

Workshop 2d

Emerging trends within construction; the implications for maintenance & asset managers

Speaker: Tom Jarman, Waterstons

Chaired by: Stephen Chalmers

Room: Norfolk



NHMF
Maintenance
Conference
2020

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Build a better business

Through technology, experience, and commitment,
we work with hundreds of clients, big and small, to
improve their business.





Limited Company - Established 1994



Over 165 consultants



Durham (HQ), London, Glasgow, Sydney, Perth



UK-wide & International client portfolio



Customer intimate organisation; 80% revenue from repeat clients



Investors in People Gold status



Our passion is solving business problems with technology

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<https://www.linkedin.com/company/waterstons/>

Emerging trends...

- What do I think they are?
- Despite appearances...
 - > Much more consistency
 - > Much more Govt action
 - ... than is often seen/understood
- Biggest emerging issue that connects them; Risk
- And why are maintenance and asset managers critical to getting right outcomes, mitigating risk and building a sophisticated and resilient response?

Industry engagement





Insight, from
policy makers,
practitioners and
key influencers

DIGITAL CONSTRUCTION INNOVATION DAY

JAN 27 2020

A one day ultra-collaborative event to drive innovation in construction

European Union
European Regional Development Fund

DYNAMO
Growing the North East IT economy

w@terstons

Northumbria University
NEWCASTLE

CROSS-INDUSTRY INNOVATION • DATA • SKILLS • PROCUREMENT

Consistency...



***In my view!*, the civil service has been able to develop a consistent policy line flowing from Construction 2025 and formation of CLC**

Key docs

- ***Construction 2025*, 2013**
- ***Modernise or Die (Farmer Review)*, 2016**
- ***Project 13; From Transactions to Enterprises*, 2017**
- ***Transforming Infrastructure Performance (TIP)*, 2017**
- ***Industrial Strategy*, 2017**
- ***McKinsey; Reinventing Construction*, 2017**
- ***Construction Sector Deal*, 2018**

Direction of travel;

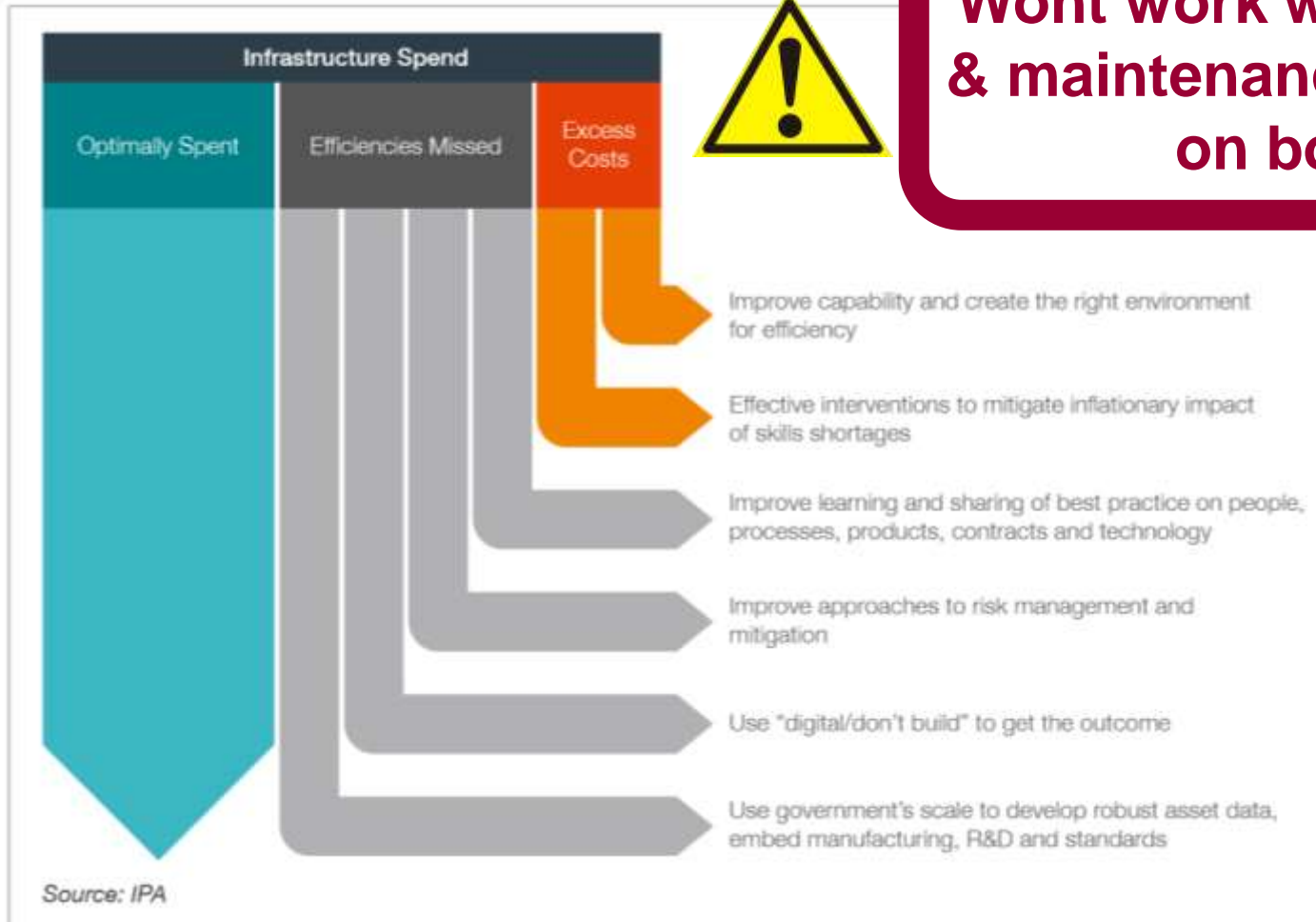
→ Outcome & value

something
beautiful



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Figure 2 – Efficiency Opportunities

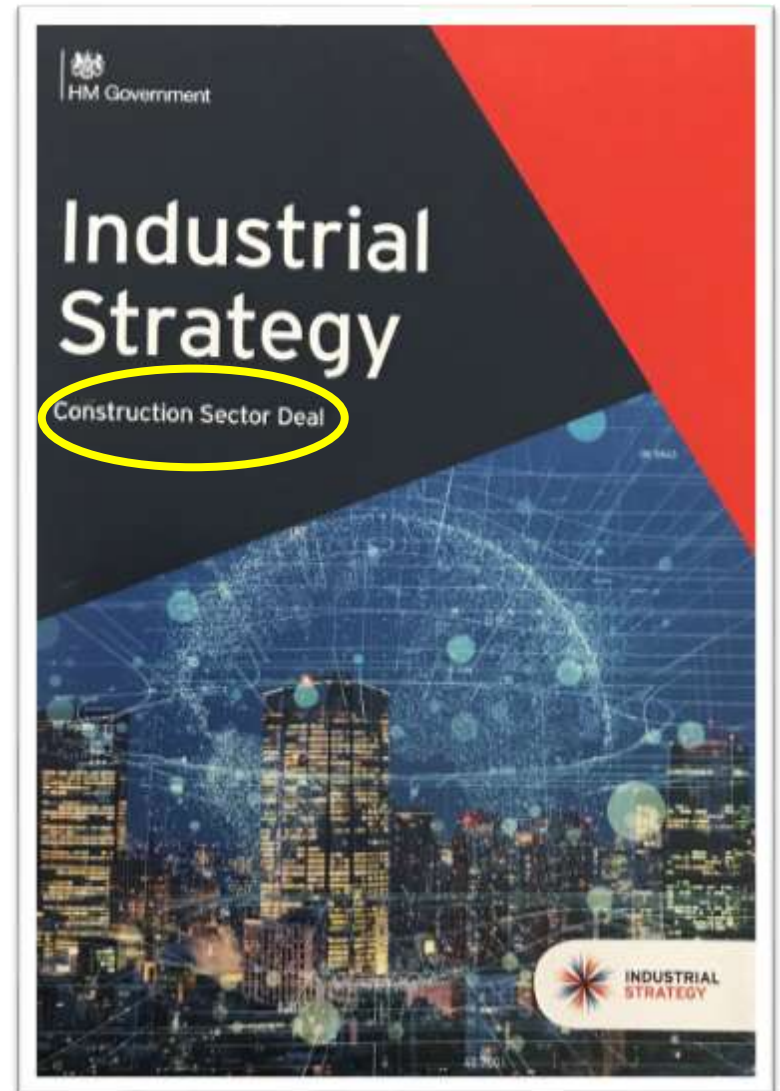


Wont work without asset & maintenance managers on board!

[Transforming Infrastructure Performance](#) (IPA, 2017) – p15

[Industrial Strategy](#) (2017), p197;

“In the months ahead the sector and the government will work to ensure construction projects across the public and private sectors are procured and built based on their whole life value, rather than just initial capital cost.”





Construction 2025

Lower costs

33%

reduction in the initial cost of construction and the whole life cost of built assets

Faster delivery

50%

reduction in the overall time, from inception to completion, for newbuild and refurbished assets

Lower emissions

50%

reduction in greenhouse gas emissions in the built environment

Improvement in exports

50%

reduction in the trade gap between total exports and total imports for construction products and materials

How??



Construction
Leadership
Council

Leading Transformation Across The Construction Industry

3 'Strategic Objectives'



DIGITAL

Delivering better, more certain outcomes using digital technologies



MANUFACTURING

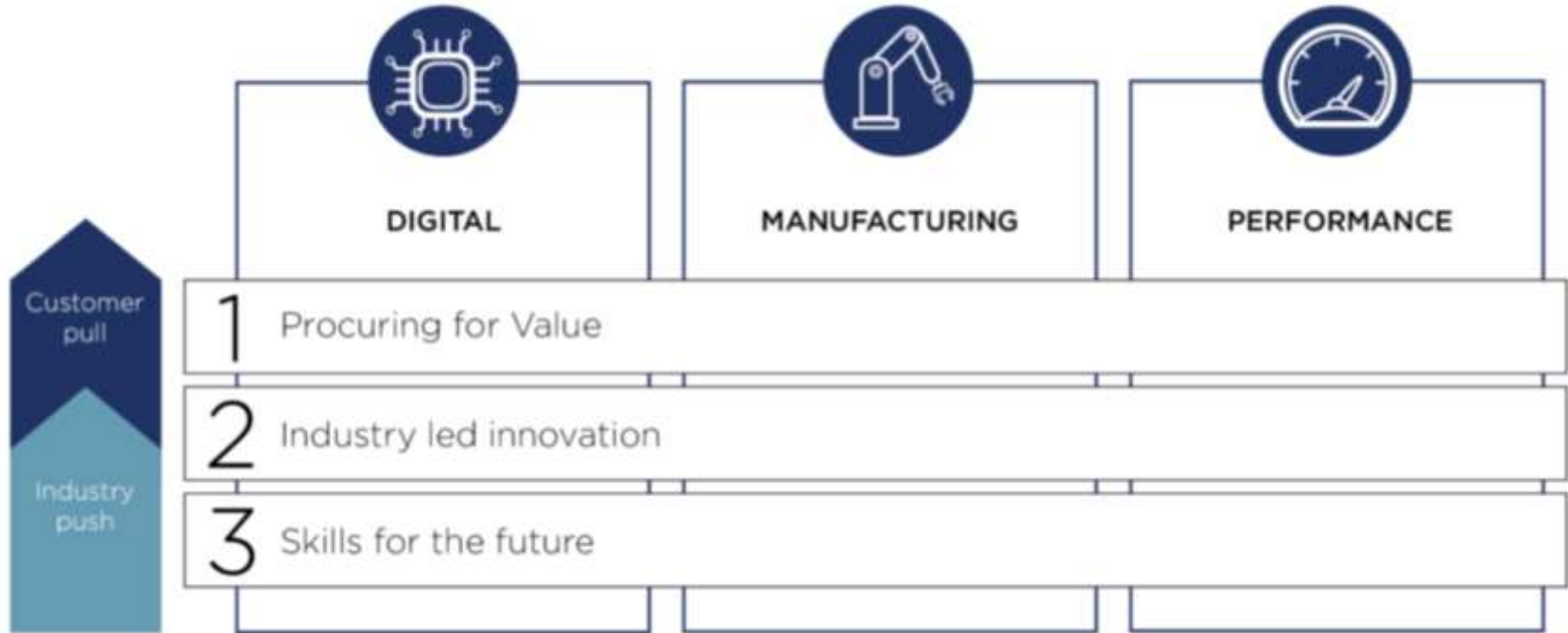
Improving productivity, quality and safety by increasing the use of manufacturing



PERFORMANCE

Optimising through-life performance through the development of smart assets

... Supported by 3 'Strategic Enablers'



Procuring for Value is very significant



(Join our Linked In group: <https://www.linkedin.com/groups/8830735/>)

Procuring for Value – *principles* are key

- Client-led
- Outcome-focussed
- Whole life costed
- Long-term

This is the space we are in as a transformational partner

- 20/25% of all newbuild, consistently, year on year
- HCA Global Accounts, Dec 2019: £5.5bn R&M

Every investment is an opportunity to deliver holistic outcomes



If this is a consistent direction of travel then the Government will have acted, won't they?

(What have the Govt ever done for us...?)

So here's what's happened...

- CLC established; working with MHCLG & BEIS on strategic objectives + issues that affect the 98%.
Now discussing next stage of Sector Deal
- 'Presumption in Favour (of OSM)', prep work from 2017, live 2019 across 5 Govt depts. Housing now being drawn in
- Smarter Infrastructure working group
- Transforming Construction; £170m allocated, 2019-2023 (+£250m from industry)

'Presumption in Favour'



Ministry
of Justice



Department
for Transport



Department
for Education



Ministry
of Defence



Department
of Health &
Social Care



Pitstop 1

- Easy to believe that construction and housing are in a constant state of flux



Construction minister

There is no official [title](#) of construction minister within the [UK government](#), however, there is generally a minister whose role includes [construction](#) (and generally [infrastructure](#)). This is typically a relatively short [appointment](#) - there have been 17 ministers with responsibility for [construction](#) since 2001.

Source: [Designing Buildings Wiki](#)

... but consistency of policy and practice has emerged.

- Not necessarily coherent, all of the time, eg Homes England;



Strategic partnerships, MMC pilots, equity investment, infrastructure funding to enable homebuilding



Predominant focus on units

Lack of challenge (eg holistic outcomes)

Lack of routemap (eg Future Homes Std, retrofit)

... but enough to suggest that we'll need to add a 'procuring for value' approach to our capabilities

Other trends

(Back in more familiar territory...)

- Several areas where we can step back and think about how significant they are and what impact they are likely to have. Important because:
- We need to have a view/response
 - They pose significant cultural challenge
 - They create risk

Modern Methods of Construction (MMC)

Housebuilding

Prefabs sprout

Off-the-peg homes could solve a shortage of houses and builders

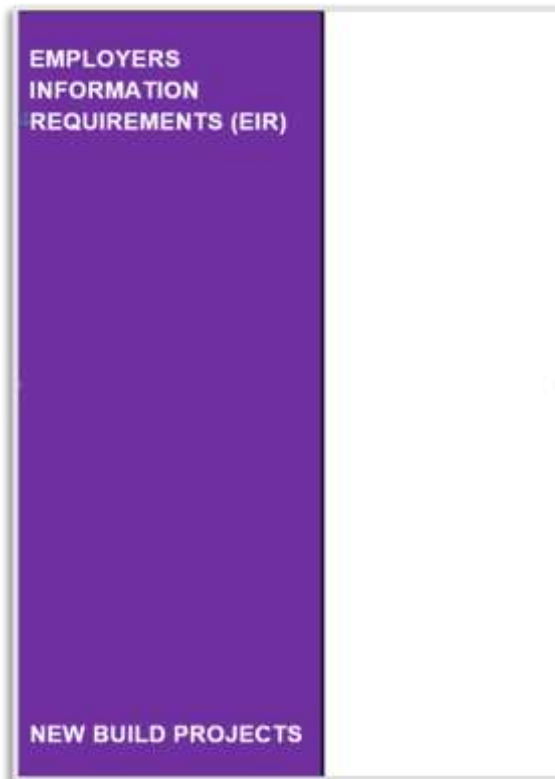


“Without more builders, Britain will have to find cleverer ways of building”

Source: [Economist](#), 20 Oct 2016

Digital construction (BIM)

- The king of value propositions, but approached almost entirely in terms of cost
- You don't manage properties, you manage information



- What information you want
- When you want it
- What format you want it in

Digital construction (BIM)

and to ensure their maintenance for both new and existing buildings. The aim should be to capture, hold and add to information that will, over time, form as complete a dossier of building information as possible for all HRRBs.

Part 1 – The digital record across the building life cycle

8.12 The review recommends that for new builds, a Building Information Modelling (BIM) approach should be phased in. BIM takes the digital techniques pioneered in other industries such as aerospace and automotive and applies them to construction. It is a process of designing, constructing or operating a building or infrastructure asset using electronic, object-orientated information.

8.13 It also forms part of the wider move towards improved transparency and integrity of information and underpins operators' freedom of effective change control. Dutyholders using the digital record effectively can more easily keep a log of the as-built

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... and underpins
Golden Thread

<https://www.linkedin.com/feed/update/urn:li:activity:6402859956399337472/>

Carbon

(as opposed to sustainability – and I'm an ex-Environmental Sustainability Officer)

Climate Emergencies, national targets, international obligations

... and specific role of housing as *manageable source of reduction*

→ Future Homes Standard via Building Regs 2025, with initial enabling via BR 2020. Scope:

- Primary energy (vs TFEE/TER)
- Decarbonisation of heating
- Overheating
- Post-occupancy Evaluation

→ *Future Homes Standard 2025*

- Compare with existing practice
 - Can't argue with building physics
- ... and risk emerges at each point

Opportunity

- Cross-over between the competencies and capabilities to make this work, and those needed for deep retrofit

But

- Lead-in time; 4 years is not very long

Talent attraction

- Millennials now joining workforce (and as customers)
- Values and expectations are different
- Use of technology
- **We need them;** resilience, renewal

So...

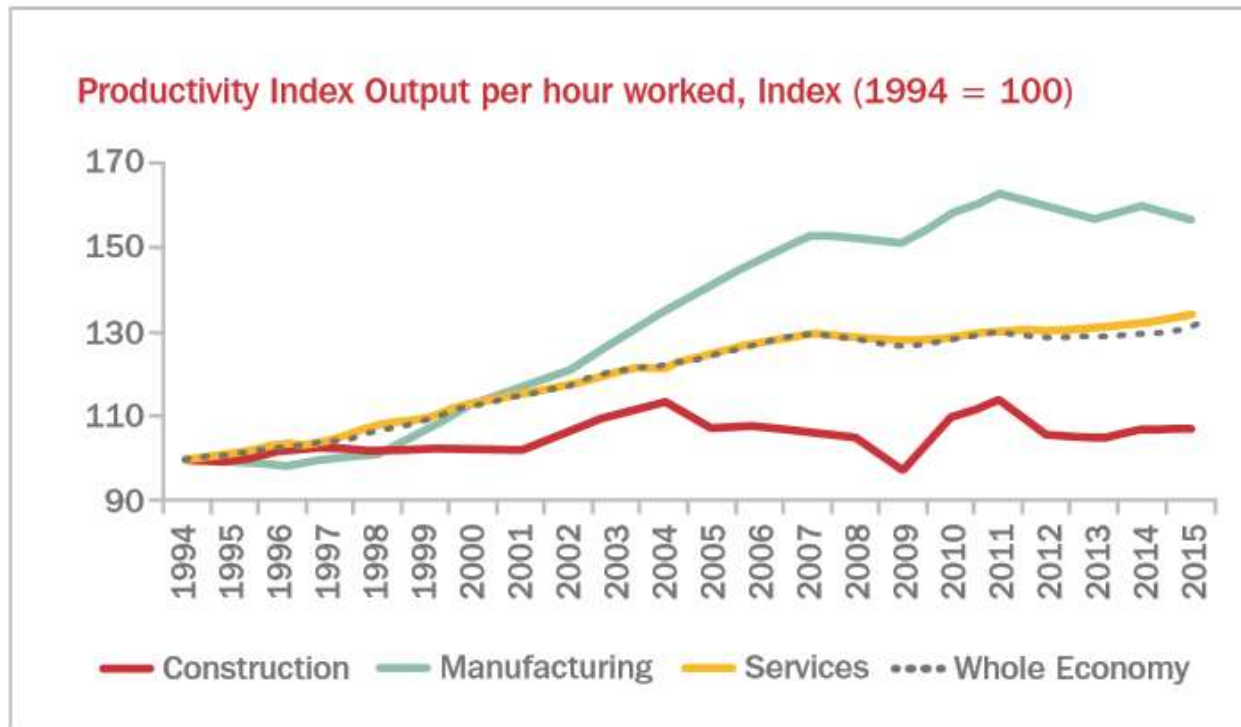
- How do we engage with them? What's our offer?
- Significance of values and practice



Productivity

- Real priority for Govt

Figure 3: ONS Labour Productivity, Q4 2015. Table 1 and 8. April 2016.



Source; Farmer Review (2016), *Modernise or Die*, p14

**The
Economist**

“the dire productivity problem that is holding Britain back”
“Britain's productivity growth is woeful”

THE  TIMES

“the broader problem facing the British economy is... its notoriously weak productivity growth.”

FT
FINANCIAL
TIMES

Productivity series, part 4
“Why the construction industry is a poster child for feeble productivity growth”

But how well do we understand productivity?

EBFaC

What is Lean?

“There are four purposes of Lean improvement:

_____ / _____ / _____ **and** _____

... these four goals appear here in the order of priority.”

Shigeo Shingo

Toyota Executive



Graphic source; Richard Daley, Turner & Townsend Suiko - *Lean in Construction* presentation, Newcastle, 3.10.2017

<https://www.linkedin.com/in/richard-daley-3ab6903/>

What is Lean?

“There are four purposes of Lean improvement:

Easier , Better , Faster and Cheaper

... these four goals appear here in the order of priority.”

Shigeo Shingo

Toyota Executive



Realistically, where is our **focus** at tender stage?

Productivity – so what?



- Operational cost effectiveness
 - Some very significant challenges on the horizon
 - These will require financial capacity, but Govt is not going to fund or regulate the sector back into a ‘safe space’
- Our narrative
 - Are we prepared to have difficult conversations outside our comfort zone?

Pitstop 2

Emerging trends within construction

‘Hidden’: Govt policy and practice → ‘Procuring for Value’

Plus:

- MMC
- Digital construction
- Carbon
- Talent attraction & organisational renewal
- Productivity

So what about Grenfell?



Grenfell

- Unquestionably horrific
- Symptomatic of dependence on regulation?
- ‘Golden Thread’; did we really have to be regulated?



Tom Jarman

A good look in the mirror

Social landlords have shown a lack of self-awareness of their role in creating the conditions that led to the Grenfell tragedy, and it is time to rethink

Since June last year, I have followed the coverage in *Inside Housing* on the causes and consequences of the Grenfell Tower tragedy, and have been watching the debate develop with an increasing sense of dismay. This culminated in the government's decision to fund the removal of cladding on social housing blocks.

I have watched the campaign to get the government to fund this work unfold, and didn't seriously think they would pay up. But they have. And I'm not sure they should.

I have read the comment pieces and editorials that have demanded the money, and been alarmed by the lack of serious self-examination. We, as clients, contributed to the situation we are in far more than we realise. We decided that building regulation formed our risk control and specification; we decided to 'transfer risk' under our contract structure; we decided that lowest initial capital cost was an appropriate procurement mechanism; and we decided that, by and large, we didn't need specialist retrofit training, a competent design review process and enhanced supervision on site.

We let the grant structure determine the quality of work; if the Energy Company Obligation didn't fund an effective and appropriate design stage, we didn't do it. If post-occupancy monitoring and evaluation wasn't part of the grant package, we didn't do it.

We have ignored for far too long where our clienting culture has been taking us.

How many in our sector have read *Modernise or Die*, the Farmer Review? It's associated with offsite construction but it's not about this; it captures how the construction sector



“We need to be active, professional, competent clients.”

operates, what its culture is. It captures the behaviours we pull through every time we commission as passive, unskilled clients. And with few exceptions, that's how we commission.

I don't recall a single article that has showed any real insight into our role in the Grenfell tragedy. Although there are wider causes and contexts, we are a sector that trades on its values and our lack of self-awareness is astounding.

So my challenge to the sector is this: every time we commission work in the built environment, we need to

deliver on our values. We need to be active, professional, competent clients. And every time we commission at lowest capital cost to minimum regulatory standards, we fail this test. I can see why the government has funded the work; £400m gets work moving, and from a practical point of view is the cost of some 3,000 houses.

However, we really need to take a good, hard look at where this leaves us. *Inside Housing's* Never Again campaign isn't provisional on the government giving us grant; it's a look in the mirror and a call to change. If we don't come out of Grenfell with a different client culture, we haven't rethought anything.

Tom Jarman, director, Low Carbon Journey

But a *trend*?

- Outcome requirements likely to be regulated (BR2020, Social Hsg WP)
- Cultural challenge; clienting, agency

Risk



Risk

Recap trends:

PFV, MMC, Digital construction, Carbon & Productivity

→ Cultural challenge, or tangible risk, or both

Collective outcomes if we fail;

- Occupant health & life opportunities
- Fabric damage & operational cost
- Reputational, including our narrative

Eg...

Modern Methods of Construction (MMC)

- This is NOT a strategic question. The strategic question is:
‘what performance, quality and outcomes do you want over the term of your asset plan?’
- Not so snappy, much more complex
- And MMC is one of a number of potential operational responses
... but MMC is **risky** and is a **value** proposition

And stuff isn't better just because its built in a factory; **its better because a client knows what outcome they want, how to procure it and can measure what is delivered**



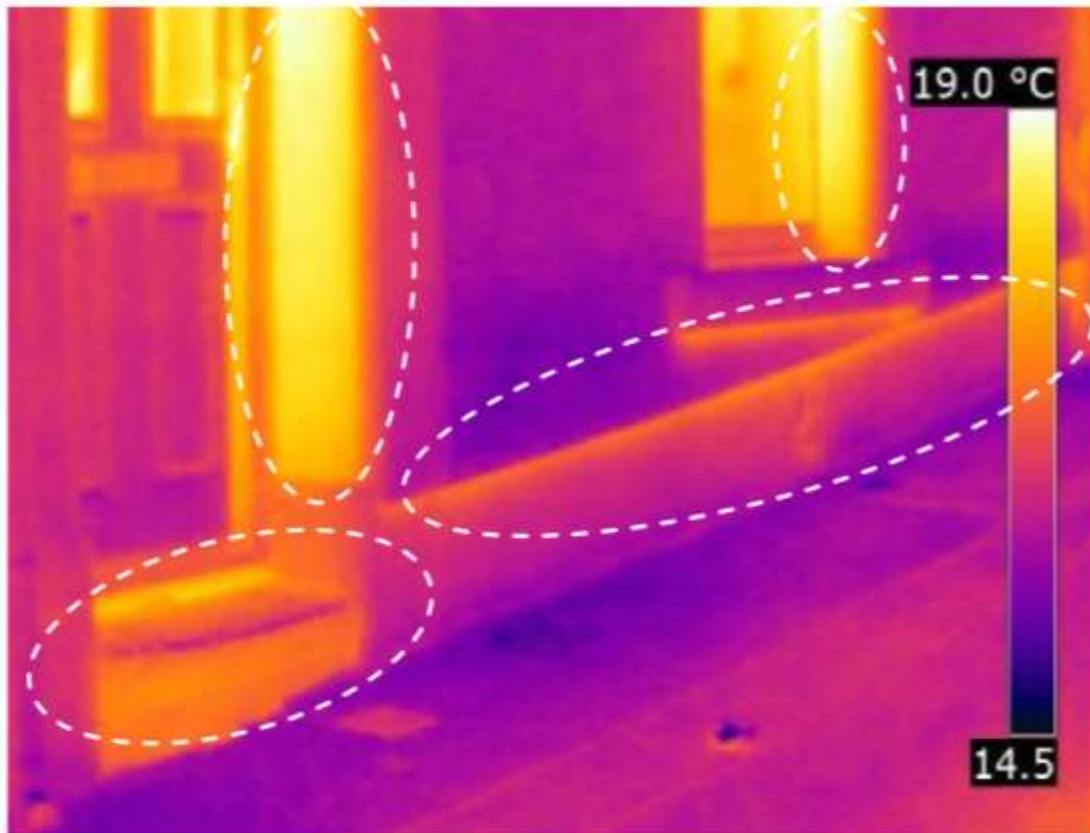
Carbon and Newbuild

“... Mr Nickless has experienced a litany of problems with his home. Among the most serious are leaky pipes and poor ventilation, which have caused damp so severe that his daughter has been hospitalised twice, and may have permanent health issues as a result”

Inside Housing, *Circle of despair*, Feb 2017



Carbon and Retrofit



*Thermal bridging, post-retrofit
(Pre-1919 dwelling)*

Carbon and Retrofit

- Technical competence/understanding of retrofit risk
- Lowest capital cost tendering
- Dependence on regulation
- Grant rules determining scope and design of project
- Specification (input) not outcome focus
- Lack of post-occupancy monitoring and evaluation



Fishwick, Preston; CESP scheme.

Kate de Selincourt, 2018

[Link](#)

Digital construction (BIM)

‘I spend half a day a week looking through handover sheets for information’; c.£100,000 over 30 years

‘We can’t manage the properties without information’

But success is *absolutely dependent* on active and sophisticated clienting

- NOT a technical challenge; culture, practice, collaboration, supply chain engagement and development
- EIRs are product of genuinely challenging process

PFV, Productivity;

More opportunity than risk?

- We have c.5 years of certainty (!)
- Digital construction, client leadership, holistic value, creating resilient supply chains, good quality, safe, risk-managed homes, heated at reasonable cost in sustainable communities...



→ We don't need regulation to do any of this

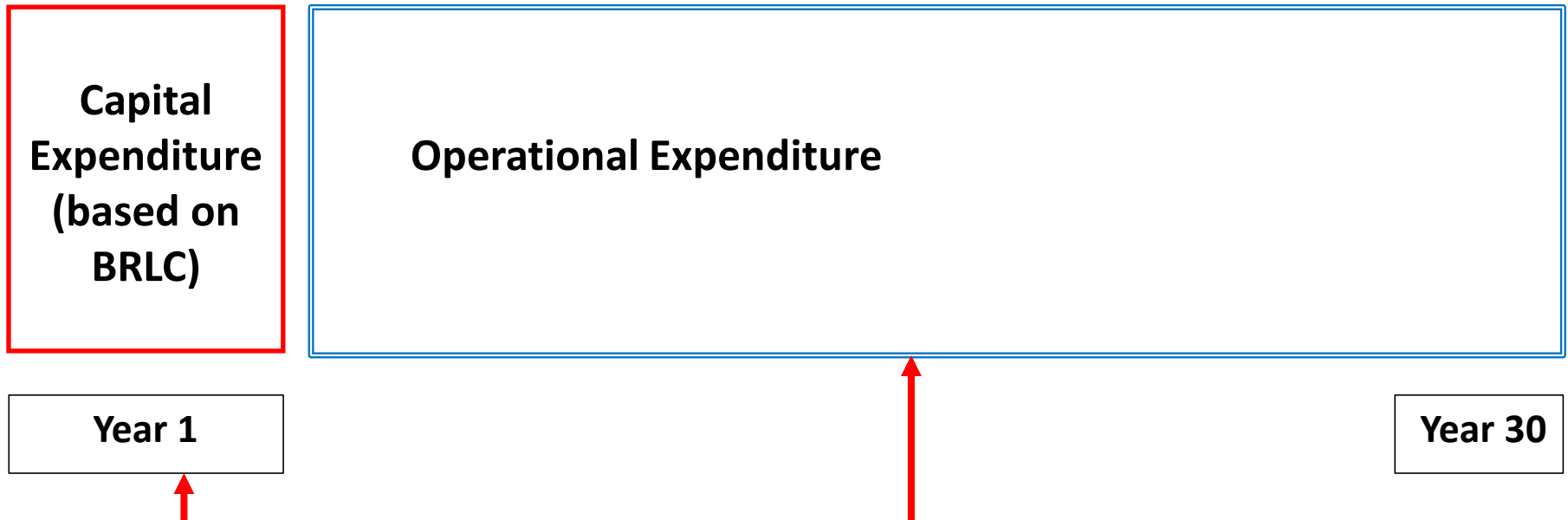
And regulation is not risk management and client competence

Role of subsidy?

- Have we really challenged ourselves (*TIP*, p15)?

- Role of operational cost effectiveness/holistic outcomes





But our values rest *here*

Focus and measurement tend to be here...
Input-focussed, short term

- Performance gap; greater energy use for occupant(s)
- Risk;
 - Overheating, poor indoor air quality
 - Damp, mould, condensation (Housing Health & Safety Rating System category 1)
- Higher operational costs and housing mgt costs; maintenance, turnover (voids and reinstatement), arrears, complaints
- Future capital cost (design & component quality, climate change)
- Opportunity costs;
 - Policy alignment
 - > Financial inclusion, digital inclusion, carbon emissions, sustainable tenancies, sustainable communities)
 - Customer service excellence
 - Future energy systems
 - Staff engagement and satisfaction, talent attraction and retention
 - Reputation

So *totex* is much more significant

- But significant gap in understanding, practice, culture



However, creates opportunity for new narrative

(PIF +)

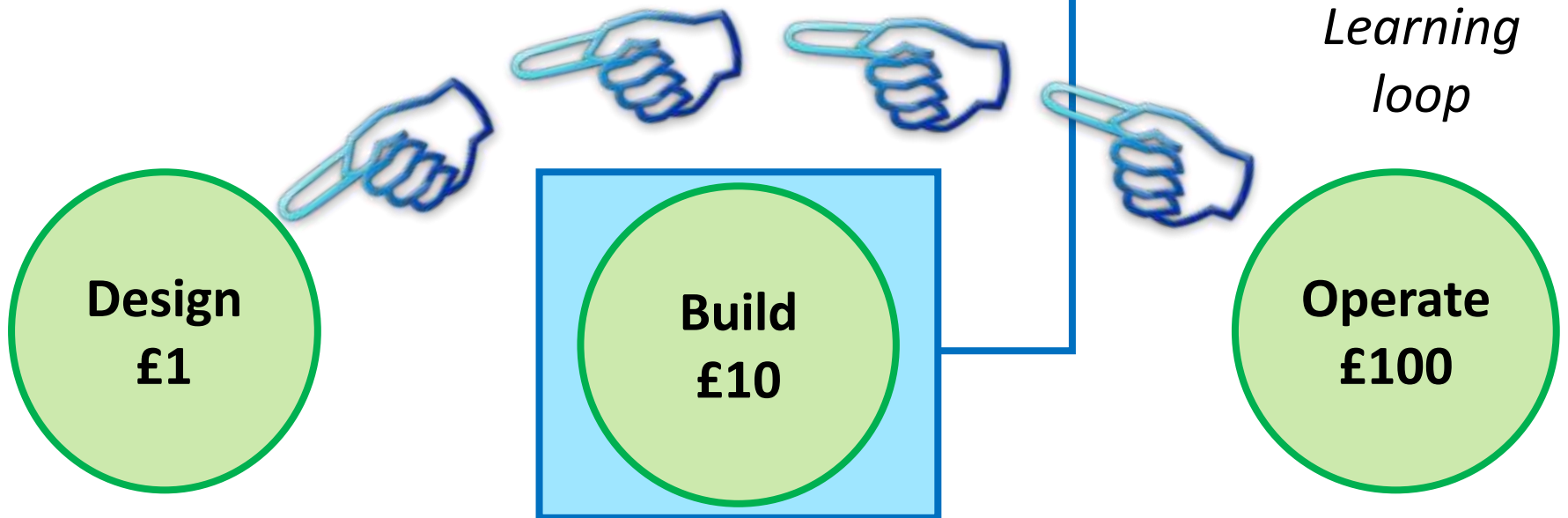


Why we absolutely need you on board...



RIBA PoW Stage

0. Strategic Definition	1. Prepara- tion & Brief	2. Concept Design	3. Develop- ed Design	4. Technical Design	5. Construc- tion	6. Handover & Close out	7. In use
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Totex

Year 1

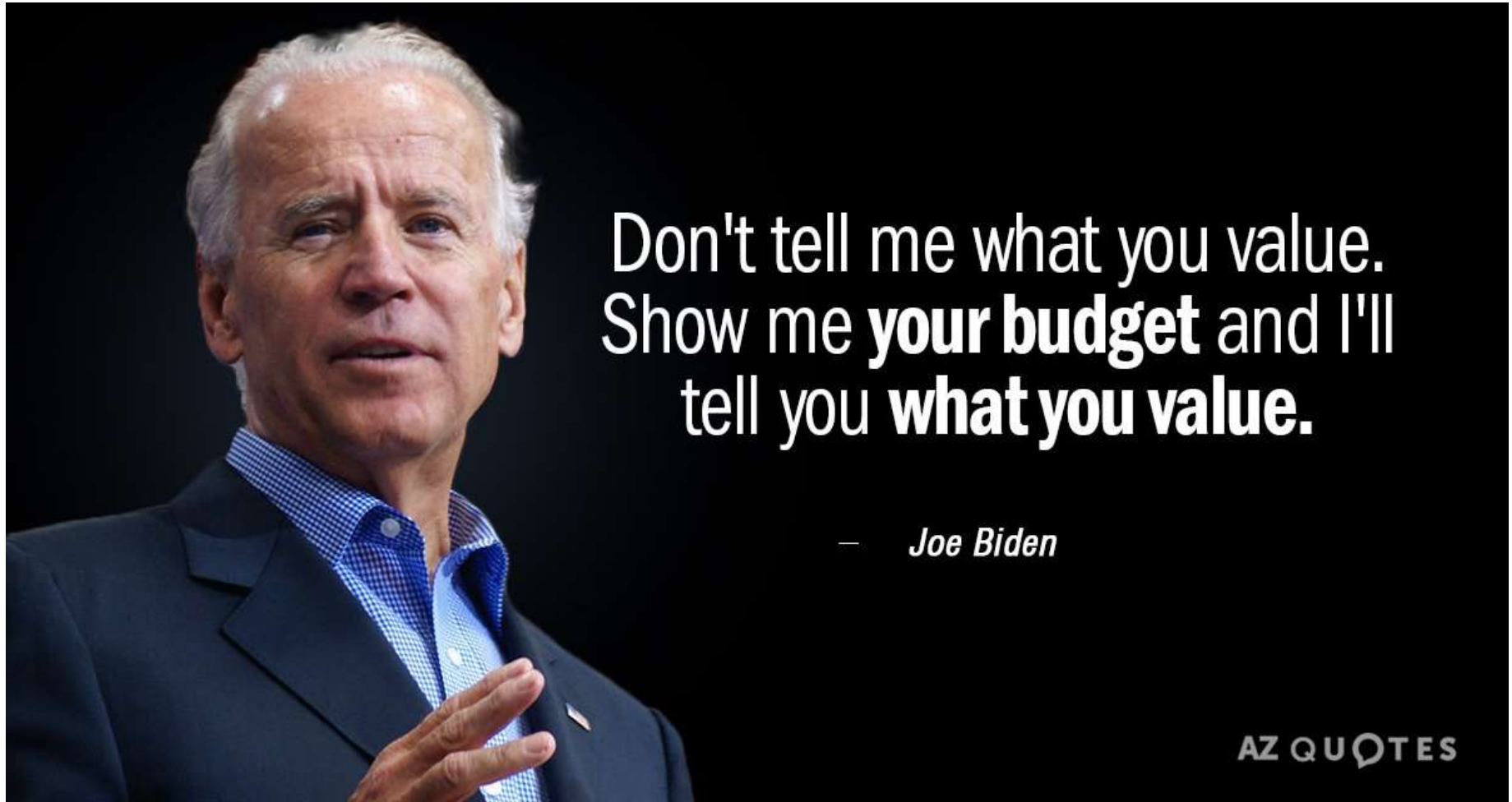
Year 30

- ??Novation
- Site-based in-house team (monitoring, mentoring, establishing standards, feed back learning)
- Supply chain engagement & development
- Post-Occupancy Monitoring & Evaluation
- Post-project Review
- Digital construction (BIM) and EIRs

Start with where you want to be

- Quality, performance, risk, outcome & value; this should be focus of discussion
- Value should have a 'clear line of sight', from inception to operation
- Resilient culture
 - But conscious choice!
 - *Talent attraction*; challenge & renewal

Concluding Thoughts...



AZ QUOTES

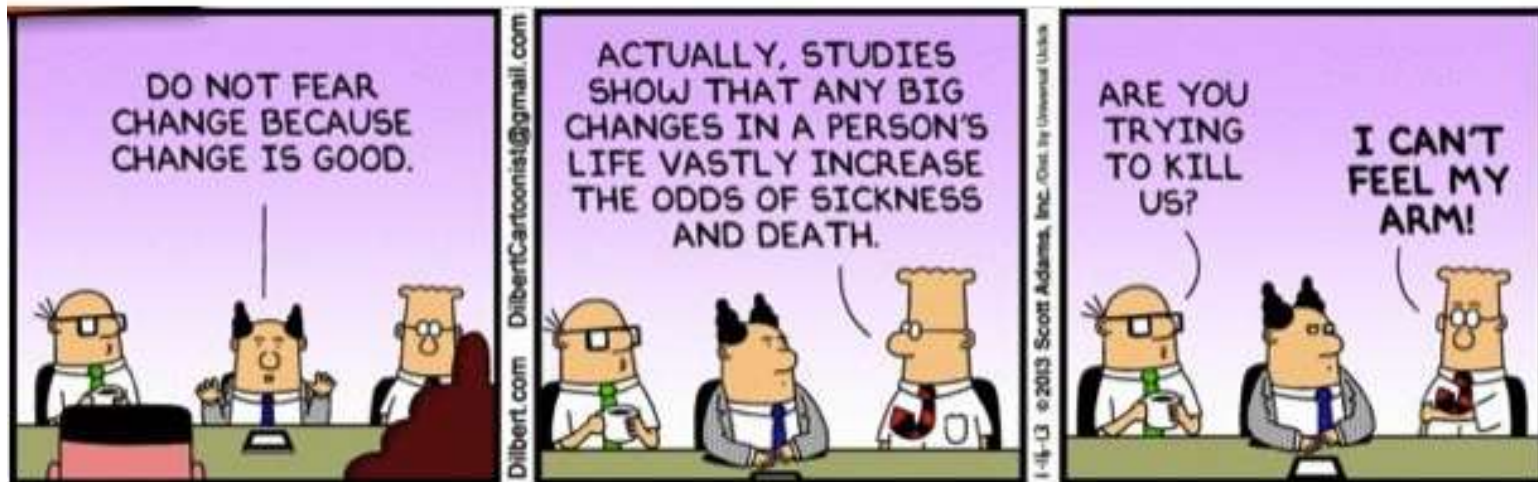


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Concluding Thoughts...

Alistair Dryburgh, Chief Contrarian, Akenhurst

“Schumpeter famously talked about ‘creative destruction’, but let’s not forget that for every person turned on by ‘creative’ there are 10 turned off by ‘destruction’.”





“I want you to find a bold and innovative way to do everything exactly the same way it’s been done for 25 years.”

BAU → BAU Slightly Better → Change

DO/ ↓
DISRUPT/
Change the
status quo.
Or become it.
Mark Shayler

Mark

“Average has a long
half-life”

- **But BAU Slightly Better is not going to be adequate looking ahead**

Concluding Thoughts...

“Well done vs well intentioned”
David Adams, Melious Homes



Energiesprong site,
Nottingham - [link](#)

Thank you.

See you at the
next conference!

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