Platforms for Housing

10th Annual Affordable Housing Projects

9th April 2019
The construction industry is facing challenges

Source: KPMG “Construction 2.0” report
The construction industry is facing challenges
The construction industry is facing challenges

In pursuit of value

Circle Hospital, Reading

- 20% reduction in programme
- 28% reduction in cost
- 79% of components were standardised

Heathrow T3 Temporary FCC

- 38% reduction in overall programme
- 75% of work taken offsite
- 28% reduction in cost vs. traditional

GlaxoSmithKline ‘Factory in a Box’

- 60% reduction in programme
- 75% reduction in labour
- Cost neutral (achieves world class standards for the cost of traditional construction in Africa)

Heathrow & Gatwick Pier segregation

- 50% reduction in overall programme
- 36% reduction in cost vs. traditional
- 80% of work taken offsite

Optimum Switch data centres

- 30% reduction in overall programme
- 40% of work taken offsite
- 30% reduction in cost vs. traditional

Heathrow Terminal 5C Nodes

- 87% reduction in overall programme
- 65% of work taken offsite
- 25% reduction in cost vs. traditional

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In pursuit of value

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Platforms bridge the gap between manufacturing and construction
Component

Engine block

Shipping container

Uber

Platform

Chassis

Global freight infrastructure

Outcome

Car

Low cost, reliable global trade + supply chains

Peer-to-peer ride sharing, food delivery and transportation network

iPhone
Designing for Platforms
“Platforms could achieve a 33% reduction in capital cost”
Labour
- Skilled operative
- Highly skilled operative
- Supervisor

Information
- Skills + training
- Standardised processes / APQP / standard operating procedures / guided instruction

Materials
- Existing products (+ those developed by manufacturers)

Components
- Products developed specifically for departments (may be applicable to multiple building types)

Dynamic Cost Model
How do we design using platforms?
Platforms = RULES

RULES = Automated Design
Select solutions rather than develop options
Optimise site layouts using a genetic algorithm
Digital assembly from a known library of components
GLA Configurator
What would a platform for **Affordable Housing** look like?
Platforms for Housing

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Platforms for Housing

1. Kit-in kit delivered to floorplate as a modular element containing both bathroom and kitchen sub-assemblies, packed into a crate and moved into position on a pallet.

2. Kit unfolds to separate the bathroom and kitchen sub-assemblies.

3. Once separated, the bathroom and kitchen sub-assemblies can be moved into their final positions on the floor plate.

4. Once in position, ceiling cassette and lighting installation can be commenced.

5. Final fit-out works can then be completed for the bathrooms and kitchen (floor screed, completion of partitioning, tiling).
Platforms for Housing
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Primary services distribution zone (above shared corridor ceiling)

Secondary services distribution zone (inside apartments)

Gap for services distribution between downstand beam and corridor structure

450mm Overall floor thickness including services zone

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Gutenborg, St. Petersburg

Bryden Wood
Gutenborg, St. Petersburg

Bryden Wood
Southbank Place, London

Bryden Wood
Southbank Place, London

Bryden Wood
Southbank Place, London
Thank you

Adam Jordan
ajordan@brydenwood.co.uk

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@BrydenWood
BrydenWood
Bryden Wood
brydenwood.co.uk