An introduction to Building Information Modelling (BIM)

Key information Title

- Building Information Modelling (BIM) is here and working
- Some installations require BIM models to be adopted
- Many installations can benefit from following the BIM methodology
- Some installations will not benefit from following the BIM methodology

1. Building Information Modelling - BIM

What is BIM?

In terms of construction, Building Information Modelling or BIM, is a concept of using digital technologies to enable a project to be delivered more efficiently. The process is relatively simple, a building is 'built' in a digital fashion that is open to all parties involved. Any changes that are made will be made in a digital model that updates all relevant parties.

BIM will also enable buildings to be modified easier throughout their lifespan as all details about the infrastructure will be housed in a single file.

Of course, not all buildings will be required to be designed with BIM in mind but those that do will have a choice of levels to work to.

What are the levels of BIM?

BIM is divided into 4 levels, these can be summed up as:

Level 0
These projects typically use 2D CAD for their designs with no real digital collaboration. Diagrams are often printed and shared on paper.

Level 1
These projects use a mix of 2D and 3D design models. A common data is used to share data electronically.

Level 2
Every object is data rich and managed in a 3D environment. All parties can combine

their data through the common data environment. All public projects are now required to meet BIM level 2.

Level 3
All projects are fully collaborative and have a single project overview for data. All parties can access and modify data.

What are the benefits of BIM?
In many cases it may seem as BIM is an overly complex way of working, and this may be true on smaller projects. However, there are benefits to working with 3D modelling software in medium sized projects and up, these are, though not limited to:

> Increased efficiency – data can be managed and shared more efficiently in a BIM style

> Greater awareness – one change made is instantly informed to all parties on the project

> Reduced errors – as updates are 'live' there is less chance of mistakes and clashes occurring in the design process

> Keep up with others – more businesses are adopting BIM protocols

> Futureproofing – more projects are looking to use BIM in some degree

What are the obstacles to adoption of BIM?

BIM not only needs suitable software, equipment and training but also the will of all parties involved to make it work. However, these software packages are dramatically reducing in price and are becoming more user friendly.

Where can I find more details about how to reach BIM level 2?
The government has released a set of Publicly Available Standards entitled PAS 1192-2, which builds on existing standards defined by BS 1192:2007. These can be downloaded here.

Will BIM be influenced by the Hackitt report?

One of the underlying concepts within the Hackitt report is that buildings should have a clear path of information, a golden thread. BIM will help designers and builders to achieve this. So although the Hackitt report does not stipulate that BIM should be used for all projects, the use of BIM will help contractors meet the requirements of Hackitt going forward.

Limitations and cautions

Although ECA are keen to support Members using BIM, it is important to understand that there are limitations to be aware of.

ECA would advise that Members use caution when sharing specific data and ensure that it is clear who owns what data and where responsibilities sit.

It is also possible that Members may experience high initial costs relating to set up, despite software coming down in price. Users of BIM software would need to ensure they have

suitable hardware to run any software on and are suitably trained to the required standards to operate it. This may involve external training.

Further information

BSI have produced a free to access guide to BIM for anyone looking to be more aware of the requirements and Standards associated with BIM. It can be [downloaded here](#).