Welcome

AGENDA
- Introductions - facilitators and attendees
- What do we mean by offsite and Modern Methods of Construction (MMC)?
- Considerations in Offsite Logistics - Jez Desmond
- Offsite Quantity Surveying - Alex Hyams, Alinea Consulting (Video)

Break

- Introducing Construction Industrialisation
- Case Study: A14 Viaduct - Nick Bishop, Skanska

Break

- Exercise: What might logistics need to know at each stage of construction industrialisation?
- Real World Logistics - Jez Desmond
- Sum up and close

Your facilitators today

David Emery

Jez Desmond

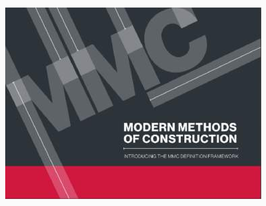
Nick Bishop

Introduce yourself

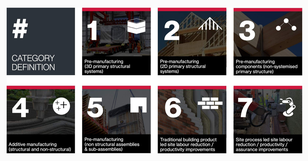
1. Put a post it note on the map where you are
2. Add your name and company
3. Add a word or two to describe the best thing about your job

NOTE: don't use paragraphs (Enter key) or this will exit the Post-It note.

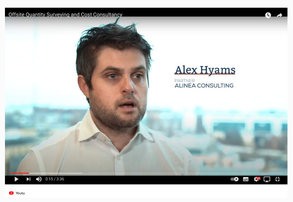
MMC Definitions Framework



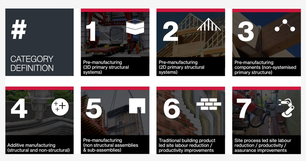
MMC Category Definitions



Offsite Quantity Surveying



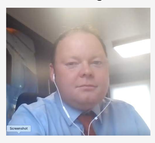
MMC Category Quiz



On your mobile 'phone go to menti.com
When prompted for a code type in
3762 2687

Jez Desmond: What's Different in Offsite?

Please go back to the 'Zoom' meeting



Tea/Coffee Break

Break 1

Exercise: Compare different 2D & 3D systems in terms of transportation and delivery

Write down any benefits or any challenges you can think of when considering 2D and 3D systems

Benefits Reveal

3D Benefits
Rapid assembly on site (assuming suitable lifting available)
Shorter project programme can result in earlier revenue in leisure and retail projects

2D Benefits
Generally smaller loads mean generally smaller delivery vehicles
Careful planning of 2D assembly can often mean there is no need for scaffold.

Challenges Reveal

2D Challenges
Although often easier to transport than 3D volumetric modules, 2D components can still be difficult to transport because:
- Some very large components - such as bridge components - may still suffer the same transportation problems as 3D, e.g. special transport/craneage, too large for access routes, special permissions etc.
Ideally 2D components should be loaded in reverse sequence so that they can go straight to their assembly position as they are off-loaded.
- This may not be possible if the mix of elements vary greatly in size and weight; for example, large heavy components may not be able to be loaded on top of smaller more fragile elements.
2D elements may need to be stored on site if they are not to be assembled straight away.
- This introduces costly double-handling and may result in on-site logistical difficulties if their storage locations are not carefully planned.
2D elements will need to be lifted into position for assembly on site, which will take more time than 3D
2D elements are more likely to need temporary bracing than 3D

3D Challenges
Large volumetric modules
- Require specialist transport and lifting
- May be too large for access routes onto the site
- May need special permissions for deliveries into city centres which may mean night deliveries
- Can create stockpiling problems if the site and factory programmes fall out of sync
- Are susceptible to damage if mishandled (e.g. incorrect lifting resulting in 'twisting')

Construction Industrialisation

Feasibilty Stage First!

Design Stage Reveal

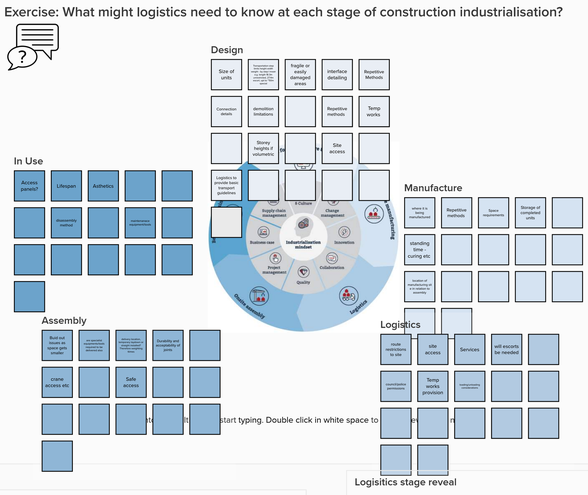
Tea/Coffee Break

Break 2

Case Study - Nick Bishop, Skanska

Please return to the 'Zoom' meeting

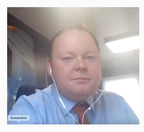
Exercise: What might logistics need to know at each stage of construction industrialisation?



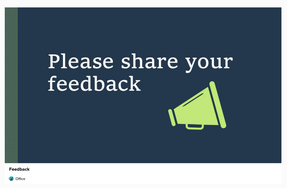
Manufacturing Stage reveal

Jez Desmond: Real-world Logistics

PLEASE GO BACK TO THE ZOOM MEETING



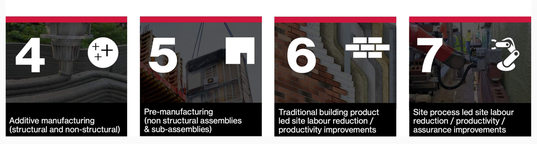
Please share your feedback



Questions and Answer, Sum-up

Assembly stage reveal

Logistics stage reveal



Load Information Examples

Lifting Beam example

Crane site survey report 96 Module Student Accomodation

Example Initial Quotation

Modular Volumetric - information for RAMS

Delivery Management

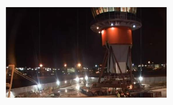
Implications on the lifting and logistics plan of the data:

Module Dimensions XL x XW x XH – *Transport – Type of trailer, STOO/Abnormal loads restrictions, Authority & Police involvement, ingress to site, route to site*

Module Weight Xmte – *Site lifting operation – crane size, ground preparation , ingress & egress for crane and associated transport*

Build Sequence – *Site Lifting Operation – crane size*

Site Address – *road width, street furniture, environmental restrictions, railways, airports & utilities - will all impact on overall cost and programme timeline*



Size affects lift affects plant and equipment
(Dave to Add George Street images)

The new Heathrow Air Traffic Control Tower.

Mace brought a highly motivated team to tackle a variety of technical challenges including, prefabricating the top 35m of cab and mast then transporting the 1000ft structure across the airport.

Installing five 12m, 80-tract sections underneath the top 35 m using bespoke temporary works and a brand pulley system. Installing six 1M 70m long tension cables. Constructing a two-storey base building. Installing a link bridge to Terminal 5.

All of the above carried out immediately adjacent to the golf course and live aircraft stands, which is continuous site.
https://www.youtube.com/watch?v=mq1RUzN3BE