

BIM OVERVIEW

WHAT IS BIM?

Essentially BIM is a combination of structured processes supported by developing technology for design, construction and operation of an asset. The intent of a BIM framework is to reduce risk generating predictability and efficiency.

For a project to be defined as a BIM project it should comprise:

- A single information environment (such as a web based file sharing system) which is accessible to all individuals who are required to produce, use and maintain it;
- Information generated in the form of models, with information sourced from other models, either directly by reference, by federation or by information exchange. Digital models should be interoperable with others. COBie information exchange is required as a minimum;
- A supply chain evaluation methodology; and
- Clearly defined Employer's Information Requirements which the supply chain then respond to with their BIM Execution Plan(s).

A BIM environment is one where information is delivered in a timely manner, it is structured and predictable, there is only one instance of it, it can be verified and it is transferable.

WHAT ARE THE TANGIBLE OUTPUTS FROM BIM

- A project information model (PIM). This is all information (documents plus graphical and non-graphical data) that is needed for design and construction;
- An asset information model (AIM). This is all information needed to manage, maintain and operate an asset; and
- A COBie template for each asset. This is a specification for information exchange and the template contains structured information about the asset which is needed specifically to manage, maintain and operate it. This can be used to populate CAFM systems.

POTENTIAL BENEFITS ARISING FROM BIM

The Benefits of BIM are considered to be the following:

- A managed, secure information environment operated specifically for each Project;
- Clearly defined information requirements setting out:-
 - The strategy supporting information use;
 - Level of detail required at specific stages of the project;
 - Information exchange formats;
 - Interoperability requirements;
 - Facility operation training requirements;
 - Information standards to be complied with;
 - Roles and responsibilities aligned to BIM;

- Information security and integrity requirements;
- The framework for collaboration;
- The delivery strategy for asset information;
- Project deliverables monitored against information exchange points and key activities;
- Competence requirements and means of assessment for the supply chain;
- Concise, contractual capture of requirements and obligations through the implementation of a BIM protocol;
- The creation of accurate, virtual models through design and construction to aid decision making and to manage, reduce and where possible eliminate risk;
- The ability to support an ongoing programme of development, adjusting requirements as lessons are learnt;
- Predictability of outcome (such as cost and energy performance) supported by managed, timely information delivery in appropriate format that can be checked, verified and re-used;
- An agreed, dynamic information exchange format to support effective operation of facilities with data transfer into the CAFM system;
- Intelligent use of software offering automation, data extraction and project simulation, resulting in improved value in service delivery. Simulation is particularly useful in managing densely populated site areas; and
- Confidence in supply chain capability, capacity and performance.

CREATING A BIM FRAMEWORK

To be effective BIM needs to be Employer led, supporting:

- Key activities which are carried out according to certain stages of design, construction and asset operation; and
- On-going activities during design and construction.

The role of the Information Manager (IM) is defined by the Construction Industry Council (CIC) and is also highlighted in PAS 1192-2: 2013.

The IM is appointed by the Employer and is charged with executing certain activities (creating and managing the framework). The IM deals specifically with information – the role does not replace that of Design Lead or Design Co-ordinator and it carries with it no design responsibility/liability.

The IM may be an individual for the duration of the project or could be a number of individuals depending upon the nature of the project and the stage the project is at. It can be a standalone appointment or an extension of an existing appointment.

As well as accepting/rejecting information exchange the IM will generate the agreed Employer's Information Requirements plus a project specific BIM protocol. The IM will also manage the information environment and may possibly host this.

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