

Building Information Modelling (BIM) – A New Method of Project Delivery but a Minefield of Potential Legal Issues?

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Building Information Modelling (BIM) is a revolutionary method of project delivery that is becoming common throughout the world. BIM is a method of project management, which attempts to encapsulate multiple facets of an engineering project in one self-contained computer programme, that all parties have access to in order to manage and maintain the project for potentially its whole of life. There are 2 main categories that these touted benefits fall into:

1. The first is decreasing the time and cost of the design and construction phase (there are reports of 20% being a typical saving). The essential aim of BIM, is to have all the parties to the project contributing to developing the CAD-model right from the very commencement of the project. It is thus said, that this will ensure a design that is tailored to conditions with significantly reduced errors.
2. The second category, is the decreasing the whole of the building total life costs (up to a 33% saving has been reported over the entire life of a BIM building). It has been reported that for every \$1 for construction costs there is normally a \$100 allocated towards operation and maintenance of the facility over the projects life. Thus for an owner, if BIM can reduce the operation and maintenance to \$70 or lower, these significant savings are very attractive.

It is natural therefore for facility owners, particularly government entities, to want to take advantage of these potential financial benefits by implementing BIM on their projects. So, while the demand is high for BIM from owners, the implementation aspects of BIM are lagging behind. This is largely due to a number of unresolved issues such as (1) confusion with the adoption of “standardized” BIM computer programs; (2) undefined methods for managing the relationships and scope of works between the participants; and, (3) unsatisfactory contractual documentation.

The most important of these is the contractual aspect, as the contractual documentation on a project is quite possibly the most important part of the entire project! There is of course an awareness of this issue and various associations around the world are developing tailored BIM contract documents, for instance the American Institute of Architects (AIA) is creating the “Digital Practice Documents” for BIM projects, and The Australian Institute of Architects and Consult Australia (AustIA/CA) has developed the “BIM in Practice Guidelines”.

Despite best attempts to develop what appears to be a legally sound contractual document, the method by which contracts become user friendly is the process of legal challenge. The Australian Standards suite of construction contracts such as AS2124 and AS4000 are constantly being refined as matters under dispute present to court. As a result of a court

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finding, the relevant clause is then modified to avoid that particular dispute arising in the future. The issue with BIM projects, is that with a “brand new” type of contract, such as that for BIM, one cannot know what clauses are sound and which are not. In effect, these BIM contracts will follow their predecessors, such as AS2124 and be subject to many forthcoming years of legal challenge. At this point, it should be noted that due to the infancy of the BIM contractual refinement process there are relatively few cases so far.

There are a few main areas that have already been identified as potentially going to be subject to legal challenge, including: confidentiality (document control) and intellectual property; and liability/negligence and insurance issues.

Confidentiality and Intellectual Property

Traditional contracts such as AS2124 mandate a certain level of confidentiality of the parties to the contract. It has very quickly been realized in many circles that in a BIM project, the fact that because there could be multiple contracting parties that have access to the “master copy”, there is a very real possibility of issues of confidentiality arising. This includes not only an actual breach of confidentiality but extends to an unwillingness to be open and frank in the first place because of this possibility that someone else can access their data.

Confidentiality breaches are a distinct possibility now when dealing with the concept of intellectual property. Construction projects are subject to intellectual property (IP) law, and accordingly the standard contracts such as AS2124 recognize and protect these rights. For instance, consider the protections given in clause 13 of AS2124 to protect infringements of intellectual property rights (such as plans, drawings, designs, and the final form).

In regards to confidentiality and intellectual property law a number of legal questions arise which may be subject to future legal challenges. For instance, who “owns” the final design when many different parties have contributed its development? How can the openness of the BIM style project and confidentiality be reconciled to protect participants?

Negligence/Liability and Insurance Issues

This is the aspect causing the most concern to potential participants, particularly in light of a large and potentially undefined number of project participants. A BIM project is successful by reason of having as many participants as possible be able to access and contribute to the development of the conceptual design and detailed technical design. This then, throws up many questions in regards to BIM projects and negligence and liability.

- Who manages the inputting of data into the model? What happens if there is unauthorized access to the data set? Who takes ultimate responsibility for the integrity of that data?
- Who controls changes to the model and who is liable for changes to the model if incorrect information is inputted? This incorrect data may then be subject to the “ripple effect” where errors at the start are propagated by various subsequent parties relying on that data. Who would then bear the liability for the final defect, would it even be possible to assign liability? BIM programs do allow for tracking but the fundamental problem still exists, who is liable if multiple parties have rippled and magnified the original problem?
- Ongoing liability issues: when does liability cease for each party?

In conclusion, in light of the preceding discussion, a final point to be briefly mentioned is that of insurance. There have been serious questions of the possibility of traditional professional indemnity insurances failing to respond to BIM participants in regards to the issues highlighted herein. This is a complex area which will be further developed in future articles by the authors.