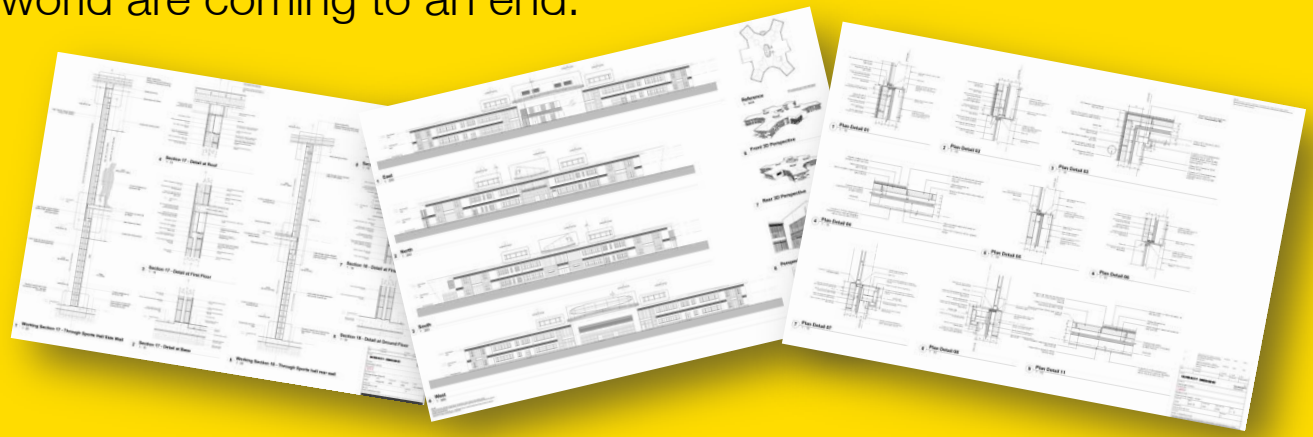
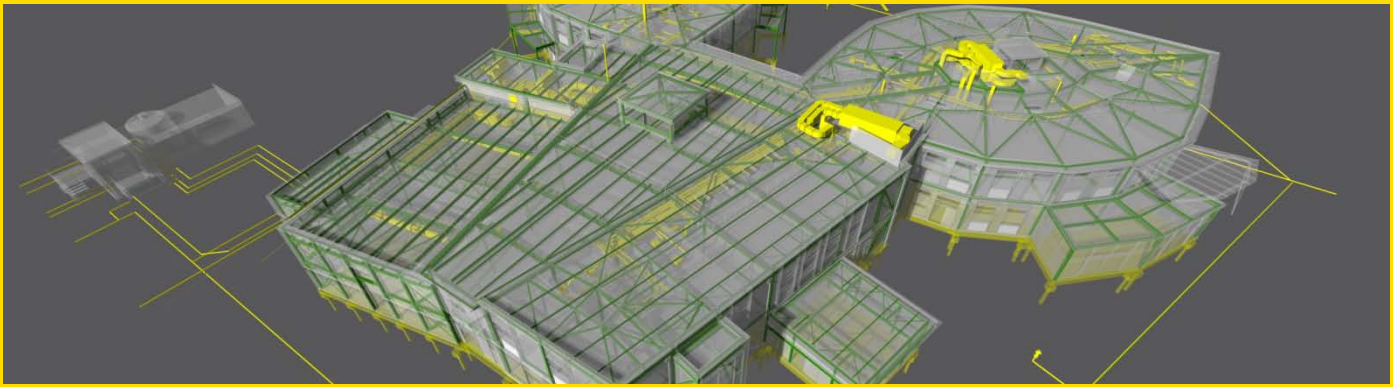

I
BIM

The days of designing in a disconnected, two-dimensional world are coming to an end.



Building Information Modelling (BIM), is a new approach to design, based around the creation of information rich, intelligent models. Using this approach, we can open up opportunities to drive improvement in construction.



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BIM places a focus on the information contained within a project, centred on three-dimensional models.

As a process, it changes the way that we work. All of the design team bring together their designs in 3D, and those models also contain information. The model brings together that geometry with other project data such as programmes, costs and analysis.

2.32 Government will require **fully collaborative 3D BIM** (with **all project and asset information, documentation and data being electronic**) as a minimum by 2016

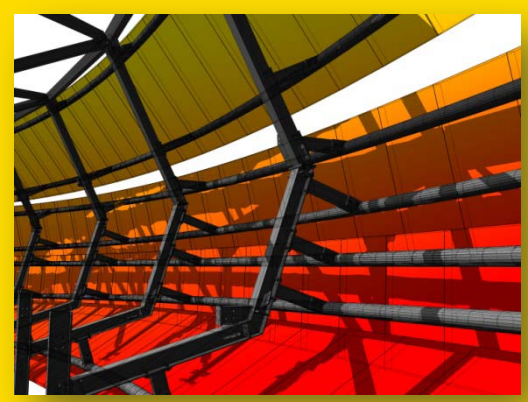
Why Now?

In May 2011, the government released its Construction Strategy, in which they mandated the delivery of all projects in BIM from 2016. This mandate reinforces the benefits that clients can derive through BIM enabled projects, and has set a benchmark for the construction industry to aspire to.

For designers, there are several benefits to working with BIM processes:

Coordination

Because the design is modelled, the need to coordinate information is permanently removed – it is all taken from the same source.



Efficiency

An information model begun at the start of the design process grows along with the project. Parametric modelling further enhances the model, and as time goes on, the information is simply called off rather than created afresh.

Quality

Working on a model encourages thought about resolving the whole – if a problem cannot be solved virtually, it is immediately apparent.

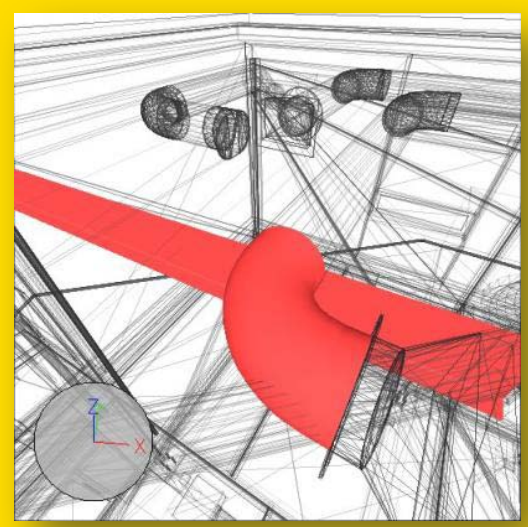
Predictability

Every great building deserves to be built twice. Virtual construction of the proposal enables less risk on site, with more predictable results.

For constructors, there are several benefits to working with BIM processes:

Predictability

Understanding the construction sequence enables a transition to assembly of a kit of parts. By planning in a virtual environment, both cost and safety become known quantities and can therefore be managed.

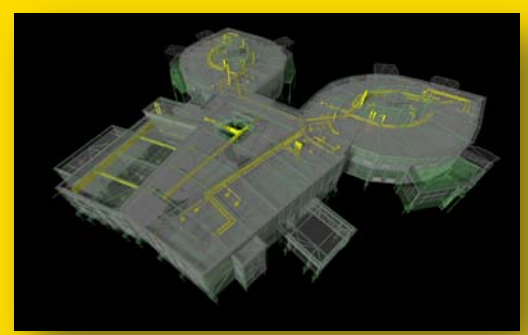


Clarity

There are proven examples that BIM delivers projects with less RFI's. This can directly translate to savings in time and money, improving the process.

Coordination

The ability to take delivery of a coordinated model, and to check a design to assess its buildability is a fundamental benefit to constructors using BIM. Less rework on site means more efficient delivery.



Planning

BIM offers the opportunity to forecast time and budgets for a project and the ability to simulate options.

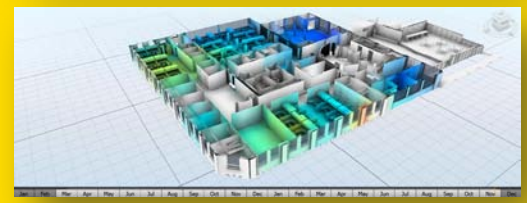
For building owners, there are several benefits to working with BIM processes:

Risk
BIM enhances the ability to manage risk, by eliminating many of the current unknown entities in a construction project.

Communication
The ability to understand a project is greatly enhanced through the use of BIM. Clients can walk through and see the construction models, not just 'artists impressions' of elements.

Change
BIM facilitates the evolution of good design. Being able to ask questions from the beginning, and receive an answer based upon a coordinated analysis improves quality.

Asset Management
A BIM is essentially a massive database of project information. The reason the government are demanding BIM deliverables is because of the value of this information to them as clients.



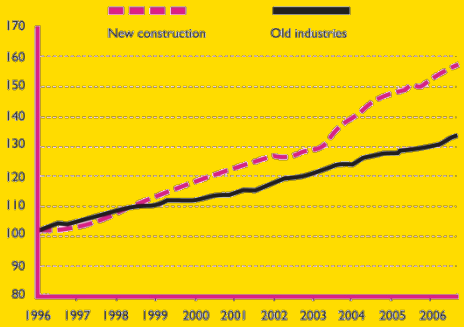
But BIM is not all about opportunity, it also represents a serious challenge to the industry as a whole.

Change

BIM is essentially a process of change management. The move from 2D design to an information rich 3D model linked into a variety of data input and output is a massive leap. It is important that this challenge is understood at the outset.

Skills

We face a large challenge as an industry to react to BIM, and there is a very real need to raise skills in all sectors of the industry. The leaders of the pack have invested over the past 10 years, and the rest of the industry needs to start their journey.



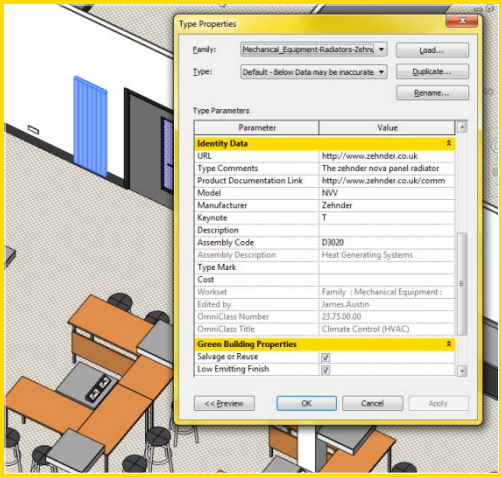
Investment

Committing to BIM raises questions over investment. Whether it is in terms of cost, time or people, it is inevitable that this needs to be understood, but it is becoming apparent that it is now required.

So what are the opportunities for product manufacturers, and how do they go about realising them?

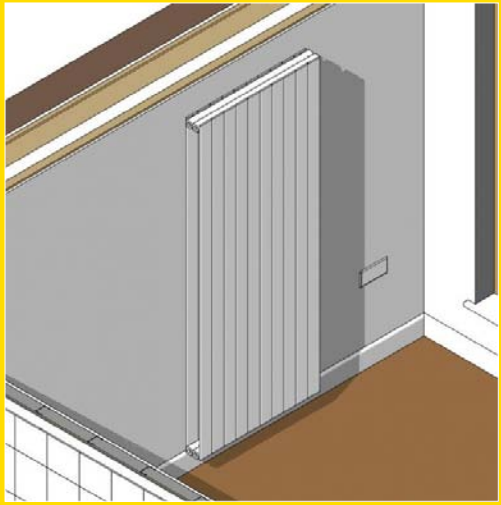
Specification

The gap between specifier and manufacturer has grown with the advent of design and build, replaced by ‘supply chain’ management. BIM offers an opportunity to reposition products in the model, knitting them into the analysis and reports generated from an early stage, making them an integral part of the proposal.



Brand Convenience

If products are available as BIM components, it is easier for designers to access information, and they can be ‘dragged and dropped’ directly into designs.



Facilities Models

Once a component is delivered as part of a BIM, it lives on in the database. The information delivered as part of that component is then accessible for lifecycle analysis and maintenance plans.

BIM is about opportunity.

BIM is not about the tools that we use to design, it is fundamentally a process by which we deliver our designs. By using BIM to improve the process, we can achieve real efficiencies in design, construction and our built environment assets. That is the real reason why it is so important.