Section 2 – The Challenges for the future.

The shift from level 0 to level 3 BIM requires:

- knowledge of databases and how these can be integrated with the building model to produce a data-rich model, incorporating specification, cost, time and FM information;
- new procurement routes and forms of contracts aligned to the new working methods;
- interoperability of software to enable concurrent design activities;
- standardisation of the frequently used definitions and a rationalisation of the new terms being developed in relation to BIM.

Saint-Gobain's view:

Saint-Gobain welcomes the move by Government to adopt the use of BIM within the Construction Strategy and is actively working to address the needs of both Government and the market in preparation. The accuracy of data used within BIM is critical to its success and as such, Saint-Gobain would like to ensure that live product data direct from manufacturers is used for level 2.

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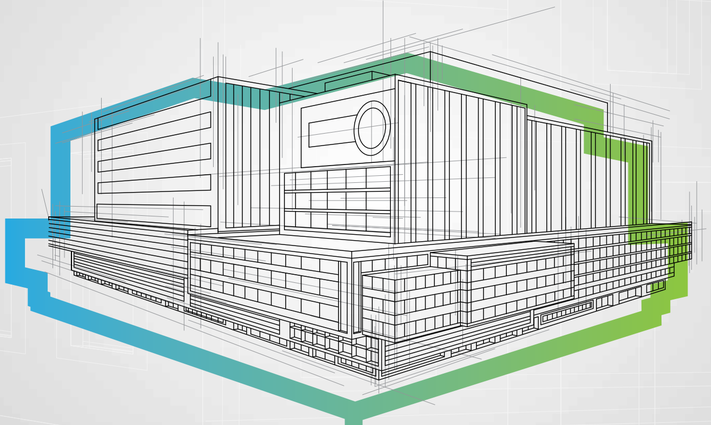
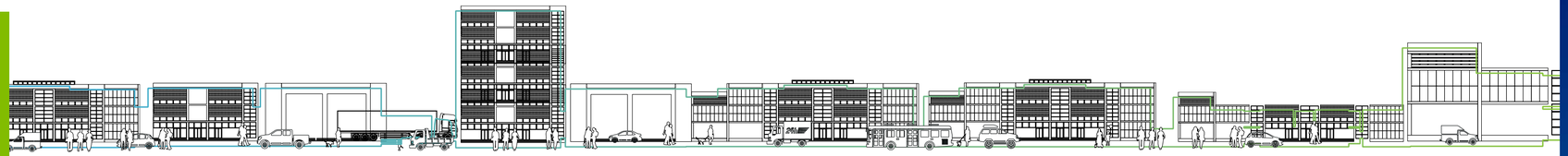
BIM (Building Information Modelling)

The Basics



The very fabric of Building Technology

SAINT-GOBAIN



What is BIM and why is it important?

The introduction of BIM [Building Information Modelling] is being used by the Government to drive through changes first called for by the Latham and Egan Reviews of 1994 and 1998. It was introduced into the UK market through the UK Government Construction Strategy, published in May 2011.

The current Government Construction Strategy effectively adopts the key elements of the 2008 National Platform strategy - above all, it seeks cost reduction of 15-20% by 2015.

BIM is widely used as the acronym for 'Building Information Modelling' which is commonly defined using the Construction Project Information Committee (CPIC) definition as:

'...digital representation of physical and functional characteristics of a facility creating a shared knowledge resource for information about it forming a reliable basis for decisions during its life cycle, from earliest conception to demolition.'

'Building Information Management' and others use the term BIM(M) alluding to 'Building Information Modelling and Management transforming how the construction industry works in terms of the ways in which design data is generated, shared and integrated, creating a requirement for new protocols, activities and definitions.

Government ambition

The UK Government has set out an ambitious vision for the adoption of BIM on all public sector projects and a legal requirement to adopt level 2 BIM on all projects from 2015.

BIM is a key contributor in the drive by the Government for its estate to be more energy and cost efficient from both a capex (capital cost) and opex (operating cost) perspective, and that the construction industry must respond to the challenges that have been set.

The principles of BIM can be applied to both complex projects with large multi-disciplinary design teams and large numbers of specialist sub-contractors and also to smaller, bespoke projects undertaken in a more traditional manner.

Section 1 – BIM levels and implementation dates.

Level 0

This is defined as the use of 2D CAD files for production information: a process that the majority of design practices have used for many years.

Level 1

Acknowledges the increased use of both 2D and 3D information on projects. For architects, 3D software has increasingly been used as a conceptual design tool. This has limited benefit and only one party or consultant using the benefits, with the rest generally working independently.

In terms of processes, level 1 embraces the need for management processes to sit alongside design processes.

Level 2

This is required for all contracts from 2015. This provides integrated team management using 3D BIM models. However, the 3D model is not intellectual enough to create constructional details from the 3D model. Consequently these still need to be drafted independently.

Level 3

The greatest BIM challenges arise when moving from level 2 BIM to level 3 BIM and the perceived 'holy grail' of the single project model. With level 2 resolving the methodology of all the designers working in 3D, the challenge with the single model will not be the collaborative use of the information: it will be harnessing the information in the model so that it is of greater use. For example, augmented reality on-sites to determine correct specifications for designers checking the detail.

BIM Level 3 should not only include 3D information, but also 2D components. It should also be noted that the limitations of hardware to date and the typical hardware configurations of most business to date will not allow for extensively detailed 3D diagrams. Therefore most architects and designers are not utilising these as they are freezing or crashing computers. Only when the computers have been updated to a sufficient level (hence 2015 implementation dates for level 2) will detailed 3D models be implemented.