Dr Paul Wilkinson
Director, UK BIM Alliance and chair, technology group
MD, pwcom.co.uk Limited

The UK BIM Framework
and the UK BIM Alliance
Who is Paul Wilkinson?

- Independent technology consultant, PR consultant, writer, journalist and blogger (2009-date)
- In-house (1987-2009): Halcrow, Tarmac Professional Services, BIW Technologies
- Active in ICE (dep chair of Digital Transformation CoP), COMIT, Constructing Excellence, UK BIM Alliance (chair of technology group)
The overarching approach to implementing BIM in the UK
UK BIM FRAMEWORK

- Design
- Build
- Operate
- Integrate
Standardisation
WHY THE TRANSITION TO ISO?

BIM LEVEL 2 moving to

BIM LEVEL 2 moving to

BASED UPON USING

ISO STANDARDS

The working group recognises that at this early stage in the international maturity of BIM there is an opportunity for significant synergies in combined international effort in developing BIM policy, implementation and mobilisation strategies...

A report for the Government Construction
Client Group 2011
Committee: ISO/TC 59/SC13 Construction works information
ISO 19650-1 BIM Concepts and principles (Nov 2018)
ISO 19650-2 BIM Delivery phase of assets (Nov 2018)
ISO 19650-3 Operational phase of assets (2020)
ISO 19650-4 Information Exchange (2022)
All based on BS/PAS 1192 series

Committee: CEN/TC 442 Building Information Modelling
Adopts ISO/IECs i.e. all of the above
Develops ENs to complement ISO/IEC
Product data templates, data dictionaries and smart CE Marking

Committee: B/555 Construction design, modelling and data exchange
Coordinates UK input into CEN an ISO
Adopts ENs and ISOs as British Standards
Develops BS and inputs into PAS

INTERNATIONAL BIM STANDARDISATION
Information management according to ISO 19650: 

The UK BIM Framework

The published UK BS/PAS 1192 Series ..... 

What if I’m already using the 1192 standards?

From January 2019
Information management according to ISO 19650: *The UK BIM Framework*

From January 2019

ISO 19650 Guidance Documents
Information management according to ISO 19650

Table 1 — Information management perspectives

<table>
<thead>
<tr>
<th>Perspective</th>
<th>Purpose</th>
<th>Example deliverables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asset owner's perspective</td>
<td>To establish and maintain the purpose of the asset or project. To make</td>
<td>Business plan</td>
</tr>
<tr>
<td></td>
<td>the strategic business decisions.</td>
<td>Strategic asset portfolio review</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Life cycle cost analysis</td>
</tr>
<tr>
<td>Asset user's perspective</td>
<td>To identify the true requirements of the user and make sure the asset</td>
<td>Project brief</td>
</tr>
<tr>
<td></td>
<td>solution has the right qualities and capacities.</td>
<td>AIM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PIM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Product documentation</td>
</tr>
<tr>
<td>Project delivery or asset management</td>
<td>To plan and organize the work, mobilize the right resources, coordinate</td>
<td>Plans, for example BIM Execution Plans</td>
</tr>
<tr>
<td>perspective</td>
<td>and control development.</td>
<td>Organizational charts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Function definitions</td>
</tr>
<tr>
<td>Society's perspective</td>
<td>To make sure the community's interest is taken care of during the asset</td>
<td>Political decisions</td>
</tr>
<tr>
<td></td>
<td>life cycle (planning, delivery and operation).</td>
<td>Area plans</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Building permits, concessions</td>
</tr>
</tbody>
</table>

NOTE: The example deliverables are relevant to the point of view of each perspective and do not indicate ownership of the deliverables or who does the work to produce the deliverables.
Information management according to ISO 19650

The Information Delivery Cycle

BS EN ISO 19650-1
Information management according to ISO 19650

**SHARED**
Information approved for sharing with other appropriate task teams and delivery teams or with the appointing party

**WORK IN PROGRESS**
Information being developed by its originator or task team. Not visible to or accessible by anyone else.
- Task Team
- Task Team
- Task Team

**CHECK / REVIEW / APPROVE**

**REVIEW / AUTHORIZE**

**PUBLISHED**
Information authorized for use in more detailed design, for construction or for asset management

**ARCHIVE**
Journal of information transactions, providing an audit trail of information container development

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**Figure 12:**
Common Data Environment concept
Implementation
What is the UK BIM Alliance?

IT’S YOU

Our work is for the industry, by the industry
The built environment sector

UK BIM Alliance Communities

Executive & Strategy Team

Infrastructure

North West

Alliance Forum

Secretary

Implementation

Engagement

BuildingSMART UK & Ireland

Communities

Stakeholder Engagement Standards Technologies Partners / Sponsors / Affiliates Speaking Knowledge / Training / Opportunities / Business Case

Operations

Secretariat

Other office platforms
Technology Group
Information management according to the ISO 19650 series
UK BIM Framework: Guidance
Who's involved so far?

- Anne Kemp (Chair)
- Paul Shillcock
- Daniel Rossiter
- Lewis Watts
- Andrew Croft
- Emma Hooper
- Andy Boutle
- John Ford
- Casey Rutland
- David Glennon
- Fred Mills
- Alex Luck
- Hywel Davies
- Shaun Farrell

- David Churcher
- David Philp
- May Winfield
- Nigel Davies
- Michael Hudson
- Neil Thompson
- Pam Bhandal
- Paul Dodd
- Sarah Davidson
- Sonia Zahiroddiny
- Stephen Holmes
- Stefan Mordue
- Simon Lewis
- Stephanie Kosandiak
Part 1: Concepts
1st edition released April 2019
• High level principles of implementation
• Target audience – new users
• Information requirements and delivery
• The National Annex
• Legal and contractual guidance note

2nd edition released July 2019
• Edits
• Feedback

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Free download at www.ukbimalliance.org
Part 2 processes for project delivery

Approach:

- Incremental release
- Interactive easy to navigate version + pdf download
- Different routes of navigation
  - You can read start to finish, or
  - Navigate through the guidance depending on the what party you are, what activity you want to understand about, what theme you want to learn more about

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UK BIM Framework: Guidance

Information Management Process Summary

Assessment and Need (19650-2 clause 5.1)
(Establishing the project’s information framework)

New Project

5.1.1 Appoint individuals to undertake the information management function

5.1.2 Establish the project’s information requirements

5.1.3 Establish the project’s information delivering subclauses

5.1.4 Establish the project’s information standard

5.1.5 Establish the project’s information production methods and procedures

5.1.6 Establish the project’s reference information and shared resources

5.1.7 Establish the project’s common data environment

5.1.8 Establish the project’s information protocol
Information management according to the ISO 19650 series
UK BIM Framework: Guidance

2nd edition - released October 2019

Area 1
Understanding your role and the team context

Area 2
Understanding information about primary themes:
• Common data environments

Area 3
Insight text associated with ISO 19650-2 clause 5 sub-clauses:
• Project level clauses

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## Area 1
Understanding your role and the team context

## Area 2
Understanding information about primary themes:
- Common data environments
- BIM Execution plan
- Information requirements
- Level of information need
- Open data

## Area 3
Insight text associated with ISO 19650-2 clause 5 sub-clauses:
- Project level clauses
- Appointment level clauses

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Information management according to the ISO 19650 series
UK BIM Framework: Guidance

4th edition - to be released April 2020

Area 1
Understanding your role and the team context

Area 2
Understanding information about primary themes:
• Common data environments
• BIM Execution plan
• Information requirements
• Level of information need
• Open data
• Information delivery planning

Area 3
Insight text associated with ISO 19650-2 clause 5 sub-clauses:
• Project level clauses
• Appointment level clauses

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Welcome

Here you will find the overarching approach to implementing BIM in the UK, brought to you by UK BIM Alliance, KSI and COBIS. The work you see here has been, and continues to be, the result of a massive collaborative effort, from many people over a long time, often on a voluntary basis. Thank you to all for the time and passion given.

We hope you find the resources here useful in helping you on your journey to digital transformation. The UK BIM Framework is a vital foundation for future developments. We want to ensure that through the Framework you have the support you need to implement BIM. Please do let us know if you have feedback or ideas on how we can improve this support.

The BIM Process

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

Build - Explore new and emerging digital construction and manufacturing technologies, processes and techniques; secure shared information, enabling clients, design teams, construction teams and the supply chain to work more closely together to improve safety, quality and productivity during construction.

Operate - Use real-time information to transform the
It’s about digital transformation ...
Identifies the need for a ‘golden thread’ of information for all higher risk residential buildings (HRRBs), so that their original design intent is preserved and changes can be managed through a formal review process. Equally, access to up-to-date information is crucial when effectively carrying out a fire risk assessment of a building and determining whether any action is required.
Construction sector deal (July 2018)

Three main strategic areas:
Digital techniques
Offsite manufacturing technologies
Whole life asset performance
Introducing the Centre for Digital Built Britain

The Centre for Digital Built Britain is a partnership between the Department of Business, Energy & Industrial Strategy and the University of Cambridge to deliver a smart digital economy for infrastructure and construction for the future and transform the UK industry's approach to the way we plan, build, maintain and use our social and economic infrastructure.
The digital direction of travel: beyond BIM

**Build**
Exploit new and emerging digital construction and manufacturing technologies, processes and techniques.

Secure, shared information, enabling clients, design teams, construction teams and the supply chain to work more closely together to improve safety, quality and productivity during construction.

**Operate**
Use real time information to transform the performance of the built environment and its social and economic infrastructure.

Smart asset management to predict and avoid disruption of services.

Digitisation of existing assets and infrastructure.

**Design**
Deploy digital techniques to design better performing buildings, homes and infrastructure.

Use good practice, secure by default, information management to get data right from the start.

**Integrate**
Understand how spaces and services can improve citizen quality of life.

Feed that information in to the design and build of our economic and social infrastructure and the operation and integration of services they deliver.
Digital twins and the national digital twin

“a realistic digital representation of assets, processes or systems in the built or natural environment”
+ connected to the physical twin

National digital twin

“An ecosystem of digital twins connected via securely shared data”
# The Gemini Principles

## Purpose:
- **Public good**: Must be used to deliver genuine public benefit in perpetuity
- **Value creation**: Must enable value creation and performance improvement
- **Insight**: Must provide determinable insight into the built environment

## Security:
- **Must enable security and be secure itself**

## Openness:
- **Must be as open as possible**

## Quality:
- **Must be built on data of an appropriate quality**

## Function:
- **Federation**: Must be based on a standard connected environment
- **Curation**: Must have clear ownership, governance and regulation
- **Evolution**: Must be able to adapt as technology and society evolve

## Trust:
- **Must be trustworthy**
Fledgling examples of an Integrated Digital Built Environment:

- Smart cities
- Common place availability of location – based mobile apps
- Autonomous transportation systems

These challenges generally demand integrated approaches, with a need to move information and data freely between different disciplines/modelling approaches – joined up multi-disciplinary thinking.
How to Get Involved – UK BIM Alliance

- Twitter: @UKBIMAlliance
- Email: info@ukbimalliance.org
- Website: www.ukbimalliance.org