BIM promotes collaboration

Following a recent BIM Working Group held by Beale & Company, Andrew Croft and Natalie Ledger identify some of the legal issues arising from the use of BIM and explore some of the methods of managing them. Collaborative contracts look like becoming more prevalent.

**KEY POINTS**

- Uptake of BIM is increasing as the government’s deadline of 2016 draws close
- How BIM will be used on a project should be clarified at the outset
- BIM is often reflected in construction contracts, including the CIC Protocol
- Contracts must adequately reflect the use of BIM on projects
- BIM is continuing to develop and as it does so, collaborative contracts are likely to become more prevalent

BIM was defined by the BIM Working Party in its strategy paper for the Government Construction Client Group (March 2011) as:

‘a 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 progress of BIM has not been consistent across the construction industry. However, there are three generally accepted ‘levels’ of ‘BIM maturity’, i.e. essentially how BIM is utilised in a construction project:

- Level 1 BIM, when BIM is used simply as an internal tool, not as a collaborative tool;
- Level 2 BIM, when information is exchanged between the project team and may be integrated to some extent, but the parties’ contributions generally remain distinct; and
- Level 3 BIM, when BIM is used in a truly integrated way and information can be readily accessed by all relevant members of the construction team.

Thus, as BIM maturity increases more data, both graphical and non-graphical is shared between the project parties.

**Government policy**

In 2011, the UK government published its construction strategy announcing that all centrally procured government projects will be required to use collaborative BIM (generally understood to be Level 2 BIM) by 2016. By introducing BIM into all centrally procured projects, the government aims to reduce construction costs and whole life costs by 33%, and to reduce the overall time for completion by 50%. In addition to cost savings, BIM can improve client outcomes, encourage co-operation in the industry and provide for better information retrieval. Spurred on by the government’s policy, the construction industry has widely adopted BIM in the public and private sectors. By 2015, NBS in their National BIM Report found that BIM adoption ‘is moving from being led from innovators and early adopters, towards being a more mature market’. With the growing adoption of BIM in the industry, and the increasing requirement on parties to use BIM in construction projects, parties must consider the legal issues and risks arising from the use of BIM and manage these.
Legal issues
Defining BIM and its use
One of the key messages arising out of our recent discussions with the industry is that for BIM to be successfully implemented on a project it is essential that all parties involved on a project have a common understanding of what BIM means on that project. On current projects it is common for clients to request ‘BIM’ without defining this and often the client does not fully understand what they do mean. If BIM is not defined at the outset of a project:

- differences of opinion may arise in respect of what the supply chain have agreed to do by using BIM;
- the supply chain may not have the capabilities or maturity to use BIM in the way the employer intended; and/or
- if the employer’s understanding of BIM only develops as the project progresses, the supply chain may be required to carry out its obligations in a different way during the course of the project and unanticipated changes may be required.

In such circumstances, the project team and the client would need to resolve these issues between themselves and this could take time, resulting in delay and extra cost.

Such risks can be reduced if the employer issues Employers’ Information Requirements (EIRs) as part of the tendering process. EIRs will set out how what models and other information the employer requires to be delivered on a BIM project at each stage and how the same should be prepared and delivered. The issuing of EIRs by the employer is recommended in PAS 1192-2, a specification for information management on a construction project. A mutual understanding of BIM will allow consistency between the parties and aid contract administration. If the employer is unable to define its EIRs, its consultants could offer to advise the employer in relation to the same at the outset.

Contractual framework
The use of BIM is not always reflected in construction contracts. If BIM is not always provided for in the contract, there are a number of risks associated with the use of BIM, which are highlighted below. Where the use of BIM is reflected contractually it is usually by:

- incorporating protocols (such as the industry standard CIC BIM Protocol) into the contract; or
- including additional obligations in relation to BIM.

Protocols
The CIC BIM Protocol (CIC Protocol) was published by the BIM Task Group for use on Level 2 BIM projects, and drafted by John Henderson and Andrew Croft of Beale & Company. The CIC Protocol:

- places contractual obligations on the employer to incorporate the CIC Protocol into the contracts of all those involved in the preparation and use of models, and appoint an information manager who establishes and manages the basis on which BIM will be used on the project;
- places contractual obligations on the member of the project team in relation to the production and use of models;
- grants licences to and from the member of the project team and the employer for the use of models for a purpose which is consistent with the level of detail of a model; and
- includes important exclusions of liability in relation to the use of BIM, including for any use of a model which is not in accordance with the intellectual property licence granted in the Protocol and in respect of technological issues in a model (including data corruption).

To be effective the CIC Protocol should be expressly incorporated into all contracts and any sub-contracts on a project where obligations arise in relation to models, with the CIC Protocol appended. If the CIC Protocol is used Appendix 1 (Model Production and Delivery Table) and Appendix 2 (Information Requirements) need to be carefully completed. This includes clearly defining in Appendix 1 the models required from the project teams’ members and the level of detail to which they must be prepared. As above, the level of detail determines the purpose for which a model can be used, so its definition is key. Some employers have attempted to use the CIC Protocol without completing Appendix 1 and 2, in which case there is significant uncertainty as to the parties’ obligations and risk.

Additional obligations
Other common contractual approaches include:

- a strict obligation to comply with a ‘BIM Execution Plan’. BIM Execution Plans are practical documents governing how BIM will be used and change during a project. This may expose parties to risks.
outside the parties’ control and may not be covered by professional indemnity insurance, so should be resisted; and

- an obligation to comply the ‘BIM Requirements’ which are either not specified or ‘to be advised’. The intention of such an obligation should be clarified at the outset, otherwise uncertainty will arise and the employer could seek to impose additional obligations on the project team during the project.

Inadequate/non-existent contractual provision
If the contractual provisions in relation to BIM are inadequate or non-existent and BIM is used on a project, there are real risks associated with the same, in particular in respect of the basis upon which any collaboration takes place and the technological risks which can be associated with the inconsistent use of BIM.

Collaboration
If the use of BIM on a project involves any collaboration between the members of the project team, as it does at all levels of maturity other than Level 1, there can be uncertainty in relation to: (i) when models and other information will be produced on the project by the project team; (ii) the formats in which models will be issued; and (iii) the extent to which models can be used by the project team.

On such projects, if possible a clear BIM Execution Plan should be agreed between the members of the project team which governs how they will use BIM on the project, otherwise members of the project team could be delayed as a result of information being provided at the wrong time or in the wrong format. Even if a BIM Execution Plan is agreed, if it does not clearly define how any models and other information exchanged on the project can be used (eg by reference to a Level of Detail), there is a risk that it will be used for a purpose which was not intended when it was issued.

For this reason, on such projects models are often exchanged on the basis that they can only be used for very limited purposes, if at all, with significant disclaimers included in the model. Whilst it is understandable that members of the project team wish to protect their position in this way, it is likely to hinder the true benefits of the use of BIM being achieved. It is therefore important that where possible, the basis on which any collaboration will take place on a BIM project and the extent to which models can be used is agreed at the outset, as envisaged under the CIC Protocol.

Data loss and interoperability
One of the key features of BIM is that data is shared on a common data environment (the CDE). There are risks involved in hosting the CDE, such as the complete data loss of all information uploaded into the same. This is likely to have a major impact on a project, with associated costs being incurred. Taking into consideration software companies’ often one-sided terms and conditions it is unlikely that the CDE host will be able to recover such losses from them. From our recent discussions with the industry it appears that some employers are requesting that members of the project team take responsibility of hosting the CDE, but it is unlikely that the project team’s insurance will cover such loss and they should resist doing so.

On a BIM project the use of technology is central to the design process. Different members of the project team often use different software to prepare and access models. If the formats in which models will be prepared is not carefully considered at the outset of the projects there is a real risk of data corruption arising as a result of the software being used by the project team failing to be interoperable. This underlines the importance of a clear BIM Execution Plan being agreed. The CIC Protocol includes an exclusion of liability for the corruption of data in cl 5.2.

Conclusion
Dealing with a complex industry-wide innovation such as BIM inevitably raises a range of legal issues. This article has examined some of the most common issues arising. However, as BIM matures and becomes ‘business as usual’, further legal issues may arise. In our view the key issue associated with the use of BIM at the moment is the need to have clarity across the project team as to how BIM will be used and the basis on which they will collaborate, including in the contracts of the project team. As the industry looks towards 2016, Level 3 BIM and Digital Built Britain (the ‘10 year plan’ for the adoption of Level 3 BIM recently published by the UK BIM Task Group), legal issues associated with BIM will continue to evolve, with collaborative procurement methods and integrated project insurance likely becoming more prevalent. CL