Little book of BIM

bsi.

...making excellence a habit.™

Welcome to the **BSI little book of BIM**

This handy guide is your quick reference to some of the key definitions which are commonly used in describing BIM and its related processes, as well as your link to the key standards.

If you're already operating using BIM, these terms will be familiar.

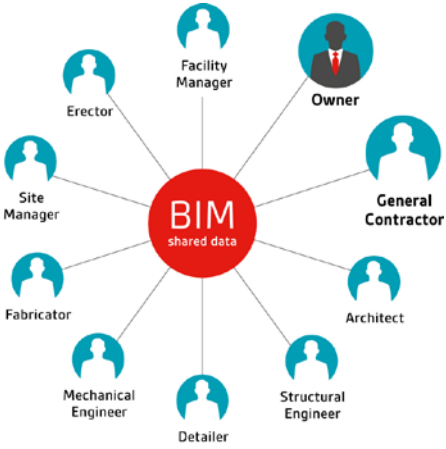
This guide can also be used to support your supply chain.

Contents

BIM definition

Building Information Modelling (BIM) is a collaborative way of working underpinned by digital technologies, which allow for more efficient methods of designing, delivering and maintaining physical built assets throughout their entire lifecycle.

Greater efficiencies can be realised due to significant pre-planning during the design and construction phases, providing comprehensive information at handover stage.



Key standards for BIM

BS 1192:2007+A2:2016 – Collaborative production of architectural, engineering and construction information. Code of practice.

PAS 1192-2:2013 – Specification for information management for the capital/delivery phase of construction projects using Building Information Modelling. Pioneering the BIM Standard.

PAS 1192-3:2014 – Specification for information management for the operational phase of assets using Building Information Modelling.

BS 1192-4:2014 – Briefing for design and construction. Code of practice for facilities management (Buildings infrastructure). Collaborative production of information. Fulfilling employer's information exchange requirements using COBie. Code of practice.

PAS 1192-5:2015 – Specification for security-minded building information modelling, digital built environments and smart asset management.

BS 8536-1:2016 – Briefing for design and construction. Code of practice for facilities management (Buildings infrastructure).

To discover all the BIM Standards available please click to scan or visit bimlevel2.org

BS 11000-1:2010 – Collaborative business relationships. A framework specification.

ISO 9001:2015 – Quality management systems. Requirements.

ISO 55001:2014 – Asset management. Management systems. Requirements.

ISO/IEC/27001:2013 – Information Technology. Security techniques. Information Security Management system requirements.

BS ISO 10004:2012 – Quality management. Customer satisfaction. Guidelines for monitoring and measuring.

Acronyms and definitions

There are many terms which are part of the BIM language. Whilst not exhaustive, here are some of the common ones to look out for.

Asset Information Model

All the information that is needed to support the management and operation of the asset, the infrastructure or building project.

This is the model that is generated from the PIM at the handover stage of a project. It differs from the PIM in that it consists of all the information that is needed to support the management and operation of the asset (infrastructure or building project). The AIM will continually be updated and developed throughout the life of the asset as information is fed into the model during the asset's management.

BEP BIM Execution Plan

This document defines how the project will be carried out. These details relate directly to the EIR. It includes, amongst other things, who is responsible for providing

information, what the processes will be, and provides common terminology to be adopted as well as job titles and responsibilities.

CDE Common Data Environment

The single source of information for any given project, used to collect, manage and disseminate all relevant approved project information. Stored digitally, this is where information is shared collaboratively in a logical, accessible way to help all key parties gain access to information. **This means that, firstly, information is readily accessible (using universal naming conventions) and is not duplicated, and secondly, information has both a defined purpose and owner.**

A CDE could be stored using an extranet, a project server or in the cloud.

COBie Construction Operation Building Information Exchange

A spreadsheet data format that contains digital information about an asset in as complete and as useful a form as possible. **It is a spreadsheet that has a pre-defined structure that is used to both store and index information transferred within the CDE.**

A COBie file contains only information that is needed and is stored in such a way that the recipient knows exactly where to find any given information (allowing automation of this process).

EIR Employers Information Requirements

This is the document which determines what the client (the 'Employer') wants from the project, as delivered by the project team. It identifies what the client would expect to be delivered during both the delivery and handover phases including responsibility, timescales, format and level of detail of the delivery of such information. It also includes any other project-specific requirements such procedures to be adopted, the plan of work to be used or any format restrictions.

LOD Level of Detail

The Level of Detail defines the amount of graphical information a model contains.

LOI Level of Information

This describes the amount of non-graphical information a model contains.

MIDP Master Information Delivery Plan

Developed from the BIM Execution plan, this forms part of the (post-contract) BEP and is the primary plan for when information is going to be prepared, by whom and when. It also sets out the format and the timescales. This is developed from the BIM Execution Plan.

Each information deliverable will be aligned to a defined project stage and so the MIDP serves as a tool to define information delivery throughout the project.

PIP Project Implementation Plan

This is a document which relates to the suppliers IT capability to deliver the Employers Information Requirements. **This forms part of the BEP and is a series of documents used to prove the supply chain's overall capability to deliver the project, as defined by the EIR. This includes a supply chain member's current BIM knowledge and experience as well as the capability of both their IT and human resource.**

This will lead to an overall picture of the entire project team's BIM capability.

PIM Project Information Model

This is the term for the information (graphical, non-graphical, documentation) which is developed during the design/construction phase of the project. **Information that forms the PIM is created by the project teams and sits within the Common Data Environment. As the project develops so too will the PIM, which will increase in both size and accuracy; starting as a design intent model progressing to an as-built model after construction is complete.**

SMP Standard Methods and Procedures

This defines the rules of how the information within the CDE is managed, for example, naming conventions and status codes adopted in the project.

TIDP Task Information Delivery Plan

Task Information Delivery Plans are produced by each supply chain member from their viewpoint. They are collated into the Master Information Delivery Plan and are based on the deliverables as agreed in their contract.

BIM Maturity

There are four levels of BIM maturity essentially which move the journey for the production of information from an individual, non sharing and 2 Dimensional approach to a fully digital environment encouraging true collaboration (BIM Level 3).

BIM Level 0	– 2D CAD drafting utilised – no collaboration.
BIM Level 1	– Mixture of 3D concept work and 2D for drafting of statutory approval documentation – Electronic sharing of data using a common data environment (CDE) – No collaboration between parties but data is shared.

BIM Level 2

- All parties use their own 3D CAD models, not necessarily working on a single, shared model
- Collaboration is used. Data is exchanged between parties and design information is shared in a single file format
- Federated BIM model is created. Each party can combine data with their own in order to make checks.

BIM Level 3

- Full collaboration between all disciplines by means of using a single, shared project model which is held in a centralized repository.

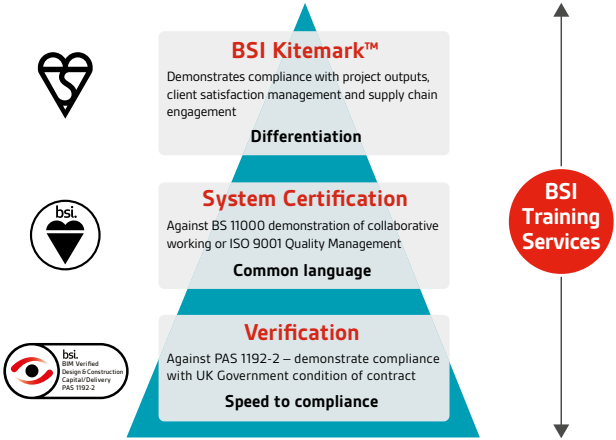
BIM Level 2

This is the UK Government condition of contract that since April 2016 all Government commissioned construction projects will require BIM Level 2 competence.

PAS 1192-2 and BS 1192:2007 are the standards that support the Construction BIM Strategy to achieve BIM Level 2 compliance and the desired reduction in CAPEX out turn cost. This means:

- All parties use their own object based 3D models, not necessarily working on a single, shared model
- Collaboration is used. Data is exchanged between parties and design information is shared in an interoperable format
- Federated BIM model is created. Each party can co-ordinate their models with those produced by other organizations to make checks.

BSI BIM Solutions



BIM Verification Capital/Delivery

bsi.
BIM Verified
Design & Construction
Capital/Delivery
PAS 1192-2

Based on PAS 1192-2:2013, this has been developed for any organization involved in using BIM to deliver new buildings or infrastructure projects. It will help you to demonstrate your BIM capability through independent and impartial third party verification.

Proven success of adopting the BSI Kitemark™

65%

say the BSI Kitemark had **increased sales**

60%

experienced improved **internal business confidence** with the BSI Kitemark

80%

see an improvement in their **business reputation**

70%

see an increase in the **efficiency of their processes** with the BSI Kitemark

80%

say the BSI Kitemark helped them to **improve customer satisfaction**

75%

say the BSI Kitemark certification had helped them **attract new customers**

BSI Kitemark™ for Design and Construction

Developed for both Tier 1 and non-Tier 1 organizations the BSI Kitemark will provide the most robust measurement of a company's delivery of BIM projects, certifying businesses for their diligence in design and construction, supply chain management and delivery of customer service excellence. As with other BSI Kitemarks, organizations holding the BSI Kitemark will be routinely assessed, providing clients with complete confidence in their delivery to industry standards.

"The BSI Kitemark is a respected brand. Applied to our services it will reinforce client confidence and prove greater quality in the delivery of BIM projects."

David Throssell,
BIM and Digital Engineering Operations Manager,
Skanska UK

The BIM Kitemark builds on the verification certification PAS 1192-2. It involves sampling of completed projects and assessment of customer satisfaction through ISO 10004 Customer Satisfaction Guidelines for monitoring and measuring. It also uses additional assessment parameters through BS 11000 Collaborative Business Relationships and builds on specific requirements from ISO 9001, Quality management systems. Like the verification certification, the BSI Kitemark covers BIM Level 2 at the Design & Construction phase.

"Digital Integrity is an important part of delivering social and economic infrastructure. The BSI Kitemark assures our customers that we are expert in handling their digital assets and are trusted to deliver them at the highest standard."

Neil Thompson,
Head of Digital Research & Innovation,
Balfour Beatty UK

Training

Our BIM training course(s) are suitable for those involved in all tiers of the supply chain and required to show application of BIM Level 2.
Visit: **bsigroup.com/training**

We hope you have found the information here useful.

Call: **+44 (0)345 0765 606**
Email: **bim@bsigroup.com**
Visit: **bsigroup.com/bim-uk**
bimlevel2.org

Why BSI?

A global brand and network – trusted and recognized around the world

- A global network of over **4,000 people** supported by **10,000 industry experts**
- Over **100 years experience** across almost **every sector**
- Global specialization focused on **standards, training, certification and GRC**
- Industry specialized assessors **constantly trained** on new standards and processes
- Our Credo "**Making Excellence a Habit**" keeps BSI **client focused**, **valued and appreciated** by our clients – BSI assessors score 9.25/10 in our Global Client Satisfaction Index.

We are the business standards company that equips businesses with the right tools and solutions to turn best-practice standards into habits of excellence. With over 3,000 staff worldwide, we help our clients drive performance, manage risk and grow sustainably.

All our standards are underpinned by a collaborative and rigorous approach perfected over decades. We always work closely with industry experts, government bodies, trade associations, businesses of all sizes and consumers to develop standards that drive excellence.

Our reach is global and we play a key role within the International Organization for Standardization (ISO). As one of the founding members, we help make sure international standards developed address today and tomorrow's business and societal needs, while delivering real benefits to an organization and all its stakeholders.

To find out more
Call: **+44 (0)345 0765 606**
or visit: **bsigroup.com/bim-uk**

BSI BIM enquiries

For construction companies with an employee size of 2,500 employees+

Mohammed Zaheer – 01908 814590
Helen Stirling – 07881 630012
Ross Wood – 07500 225957

BIM certification enquiries

North of England, Scotland
Adam Horne – 07823 661642

Ireland
Kosru Choudhury – 07825 658771

Central England
Pete Saddington – 07824 527653
Simon Williams – 01908 814524

South of England
David Lilley – 07909 890479
Kosru Choudhury - 07825 658771

BIM training enquiries

Andy Cohen – 01908 814515
Jugjeet Mehmi – 01908 814528

bsi.

Kitemark Court,
Davy Avenue, Knowlhill
Milton Keynes MK5 8PP

T: +44 (0)345 0765 606
E: bim@bsigroup.com
bsigroup.com/bim-uk

 BSI/UK/967/PC/1616/EN/BLD