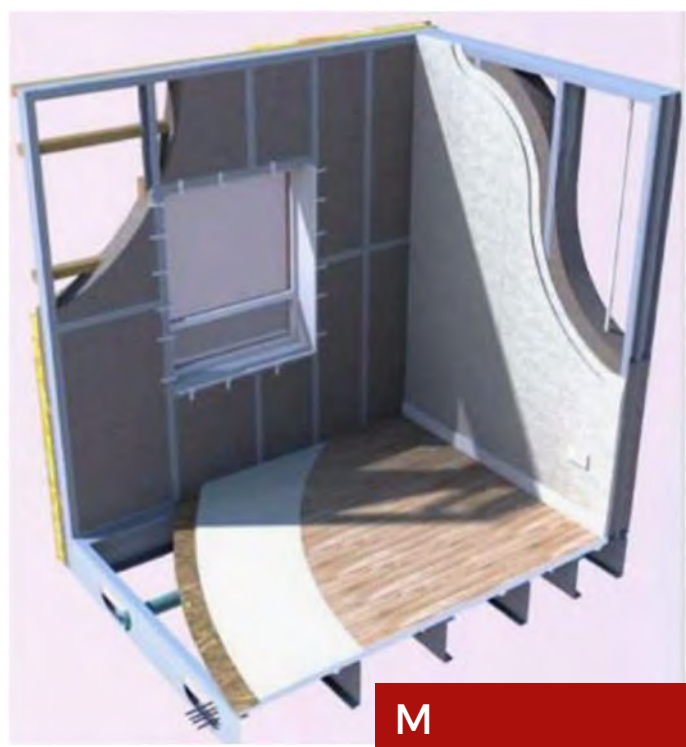
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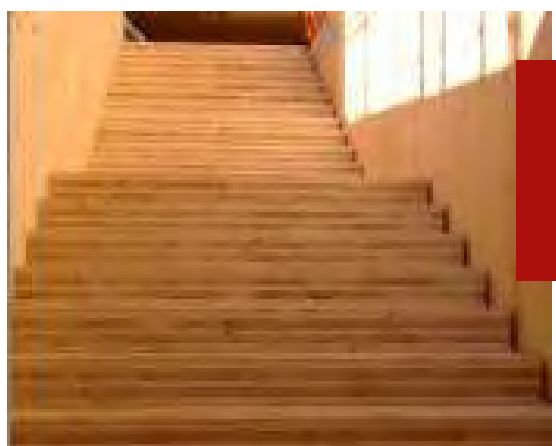
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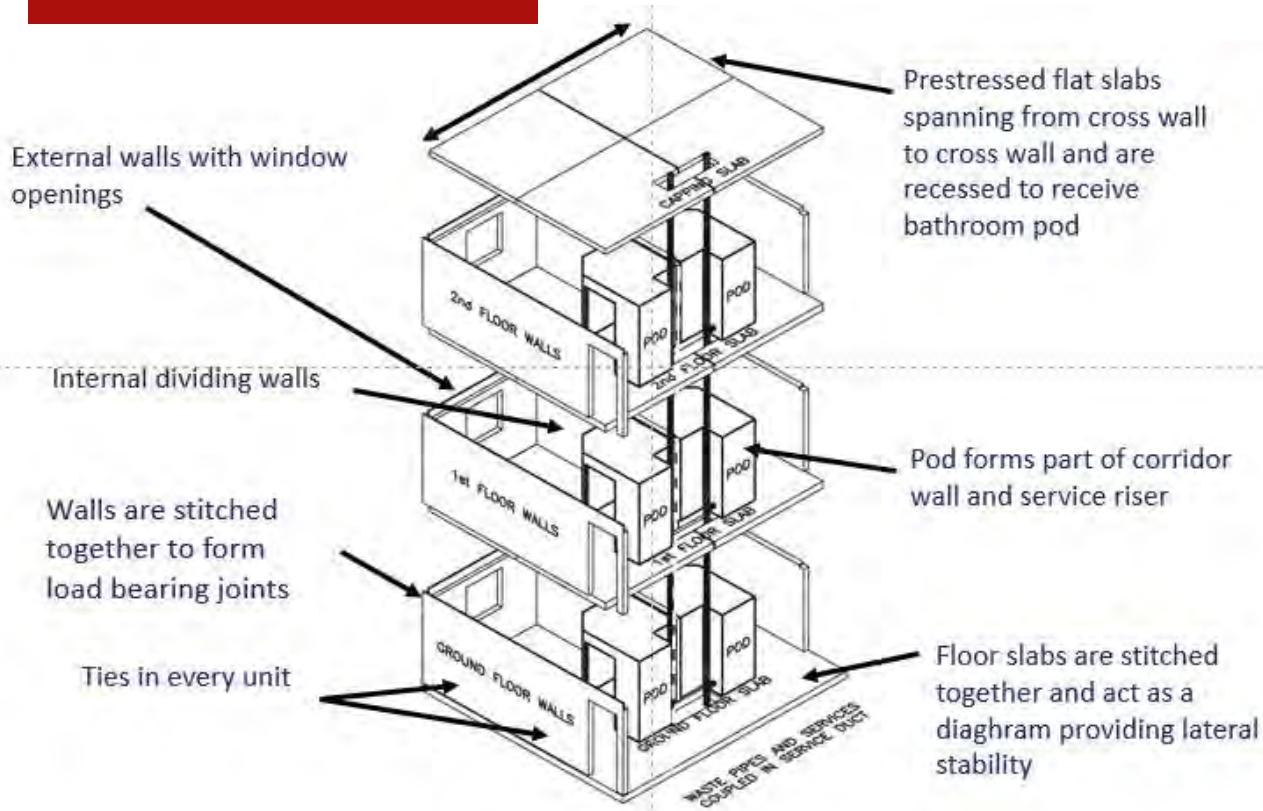


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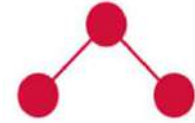
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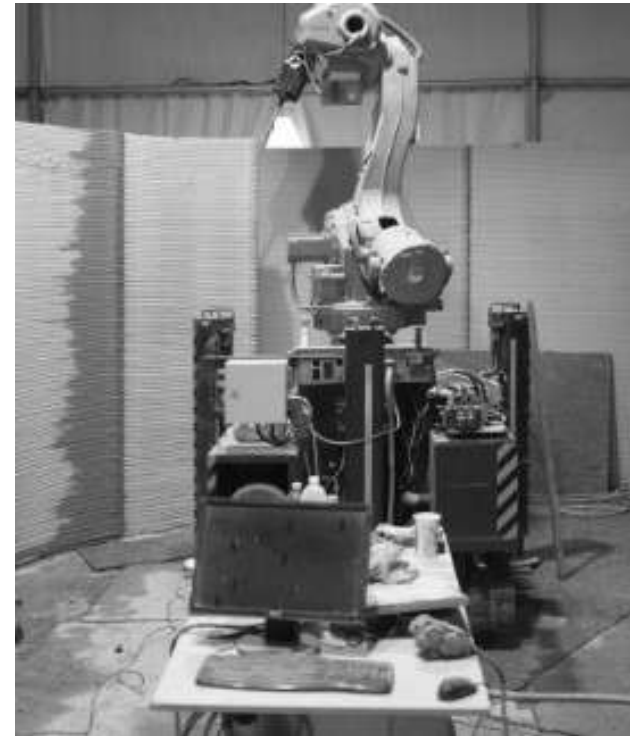


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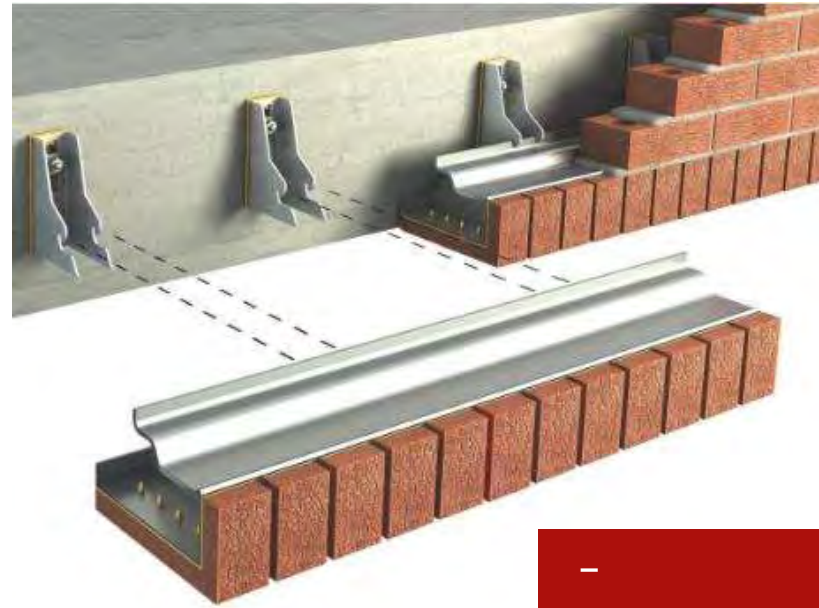


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# Which MMC Category - By Definition





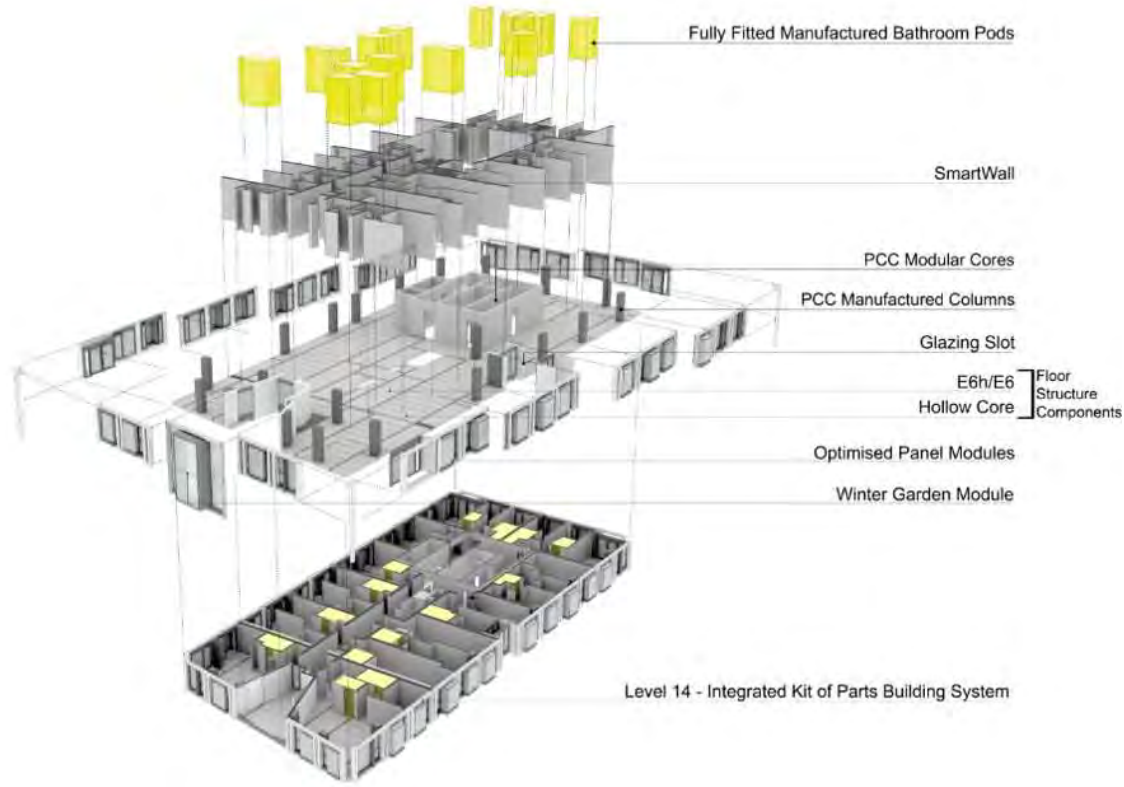
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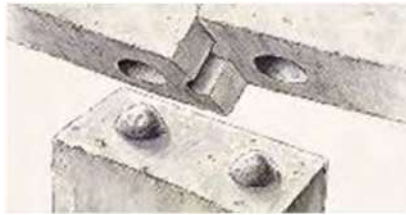
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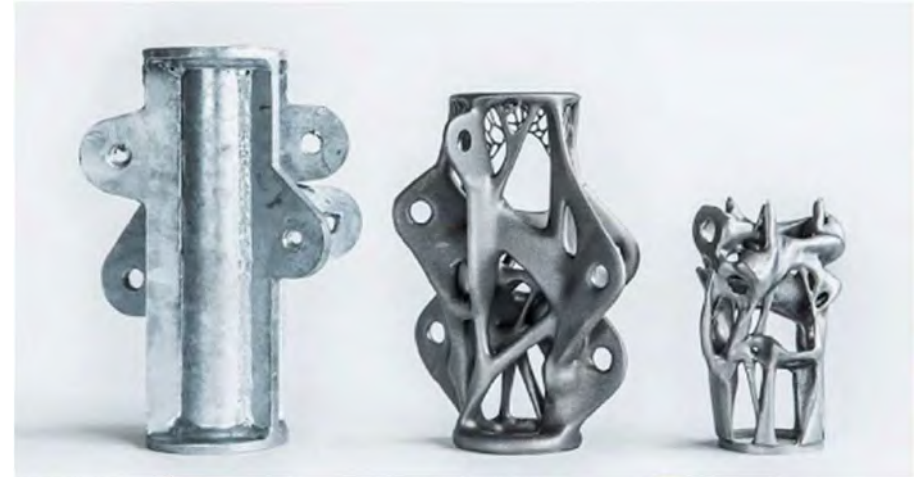
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# MMC Systems & Components

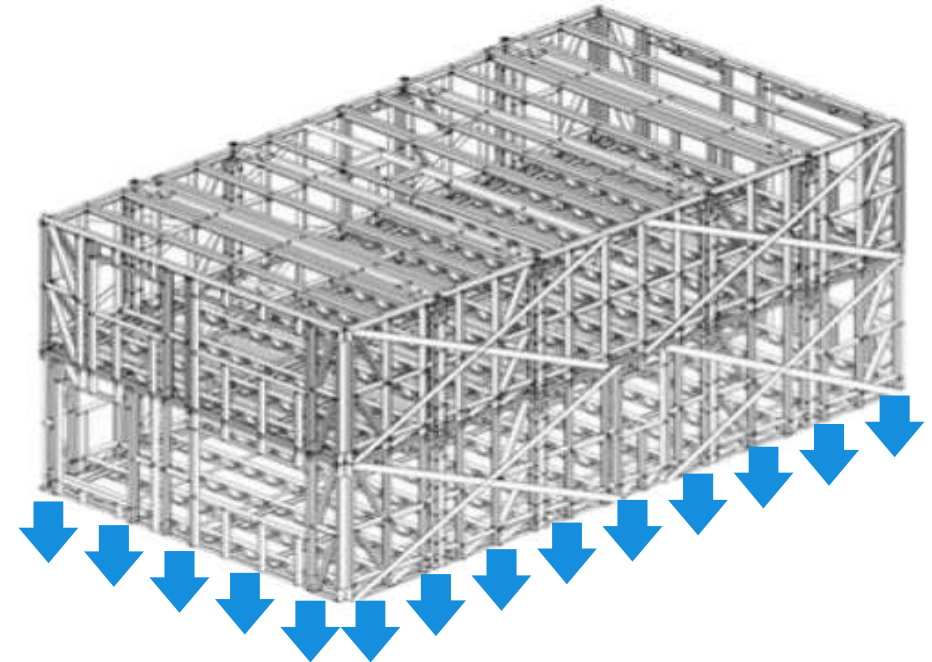
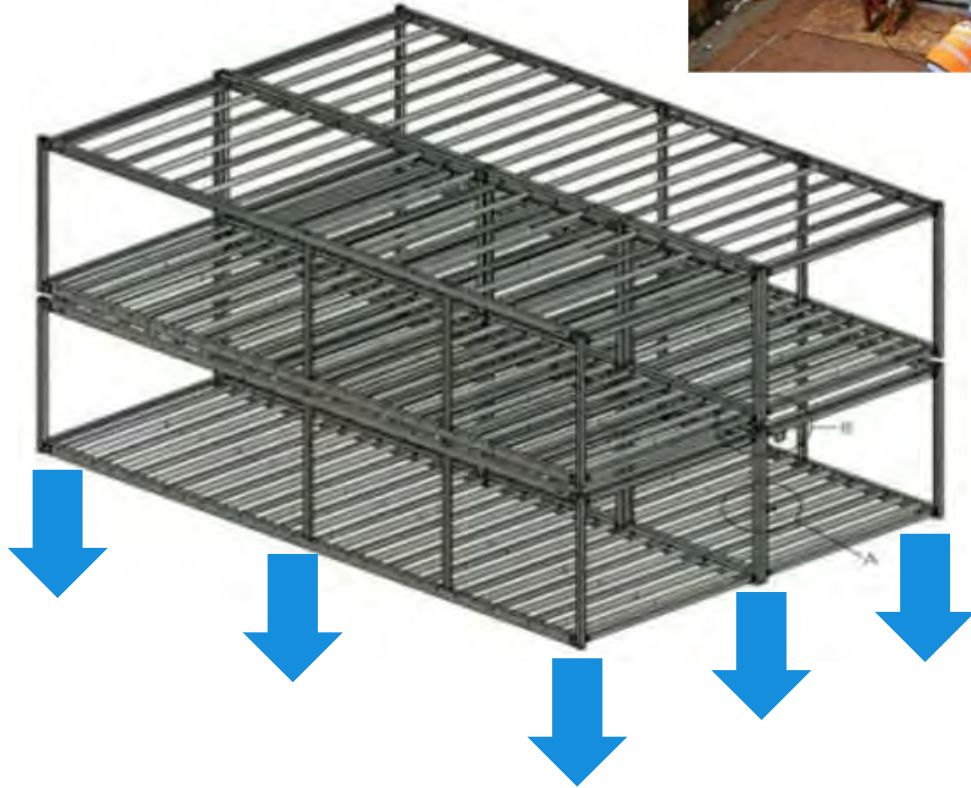




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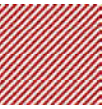
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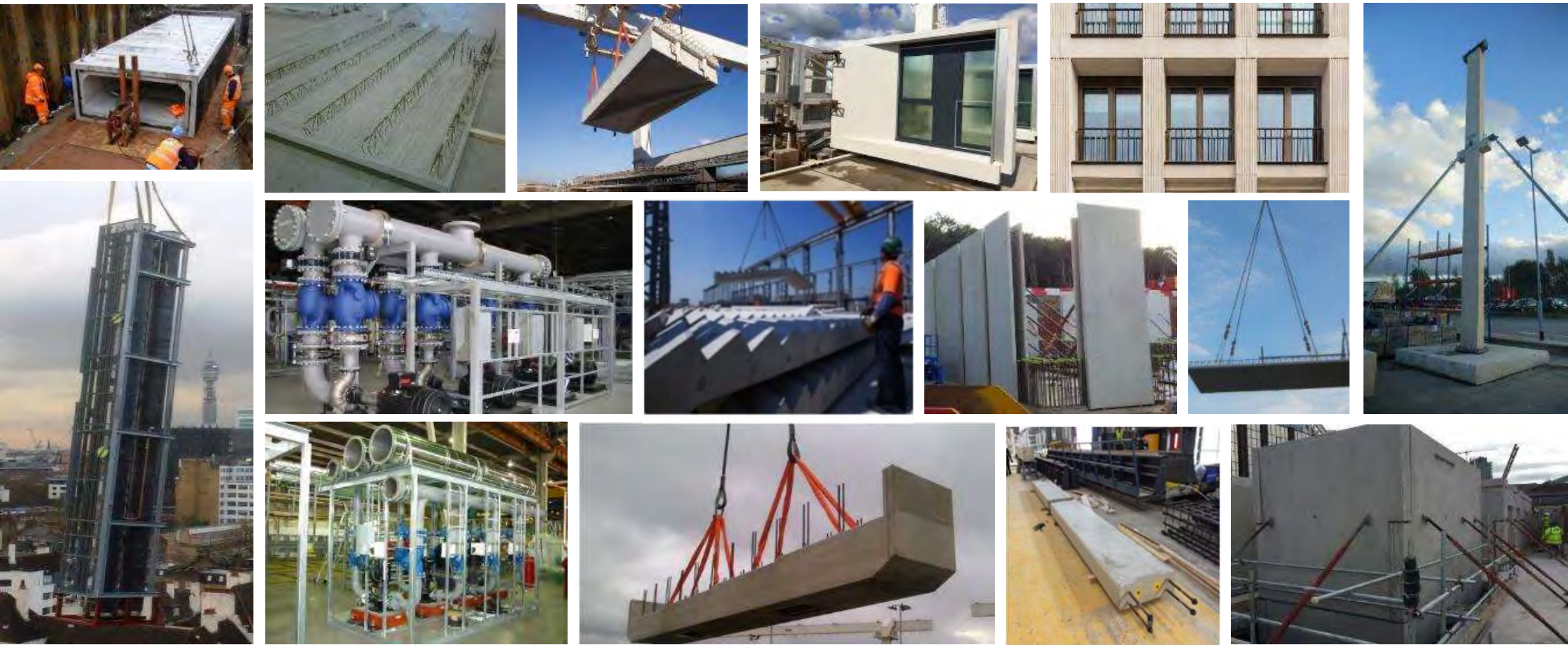


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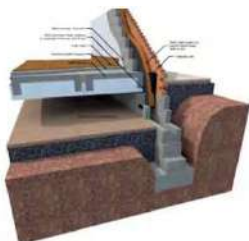
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Description		Floor cycle	Total man days	Men/week	Total days						
DfMA/MMC Solution	40 floors	6 days	5,280	22	240						
Insitu Solution	40 floors	9 days	13,320	37	360						
Variance			8,040	15	120						
<b>Reduction/saving</b>			<b>60%</b>	<b>41%</b>	<b>33%</b>						

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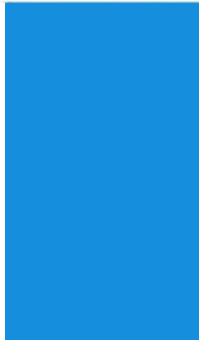
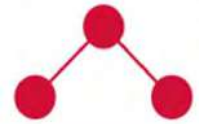
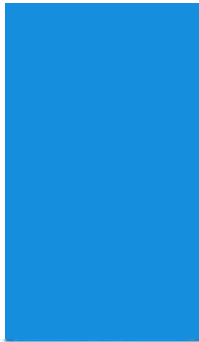
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# Which MMC Category - By Description



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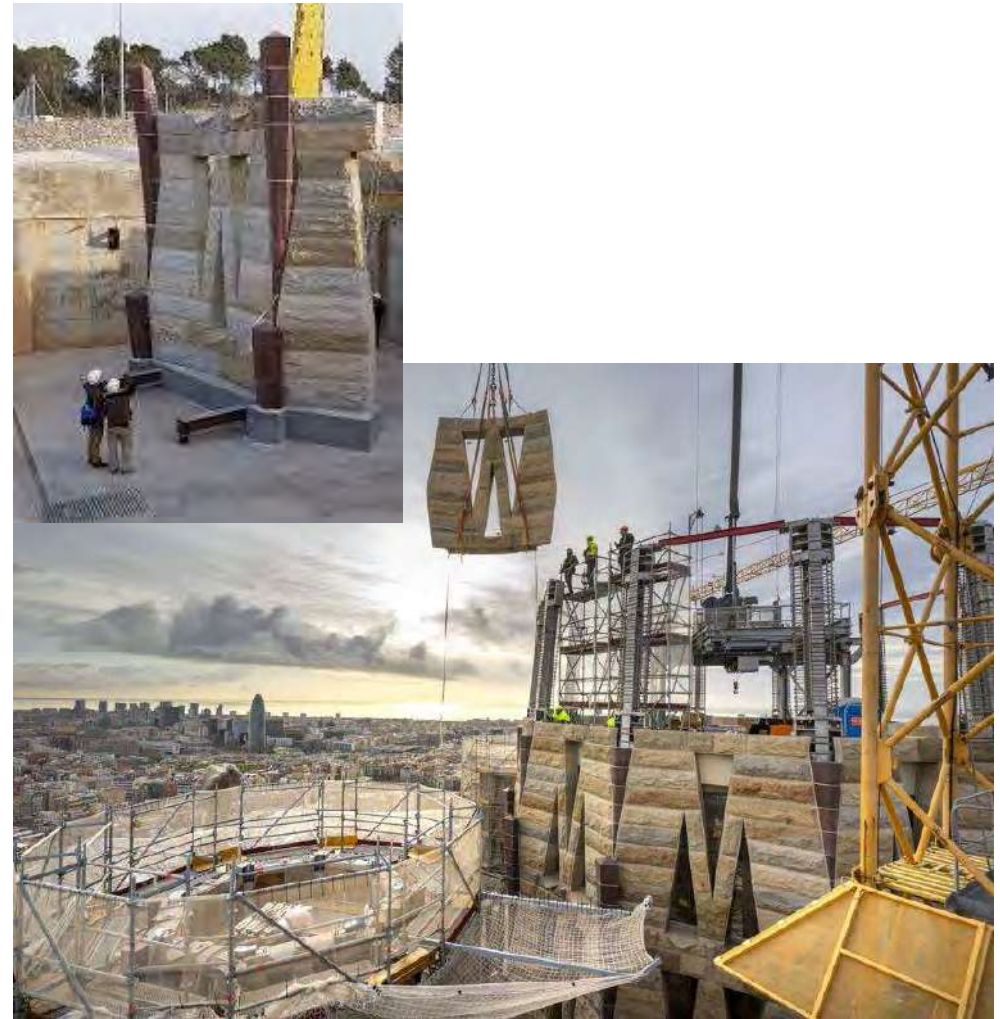
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Tea/Coffee break - 15 minutes

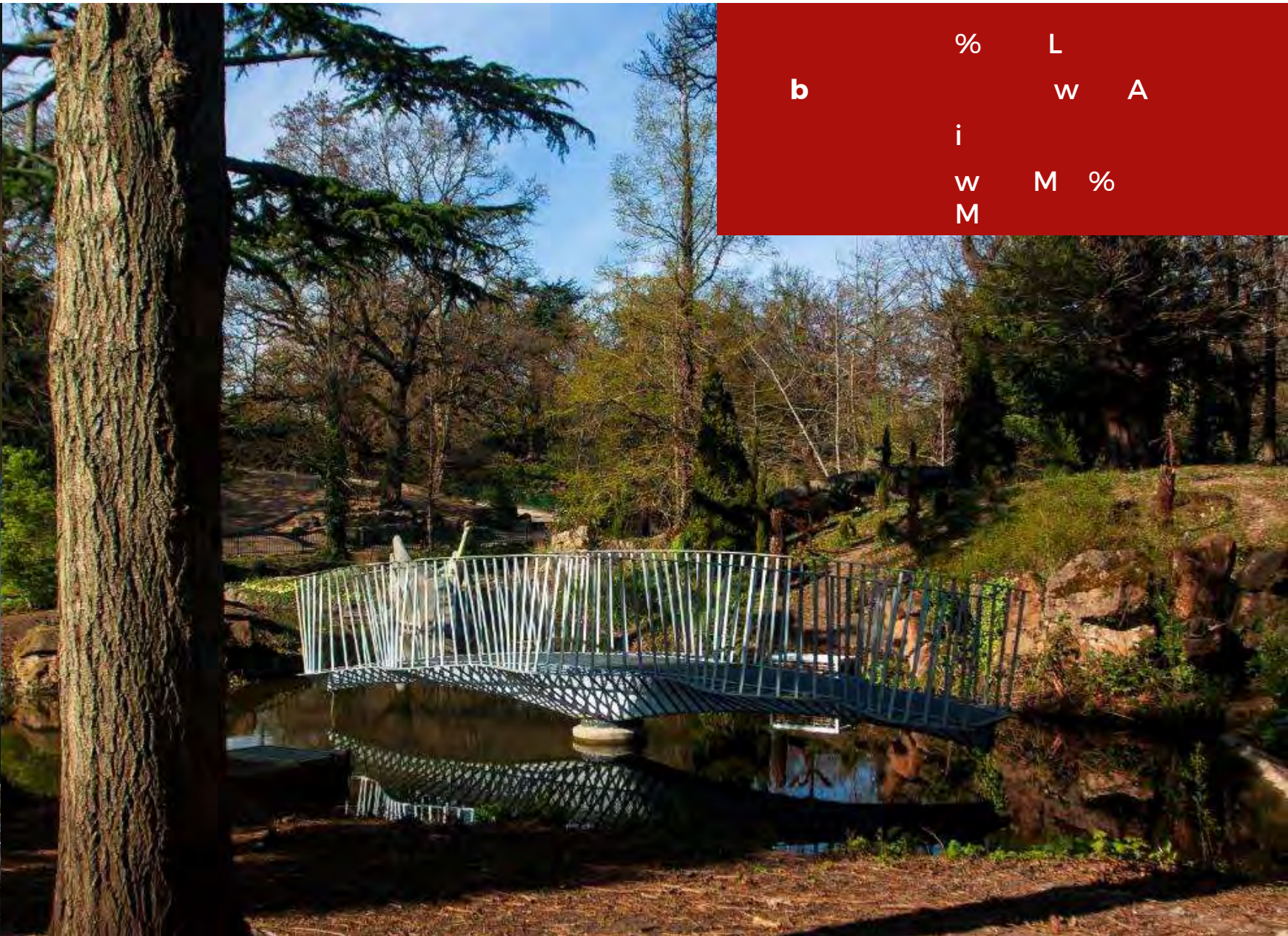




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# Offsite & MMC in Practice

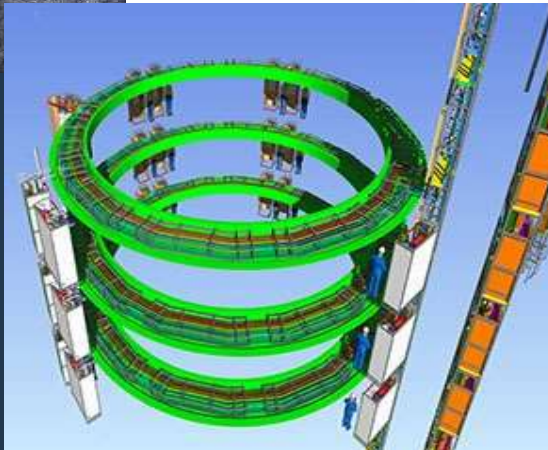




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# Offsite & MMC for Highways

- Good Practice & Potential  
or Benefits & Barriers



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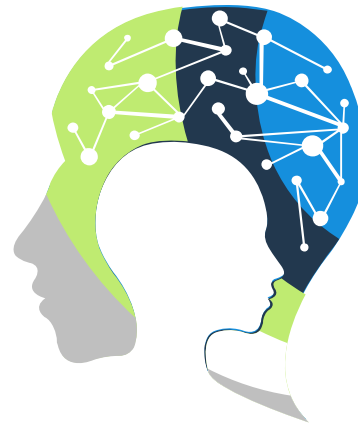
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# GROUP DISCUSSION – EXAMPLES & POTENTIAL

Current Examples

Potential



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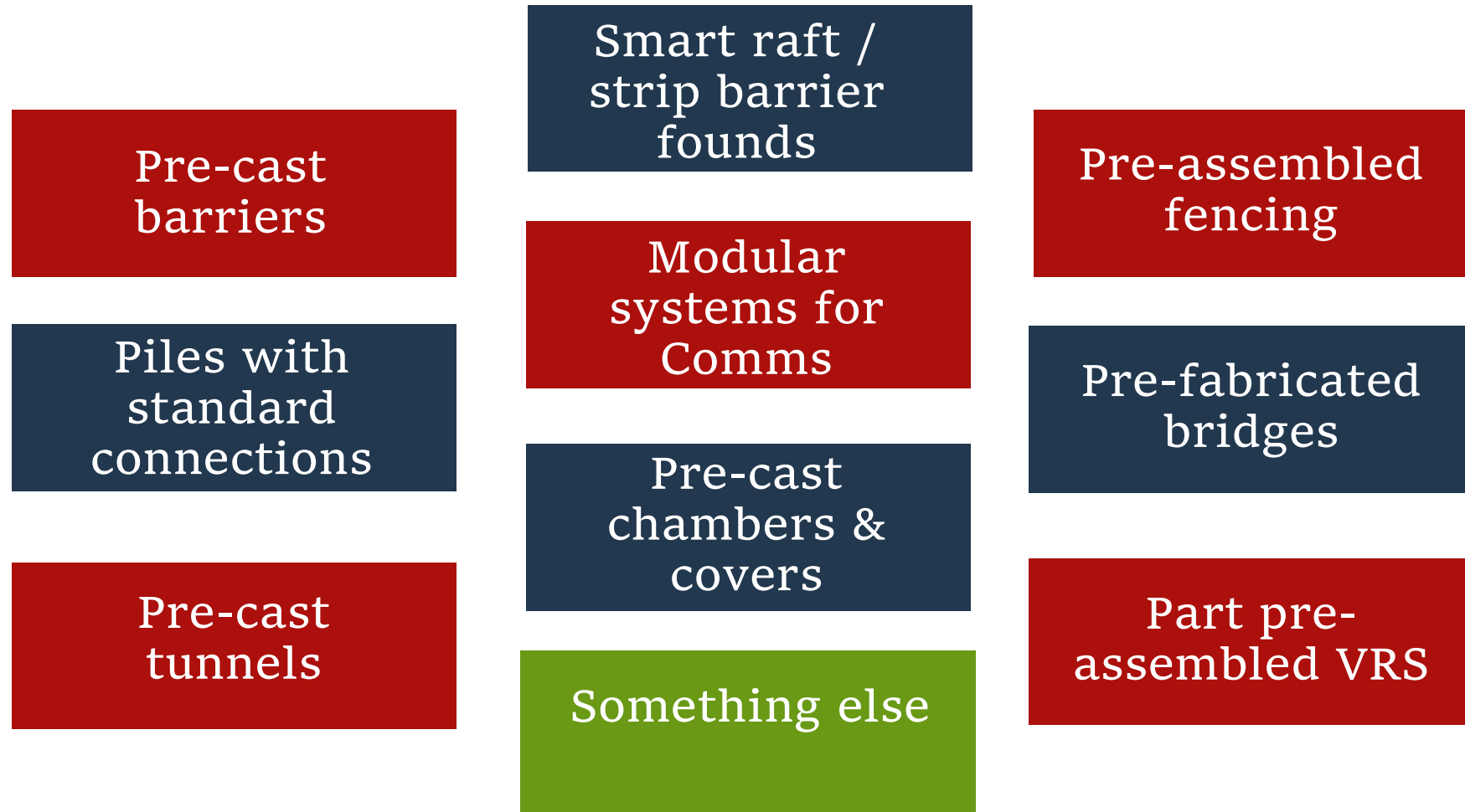
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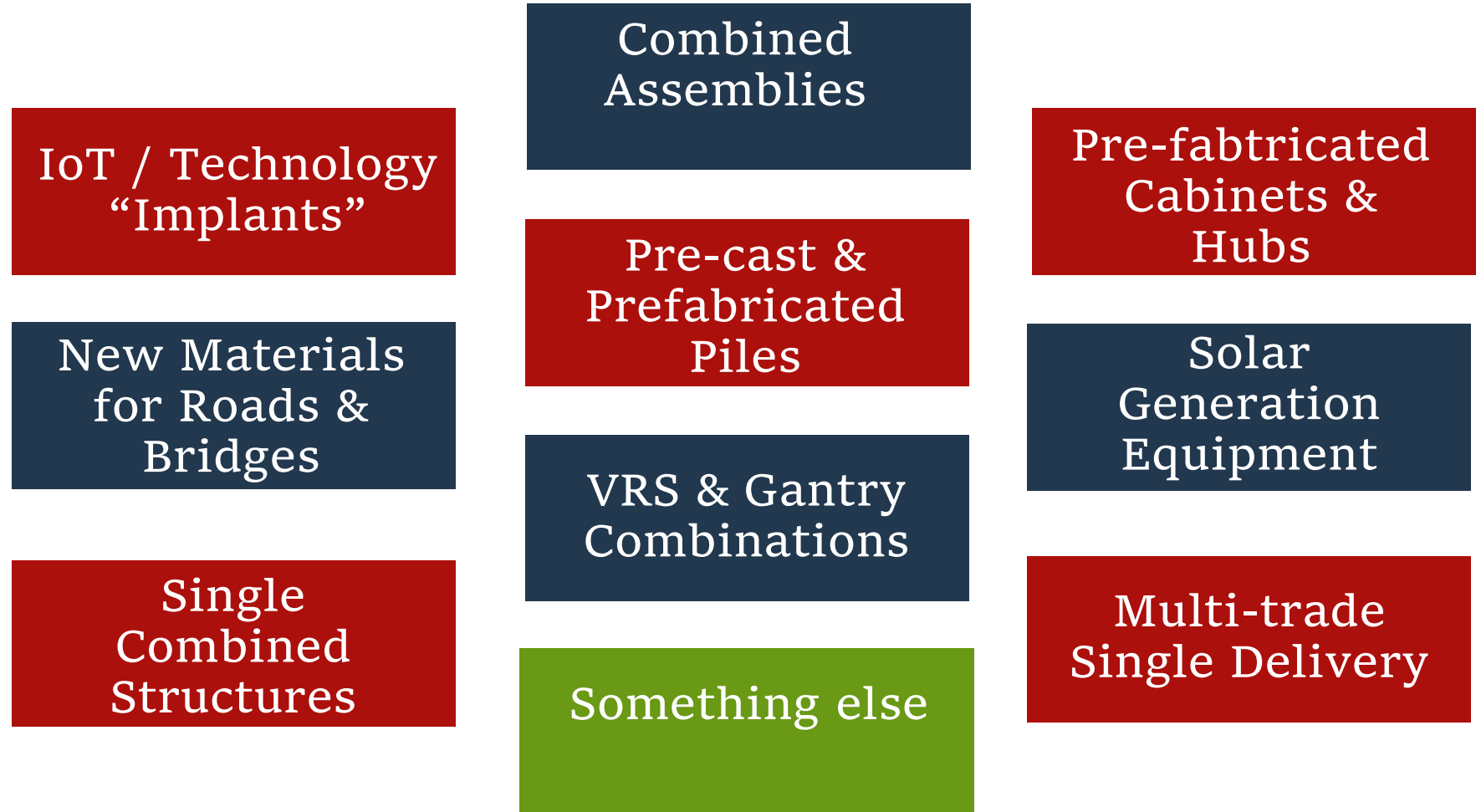
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# Offsite & MMC on Highways

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# Offsite & MMC on Highways



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# Offsite & MMC

## Benefits & Barriers





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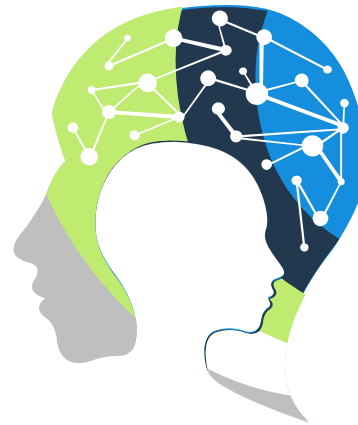
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# GROUP DISCUSSION – BENEFITS & BARRIERS

**Business Case**

**Barriers / Blockers**



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# Benefits of Offsite & MMC

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1 - Faster

2 - Better Quality

3 - Less Waste

4 - Safer Working Conditions

5 - Better Productivity

6 - Less Disruption

7 - Cost Effective

8 - Carbon Reduction

9 - Cost & Time Certainty

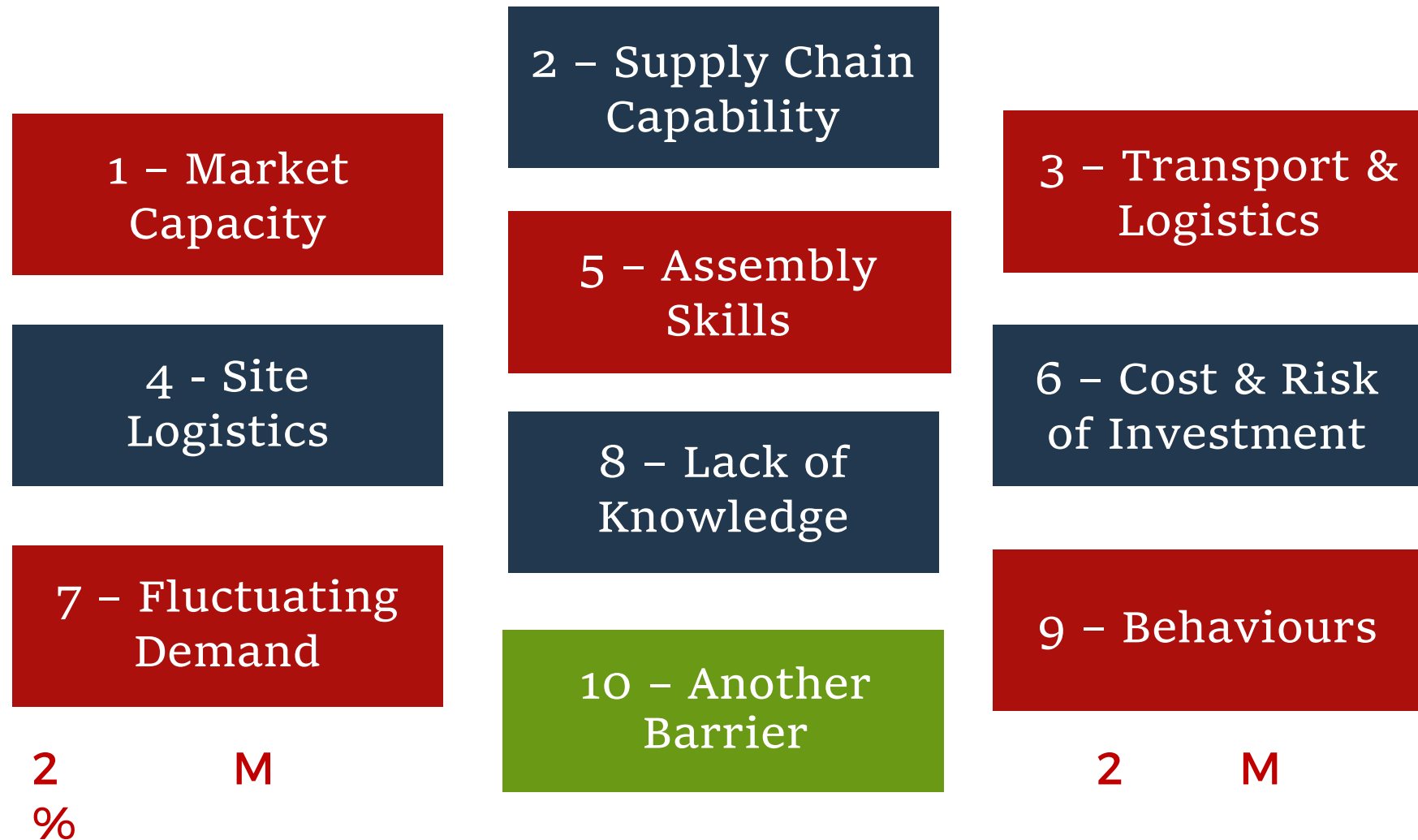
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# Barriers to Offsite & MMC

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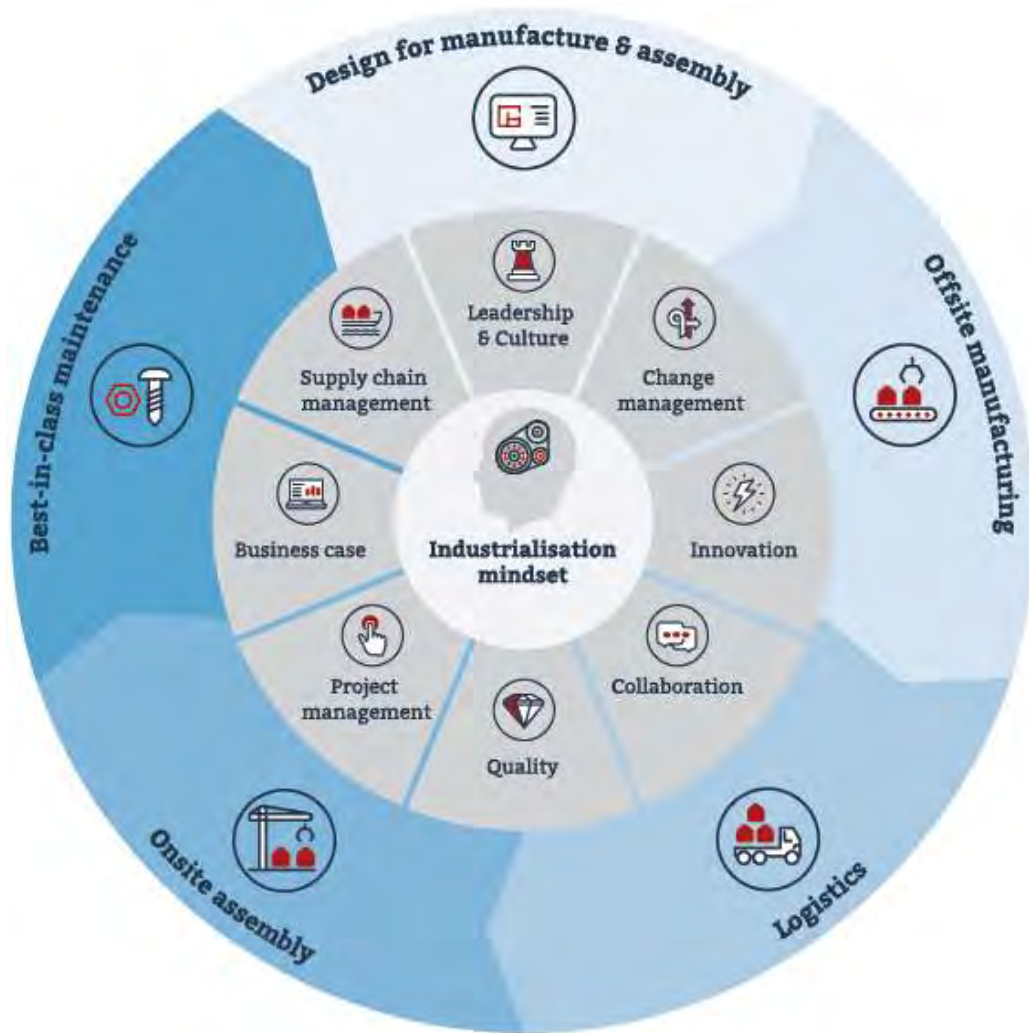
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# Offsite & MMC - Net Zero

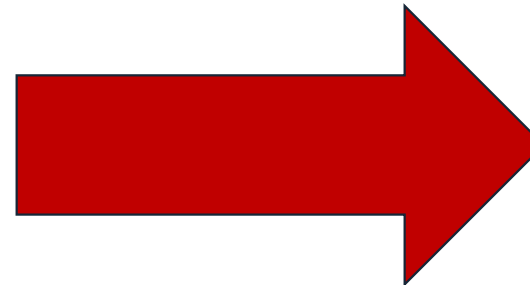


# Construction Industrialisation

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Human Activity



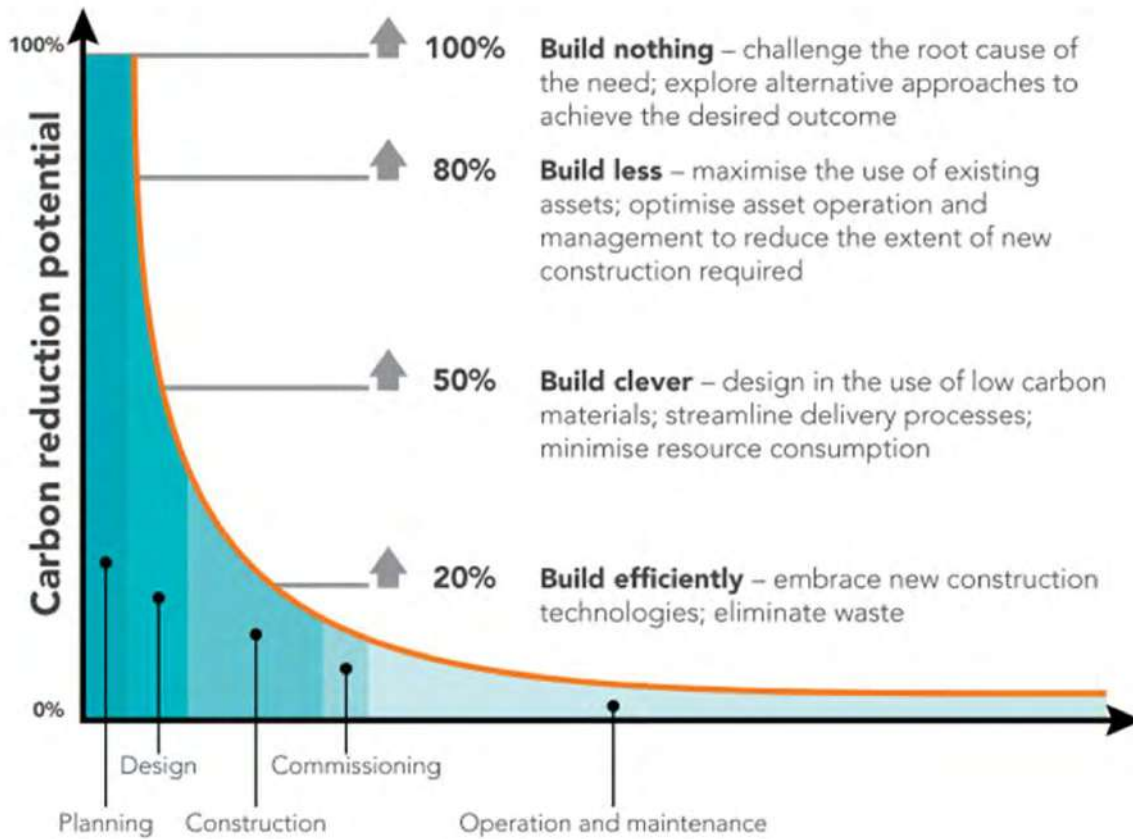
Materials  
Consumption &  
Processes



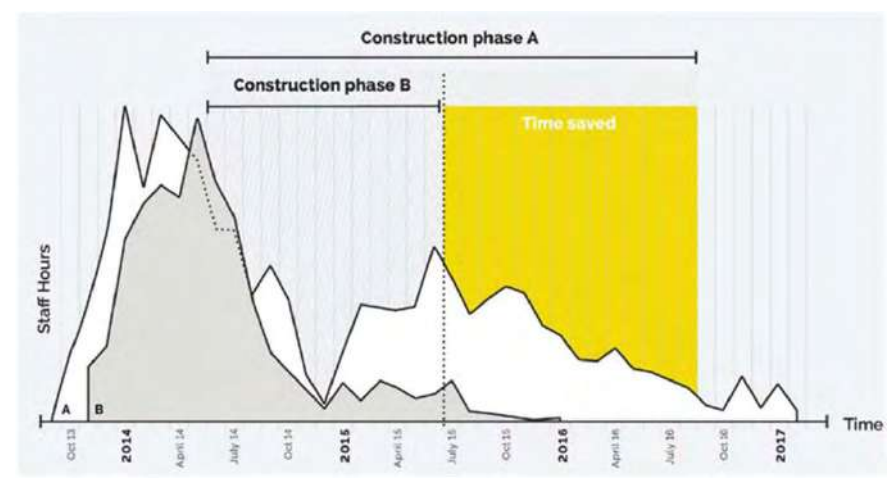
# MMC Potential

## Embodied carbon reduction potential at different stages of a building project

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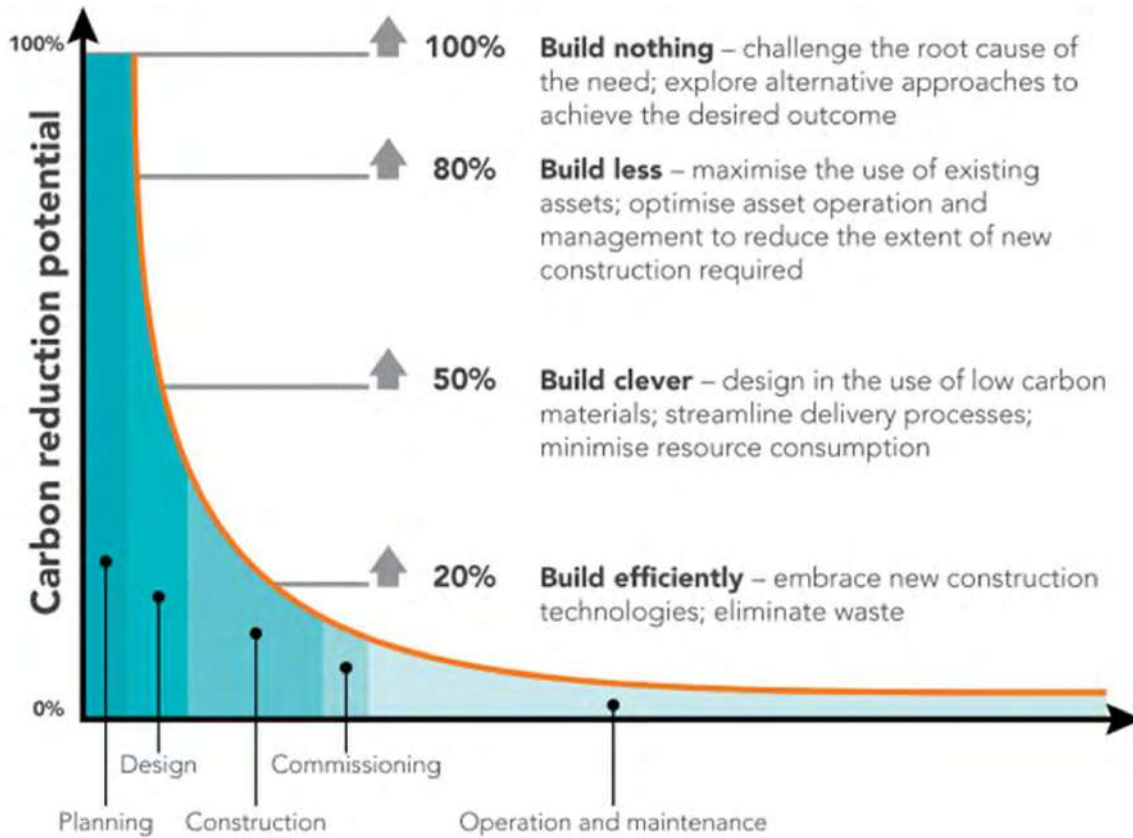


# MMC Potential



## Embodied carbon reduction potential at different stages of a building project

© HM Treasury; Green Construction Board

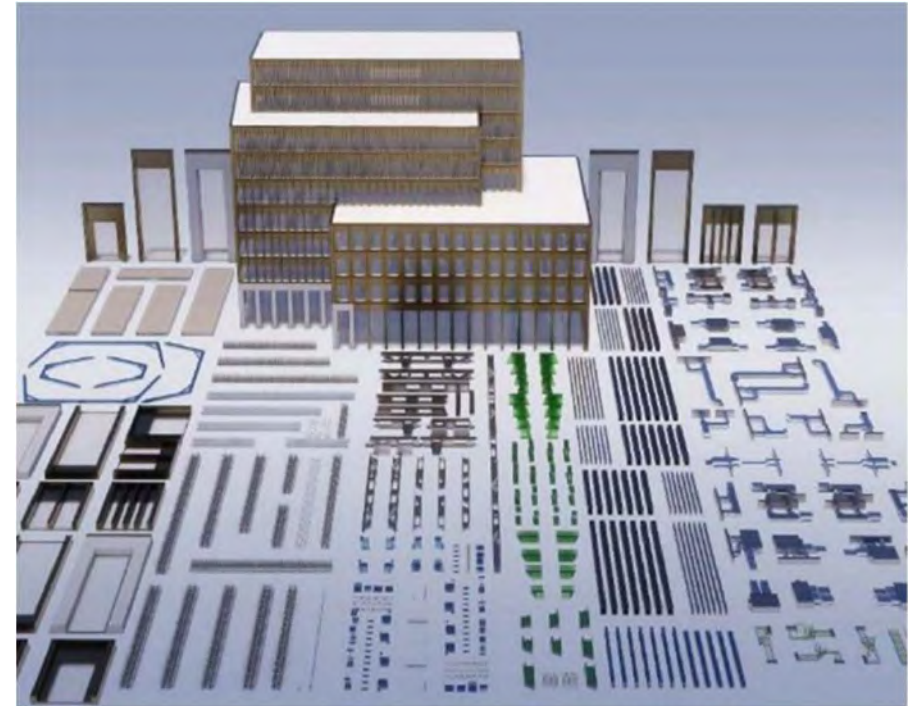
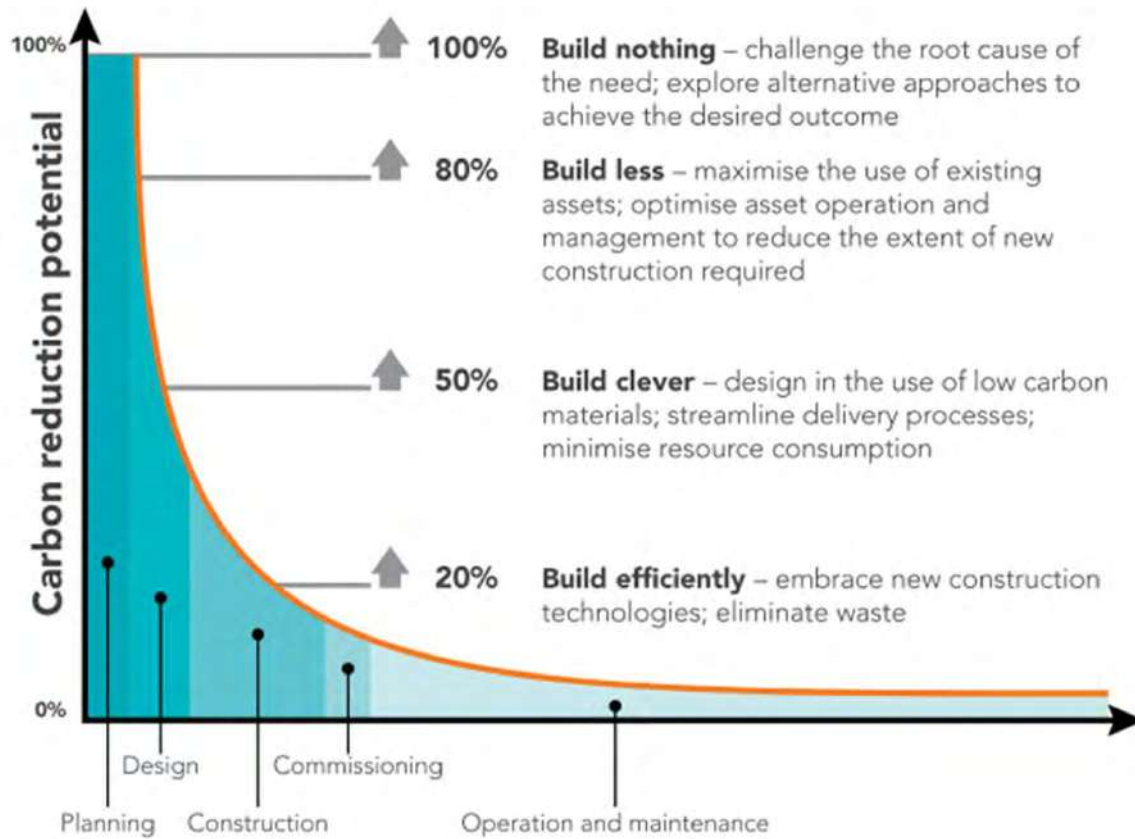


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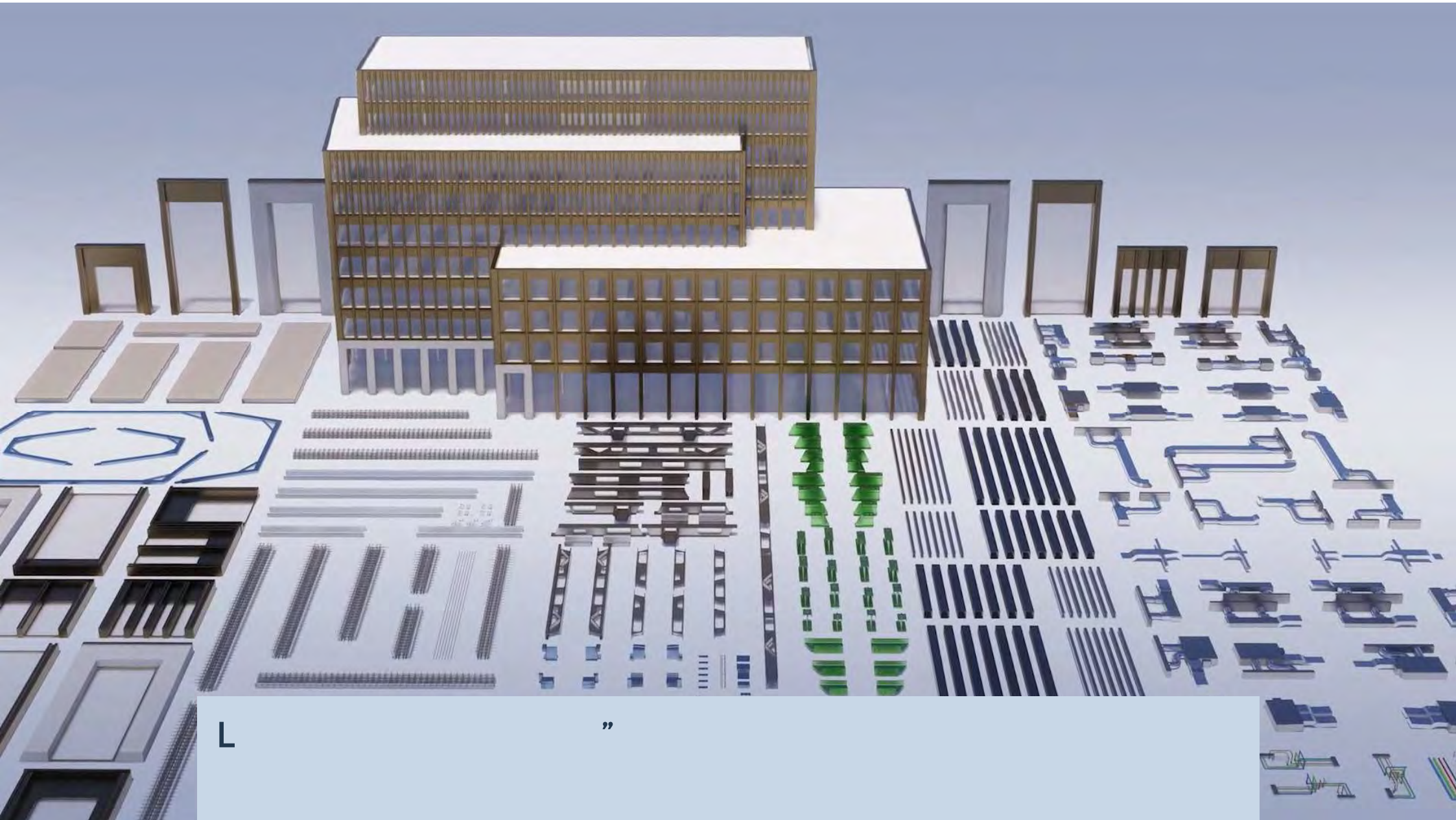


## Embodied carbon reduction potential at different stages of a building project

© HM Treasury; Green Construction Board









# MMC & Offsite – More information

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