



Transforming Construction: Building Global Knowledge

Centre for Digital Built Britain

Adam Matthews

Head of International

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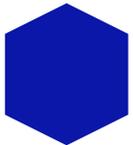
Agenda



UK Journey to sector digital transformation



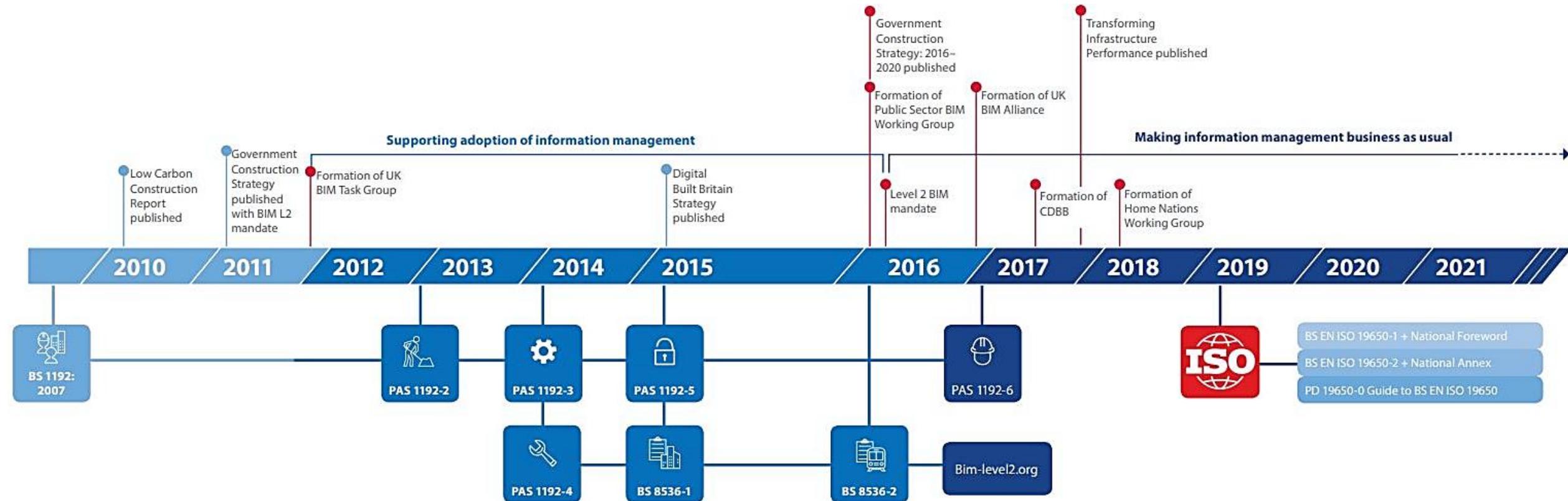
Information Management enabled developments



Global knowledge network advancing the public sector roadmap to digital transformation



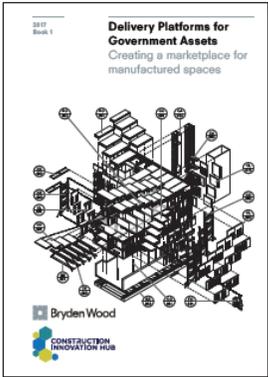
UK Centre for Digital Built Britain



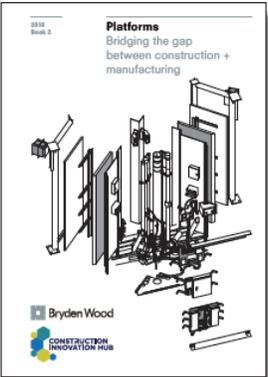
Digital platform for sector transformation



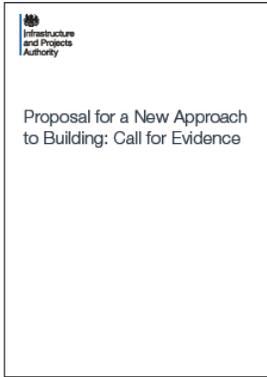
Delivery Platforms for Government Assets



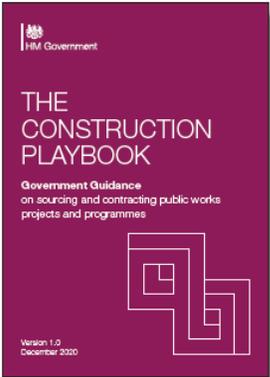
Platforms: Bridging the gap between construction + manufacturing



Proposal for a New Approach to Building



The Construction Playbook

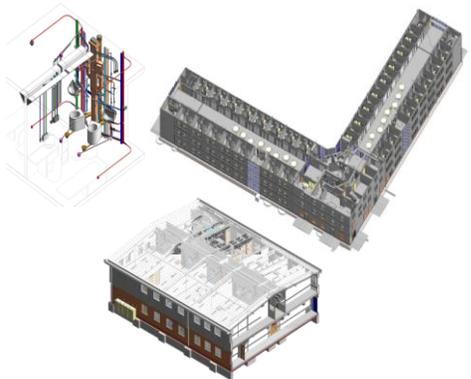


“Platform means digitally designed components used across multiple types of asset, applied wherever possible, minimising the need to design bespoke components.

For example, a single component could be used as part of a school, hospital, prison building or station.”

BIM mandate 2016

Information Management mandate 2021 (TIP)



Autumn Statement
‘The government will use its purchasing power to drive adoption of modern methods of construction...’



Construction Innovation Hub awarded £72 million to drive innovation + technological advances in the UK construction and infrastructure sectors.

Platform Design Programme ‘Defining the Need’





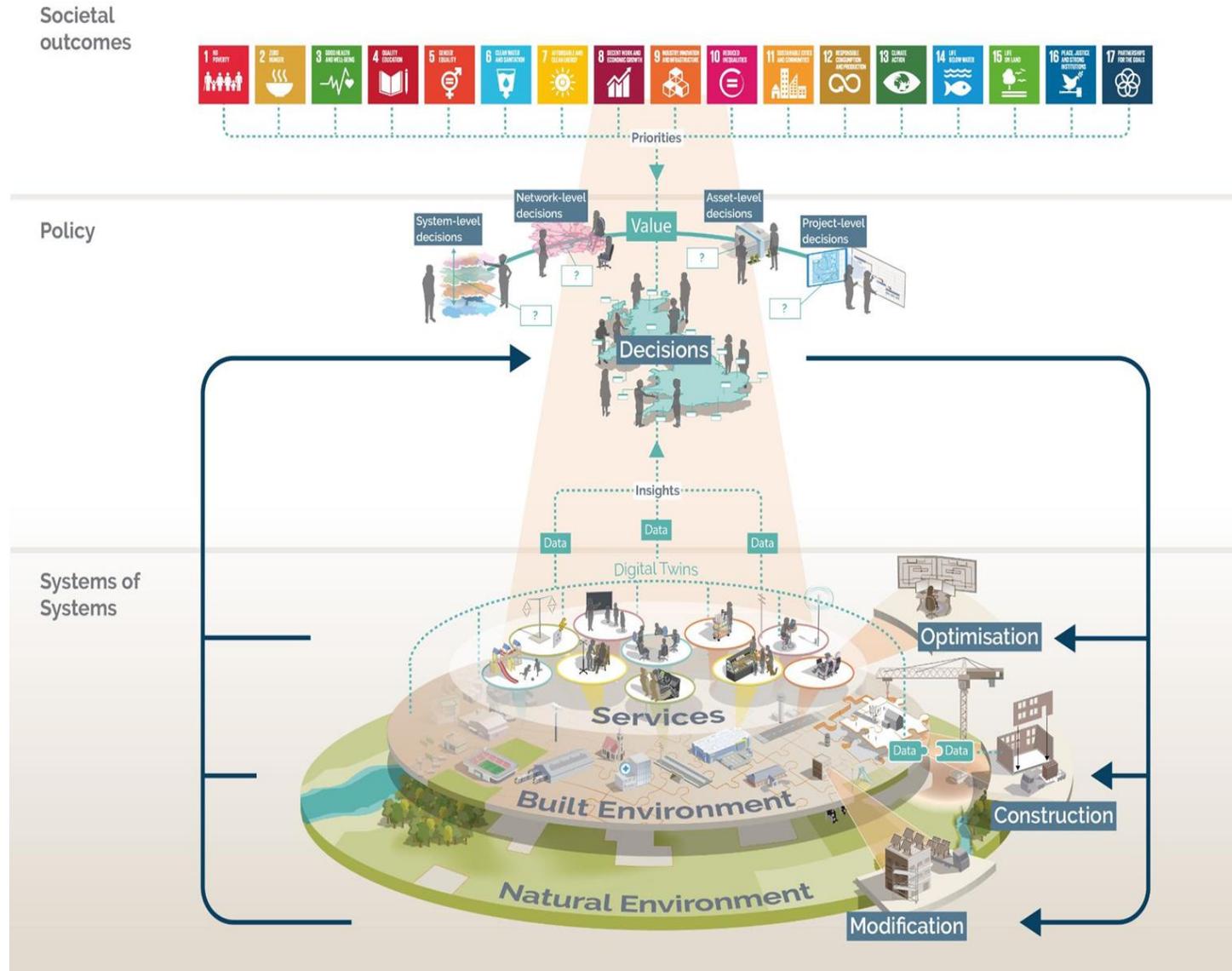
Infrastructure
and Projects
Authority

Reporting to Cabinet Office
and HM Treasury



Transforming
Infrastructure
Performance:
Roadmap to 2030

Information Management Mandate



The Built Environment Model has been **developed in partnership with government, industry and academia**. It describes a new approach to decision making, founded on an understanding of the **interlinked nature of our infrastructure systems**, which are rooted in the **natural environment** and encompass the **built environment and the services** on which we all depend.

In this new approach:

- We must understand the **societal outcomes** that are needed in the context of this system
- Outcomes must be translated into **delivery strategies**, balancing the addition of new assets and the need to intervene in existing ones
- The success of our strategies in delivering the desired outcomes **must be tracked and fed back into decision making**

Transformation Targets



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

Construction Innovation Hub

The Construction Innovation Hub's vision is for a world-leading construction and infrastructure sector, future-proofed through collective innovation, that delivers long-term environmental, economic and social benefits for the UK.



And a commitment...

The Hub's mission is to create better outcomes for current and future generations by driving the adoption of manufacturing and digital approaches that improve the delivery, resilience and performance of infrastructure.

Information based solutions

Value Toolkit

- A process and suite of tools which will empower clients and policy makers to make smarter, more informed, value-based decisions.
- Value-based decisions will in turn ensure that our buildings and infrastructure are delivering better outcomes for the economy, society and the environment.

Information Management

- Digital information that provides assurance through all lifecycle stages to ensure solutions comply with standards, regulations and meets performance criteria.
- The right information is digitally available to the right people at the right time to support the right decisions.

Platform

- To enable a sustainable UK manufacturing solutions market to grow and prosper in response to government's policy objectives for the built environment and meet the ambitions of the Construction Sector Deal

Information Management developments



Soft Landings

- A structured and consistent approach to the delivery of facilities and infrastructure by focussing on operational and performance requirements and information exchanges from the outset of a project.



Digital Estates

- A framework approach to help asset owners, especially those with a portfolio, to digitise their retained estate in a manner that is both proportionate and appropriate to their use cases.



Digital Twins

- The National Digital Twin offers a systems of systems approach to better outcomes for all stakeholders per whole-life spend in the built environment.

Why do we need Soft Landings?



Built assets not performing as client expected (often due to poor briefing)

Poor Handover between construction and operational teams (especially of as-built information and data)





The purpose of Soft Landings

The purpose of GSL and an extended aftercare period are:



Better briefing to align with operational objectives (enabled by BS8536 Part 1 &2)



Optimise the operating performance



Align the operating performance with the required performance outcomes set at the start of the design and construction period.



BS 8536-2:2016



Briefing for design and construction - Part 2: Code of practice for asset management (Linear and geographical infrastructure)

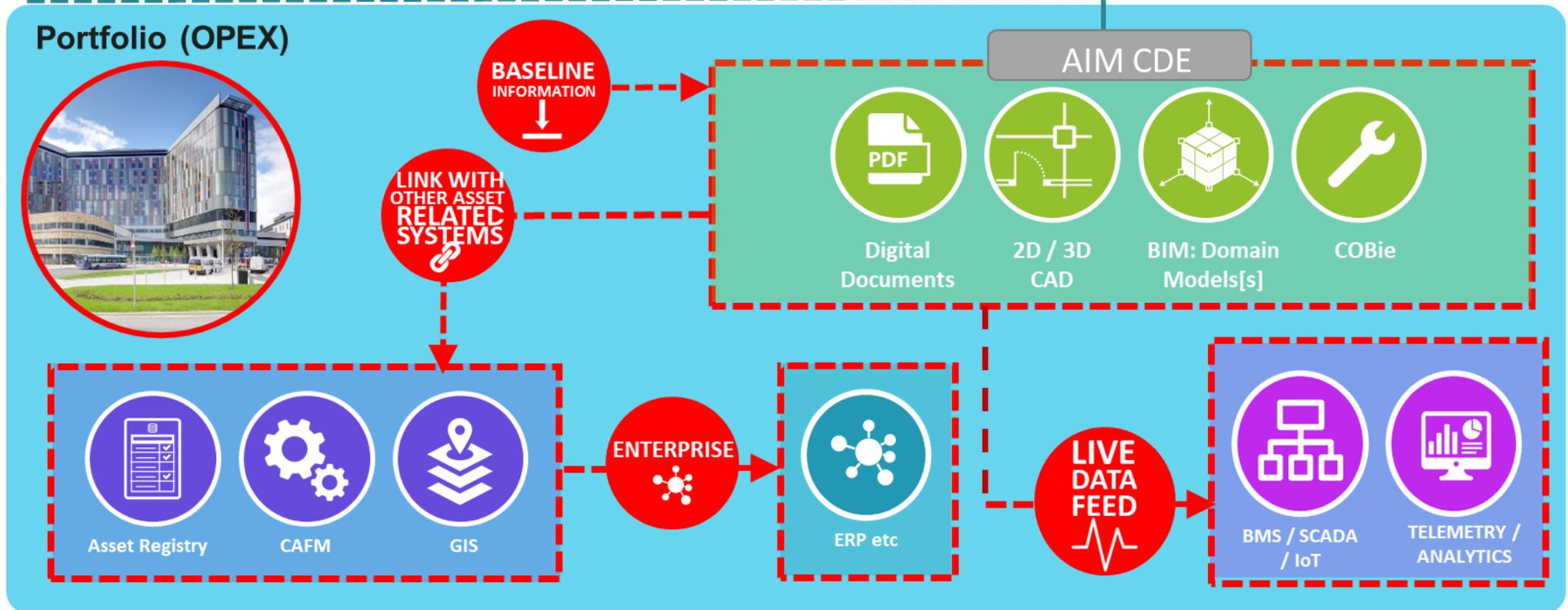
The Digital Estate

An environment where Digital & Physical co-exist

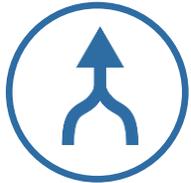


New Project Investments (CAPEX)

Portfolio (OPEX)



The Digital Estate value proposition



Joined up & appropriate use of data and Information



Help identify additional surplus land and property



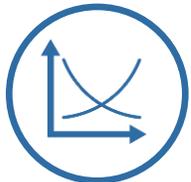
Support flexible estate planning



Enhanced resilience and business continuity



Support Value focused delivery programmes



Match supply and demand



Search, unify & analyse asset data at an enterprise level



Data insight



Accurate repository of all information



Cross department / organisational experience-based learning and feedback from asset and service performance

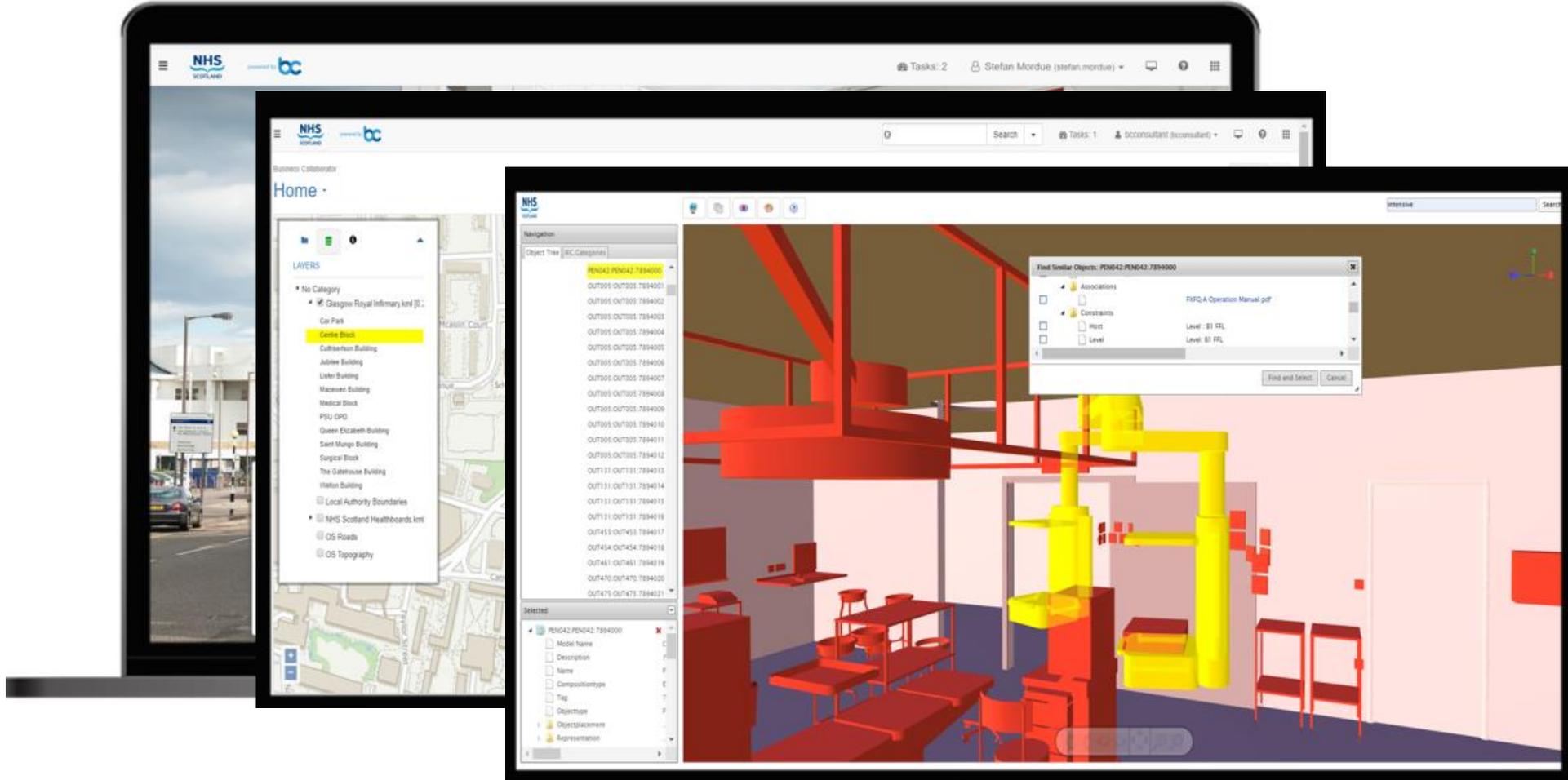


Audit trail of documents and decisions



Better user experience

NHS Scotland Digital Estate



2

Digital Twin

Action

The National Digital Twin offers better outcomes for all stakeholders per whole-life pound spent in the built environment:

Key benefits

Benefits to society: Transparent 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 environment:** Less disruption and waste. More reuse and greater resource efficiency – a key enabler of the circular economy in the built environment.
- **Benefits to the economy:** Increased national productivity from higher-performing and resilient infrastructure operating as a system. Improved measurement of outcomes. Better outcomes per whole-life pound. Enhanced 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. Optimised delivery efficiency, benefiting the whole construction value chain – investors, owners, asset managers, contractors, consultants, suppliers. Reduced uncertainty and better risk management.

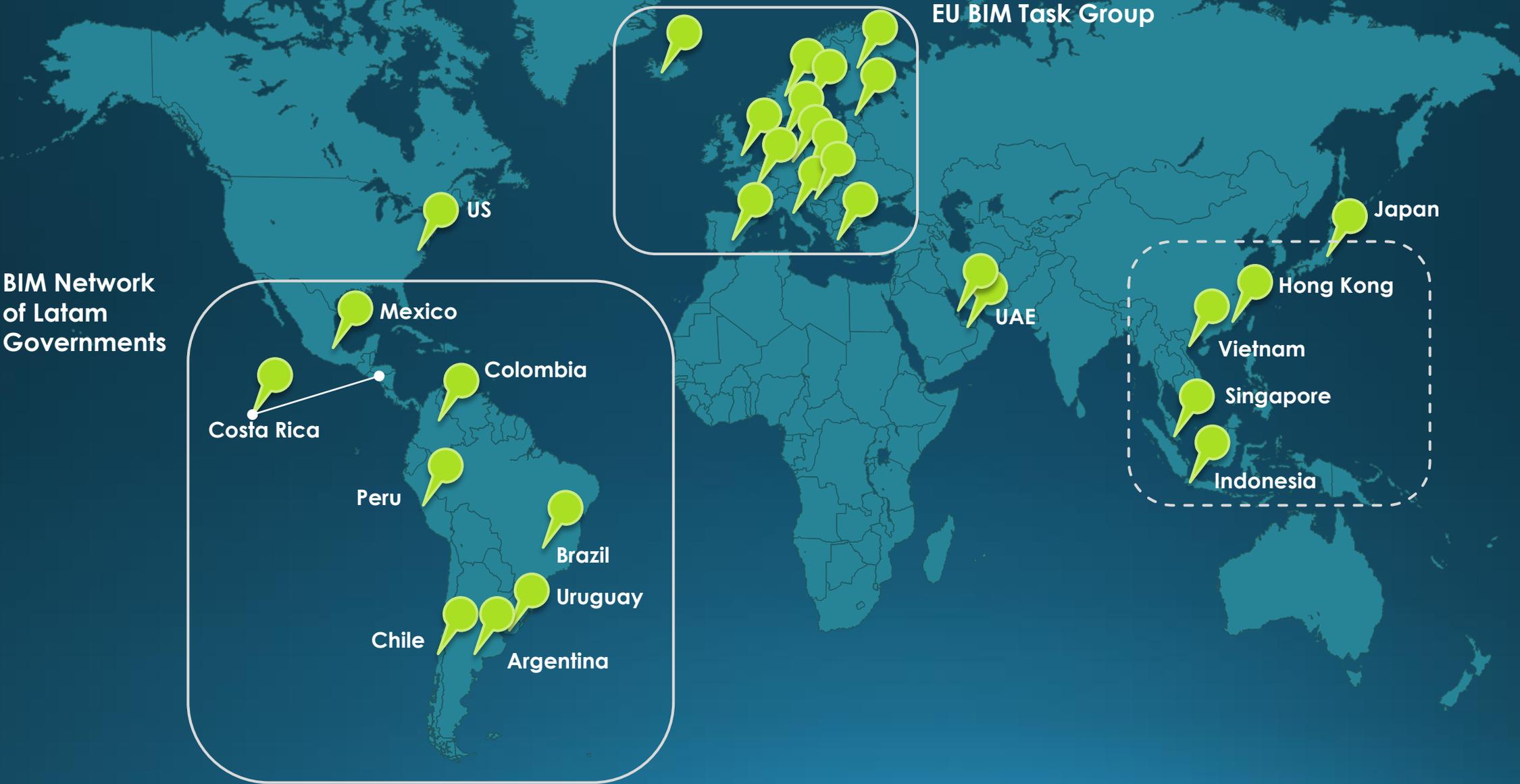
National BIM programs

2010-2015



National & Regional BIM programs

2021



Global BIM Network Steering Committee



Adam Matthews
Network Chair



Van Woods
United States



Carolina Soto
Red BIM LATAM



Sebastián Manriquez
Chile



Barry Blackwell
United Kingdom



Binh TA
Vietnam



Jaroslav Nechyba
Czechia



Valentina Sarmiento
Colombia



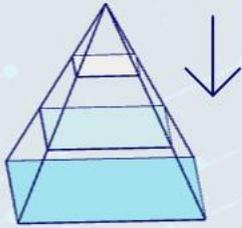
Souheil Soubra
EU BIM Task Group



Victoria Pasini
Argentina

INTERACTIVE INFOGRAPHIC

BIM around the globe: a preview of the global BIM knowledge base



← About

Estonia
France



Singapore

NATIONAL  **Construction Industry Transformation Map (ITM)**
Construction ITM is an industry transformation roadmap envisioning integrated sectors through widespread digital adoption, to spur business opportunities.

The roadmap focuses on three key areas:

- Design for Manufacturing & Assembly (DfMA)
- Green Buildings
- Integrated Digital Delivery (IDD)

Visit:
 Construction Industry Transformation Map

ORGANIZATIONAL  **Integrated Digital Delivery**

<https://www.globalBIM.org>

Global Call for Knowledge

Aim:

to expand the understanding and skill sets of people working in the built environment and drive better outcomes from national and regional initiatives.

The Network is currently seeking submissions of knowledge resources from across the **global public sector** to further develop our open access [Information Collection](#) and share knowledge of local, national and regional digital transformation journeys towards a digital built environment that brings benefits for people, places and societies.

For more information and to submit, [click here](#).

<https://www.globalbim.org/news/call-for-knowledge>

**Call for Knowledge is now
LIVE!**

Help us grow the global evidence base for digital transformation in the built environment. Contribute to the Call for Knowledge.



adam.matthews@cdbb.cam.ac.uk

constructioninnovationhub.org.uk

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#TransformingConstruction
#ConstructionInnovationHub

