Sustainable Construction, Infrastructure and Innovation Workshop

13th February 2018

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INNOVATION ALLIANCE for the West Midlands

WELCOME

Noel Street

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HM Government

Industrial Strategy

Building a Britain fit for the future

November 2017

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VISION

Three strategic outcomes....

✳ More houses ✳ More rail capacity ✳ Improved car journeys ✳ Cheaper energy ✳ Better public services

Digital

Delivering better, **more certain outcomes** using digital technologies

Manufacturing

Improving productivity, quality and safety by increasing the use of manufacturing

Performance

Optimising through-life performance though the development of smart assets

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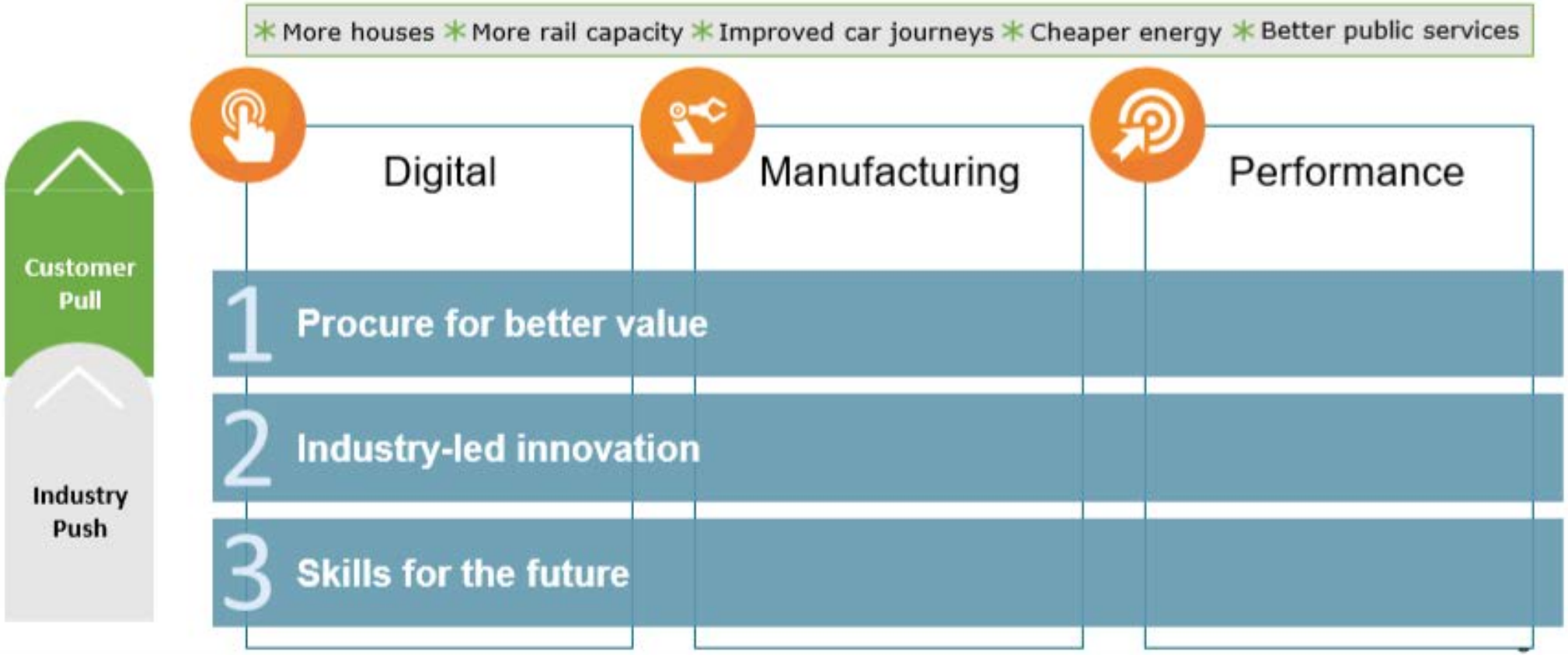
ENABLERS

…delivered through three key enablers



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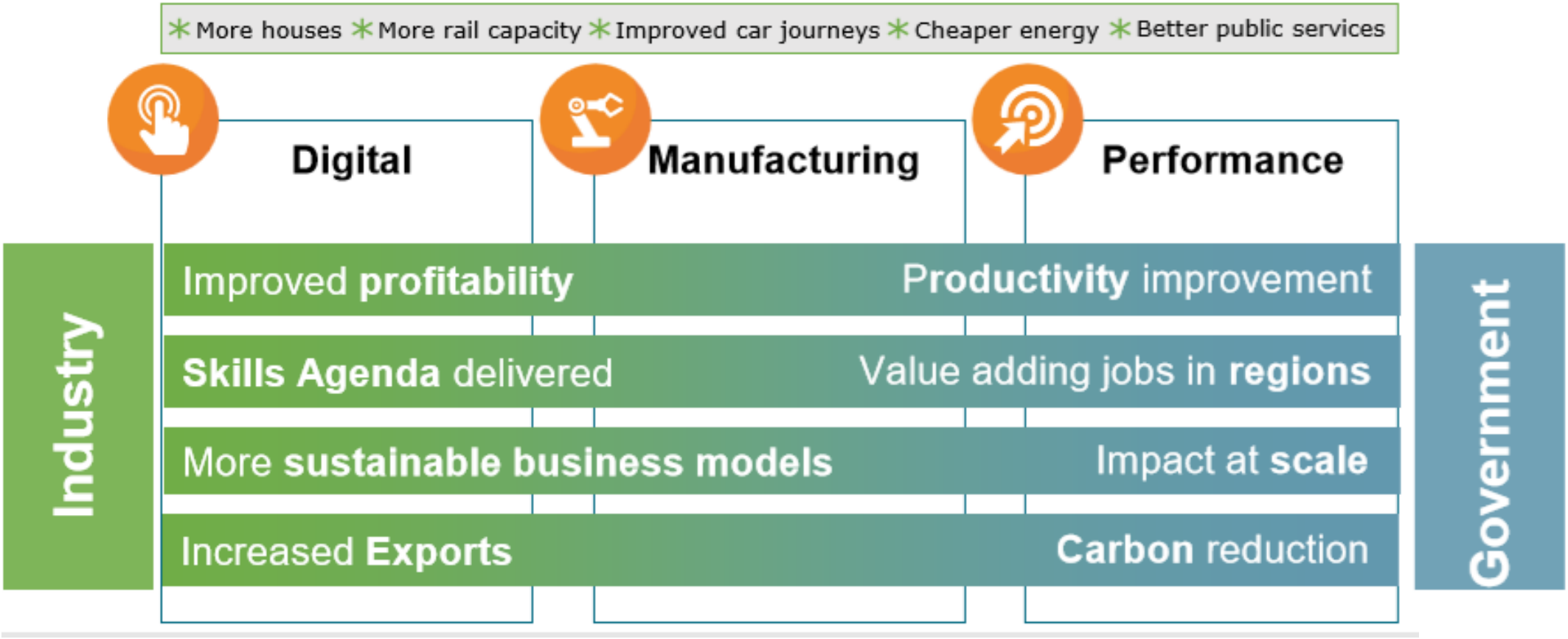
SECTOR DEAL

A deal which works for both industry and government



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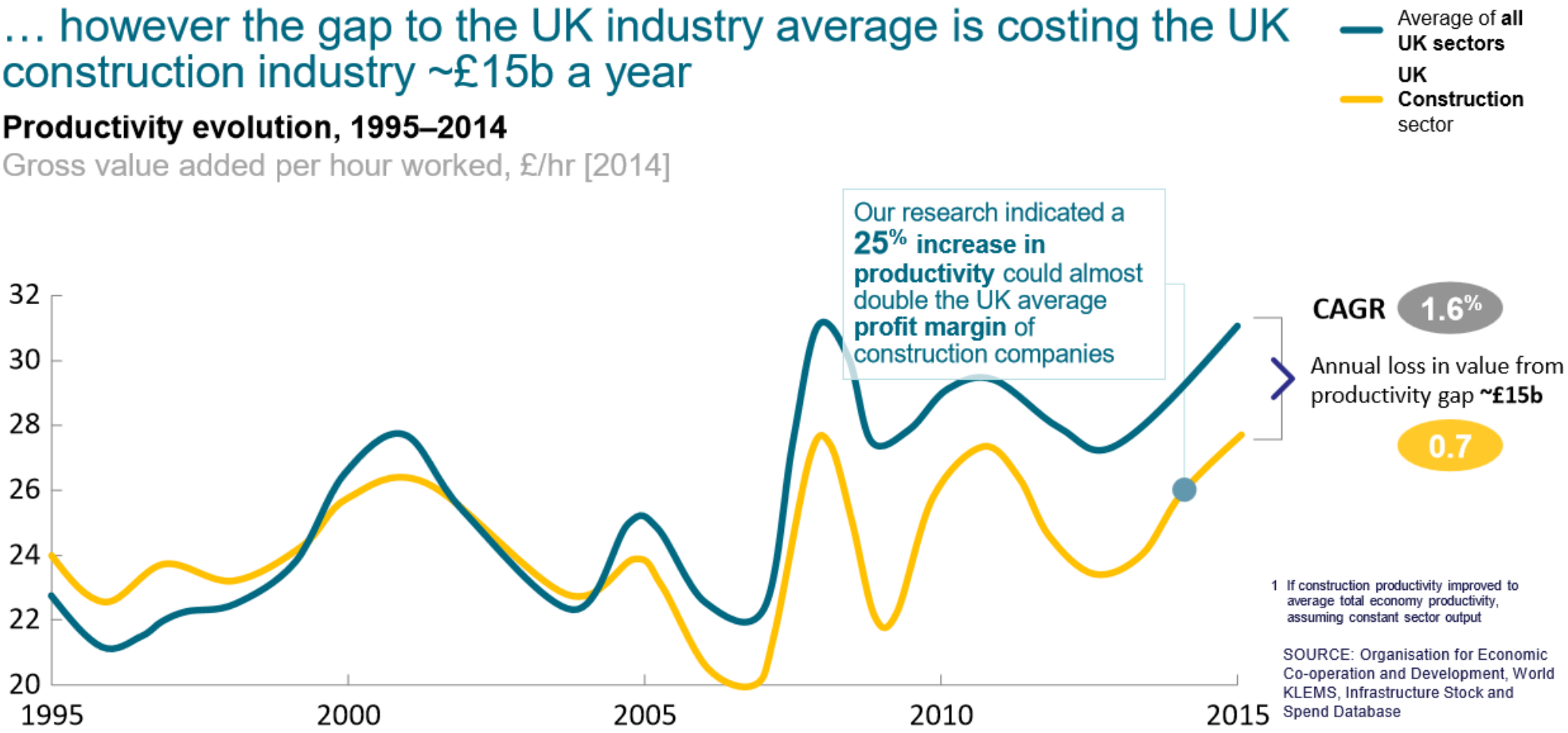
PRODUCTIVITY

… however the gap to the UK industry average is costing the UK construction industry ~£15b a year

Productivity evolution, 1995–2014

Gross value added per hour worked, £/hr [2014]



1 If construction productivity improved to average total economy productivity, assuming constant sector output

SOURCE: Organisation for Economic Co-operation and Development, World KLEMS, Infrastructure Stock and Spend Database

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FUTURE of CONSTRUCTION

03 *Satisfying UK housing supply and demand*
It's a political hot potato – and building enough new homes will boost the UK's economy as well as win votes

05 *Sustainable buildings are green and beautiful*
Green buildings bring nature into urban spaces, save energy, improve water management and combat pollution

07 *Ten innovations to watch in construction*
New materials and designs, plus advances in digital technology and big data, are creating a wave of building innovation

08 *Capital city that is looking up to the sky*
Most Londoners may not know it, but the capital is about to get a futuristic and controversial high-rise makeover

Constructing an industry for 21st-century UK

The construction industry is replenishing the UK's housing stock, building new infrastructure and helping restore the economy, but challenges remain if it is to attract and retain a forward-looking workforce

OVERVIEW
JIM McCLELLAND

Money talks, but people count. Construction contributes £92 billion a year to UK economic output. However, to appreciate the true scale of the industry, it pays to think instead in terms of people and jobs, all 2.1 million of them.

Driving construction to work, every day, would require 262,500 double-decker buses, full to standing. That would be enough to jam a three-lane motorway, nose-to-tail, for almost 600 miles.

The same data, however, also explains why construction is concerned about recruitment and retention of talent going forward, making the skills gap a hot topic.

Taking growth job markets in sustainability, as an example, construction, for all its environmental and social issues and impacts, is just not a preferred option, says Dawn Love, head of environment and sustainability at Taylor Woodrow. "The simple fact is that sustainability professionals are not considering construction as a viable career choice. The industry still has an image issue and the innovative work we do doesn't often make the headlines. Most sustainability professionals get into construction by accident," she says.

Relying on happy accidents is obviously not a credible business plan. There are, though, signs of progress, according to Ms Love. "My hope and vision is that the work done on the diversity agenda, which has evolved into 'fairness, inclusion and respect', helps to change the culture of construction. We have come a long way in the last 20 years; however, we have a long way to go in the next 20 to make it somewhere to attract bright, young talents from all walks of life and retain them."

On-boarding new hires is only half the story. Retention, though, is not all about pay and promotion. In a modern, millennial-minded working environment, social and cultural initiatives to tackle issues, such as mental health, plus flexibility around personal and family commitments, are key enablers of long-term employment. So, how is construction progressing in its attitude and approach to looking after the health and wellbeing of existing staff?

In January, the Considerate Constructors Scheme introduced mental health assessment into its checklist, with positive feedback according to chairman Mike Pettet. "We are starting to see an encouraging response from many sites regarding this matter – some are at the information-and-guidance stage and others are looking at provision of mental health first-aiders."

This represents a new criterion, over and above existing concern for general wellbeing. Mr Pettet adds: "Many projects and companies provide general health and welfare information. This might be in the form of awareness posters for various cancers, healthy eating and dehydration. On the very best sites we see the workforce offered literacy and numeracy support and guidance."

Such considerate behaviours on site are symptoms of an emerging spirit of industry tolerance and inclusivity. In short, construction is learning to care.

This progression forms part of a broader transition that casts construction personnel more as professional problem-solvers, in the business world of 2015 and beyond. The advent of digital working, including building information modelling, with an accompanying increase in automation and off-site construction, will herald a wider shift in skillsets, argues Martin Perks, divisional director at Mott MacDonald. "Stakeholders are likely to become more numerous and more sophisticated, and the commercial complexities more subtle, given the collaborative working involved in digital delivery. End-user expectations will continue to rise, with more voices becoming prominent in the process," he says.

"Collaboration, alliancing, interface engineering and information management will therefore become core skills. We then see a gradual pivot of our traditional core, more towards analysis, interpretation, interpersonal and 'soft' skills."

This more collaborative, inclusive model for the future of construction supports values of openness and transparency, suitably aligned with corporate social responsibility agendas of corporate clients. It also speaks to a learning culture that is alive to global market opportunities, international relations and the exporting of skills.

> "Collaboration, alliancing, interface engineering and information management will become core skills

Such a worldview, with global capacity and capabilities, is good for business, says John Alker, director of policy and communications at the UK Green Building Council. "Cross-border collaboration and sharing of best practice are key. The UK is a global leader in sustainable design and construction, and exporting its knowledge and expertise not only helps other countries with low-carbon development, but in the case of commercial buildings, could contribute an estimated £0.7 billion to UK GDP," he says.

Financial reward is not the only potential benefit to be manifest back home. Reflecting on the LEED Platinum – US green building certification – design for Siemens Middle East HQ in Abu Dhabi, Alan Shingler, a partner at Sheppard Robson, describes the win-win scenario possible. "Working internationally is a two-way street – UK practices that are hired to export their talents across the world inevitably broaden their range of experience, and in turn import skills and knowledge back into the UK," he says.

"New constraints, objectives and context push you to challenge convention and seek new ideas to improve design performance. Working at Masdar City (Abu Dhabi), with its extreme climate, stringent key performance indicators and design-savvy occupiers, put issues of efficiency and performance into acute focus."

Built environment metrics are also informing a bigger picture, people-centric context. The Living Building Challenge (LBC), as well as setting stringent standards for water and energy use, also tackles topics including equity, health and happiness, beauty and education. Such a remit clearly adds up in today's markets, according to UK LBC ambassador Martin Brown. "Increasingly, construction is being measured on social outcomes, in addition to financial performance. For many large organisations, utility costs are small in comparison to staff costs, so creating buildings that provide healthy and happy places, free of toxic materials, just makes good sense," he says.

Tomorrow promises not just to be another day, but a whole new world for construction – the future is caring and sharing.

CONSTRUCTION SECTOR'S CONTRIBUTION TO THE ECONOMY (£bn)

Source: House of Commons, June 2015

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Ok. What does Innovation mean?

What do we mean by "innovate" and how realistic is a drive for innovation in an industry still governed by risk apportionment and adversarial contracts?

"Innovation" is defined in the Cambridge English Dictionary as: *"(the use of) a new idea or method".*

Clients are looking for new ways to achieve better projects in less time and for less money. Contractors are looking to maximise margin and efficiencies. Professionals are expected to be innovative in their approach to design, risk, and cost whilst also meeting professional and regulatory standards.

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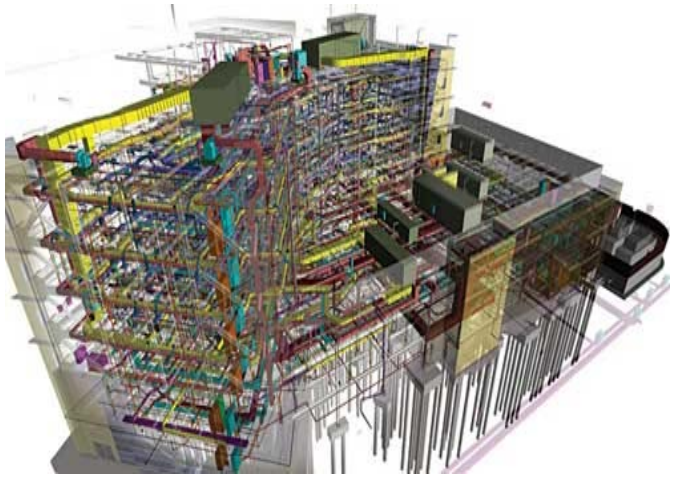

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100 YEARS ON …… what's next?

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THANK YOU

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