Introducing ISO 19650 Standard for BIM

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Certification Technical Expert – Digital Construction
Introducing ISO 19650 Standard for BIM

Agenda

• Introduction to ISO 19650
  Gain an understanding about the new ISO 19650 international standards for BIM

• BSI BIM Certification
  Our journey so far and the introduction of ISO 19650
We are a purpose-driven business focused on Organizational Resilience.

- We work for the public good to improve, standardize and simplify business systems
- Profit is reinvested back into BSI and never distributed
- We are independent from outside influence
Around the world, we enable businesses like yours to turn best practices into habits of excellence.

84,000 clients in 193 countries
50% of the Fortune 500
84% of the FTSE 100
81% of the Nikkei 225 Index
23 of the Top 25 medical device manufacturers certified
BSI: A global organization

- 80,000 clients
- 172 countries
- 3 regional hubs
- 75 offices worldwide
- 51% of Fortune 500
- 75% of FTSE 100
- 68% of Nikkei Index
Introduction to ISO 19650
Introduction to BIM

BIM Standards

BS 1192 / PAS 1192-6

PAS 1192-2

PAS 1192-3

BRIEF

DESIGN

CONSTR.

USE

DECOM.

BS 1192-4

ASSET LIFECYCLE

PAS 1192-5

BS 1192

Info. Sharing (CDE)

PAS 1192-2

Design & Construction

PAS 1192-3

Asset Management

BS 1192-4

Info. Transfer

PAS 1192-5

Security

PAS 1192-6

Health & Safety

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Introduction to ISO 19650
Publication of the New International BIM Standards

WITHDRAWN

UK standards
BS 1192
PAS 1192-2

Q1 2019

International standards
BS EN ISO 19650-1+
National Foreword

BS EN ISO 19650-2+
National Annex

PD 19650-0
Transition guidance to BS EN ISO 19650
Introduction to BIM
ISO 19650: What’s the Same & What’s New?

- Modified structure
- New/amended terms
- Some new requirements
- Clarifications
- Entire asset lifecycle viewpoint
- Increased flexibility
  1. Applied proportionately
  2. Less restrictive requirements
  3. Allow for regional differences
- Lessons learnt

- Core principles of BS 1192 and PAS 1192-2 remain
Introduction to BIM
BS EN ISO 19650-2 UK National Annex

• Information container identification

• Information container metadata:
  1. Status code (S0, S1, S2, ...)
  2. Revision code (P01.01, P01.02, ...)
  3. Classification (Uniclass 2015)

• Information model exchange

• Project’s information requirements (PIR)

Other countries are currently developing their own National Annexes.
Introduction to BIM
Guidance Document PD 19650-0

- Overview of BS EN ISO 19650-1/2
- ISO transition highlights
- Clause-by-clause mapping
  (BS 1192 & PAS 1192-2 → BS EN ISO 19650-1/2)
- Changes in terminology
- Transition guidance relating to BS 1192 & PAS 1192-2
Introduction to BIM

BIM Standards – Internationalisation of BIM

**UK STANDARDS**

- BS 1192
  - Version: 4
  - Info. Transfer
- PAS 1192
  - Version: 3
  - Asset Management
  - Version: 5
  - Security
  - Version: 6
  - Health & Safety

**INTERNATIONAL STANDARDS**

- ISO 19650
  - Version: 1
  - 2018
  - 2
  - 2018
  - 3
  - 2020 (TBC)
  - 5
  - 2020 (TBC)

**PD 19650-0**

- Transition Guidance

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Introduction to ISO 19650
Core BS/PAS 1192 Principles Remain

- CDE
- OIR / AIR / PIR / EIR
- PIM / AIM
- BEP
- MIDP/TIDP
Introduction to ISO 19650
New & Amended Terms

<table>
<thead>
<tr>
<th>OLD</th>
<th>NEW</th>
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<tbody>
<tr>
<td>BS 1192 / PAS 1192-2</td>
<td>ISO 19650-1/2</td>
</tr>
<tr>
<td>client</td>
<td>A appointing party</td>
</tr>
<tr>
<td>lead supplier (tier 1)</td>
<td>B lead appointed party</td>
</tr>
<tr>
<td>supplier (non-tier 1)</td>
<td>C appointed party</td>
</tr>
<tr>
<td>1 project team</td>
<td>3 task team</td>
</tr>
<tr>
<td>2 delivery team</td>
<td></td>
</tr>
</tbody>
</table>

Diagram: Basic structure showing different roles and relationships.
## Introduction to ISO 19650

### New & Amended Terms

<table>
<thead>
<tr>
<th>OLD</th>
<th>NEW</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BS 1192 / PAS 1192-2</strong></td>
<td><strong>ISO 19650-1/2</strong></td>
</tr>
<tr>
<td>contract</td>
<td>appointment</td>
</tr>
<tr>
<td>EIR (employer’s information requirements)</td>
<td>EIR (exchange information requirements)</td>
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<tr>
<td>Level of definition</td>
<td>Level of information need</td>
</tr>
<tr>
<td>PLQ (plain language questions)</td>
<td>PIR (project information requirements)</td>
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<td>Project’s Information standard</td>
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<td>/</td>
<td>Project’s Information production method &amp; procedure</td>
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<td>/</td>
<td>Delivery team’s Mobilisation plan</td>
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<tr>
<td>/</td>
<td>Information delivery risk assessment</td>
</tr>
<tr>
<td>BIM Level 2</td>
<td>BIM according to ISO 19650</td>
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<tr>
<td>/</td>
<td>Information management function</td>
</tr>
<tr>
<td>CDE area</td>
<td>CDE state</td>
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</table>
Introduction to ISO 19650

New Requirements

- Project’s Information standard
- Project’s Information production method & procedure
- Delivery team’s Mobilisation plan
- Information delivery risk assessment
- Responsibility matrix
Introduction to ISO 19650

Increased Focus on Appointing Party’s Requirements
Introduction to ISO 19650

New Requirements – Mobilisation Plan

common data environment (CDE)

information exchange

SOFTWARE / HARDWARE / INFRASTRUCTURE

CDE INTEROPERABILITY

INFORMATION SHARING

SKILLS / KNOWLEDGE

EDUCATION / TRAINING

CAPACITY
Introduction to ISO 19650

New Requirements – Information Delivery Risk Assessment
Introducing to ISO 19650
New Requirements – Information Function Responsibility Matrix

Annex A
(informative)

Information management assignment matrix

Table A.1 — Information management responsibility matrix template

<table>
<thead>
<tr>
<th>Task</th>
<th>Key</th>
<th>R: Responsible for undertaking activity</th>
<th>A: Accountable for activity completion</th>
<th>C: Consulted during activity</th>
<th>I: Informed following activity completion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ID</td>
<td>Appointing party</td>
<td>Third party</td>
<td>Lead appointed party</td>
<td>Appointed party</td>
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<tr>
<td>5.1.1</td>
<td></td>
<td>Appoint individuals to undertake the information management function</td>
<td></td>
<td></td>
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<tr>
<td>5.1.2</td>
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<td>Establish the project’s information requirements</td>
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<td>5.1.3</td>
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<td>Establish the project’s information delivery milestones</td>
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</table>

allocation of responsibility
BSI BIM Certification
BSI BIM Certification
Collaborative Approach to Out BIM Schemes
BSI BIM Certification
Supporting the Entire Project Team

Appointing Party / Client

Helping clients specify information requirements to realise maximum benefit of BIM

Lead Appointed Party / Tier 1

Ensuring that the entire delivery team understands and can meet the project’s/asset BIM requirements

Appointed Party / Supply Chain

Creating a consistent approach amongst the entire task teams to fulfil BIM appointment requirements
BSI BIM Certification
Our Certification Schemes

December 2015
BIM Verification for Design and Construction launch

April 2016
UK Govt target BIM Level 2

December 2016
BSI Kitemark for BIM Design and Construction launch

June 2017
BSI Kitemark for BIM Asset Management launch

June 2017
BSI Kitemark for BIM Objects launch

October 2018
BSI Kitemark for BIM Level 2 launch

January 2019
ISO 19650 published

BIM Courses with BSI
Our BIM courses cover every level from senior management overview through to hands-on practitioner.
BSI BIM Certification
BIM Design & Construction Verification

Design & Construction

- BIM processes (ISO 19650-1/2)
- Competency requirements
- Management system (e.g. ISO 9001)

BSI BIM Certification
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BSI BIM Certification
BIM Design & Construction Verification

Demonstrates:

- Your continued capability to deliver a BIM project
- Processes and procedures are embedded in your business
- Evidence of your personnel competency for BIM
- You maintain a complaints procedure
BSI BIM Certification

BIM Design & Construction Kitemark

Design & Construction

Asset Management

BIM Level 2

Security Minded Approach

BIM Objects

Security-minded approach implemented (PAS 1192-5)

Project-based evidence

Client satisfaction (ISO 10004)

Collaborative engagement (ISO 44001)

BIM processes
ISO 19650-1/2 or PAS 1192-3

management system (e.g. ISO 9001)

Design & Construction Asset Management

BSI BIM Certification

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BSI BIM Certification
BIM Design & Construction Kitemark

Demonstrates:

• Processes and procedures are embedded in your business
• Evidence of your personnel competency for BIM
• You maintain a complaints procedure

Plus:

• Your capability and successful delivery of BIM projects
• Provides confidence to your clients that previous clients are satisfied with your work
• Your BIM maturity in the market place
• Greater supply chain collaboration and peace of mind
• Brand recognition with BSI Kitemark™
• Regular audits = regular habits
• Cost reduction
• Consistency across sites
## SAMPLE-BASED APPROACH

<table>
<thead>
<tr>
<th>Operating Unit (OU)</th>
<th>Project</th>
<th>Establish CDE (5.1.7)</th>
<th>EIR Review (5.3.1)</th>
<th>Pre-BEP Production (5.3.2)</th>
<th>Delivery Team Selection (5.3.3)</th>
<th>Capability &amp; Capacity Summary Production (5.3.4)</th>
<th>Mobilisation Plan Production (5.3.5)</th>
<th>Post-BEP Production (5.4.1)</th>
<th>Responsibility Matrix Production (5.4.2)</th>
<th>Leadership Party DB Production (5.4.3)</th>
<th>TIDP Production (5.4.4)</th>
<th>MIDP Production (5.4.5)</th>
<th>Project Info. Model Production</th>
<th>Federation Strategy</th>
<th>CDE Management</th>
<th>COBie Production (BS 1192-4)</th>
<th>Project Handover</th>
<th>Rules &amp; Responsibilities (PAS 1192-2 / ISO 9001)</th>
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<tr>
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</tbody>
</table>
BSI BIM Certification
BIM Design & Construction Kitemark Requirements - CDE

Architecture
- Software/systems used
- Interoperability of software/systems

Process
- CDE setup
- CDE management

Functionality
- CDE use
BSI BIM Certification

BIM Design & Construction Kitemark Requirements – Client Satisfaction

What are the client’s expectations

What are we going to measure?

How are we going to retrieve the measurement?

What will we do with the measurement?

Continual Improvement Process

BIM focused
Assessment: Collaborative engagement
Addressing collaboration across the supply chain to realise BIM benefits

1

Value Creation: Establishing the value of a collaborative relationships

Examples:

- Continual improvement
- Learning from experience
- Joint innovation
- Risk reduction
Assessment: Collaborative engagement
Addressing collaboration across the supply chain to realise BIM benefits

2

**Working Together**: Looking for examples of promoting collaboration by the organisation (at project and non-project level)

Examples:

- Workshops
- Publications (case studies / guides)
- Assessment (feedback)
- Training (process / software)
- Sector engagement
- Technical support (onsite/ online)
- Software support (technical / financial)
- Role / Join exchange
Steps towards ISO 19650
Achieving Your BIM Kitemark or Verification certificate

Stage 1 Assessment

- Understanding requirements
- Systems/procedures in place
- Suitable evidence
- Non-conformities
- Plan Stage 2

Stage 2 Assessment

- On-site assessment:
  - Process
  - Systems
  - People
  - Projects

Continuing Assessment Visit

1-YEAR
Steps towards ISO 19650
BSI BIM Certified Clients (July 2019)

- United Kingdom
- Australia
- Belgium
- China
- Germany
- Hong Kong
- Portugal
- Taiwan
- Ireland
- Malaysia
- Netherlands
- Russia
- Spain
- UAE
- India
bsi.

...making excellence a habit.