



## **BIM Jargon Buster**

**BIM** - Building Information Modelling - a process of designing, constructing or operating a building, infrastructure or landscape asset using electronic information. What this means in practice is that a project can be designed and built using data sets and images on computer, before it is built for real. Described as a game-changing technology, it embeds key project and asset data within a multi-dimensional computer model that can be used for effective management of information throughout the project lifecycle from its earliest inception to when the asset is fully operational.

**Open BIM** - This enables all participants to access information on a project without the need to use prescribed software. This level of transparency aims to eliminate errors and thereby reduce costs, save time and ensure effective implementation as all parties will be able to input into and access the model and identify any issues before the physical project is delivered. Open BIM objects are being developed by BuildingSMART and are software neutral. This is still at an early stage of development and the number is increasing by the month.

**BEP – BIM Execution Plan** – This is a critical document as it underpins project integration and is a written plan to bring together all of the tasks and related information with all the stakeholders and processes. This should be agreed at the outset and defines what BIM means for the project. This will define the standards being adopted, outputs required, when these should be supplied and in what format, plus any supporting documentation. It may stipulate the software to be used but in most cases this can be accommodated by imports and exports from existing software. The BEP is a working document that should be regularly reviewed and evolve as design teams, suppliers and manufactures change throughout the project.

**BIP – BIM Implementation Plan** – The blueprint for integrating BIM into an organisation's working practices. This should align to the objectives and aspirations of the organisation, its business partners, its skill base, levels of investment and the nature and scale of projects that it wishes to undertake now and in the future.

**BIM Toolkit** - The NBS BIM Toolkit (<http://www.thenbs.com/bimtoolkit/>) provides step-by-step help to define, manage and validate responsibility for information development and delivery at each stage of an asset's lifecycle.

**COBie – Construction Operations Building Information Exchange** - This is a structured, universal database where data sets for a wide range of products can be stored providing information for the commissioning, operation and maintenance of a project. It can be viewed and edited in standard spreadsheet software enabling engagement at all levels of the design, operations and supply chain. . COBie may include links and specification information that describes the objects but does not include any geometry information. (See IFC below)

**EIR - Employers Information Requirements**– This the brief or specification provided by the employer/client. It sets out and defines the requirements of the client and information that the employer wishes to procure, in order to be able to develop and operate the asset in the future.

**IFC - Industry Foundation Classes** - The Industry Foundation Classes (IFC) is an open, neutral and standardised specification for Building Information Models, and is in the process of becoming an international Standard as ISO16739. IFC includes both specification information and geometry, enabling the object to be displayed.

**BIM Level 0** – This is supported by simple Computer Aided Design (CAD) and uses lines, shapes and text to produce paper 2D drawings and text schedules. Data can be provided as a hard copy and is typically unstructured and inconsistent.

**BIM Level 1** - This is the use of CAD in both 2D and, where appropriate, 3D with some attached data, such as functional and physical aspects that supports design. The data is simply managed in digital formats and exchanged between design team members, client and operations managers.

**BIM level 2** - This applies to all Government-funded projects from January 2016 including buildings, infrastructure and landscape. It builds on level 1 CAD but incorporates additional information associated with objects related to cost and time. Project roles and responsibilities are defined to meet the Employers Information Requirements (EIR). Standards, protocols and methods of working are defined to deliver the project information required by the employer. Information can be supplied in different formats provided these can be incorporated into a single federated model where clash avoidance, project management and cost can be assessed and managed. Spreadsheets can be presented in COBie format according to client data requirements. IFC standardised specifications may be applied to support data interoperability.

**BS 1192:2007. Collaborative production of architectural, engineering and construction information.**

**Code of practice** – This defines the methodology for managing the production and distribution of construction data using clearly defined process for collaboration. It provides a guide to software developers to support this process.

**PAS - Publicly Available Specification** – A sponsored fast-track standard driven by the needs of the stakeholders and developed according to guidelines set out by the British Standards Institution. They are reviewed within two years to assess whether they will be revised, withdrawn or become a formal standard. **PAS 1192-2** - This is the specification for information management for the capital/delivery phase of construction projects using BIM and sets out the requirements for BIM Level 2.

**PAS 1192-3** - This is the specification for information management for the operational phase of construction projects using BIM and builds on the code of practice for the collaborative production of information defined in BS1192:2007. **PAS 1192-4** - This is the specification that defines the expectation for the exchange and management of information throughout the lifecycle of an asset using COBie.

**PAS 1192-5** - This is the specification that provides a framework to assist asset owners understand the vulnerability of exchanging data transparently, openly and digitally to ensure the information is being shared in a securely minded way.

**CDE - Common Data Environment** – Defines the process, methodology and responsibilities for sharing a single source of information with all members of the project team. Creating a single source of information encourages collaboration and helps avoid duplication and mistakes.

**BIM level 3** – Currently being defined, in February 2015, The Digital Built Britain strategy was launched and represents the outcomes and recommendations for the next stage of the Building Information Journey, building on the standards delivered by BIM Level 2, it is expected to provide for fully interoperable and integrated design, delivery and asset management using open data resources. It will allow planning for long-term management of an asset even after it has been delivered, so can include scheduled maintenance and replacement of objects within a project, thereby helping to predict and manage whole life costs.

**BIM 4D** – utilises BIM data to analyse an asset construction over time

**BIM 5D** - supports cost management of a project and asset over time

**BIM 6D** – considers the long-term management of an “as built” asset by the facilities management team.

**Building Data Dictionary** – This is an agreed common vocabulary for disparate component parts allowing an open Building Information Model to link data from many sources, such as information from a product manufacturer, room requirements, cost data or environmental data and so improving interoperability.

**Government Soft Landings** - Form of graduated handover for both new and refurbished buildings where the project team is contracted to watch over the asset, support the occupant and fine-tune the systems post-completion.

**Federated Model** – A single model consisting of linked but distinct component data models and data from different sources that do not lose their identity or integrity by being linked but these distinct models do not interact directly so a change to one component in the model does not trigger an automatic change in another component within the federated model. Each component has clear authorship. The federated model is useful for design coordination, project development, clash detection and approvals.

**Data Drops** – defined in the Employer’s Information Requirements as key milestones, they provide a snap-shot at each stage of the project to ensure it is properly controlled and can continue to meet the employer’s requirements and can be delivered to budget and on time.

**Level of Definition** – Comprises:

Level of Detail – defines the graphical detail required to describe a feature at each stage of the projects development

Level of Information - defines the specification data required to describe a feature at each stage of the projects development

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