



Welcome to the January edition of **Insight**, Fenwick Elliott's latest newsletter, which provides practical information on topical issues affecting the building, engineering and energy sectors.

In this issue find out what you need to know about Building Information Modelling (BIM)

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DEMYSTIFYING BIM

The Government's Autumn Statement re-affirmed the Cabinet Office's commitment to the use of Building Information Modelling (BIM), the purpose of which is to provide a common, co-ordinated source of structured information to support construction projects. Within five years, virtually every UK government project above a certain size will be carried out using BIM Level 2 and it is intended that the industry will move to fully integrated BIM (BIM Level 3) thereafter. Yet BIM remains an alien concept to many.

The purpose of this note is to remove some of the mystery of BIM and consider the possible legal implications of its widespread use.

What is BIM?

There is no universally accepted definition of BIM but many commentators seem to accept the definition advanced jointly by the RIBA, Construction Project Information Committee and BuildingSmart. That definition states:

"Building Information Modelling is 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."

The BIM Industry Working Group was invited by BIS and the Efficiency Reform Group of the Cabinet Office to assess the benefits of BIM and produced a report in March 2011. The Group identified four different 'Maturity Levels' ranging from Level 0 BIM (which is the traditional CAD approach) to Level 3 BIM to ensure a clear understanding of the way in which BIM could be used on projects. Level 2 and Level 3 BIM are most relevant for present purposes and are considered in further detail below.

BIM maturity levels

Level 2 BIM

Level 2 BIM constitutes a managed 3D environment with individual discipline BIM tools with relevant data attached. Integration is achieved by proprietary interfaces and 4D programme data. 5D cost elements may also be used.

According to Mark Bews, Chairman of the BIM Industry Working Group and Director of Business Information Systems at URS / Scott Wilson, only 15% of jobs currently use Level 2 BIM and much therefore remains to be done to increase the awareness and use of BIM across all sectors of the construction industry.

Level 3 BIM

At its highest level, Level 3 BIM is a completely open design process.

Data is integrated with the use of web services which are managed by a single collaborative model server.

The project model is contributed to by the design team (architects, surveyors, consulting engineers and others) and the design sub-contractors. Each contributor adds their own additional discipline specific information to the model on an ongoing basis and tracks any changes made.

The model can be updated to take account of client change and other additional works and may determine how the timing and cost of the programme could be impacted by any client change or additional works. The model may also be used to plan the procurement of materials, equipment and manpower ensuring these are at an appropriate level to avoid any overspend.

On completion of the project, the model can be used by the employer to assist the maintenance and occupation of the building.

This transparent approach allows BIM to operate at its full potential but it also raises some legal issues which are discussed further below.

Possible legal issues arising from Level 3 BIM use

The full legal implications of BIM are still being explored and will not become fully evident until such time as the use of Level 3 BIM becomes widespread. It is however unlikely that BIM will radically shift legal risks and responsibilities: indeed, the overall risk to the various parties should in fact decrease if the key issues are identified at an early stage and the parties adopt a collaborative approach.

Contracts must recognise BIM

BIM can be used in many different ways. It is therefore crucial that the parties define the full extent to which BIM will be used on their project and ensure the contract reflects the part that BIM will play.



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Currently, the only existing contracts that could be used in their current form on a BIM Level 3 project are JCT-Constructing Excellence, NEC3 and PPC2000, all of which employ a collaborate approach and share risk. The use of other standard forms would require significant amendment or 'Z' clauses.

BIM managers

For some, using BIM may be an inherently new way of working, in which case identifying and engaging a BIM Manager could be important to ensure proper management of the model.

If a BIM Manager is appointed (any BIM Manager will ideally be the lead designer) then the duties of any such BIM Manager should be defined by any contract or professional appointment to minimise any duplication of design responsibility. Duties may include controlling access to the model and ensuring that all data is entered properly and is well structured.

Precedence of any BIM project model

If the BIM model is to take contractual precedence, the definition of "contract documents" should be amended to include the project model. This would make the model itself and the proper management of the model key. The model should only take contractual precedence if it can be operated properly and on a full-time (as opposed to part-time) basis.

If the model is not to take precedence, the level of importance of the model and its use against other contract documents (for example, specifications or other design documents) would have to be considered and reflected by the contract.

If the model is not included as a contract document at all, it would be of relatively limited use. It would have no contractual status and may be limited to a mere design tool.

Intellectual property rights and ownership of the model

The traditional approach is for the designer to own the copyright in his designs and specifications and for the client to be provided with a licence to use the plans, designs and specifications for the project. Alternatively, joint ownership can be agreed.

With Level 3 BIM, the issues are slightly more complicated because of the existence of the model. The preferred approach would probably be for the employer to take ownership of the model, and for the lead designer to retain the copyright in the model (as has been the case traditionally). This would enable the employer to generate and manage data throughout the lifecycle of the building on issues such as planning, operations and maintenance and energy efficiency. This is a defining feature and key advantage of BIM Level 3.

The sharing approach encouraged by BIM requires the contract to determine the copyright of data contributed to the model as well as the data within the model itself. Each party should therefore confirm it owns the copyright for the data it contributes to the model in default of which another party could unwittingly violate copyright by copying or using data in respect of which it has no legal entitlement.

Confidentiality

Another issue that arises out of intellectual property and data protection issues is confidentiality of the data supplied. Whilst this is by no means a feature unique to Level 3 BIM (the same issues arise in 2D design) it is worth re-iterating in the context of Level 3 BIM because BIM users need to be aware that any information added

to the model might be widely accessible. Trade secrets and confidential details necessary for the manufacture of certain components may need to be incorporated into the model and some parties will understandably feel uneasy about such information becoming more easily accessible.

One option might be to insert confidentiality provisions into the project documents and appointments but this may be difficult to achieve in practice. A solution in part may be to exclude sensitive information from the model, or alternatively, only provide sensitive information to the requesting party.

Conclusion

Whilst legal issues do arise from the use of BIM Level 3 (and also BIM Level 2) they are by no means insurmountable and should not hinder the future use of BIM.

Provided BIM is used properly and accounted for in the contract documents, it should minimise design conflicts at the design phase prior to the build commencing. When design defects are discovered on site, delay can quickly become an issue. The use of Level 3 and Level 2 BIM ought therefore to reduce the incidence of professional negligence claims and delay and disruption claims should in turn also decrease.

Should you wish to receive further information in relation to this briefing note or the source material referred to, then please contact Lisa Kingston. lkingston@fenwickelliott.com. Tel +44 (0) 207 421 1986

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