



MMC Optioneering – Benefits, Challenges & Opportunities

Factors	Assessment Criterion	Benefits	Challenges	Action	Project Impact
1. Client Requirements	Cost.	High level of standardisation will drive lower cost.	Accepting standard layouts.	Minimise design variants for early design freeze.	Affordability.
	Programme.	Ready for occupancy or sale sooner compared with traditional fit out.	Early design freeze required.	Synchronise design, procurement, construction and logistics to maximise DfMA and Offsite.	Shorter construction duration.
	Quality.	Fabrication in factory environment results in better and simpler quality control with fewer legacy issues.	Appropriate quality control and protection to prevent damage.	Agree realistic key dates with designers and suppliers for inspections and sign off.	Consistently high-quality product with fewer legacy issues.
	Choice.	Finishes, fixtures and fittings variants can be offered.	Careful and detailed planning of fabrication schedule.	Consider options including part finished assemblies or “flat pack” solutions.	Opportunity to offer variation and customer choice.
	Maintenance & adaptability.	Same or better than traditional construction.	Choosing appropriate assembly fabrication methods.	Consider life cycle requirements.	Possible higher initial investment but lower operating and maintenance costs.
2. Health & Safety	Potential for Site Accidents.	Fewer people on site, fewer interfaces, fewer materials and less waste, fewer hazards etc.	Need to plan for site access, lifting onto the correct floors and skating into position.	Define and agree suitable lifting and logistics plans.	Fewer operatives on site compared with traditional construction.





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	Installation methodology.	Number of on-site activities and resource requirements reduced.	Large assemblies and sub-assemblies requiring mechanical handling; unstable structures.	Plan for ease of access for installation, connection, operation and maintenance.	Factory fabrication safer compared with on-site operations.
3. Sustainability	Reduced Carbon and NOX Emissions.	Reduction in journeys to site (deliveries & workforce). Use of low carbon; better building performance	Fewer but larger deliveries.	Synchronise procurement and transport plans; identify appropriate construction materials.	Reduced impact on local community; lower through life costs
	Supplier Fabrication Techniques.	Application of lean construction techniques in factory conditions.	Disorganised and poorly planned fabrication process.	Encourage adoption of lean construction methods.	Better productivity and lower unit cost.
	Waste Reduction and Recycling.	Less waste on site and opportunity for more recycling.	None.	Consider overall site waste management and recycling plans.	Less waste consequently reduced prelims.
4. Project Location	Resource availability.	Factory unaffected by industry wide labour and skills shortages.	Delivery costs.	Select location to minimise haulage and maximise local labour.	Resource availability risks mitigated.
	Site Constraints.	Just in time delivery for construction program	Late delivery as factory production slots are missed.	Consider a pop-up factory and/or storage facility/transfer station.	Site storage and logistics easier to manage.
	Site Access.	Fewer deliveries resulting in more manageable logistics.	Delivery capacity limited by truck size and traffic regulations.	Maximise number of items per load and minimise number of deliveries	Reduced impact on local community (road safety & air quality).





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	Superstructure access methodology.	Eliminates multiple lifts of materials and operatives.	Higher crane lifting capacity (fixed or mobile).	Regular planned and unplanned factory visits to monitor progress.	Greater lifting capacity required but number and duration of lifts reduced
	Impact on surrounding people, businesses and services.	Less disruption of local community.	None.	Considerate Contractor Community Liaison & Social Impact	Opportunity for improved community relations.
5. Design	Design for manufacture and assembly (DfMA).	Direct transfer of design principles into the fabrication process.	Must be considered from the very outset of a project.	Identify and maximise DfMA opportunities as early as possible	Better factory productivity and reduced unit costs.
	Simplicity of layouts.	Simplicity of fabrication.	Designers are prone to prototyping and tinkering with designs.	Minimise change and if possible incorporate standard components.	Better factory productivity and reduced costs.
	Minimal number of variants.	Repetition and potentially technology agnostic assemblies.	Standardisation is regarded as inhibiting creativity.	Challenge the need for prototyping and consider re-using tried and tested solutions.	Better factory productivity and reduced project costs.
	Potential for multi-function components.	Multi-function assembly with more efficient structure and fewer components.	More difficult to transport and position on site.	Investigate multifunction units (combination of bathroom/kitchen/utility cupboard).	Lower project costs and fewer interfaces.
	Package interfaces.	Adaptable design to meet different physical constraints.	Consistency of interface requirements.	Consider construction fit tolerances, fire strategy and structure early.	Can be used with different structural options.





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	Alternative flat pack solution.	Simpler transport and handling of smaller & lighter assemblies.	More site work required.	Evaluate benefits of 2D flat pack option.	More deliveries compared with 3D assemblies.
6. Market Capacity	Production line availability.	Extends to overseas suppliers with considerable capacity.	Volatility of pipeline, lack of investment and need to import.	Use long list to check production capacity and financial stability.	Programme constrained by product availability.
	Supplier capability and financial stability.	None	Business failure.	Consider payment for materials off site and divestment certificates.	Delay and disruption resulting in loss of revenue.
7. Budget	Affordability.	Early package cost certainty.	Needs early design and specification freeze to maximise repetition.	Set out a clear package selection process based on agreed specification.	Early design freeze compared with traditional construction.
	Payment terms.	None	Potential for negative cash flow.	Consider cash flow, payment for materials off-site and divestment certificates.	Early payments compared with traditional construction.
	Pre-construction sales agreement.	Early start to design and selection process.	May need an order for advanced works ahead of main contract award.	Consider/arrange early works agreement to progress design, order materials and book production slot.	Different funding / cash profile compared with traditional construction.

