Noon Webinar
19th June, 2020
All slides and a recording of the webinar are available on the website later this afternoon

- CBI Update
- Scotland Update
- RPE Survey – please help us
- Digital Twins & IoT with Neil Thompson, Digital Director – Atkins
- Q&A
The availability and cost of RPE, and most notably face masks, has become a major issue since coronavirus struck the UK.

Tight fitting face masks are necessary to help protect many engineering services workers against a range of occupational respiratory hazards.

Please take 2 minutes to help us help you by completing this survey

Link being send via chat now.
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The National Digital Twin Programme

The information infrastructure that will unleash the information economy
Data for the public good

Recommendations:

1. A National Digital Twin – an ecosystem of connected digital twins to enable better outcomes from our built environment

2. An Information Management Framework – to enable secure, resilient data sharing and effective information management

3. A Digital Framework Task Group – to provide coordination and alignment among key players
This is Digital Built Britain

**Design**
Use best practice, secure by default, information management and digital techniques to get data right from the start and design better-performing homes, buildings, and infrastructure.

**Build**
Exploit new and emerging digital construction, information management, and manufacturing technologies and techniques to improve safety, quality and productivity during construction.

**Operate**
Use effective information management to transform the performance of the built environment and the services it delivers.

**Integrate**
Understand how the built environment can improve citizens’ quality of life and use that information to drive the design and build of our economic and social infrastructure and the operation and integration of the services they deliver.
Telecoms
Water
Waste
Social infrastructure
Residential, commercial and industrial
Interface with the natural environment
System of systems

- Economic infrastructure
- Social infrastructure
- Natural environment

Built environment
Flourishing Systems

A vision for infrastructure that is:

**People-focused** – recognising the fundamental role of infrastructure in the social, economic and environmental outcomes that determine the quality of people’s lives.

**Systems-based** – recognising infrastructure as a complex, interconnected system of systems that must deliver continuous service to society.
Systems-based view of the built environment

99.5%

0.5%
System processes and asset lifecycle
System of services

Outcomes

Social

Economic

Environment
Cyber-physical system
The information value chain

- Data management
- Sense making
- Decision taking

Learning ➔ Insights ➔ Decisions ➔ Learning

University of Cambridge
Digital twins

Physical twin

Data

Outcomes

Interventions

Insights

Decisions

Digital twin
Connected digital twins
Ecosystem of connected digital twins
Ecosystem of connected digital twins
Connectable digital twins
Cyber-physical system
Benefits of the National Digital Twin

Better outcomes for the public per whole-life pound

• **Benefits to society:** Improved stakeholder engagement. Better outcomes for the ultimate customers (the public – taxpayers/bill payers/fare payers/voters). Improved customer satisfaction and experience through higher-performing infrastructure and the services it provides.

• **Benefits to the economy:** Improved national productivity from higher-performing and resilient infrastructure operating as a system. Improved measurement of outcomes. Better outcomes per whole-life pound. Improved information security and thereby personnel, physical and cyber security.

• **Benefits to business:** New markets, new services, new business models, new entrants. Improved business efficiency from higher-performing infrastructure. Improved delivery efficiency, benefiting the whole construction value chain – investors, owners, asset managers, contractors, consultants, suppliers. Reduced uncertainty and better risk management.

• **Benefits to the environment:** Less disruption and waste. More reuse and greater resource efficiency – a key enabler of the circular economy in the built environment.
The pathway towards an Information Management Framework

1. **Foundation Data Model** – a consistent, clear understanding of what constitutes the world of digital twins

2. **Reference Data Model** – the particular set of classes and the properties we will want to use to describe our digital twins

3. **Integration Architecture** – the protocols that will enable the managed sharing of data
A National Digital Twin enabled by the IMF

21st century infrastructure

An information infrastructure

that is:

• People-focused
• Systems-based
Extensibility of the internet...
Thank you

LINKS:

Why not listen to the Digital Twin Fan Club Podcast?

Data for the Public Good Report

Flourishing Systems Report

IET Guide to Digital Twins for the Built Environment
Q&A

covid19@thebesa.com
Webinar Programme

Coming Up:

Tuesday 23rd June – In the run up to World Refrigeration Day (26th June) - We are talking all things cool with Steve Gill, Founder of International World Refrigeration Day & Julie Murray, Chair - Institute of Refrigeration

Friday 26th June – Government Property Agency - Steven Boyd, CEO

Monday 29th June – The Construction Roadmap to Recovery Plan – Stuart Young, BEIS & Hannah Vickers, ACE

Thursday 2nd July – BESA AGM (members only) 10am

Friday 3rd July – Shadow Business Minister Lucy Powell MP
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