

# FOR PROPERTY & CONSTRUCTION

## Modular: The Housing Solution? CHC Cymru Development Zone

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# Introduction

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- What
- Why
- How
- Key aspects
- Discussion



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# What?

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- Modular Build used as a term but much wider
- Off-Site Manufacturing (“OSM”)
  - ♦ Prefabricated assemblies
  - ♦ Flat pack assembly
  - ♦ Volumetric approach



# Why?

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- Labour
- Materials
- Finance
- Quality



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# Why?

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- Cost
- Time
- Health and safety
- Waste



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# How?

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- Design and build
- Construction management – trade contractors
- JCT IFC > named sub-contractor
- Goods contract > plug in and play
- Procurement law pitfalls



# Key aspects

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## Design

- Guidance is out there
- RIBA plan of work 2013 – designing for manufacture and assembly
- Think differently at stage two > buildability and modern methods of construction
- Understand the OSM technologies and processes
- BIM will be an asset > design integration and collaboration



# Key aspects

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## Design

- OSM integrates design and manufacturing
- Detailed final design required at an early stage
- Design freeze is crucial
- Detailed design needs to consider all aspects of an OSM development – manufacture / assembly, installation and operation





# Key aspects

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## Early Contractor Involvement (“ECI”)

- ECI ensures OSM design is considered
- ECI picks up practical consideration and contractor’s experience
- ECI drives project team working together and collaborative approach
- Single stage – traditional or D & B – contractor is not aware of design until complete



# Key aspects

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## Early Contractor Involvement

- Stage one > pre construction services
- Stage two > construction works
- JCT Pre-construction Services Agreement
- Commercial risks of two stage
- Procurement law risks of two stage



# Key aspects

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## Insolvency / Default Risk

- Consequences of insolvency / default much greater
- Normal design and build
  - ◆ Monthly valuations
  - ◆ Goods on site
  - ◆ Scheme can be built out
  - ◆ Performance Bond / PCG
  - ◆ Retention



# Key aspects

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## Insolvency / Default Risk

- OSM Design and Build
  - ◆ Deposit
  - ◆ Fortnightly valuations
  - ◆ No real value until first modules arrive to site
  - ◆ Title to goods risk until modules arrive
  - ◆ Exposure is at its greatest until modules arrive



# Key aspects

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## Insolvency / Default Risk

- Methods to lower risk
  - ♦ Vesting certificates
  - ♦ Advance payment bond / insurance
  - ♦ Performance bond
  - ♦ Retention
- JCT D & B 2016 has some of the mechanisms but not all



# Key aspects

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## Quality

- Certification / Quality Assurance
- Latent defects insurance
- Changing product for OSM?



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# Key aspects

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- Ability of OSM market to deliver on cost and time claims
- RSL's as OSM manufacturer



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# Discussion – Is it the housing solution?

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- Are the benefits real and sufficient?
- Advantages / Disadvantages
- Challenges
- Practical issues







## CONTACT

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