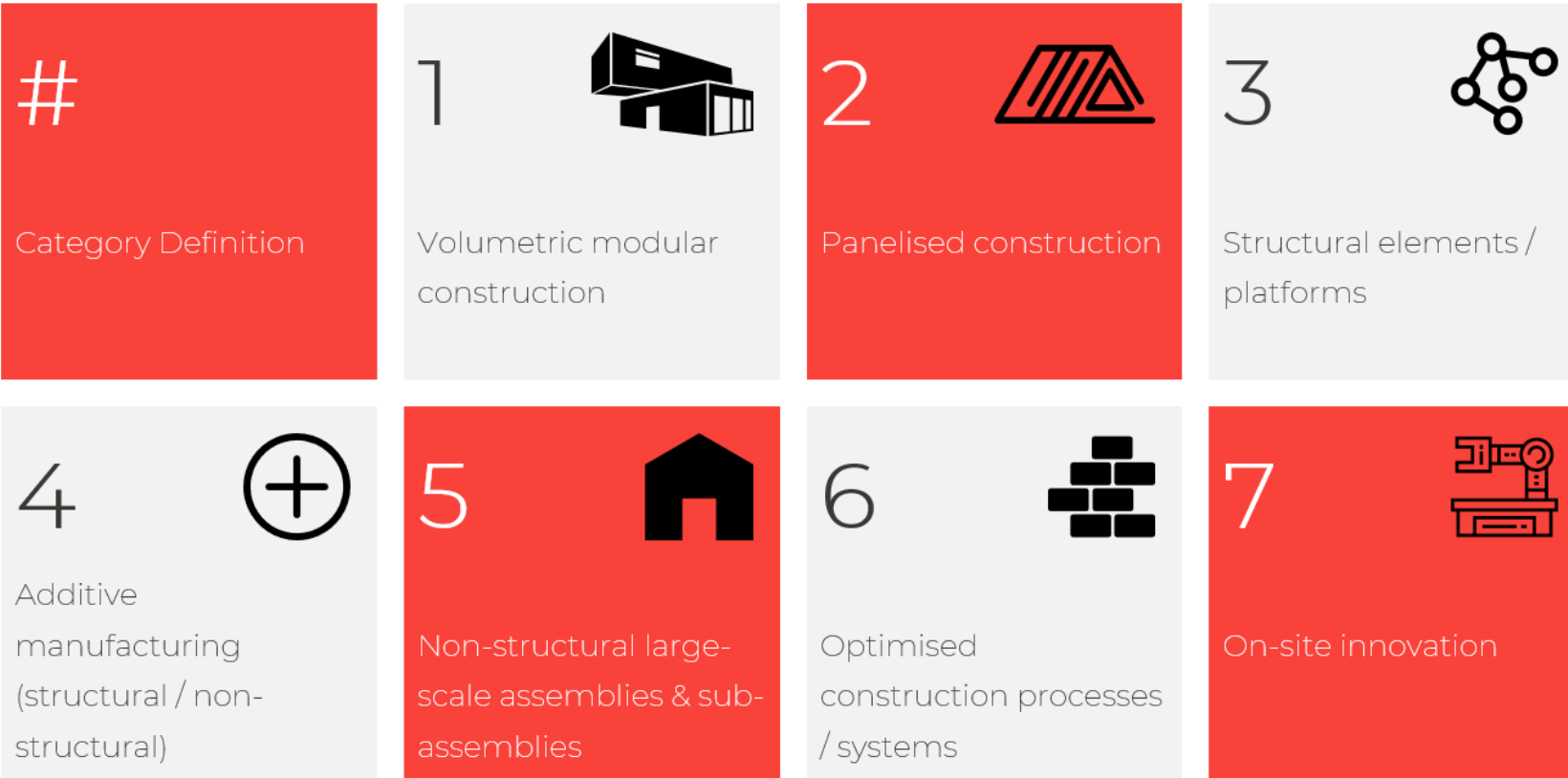


Buildoffsite New Guidance on Offsite Construction and Design



Introduction

- Specifying flexibility and inclusion MMC
- Design liabilities
- Programme
- Product trends



MMC Inclusion

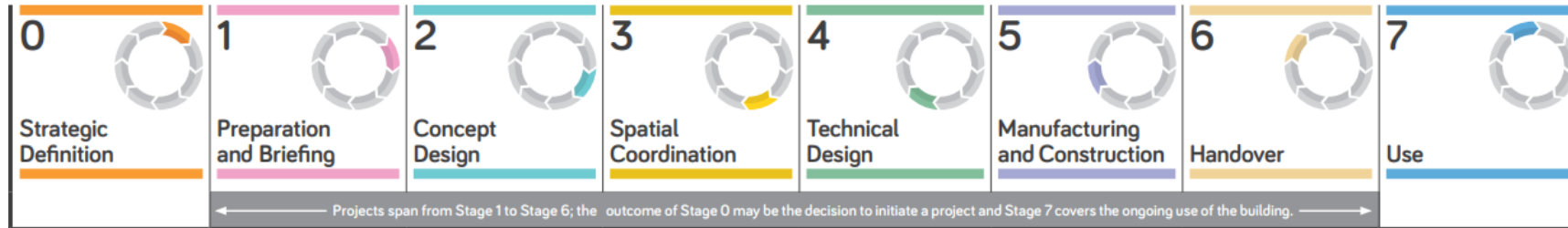
If not considered early in the design process, MMC solutions then become excluded from the design.

Category 0 – Preconditions to MMC

Early access to the supply chain

Performance specifications

Carbon intensity – blended average requirements



Procurement Opportunities

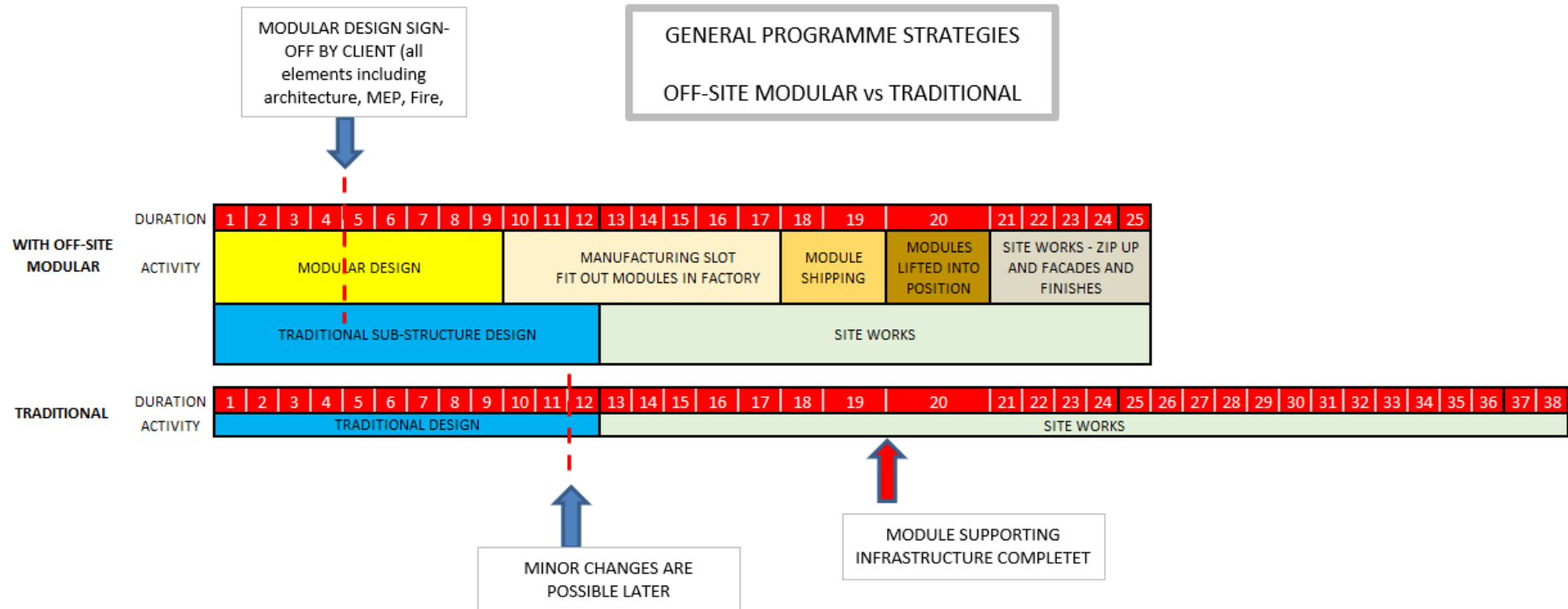
Design team and MMC
Supply chain strategies
need Concept to be aligned.

Programme Benefits



To materialise, detailed design and manufacturing of the offsite units must start on dates which incorporate site delivery.

Ground level transfer deck must be in place prior delivery of the modules.



Liabilities

The liability of the project as a whole should remain with the design team, who would normally be responsible for assembling the different MMC technologies into a single and coherent project.



Park View Student Village, Newcastle
1,234 rooms, largest student accommodation in
the UK, Galliford Try and CIMC UK Ltd
Residential / Leisure – MMC Category 1

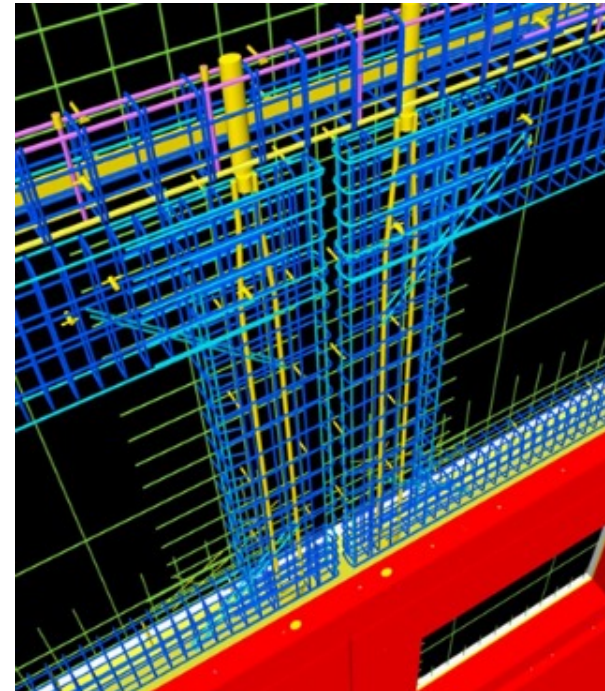


Modules contractor
design

Steel core
traditional
construction
designed by the
design team

Optimised Construction Process MMC Category 6

- Through the offsite approach to concrete, collaboration and BIM the project Grange University Hospital was delivered more than **42 weeks earlier than a traditional approach.**
- The design team collaborative model reviews were undertaken in Navisworks.
- BIMCollab was used as a clash detection/communication tool for reviewing models in the 3D environment and ultimately resulted in very few site changes.



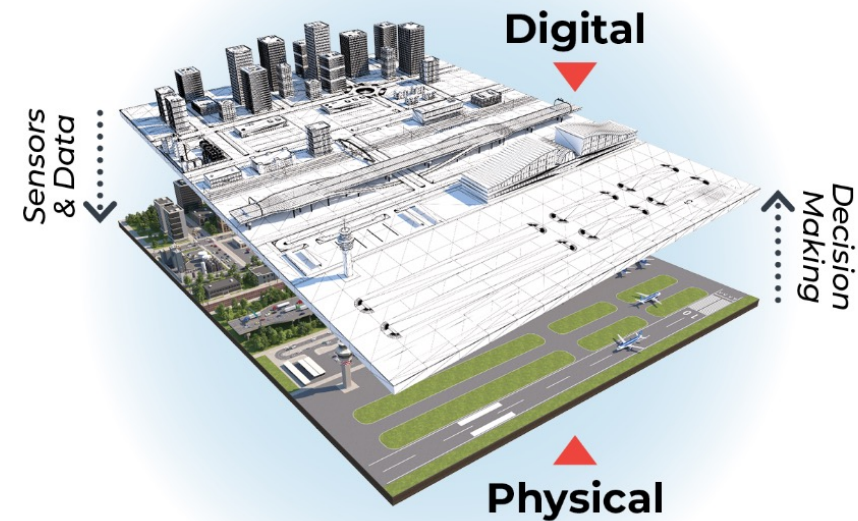
The Grange University Hospital, Cwmbran

Laing O'Rourke contractors - MMC Categories 2, 5 & 6



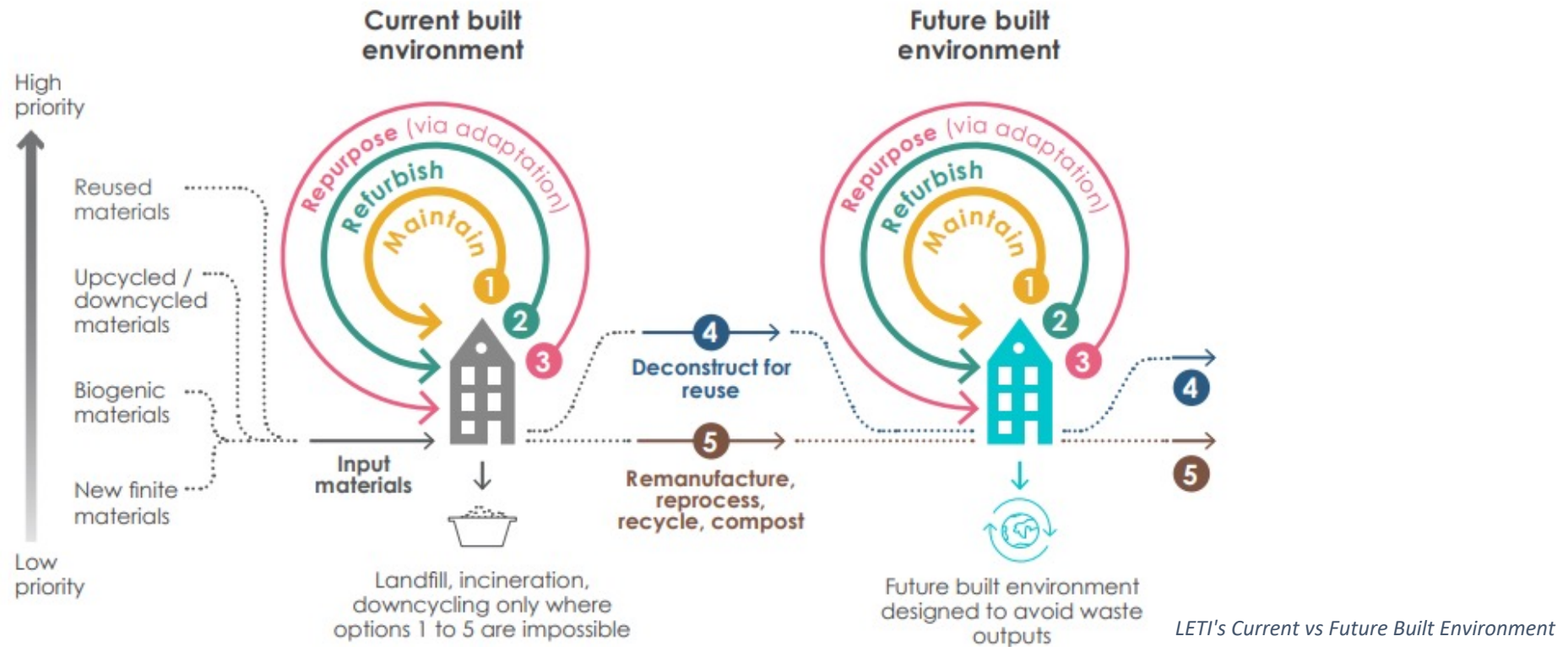
Product Trends MMC category 6

- **Platform-based Design** configurator around a data base of a kit of parts (incl. parametric design).
- **Digital twin** - tagged components for maintenance and re-use (re-cycling is old hat) whole life cycle thinking and Planning tool to predict impact of urban development (energy, water, access, etc).
- Internet of Things (**IoT**) with sensors embedded in factory produced building panels. Cambridge University research. Monitoring temperature, loads, stresses.
- Using Impressed Current Cathodic Protection (**ICCP**) with remote accessed data bases to monitor corrosion and performance of an asset without disruption (impact of the Morandi Bridge collapse, Genoa 2019).
- Decarbonisation targets - Policy driven & Industry driven.



WSP COP 27 feedback

– net zero now a given, first time implementation driven, private sector now seeking out opportunities - FOMO



MMC can reduce whole life carbon (WLC) with a more accountable and integrated supply chain where carbon intensity and blended average requirements can be specified from the outset.