‘Modernise or Die’

Risks & Opportunities For The Construction Industry

Mark Farmer
BIM Regions East, Digitising Construction Event
Cambridge 21st May 2018
THE RISKS
Four UK Construction Industry Reports – Similar Themes, Different Points in Time But It’s Clearly Evident We Now Have Different Drivers For Change
We Have a Burning Platform
Future Prognosis for ‘Business as Usual’

- Skilled construction labour now in long term structural decline
  - Quality of new ‘backfill’ labour force reducing
- Increasing reliance on shrinking pool of experienced & competent labour force
  - Main Contractors not in control of sub-contractors
  - Sub-Contractors not in control of their labour force
- Designers being de-skilled by procurement routes & transactional interfaces
- Surveyors increasingly removed from understanding true cost rather than price
  - Increasing litigation and contentious project failures
- On going commercial failures of businesses unable to control outcomes and hold ‘risk’
  - New disruptors and disruptive models emerging challenging status quo
IF NECESSITY IS THE MOTHER OF INVENTION, DISCONTENT IS THE FATHER OF PROGRESS.
The ‘Die’ in ‘Modernise or Die’ has taken on a renewed significance in the last few months!
But Discontent with Construction Performance is Now Coming from Elsewhere......
The Grenfell Tower Tragedy Has Taken This Debate To A New Level

Building a Safer Future

Chapter 8: Golden thread of technology & manufacturing

TECHNOLOGY & MANUFACTURING
Focus on BIM & Digitalisation Will Always Have Its Limitations Without Transforming Construction’s Fragmented Project Organisational Structures & Analogue Site Based Physical Delivery Model
THE OPPORTUNITIES
An Understanding of the Root Causes of Delivery Failure Needs to Define the Solution

- Design Uniqueness
- Site Labour Intensity
- No. of Transactional Interfaces (Vertical Integration)
- No. of Works Interfaces (Horizontal Integration)
Design, Procurement and Construction Delivery Success

The Solution Involves Three Key Parts – Two Primary Axes of Change & One Enabling Move towards manufacture led & hybrid construction

Digital Enablement
From Design to Site to Asset Management

- No. of Transactional Interfaces
- No. of Works Interfaces (Horizontal Integration)
- Move towards more integrated procurement models
UK Government Is Also Driving Change – Industrial Growth & Major Spend Programmes

We will use new technologies to halve the energy use of new buildings by 2030.
UK Government Is Also Driving Change - Homebuilding
And In A More Subtle Way In Homebuilding

Boosting productivity and innovation: modernising the housebuilding sector

3.37 The housebuilding industry is less productive than the wider economy, partly because it has been slow to modernise and make use of more efficient and faster ways of building. By increasing innovation and making greater use of modern methods of construction we can change this. Industry reports suggest homes constructed offsite can be built up to 30% more quickly than traditional methods and with a potential 25% reduction in costs. They are high quality, reliable, more productive and can be highly energy efficient. They can require fewer people on site, helping to mitigate the skills shortage. Some firms are increasing their use of these methods, but we need to go further.

MMC WORKING GROUP

Full Working Group – Meeting No.2
23rd February 2018
Westminster Conference Centre
INTEGRATED PROCUREMENT
We Need to Also Recognise that the Traditional ‘Tier One Contractor’ Model is Broken

WE NEED TO **DISINTERMEDIATE** TRANSACTIONALLY LED, NON-VALUE ADD MODELS

= COLLABORATION & TRUST
We Need to Move to New Organisational Models Enabling Higher Levels of Pre-Manufactured Value With Less Transactional & Management Hierarchy

Enterprise Led Outcome Models
Integration Not Contracting
Project & Programme Alliances
DfMA & Higher PMV
Disintermediated Payment
Behavioural Filter Applied to Teams
INCREASED LEVELS OF PRE-MANUFACTURED VALUE - MANUFACTURE LED & HYBRID CONSTRUCTION
Productivity Improvement Has to Occur Alongside Cutting Transactional Waste
‘Construction as Manufacturing’ – All Levels of Pre-Manufactured Value
‘Construction as Manufacturing’ Is Not Just About Big Centralised Factories – It’s About Re-Shaping The Entire Supply Chain – SME’s Included
Some Business Models Will Vertically Integrate a DfMA Led Full Development Capability & Start Excluding Traditional Consultant & Contractor Players
Some Business Models Will Allow The Industry to Simulate ‘Vertical Integration’

Press Releases

12 February 2018

A Game-Changing Approach to the UK’s Housing Stock

Three of the UK’s most innovative firms in their respective fields of development, housing management and modern construction have joined forces to help solve the UK’s housing crisis.

Stanhope plc, with £22 billion in completed projects, Network Homes, owning and managing 20,000 dwellings across London and the South East and international engineering enterprise, Laing O’Rourke have formed a long-term partnership to deliver and manage precision-engineered homes across the South East.
Innovation Should Be Led By How We Organise to Maximise Interface of Technology & Human Experts – ‘Augmentation’

We Should Let Technology Do The ‘Heavy Lifting’ So Creativity, Human Intuition & Interpretation & Validation Is The Focus Of How We Improve The Built Environment
Focus now has to be ‘Digitalising Construction’ not just Initial Design or the End Assets.

The full potential of digital will not be fully realised until we take it fully into the production process & step changes site productivity & quality.
BIM Evangelists & Practitioners Must Avoid Cementing a ‘Sub-Culture’ – By Arguing About The Detail & Purity – It’s Increasingly Less About ‘BIM' it’s about ‘Digital Construction’

It is clear that there is a focus of knowledge in what might be described as ‘academic’ subjects, such as theory, research and case studies, as well as design and literature about products. There is less written about industry ‘framework’ subjects, such as policy, regulations, legislation and public procedures.

Most notably, whilst a lot has been written about Building Information Modelling (BIM), it is disconnected from other construction industry subjects. This may reflect the fact that BIM emerged as an area dominated by specialists, and has struggled to embed itself into the daily work of the rest of the industry.
Many Still Doubt That Innovation Can Change Our Industry In The Future. Change is Coming Though - ‘Incremental Transformation’

What Does Exponential Growth Look Like?

- Fold a paper in half you double its thickness
- Fold it once again it will be thickness of credit card
- Fold it 10 more times after that it will be the height of a Coke can
- Fold it 32 more times after that it will reach the moon, 240,000 miles away
- Fold it just another 8 times after that it will reach the Sun, 93 million miles away

The Future Will Not Be Dictated By The Past!