‘Modernise or Die’

Risks & Opportunities For The Construction Industry

Mark Farmer
Transforming Construction Challenge Fund Briefing & Consortium Building Event
CSIC, 30th April 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 measures this government is putting in place will help create a system that actually works for consumers.

SAJID JAVID,
COMMUNITIES SECRETARY
↑TECHNOLOGY & MANUFACTURING
Focus on BIM & Digitalisation is Wasted Without Transforming Construction’s Fragmented Project Organisational Structures & Analogue Site Based Physical Delivery Model
Design, Procurement and Construction Delivery Failure

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)
THE OPPORTUNITIES
The Solution Involves Three Key Parts – Two Primary Axes of Change, One Enabling

Design, Procurement and Construction Delivery Success

• Design Uniqueness
• Site Labour Intensity
• No. of Transactional Interfaces (Vertical Integration)
• No. of Works Interfaces (Horizontal Integration)

Digital Enablement From Design to Site to Asset Management

Move towards manufacture led & hybrid construction
Move towards more integrated procurement models
(Vertical Integration)
UK Government Is Also Driving Change – Industrial Growth & Major Spend Programmes

Transforming Construction challenge

Transforming Construction: Manufacturing Better Buildings

Challenge: Transforming construction to more quickly provide safer, healthier and more affordable places to live and learn that use dramatically less energy.
And In A More Subtle Way In Homebuilding

MMC WORKING GROUP

Full Working Group – Meeting No.2
23\textsuperscript{rd} 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
INCREASED LEVELS OF PRE-MANUFACTURED VALUE - MANUFACTURE LED & HYBRID CONSTRUCTION
‘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

FACTORY SHARE

There are many underutilised factories that through input to keep the facility operating at
Factoryshare.org is an initiative that seeks overhead) through a number of possible sc

Innovation Factory

Equipment

Offsite Manufacturing Cell

Modular Offsite Manufacturing
Some Business Models Will Vertically Integrate a DfMA Led Full Development Capability & Start Excluding Traditional Players
Some Business Models Will Allow The Industry to Simulate ‘Vertical Integration’

PRESS RELEASES

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
Why Today Is So Important For Your Businesses & Scotland

- Get your voice heard and represented on the UK stage re ISCF!
- To be able to build on Scotland’s long term use of ‘non traditional’ construction techniques
  - Accelerate ‘non traditional’ to ‘advanced manufacturing’
- To benefit from the advantage of being a smaller industry than England – you can punch above your weight!
- To be able to leverage the work already done by CSIC, Scottish Enterprise & Scottish industry & academia working groups
  - To enable Scotland to be a world leader not just a leader within UK in advanced construction
- To create both vertically integrated and virtual delivery enterprises from collaborations & clustering of different businesses across the supply chain

This is a unique opportunity to accelerate transformational change in Scottish & UK construction
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!