

***Nuclear Institute Digital Special Interest Group (Dig-SiG)
 Agenda
 6th December 2018
 Hosted by Arup***

ARUP



Chaired and Presented by Philip Isgar and Ray Chegwin



Digital Special Interest Group Agenda

6th December 2018

Hosted Arup at 8 Fitzroy Street, London W1T 4BQ

- 09:30 Coffee and networking
- 10:00 Welcome, Safety/Security/Environmental Share plus “Arup’s digital initiatives in underground infrastructure projects” (Yung Loo, Arup)
- 10:20 Workshop recap & objectives and around the room introductions (Philip Isgar)
- 10:40 Brief update on latest developments from Tier 1 organisations
- 11:00 Legal aspects & ‘Winfield / Rock Report (Sarah Rock, Gowling WLG)
- 11:20 INDE (Mark Bankhead, NNL)
- 11:40 RWM: A Direction of Travel (Henry Pairaudeau, RWM Ltd)
- 12:00 21st Century Tools and beyond (John Robison, Sellafield Ltd)
- 12:20 Lunch and networking
- 13:15 Collaboration without Borders (Iain Miskimmin, Bentley)
- 13:40 Work on HS2 (Suresh Sadanandan, HS2)
- 14:05 Industry X.0 (Thomas Christophersen, Accenture)
- 14:30 Group discussion and next steps (all)
- 15:15 Summary (Alastair Laird, Nuclear Institute Board of Trustees)
- 15:25 Any other business, other interfaces and events. Date of next meeting.
- 15:30 Close

Attendees

Thomas Christophersen, Accenture

Diane Daw, Altran

Yung Loo, Arup

Stephanie Curran, Assystem UK Ltd

John Griffin, BakerHicks

Brendan Patchell, BakerHicks

Iain Miskimmin, Bentley Systems (Uk) Ltd

Kurt Metcalf, Cavendish Nuclear

Steve Peutz, CFMS

Tim Embley, Costain

Georgia Pawson, CRA Corporate Risk Associates (rep
YGN)

Andy Epps, EDF Energy

Phil Rogers, Frazer-Nash

Sarah Rock, Gowling WLG

Suresh Sadanandan, HS2

Ray Chegwin, KTN

Mark Bankhead, NNL

Nicola Merriman, NSA-N

Craig Hamer, Nuclear AMRC

Patrick Wilson, Risktec

John Malget, RWM Ltd

Terry O'Dowd, RWM Ltd

Henry Pairaudeau, RWM Ltd

James Harris, Sellafield Ltd

John Robison, Sellafield Ltd

Philip Isgar, Sunbeam

Duncan Reed, Trimble

Susan Hewish, TUV Nord

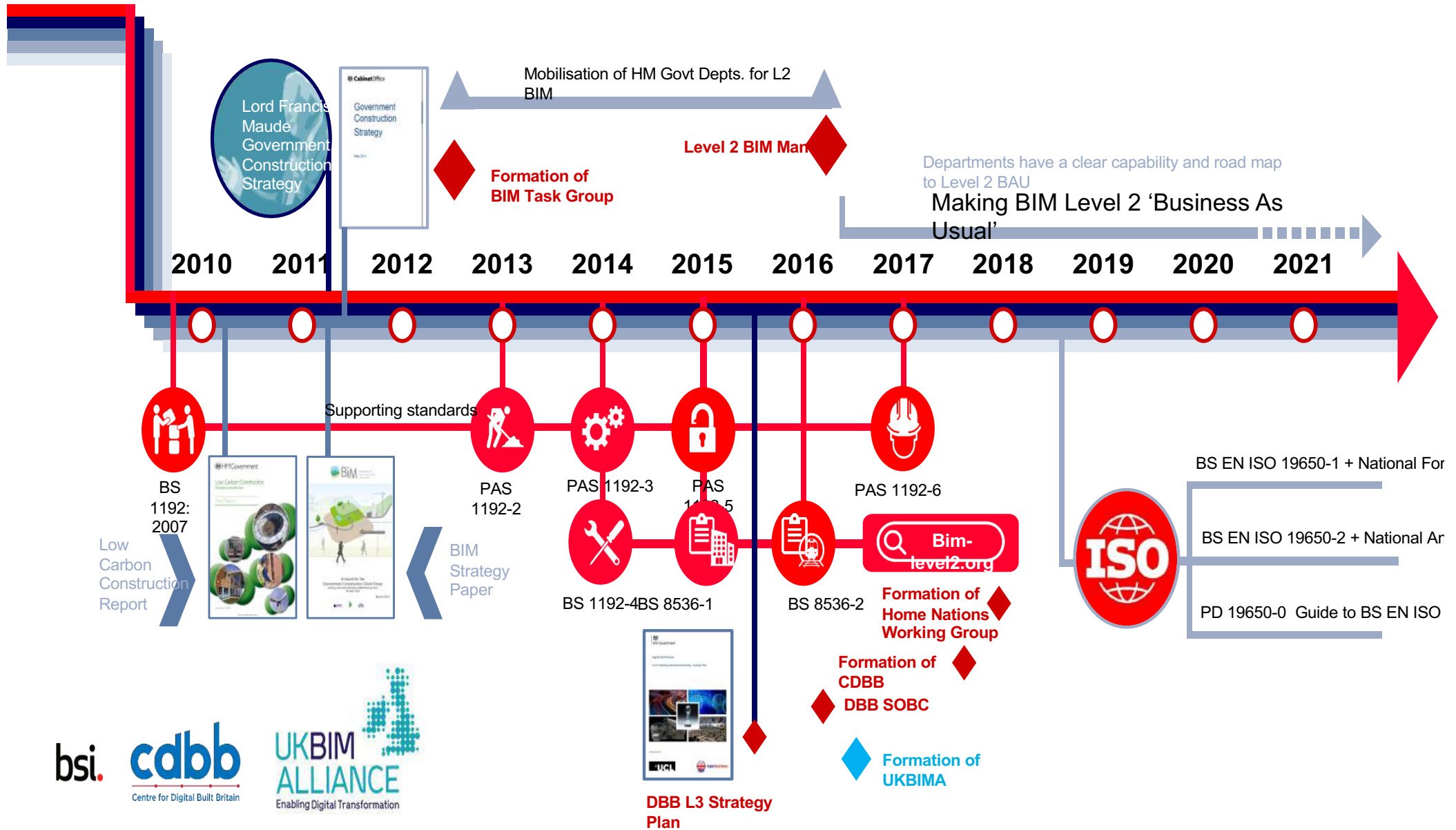
Chris Waldon, UKAEA

Mark Greatrix, Waldeck Consulting

The BIM of 40 Years ago, . . .



Timeline



UK BIM Alliance Communities

Exec team →

Communities Leads
Andy Boutle, Pam Bhandal

BIM Regions
Jill Guthrie, Mike Turpin

Standards Group
David Glennon, TBC

BIM4s
Andrew Cowell, David Owens

- BIM Regions East
- BIM Regions East Midlands
- BIM Regions Gibraltar
- BIM Regions Kent
- BIM Regions London
- BIM Regions North West
- BIM Regions Northern Ireland
- BIM Regions Oxford
- BIM Regions Scotland
- BIM Regions South
- BIM Regions South West
- BIM Regions Sussex
- BIM Regions Thames Valley
- BIM Regions Wales
- BIM Regions West Midlands
- BIM Regions North East
- BIM Regions Yorkshire & Humberside - thinkBIM



- BIM4Client
- BIM4Datacentres
- BIM4Design
- BIM4FitOut
- BIM4FM
- BIM4Health and Safety
- BIM4Heritage
- BIM4Highways
- BIM4Housing
- BIM4Infrastructure UK
- BIM4Landscape
- BIM4LG
- BIM4M2
- BIM4Rail
- BIM4Regs
- BIM4Retail
- BIM4Security and Emergency Services
- BIM4SME
- BIM4Water
- Survey4BIM.....and other SIGs





*Building Information
Modelling -
UK Transition to ISO
standards*

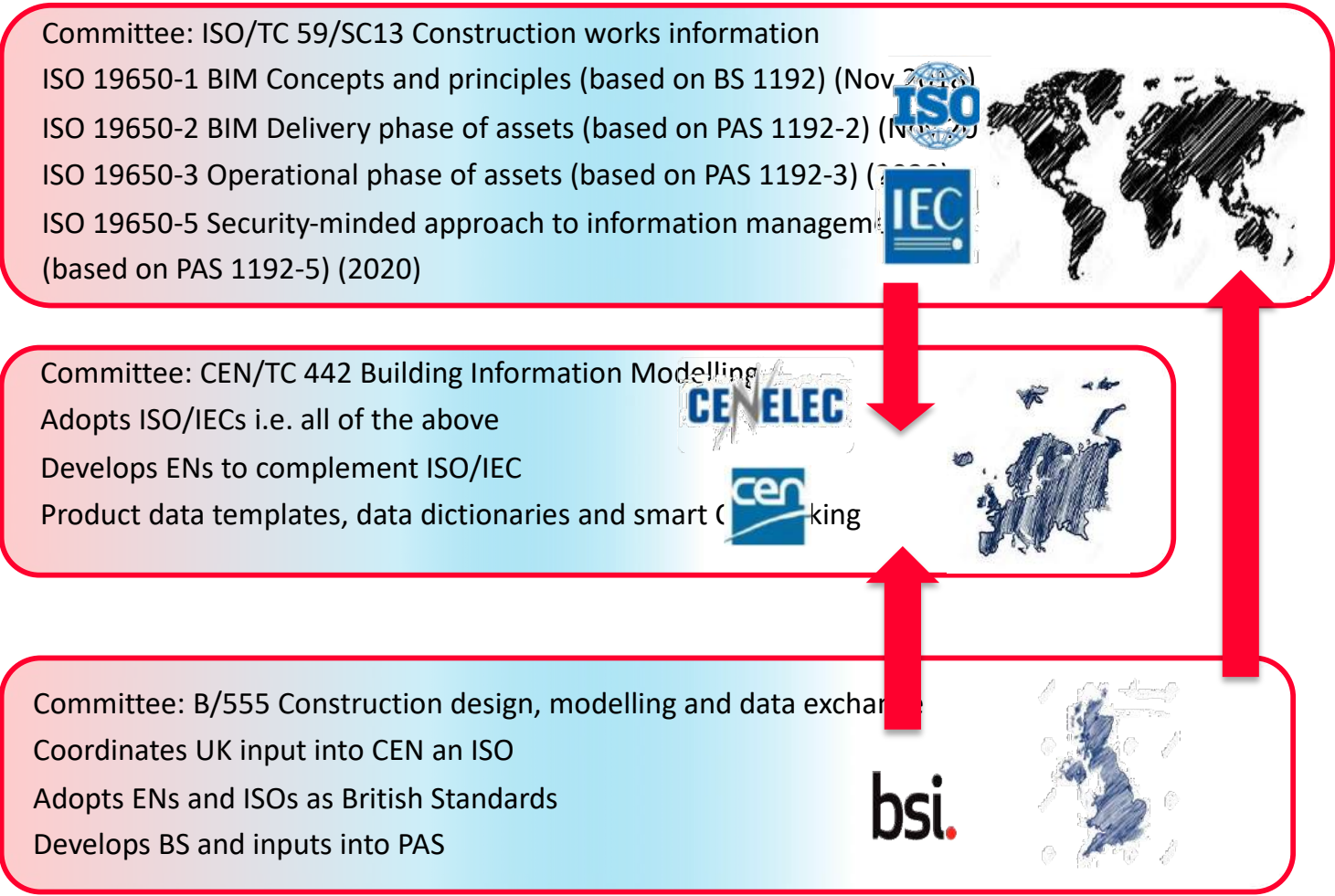
bsi.

cdbb
Centre for Digital Built Britain

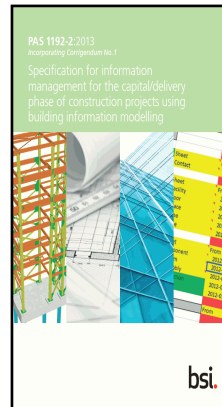
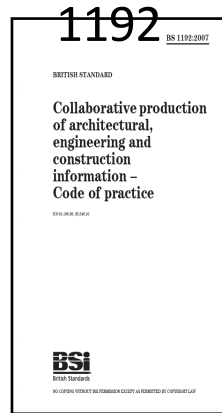
UKBIM
ALLIANCE
Enabling Digital Transformation



International BIM standardisation



UK standards BS



Q1
2019

International standards



BS EN ISO 19650-1 + National Foreword
BS EN ISO 19650-2 + National Annex

PD 19650-0
Guide to BS EN ISO 19650



Q4
2018

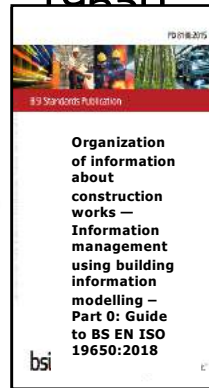
International standards

UK standards

BS EN ISO 19650-1 + National Foreword
BS EN ISO 19650-2 + National Annex



PD 19650-0
Guide to BS EN ISO 19650



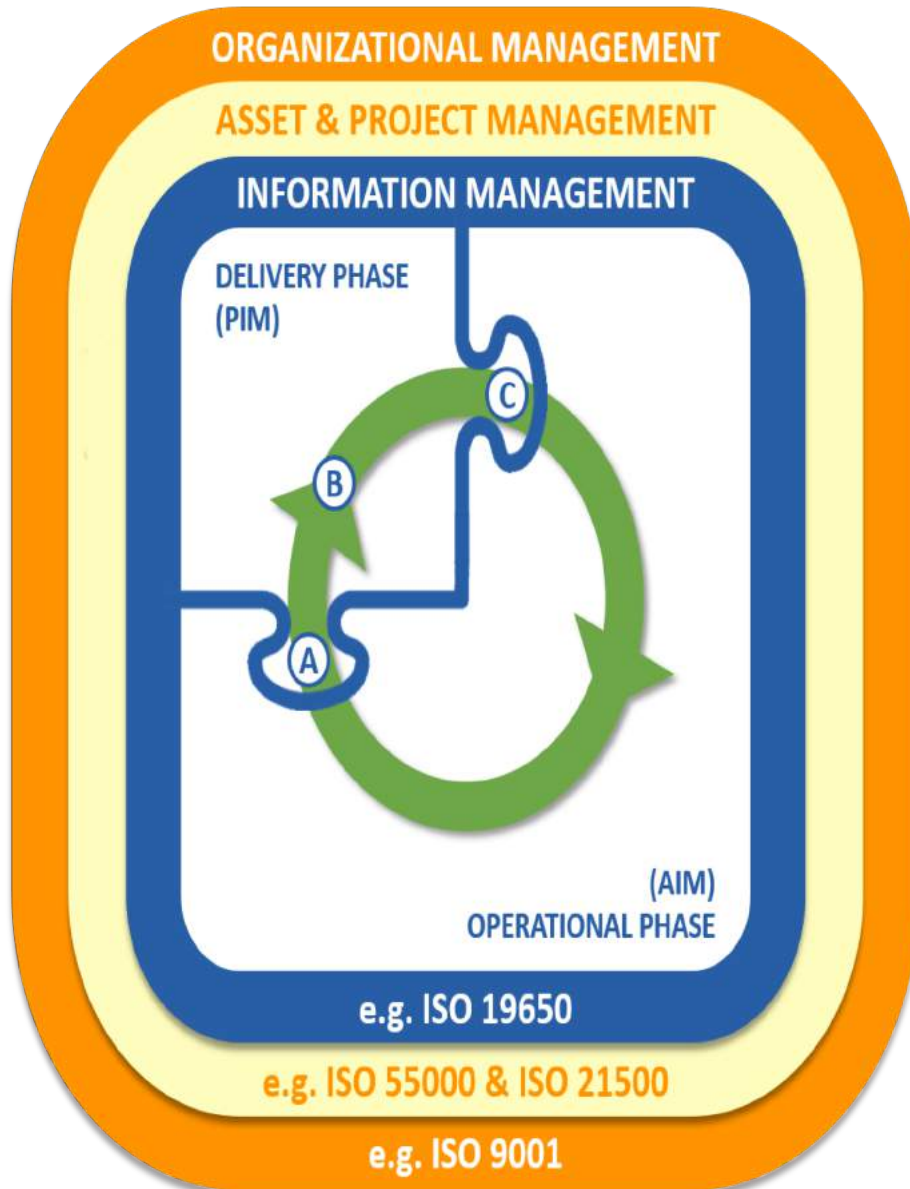
PAS 1192-3:2014 + BS 1192-4:2014



PAS 1192-5:2015

BS 8536-1&2

The generic project and asset information management life cycle



AIM	Asset Information Model
PIM	Project Information Model
A	Start of delivery phase – transfer of relevant information from AIM to PIM
B	Progressive development of the design intent model into the virtual construction model
C	End of delivery phase – transfer of relevant information from PIM to AIM

Current 1192 Series



From January 2019



PD 19650-0
Transitional Guidance

bsi.

© BSI 2018 - All rights reserved



What if I'm already using the 1192 standards?

From January 2019



From 2020 (TBC)



ISO 19650 Guidance Documents

The block contains the text 'ISO 19650 Guidance Documents' in a large, black, sans-serif font. Below the text are three logos: the bsi. logo, the UK BIM ALLIANCE logo (a stylized blue and green network icon), and the cdbb logo (Centre for Digital Built Britain).

What about the other 1192 standards?

State Of The Nation 2017: Digital Transformation

Productivity – Behaviours – Resilience

<https://www.ice.org.uk/media-and-policy/policy/state-of-the-nation-2>



A new approach to delivering high performance infrastructure

The Institution of Civil Engineers

Institution of Civil Engineers

From Transactions to Enterprises

A new approach to delivering high performing infrastructure

Infrastructure Client Group
March 2017

Why do we need to change?

Britain needs high performing infrastructure. Without it we have little hope of improving the productivity of our economy. Without an improvement in productivity we will not be able to secure the quality of life demanded by our growing population.

Yet the model we use to deliver and operate much of our infrastructure is broken. Too often it produces assets and networks that are expensive, perform poorly and fail to exploit the advances in technology that are transforming other industries. Too often the supply chain that delivers our infrastructure seems locked into a cycle of low margins, low investment and dysfunctional relationships.

What are we going to do about it?

We are creating a community of infrastructure owners and suppliers committed to change.

We are committed to a moving away from transactional, cost driven procurement of individual assets. We are embracing the creation of value driven, collaborative teams that can deliver investment programmes that secure the outcomes demanded by clients and the public.

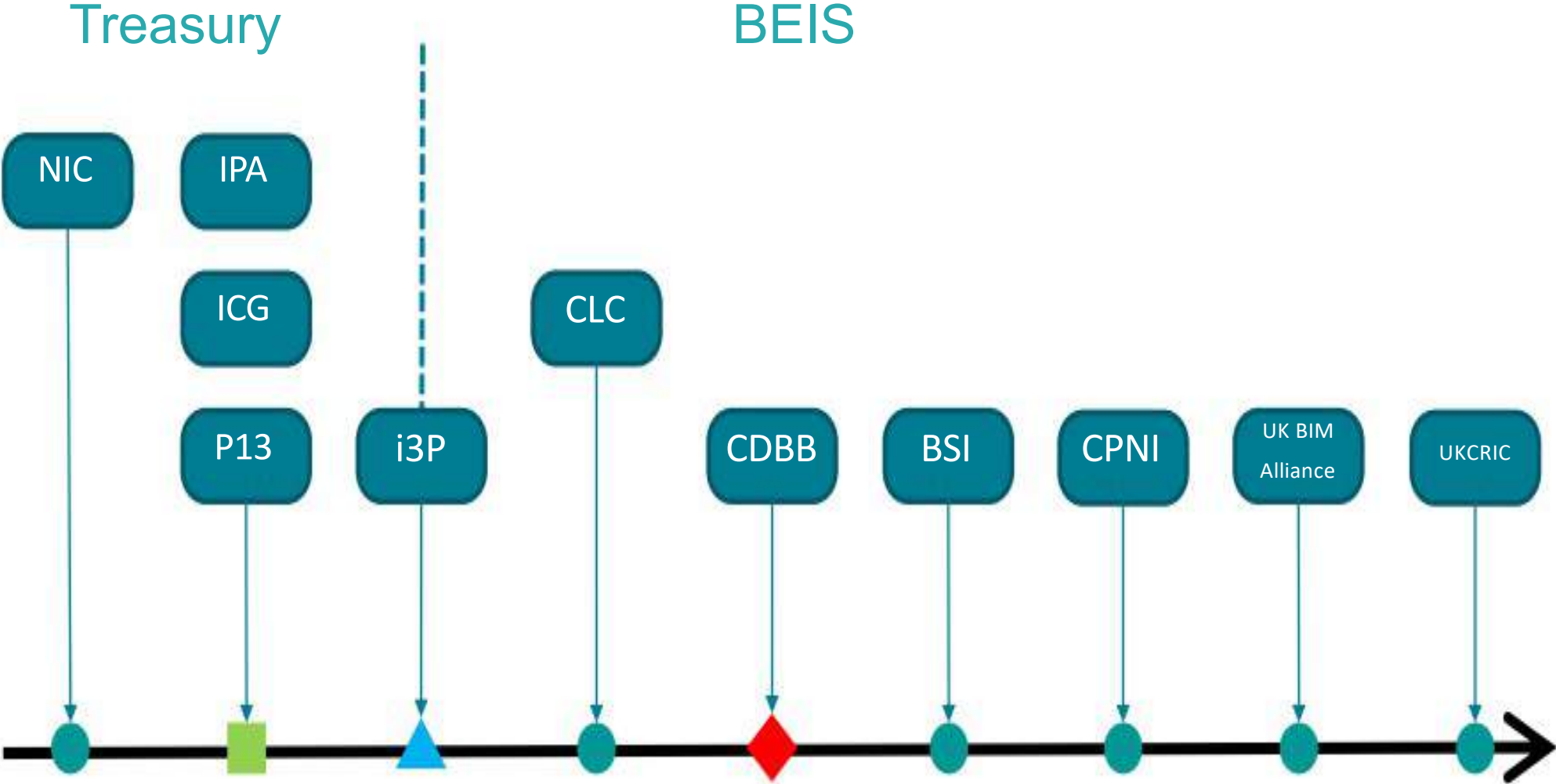
How can I get involved?

ICE is working with a group of leading infrastructure owners under the banner Project 13 to:

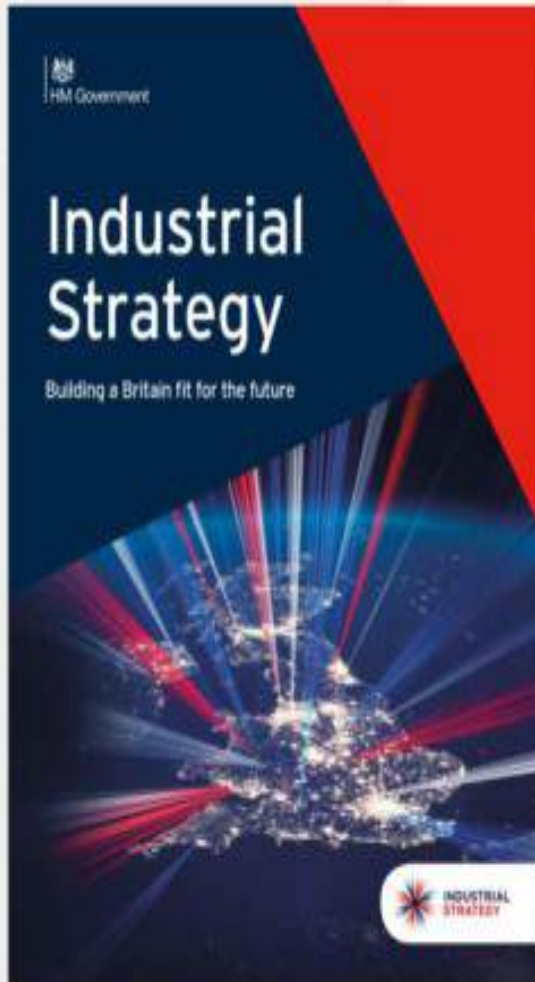
- Pilot new approaches to delivery on live projects
- Offer peer review and support to other colleagues seeking to implement the ideas in this report
- Disseminate findings through a programme of publications and events

If you want to join the Project 13 community and help transform our sector please contact policy@ice.org.uk or visit ice.org.uk/project13

Digital transformation landscape



Aligned government support



An opportunity for 'Early Lawyer Involvement' *and, . . . (Re-issue of the BIM Protocol and alignment with NEC4)*



THE WINFIELD ROCK REPORT

OVERCOMING THE LEGAL AND
CONTRACTUAL BARRIERS OF BIM

MAY WINFIELD AND SARAH ROCK



BIM LEVEL 2: WHAT IS IT AND IS THERE A 'LEGAL' DEFINITION?

'The government has recognised that the process of moving the construction industry to 'full' collaborative working will be progressive, with distinct and recognisable milestones being defined within that process, in the form of 'levels.'

Quote from NBS website⁵

Introduction

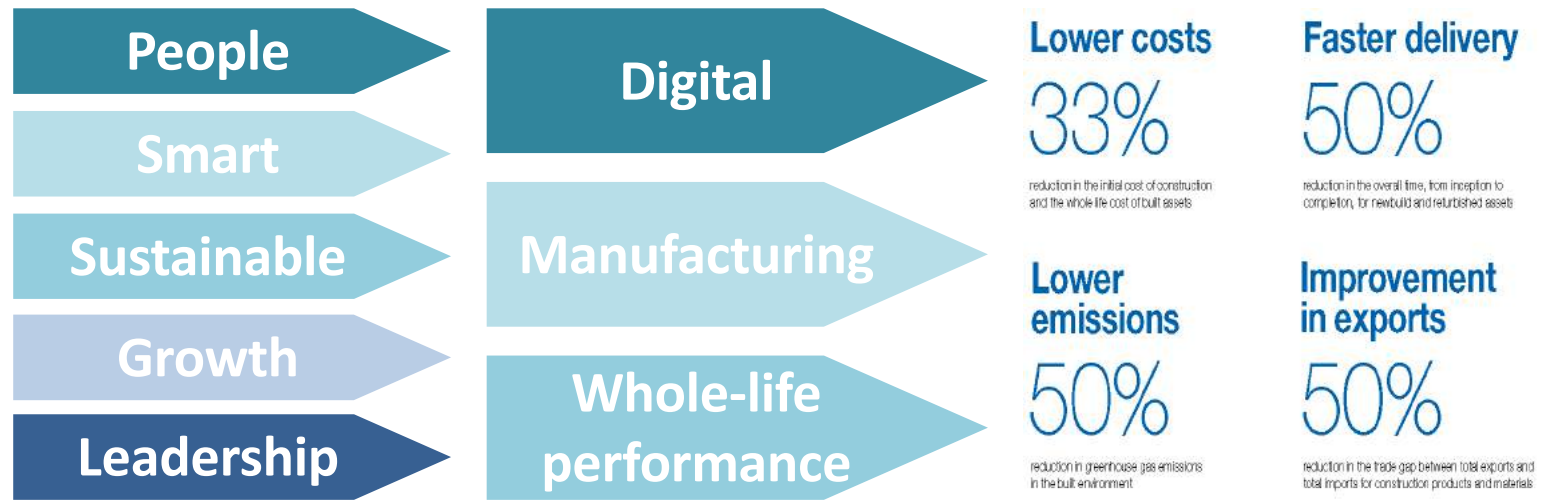
BIM is often defined through levels of maturity, currently thought of as BIM Level 0 up to BIM Level 3. The level number associated with the use of BIM on a project can be thought of on one hand as reflecting the project's level of collaboration with Level 0 being the least collaborative and Level 3 meaning the project is using fully collaborative working methods. The level numbers also indicate the level of technology used and the ability to exchange information digitally on a particular project. A Level 0 project will use 2D CAD which is passed between the project team members most likely on pieces of paper. In contrast, a Level 2 project will use 3D models which contain both design and information and are likely to be passed between the project team members using a digital exchange such as an online platform termed a common data environment. Distinction between the levels is somewhat blurred in practice and there is some debate about the exact definition of each level.⁶

'It is comparatively easy to make computers exhibit adult level performance on intelligence tests or playing checkers, and difficult or impossible to give them the skills of a one-year-old when it comes to perception and mobility.'

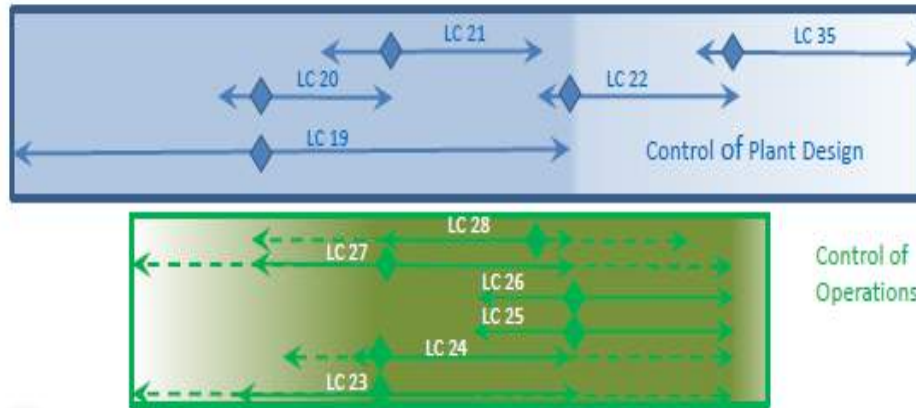
Hans Moravec

Marovec's paradox from the field of artificial intelligence ("AI") is a concept that reflects upon tasks which are hard for humans but can be easily explained to and carried out by computers e.g. multiplying 111,111,336,777 by 498,777,231,557. In comparison tasks which are, on the whole, easy for humans are sometimes hard to explain to and therefore have carried out by computers e.g. responding to another human being with the correct level of humour and decorum in a given social situation. The number of ways one human being could deal with, process and complete the social situation example is plentiful.

Government Industrial Strategy 2017 (*Construction 2025*, BIS, 2013)



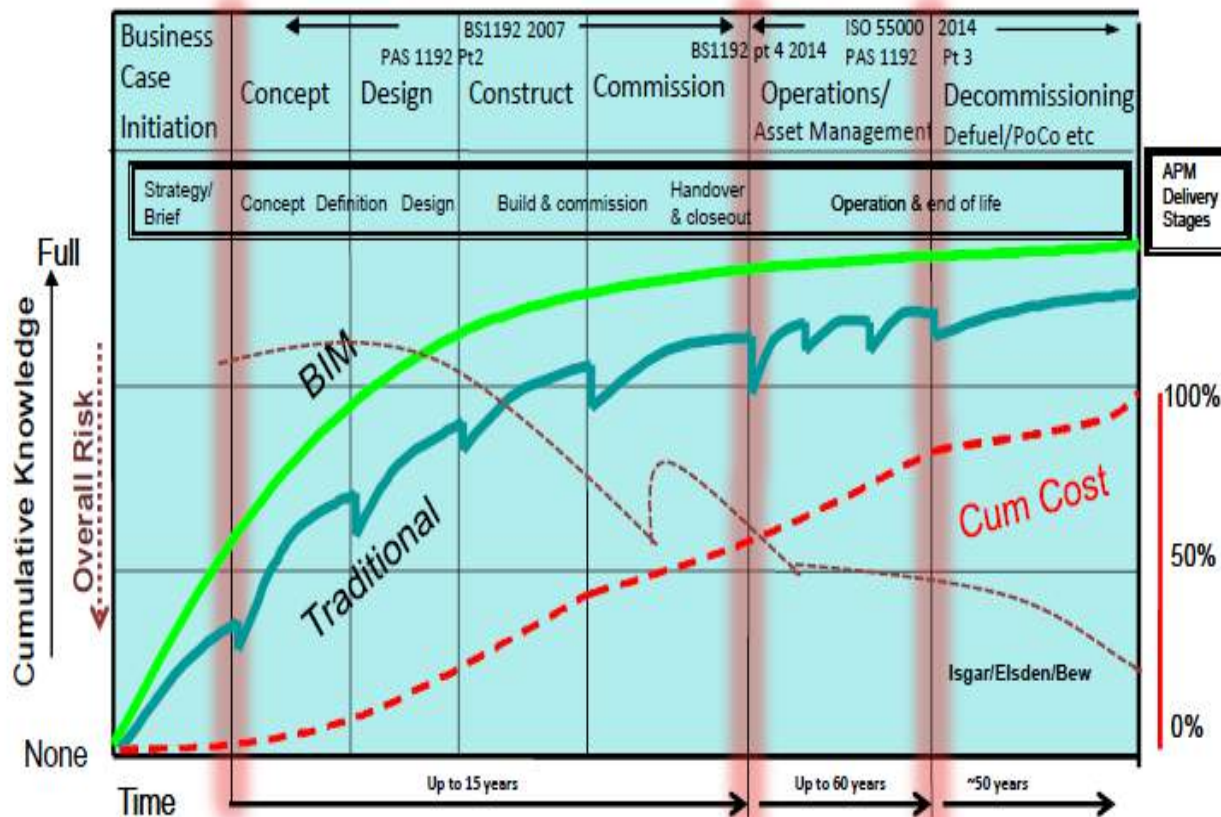
The Digital Community (Engineering–Manufacture–Construction–Operations) Enterprise Life-cycle management and, . . . the Site Licensing Conditions (as stipulated by the ONR).

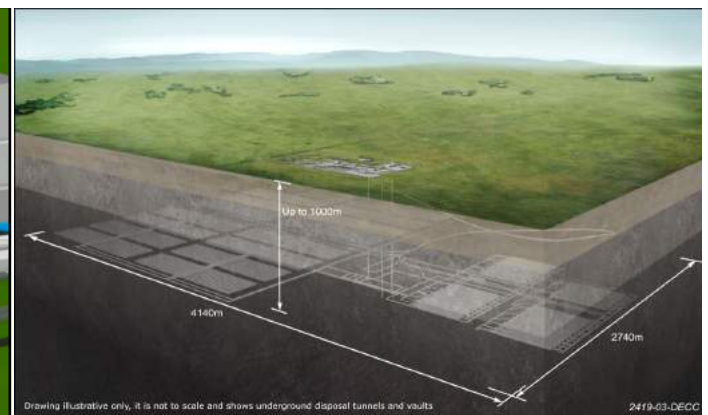
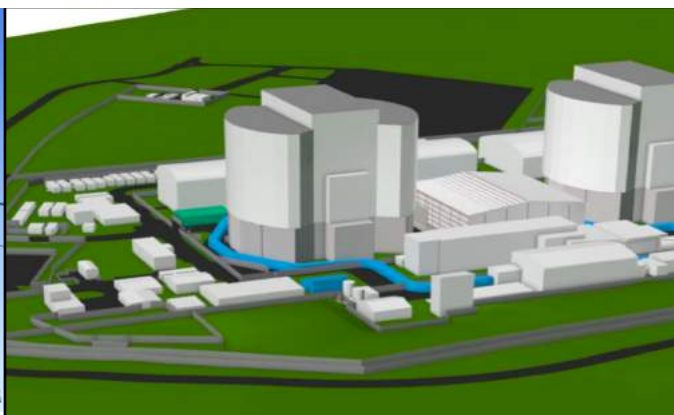


Of the 36 licensing conditions, the below are relevant to the Enterprise Lifecycle Management diagram depicted to the left.

Site Licensing Conditions:

19. Construction or installation of new plant
20. Modification to design of plant under construction
21. Commissioning
22. Modification or experiment on existing plant
23. Operating rules
24. Operating instructions
25. Operational records
26. Control and supervision of operations
27. Safety mechanisms, devices and circuits
28. Examination, inspection, maintenance and testing
35. Decommissioning





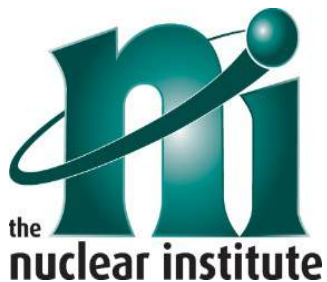
A journey from BIM to a Digital Community – Removing the Barriers

Philip Isgar plus a talented team of Supporters and Contributors

18th February 2019 - Liverpool



Digital Built Britain



Sunbeam Management Solution Ltd
London: 07785-998640
Warrington: 01925-764786

It's amazing what you can accomplish if you do not care who gets the credit.
Harry S Truman



SUPPORTING BEST PRACTICE WITH NUCLEAR SECTOR ASSET MANAGEMENT; RESEARCH AND DEVELOPMENT

Asset management is focussed on the whole life management of assets. Along with the NDA the nuclear regulators consider lifecycle asset management to be crucial to ensuring the right investment decisions are made to manage risks (both threats and opportunities) to people and the environment, ensuring the best use of resources. This has been of particular interest since the release of ISO55001 setting out expected standards for asset management.

The Nuclear Decommissioning Authority and the Environment Agency are holding a 2 day workshop hosted by Strathclyde University's Advance Nuclear Research Centre in Glasgow. The aim of the workshop is to convey the values and expectations to be achieved by asset management, to review best practice with examples from nuclear and non-nuclear industry and to present current research on asset management being undertaken. Taking into account sector risks we will discuss and action longer term research priorities that will meet the expectations of all stakeholders.

Attendance will include members of the EA, NDA and ONR and is expected to include relevant university research groups, members of the Nuclear Engineering Directors Forum and the Engineering and Physical Sciences Research Council, together with representatives from across the nuclear sector, including power generation, fuel management, defence and decommissioning.

This is request for **submission of abstracts** for the workshop on to be held on March 19 /20 2019. We are asking industry, universities and research establishments to present current research in the field of lifecycle asset management and to attend the workshop to discuss and action future research and development proposals.

Please submit your abstracts to Sophie Gallagher at the Environment Agency via email by 30 November 2018. (Maximum one A4 page and written in English).

Abstract will be reviewed by the Environment Agency and the Nuclear Decommissioning Authority and notification of acceptance will be sent by 24th December with instructions for preparation of presentations.

Sophie Gallagher

Nuclear Regulation Group (South)
Environment Agency,
Red Kite House, Howbery Park, Wallingford, OX10 8BD
sophie.gallagher@environment-agency.gov.uk
External: 020 771 40649 | Mobile: 07881 547182

classofyourown®



ADOPTERS' HANDBOOK
Adopt a School - all you need to know

design... engineer... **construct!**

only supported by PATICKS

classofyourown®



DEC! MATHS explained

with Drummond UNIVERSITY HIGH SCHOOL

design... engineer... **construct!**

classofyourown®

design...engineer...**construct!**®



**TRANSFORMING
CONSTRUCTION
ALLIANCE**

**NEW CORE INNOVATION
HUB TO BE DELIVERED
BY THE TRANSFORMING
CONSTRUCTION ALLIANCE**

www.transformingconstruction.org.uk

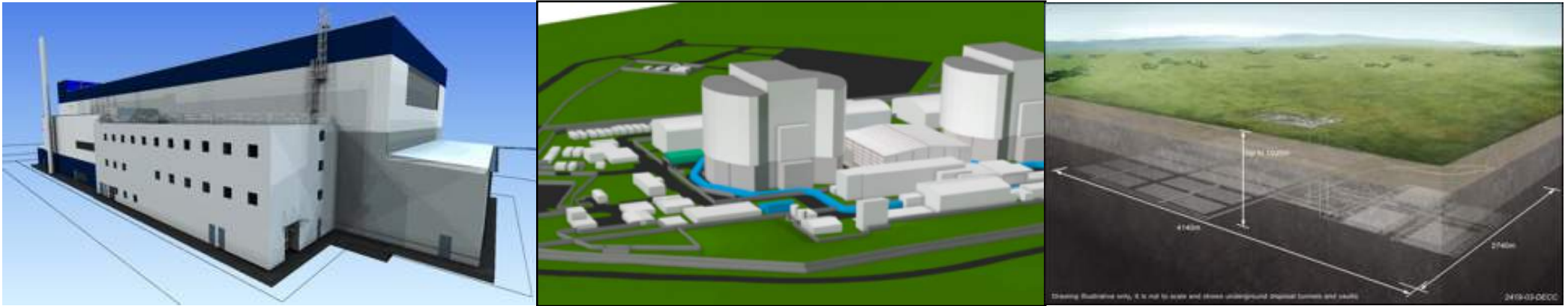
LinkedIn Conversation between Keith Waller and Philip Isgar

- **Programme Director at Transforming Construction Alliance – Keith Waller**

- *When I was first asked in 2010 if I would go into HM Treasury and “help out on infrastructure for a few weeks”, I nearly said no because I thought it wouldn’t be a particularly interesting place to work. But I have seen how policy gets shaped, decisions get made and how government impacts **#construction and #infrastructure** through what it says and what it does.*
- *It has been a fascinating time to be “doing infrastructure” in government - from the first ever National Infrastructure Plan and Infrastructure Cost Review in 2010 to last year’s Transforming Infrastructure Performance (TIP) report, with much in between.*
- *But after nearly nine years seconded into **#government**, it is time for me to step back outside. I always wanted to make sure that when I did leave, I wouldn’t throw away what I had learned inside Whitehall. So it is great that my new role builds on TIP and helps deliver the ambition of the Construction Sector Deal .*
- *There’s a real opportunity to transform the sector and improve not just the performance but also the social, economic and environmental outcomes from it.*
- *As it turned out in 2010, I already know this is not just “a few weeks” work and I will have to keep both government and industry aligned to make it a success. Wish me luck.*

Philip Isgar

- *Provider of Strategic and Innovative solutions together with Non-Exec Director skills to the public and private sectors.*
- *Great opportunity Keith, . . . We need the Construction Sector Deal to be managed effectively and I’m sure you will do a great job. For me this is an excellent lead in to delivering the **#NuclearSectorDeal** they go hand in hand for a great part. **#Digitalisation** is fundamental across both Alex Lubbock Don Ward Adrian Worker BSc (Hons), CEng, MNucl, MAPM together with our work on **#FactoryThinking and #Sellafield** work on **#DigitalEngineeringCapability** John Robison will play its part....*
- *Philip Isgar’s comment Reply*
- *on Philip Isgar’s comment · 1 Reply 1 Comment on Philip Isgar’s comment*
- *Open options for Keith Waller’s comment*
- *Programme Director at Transforming Construction Alliance*
- *Thanks, Philip. You’re absolutely right **#ConstructionSectorDeal and #NuclearSectorDeal** need to work hand in hand*
- *Keith Waller’s comment Reply*



The Digital Journey Continues – nuclear is very much part of it, . . .

Thank You

www.Level2BIM.org

www.bimtaskgroup.org

www.digital-built-britain.com



HM Government

Construction



Digital Built Britain