

## Building Information Modelling (BIM) and its legal implications

Internationally, Building Information Modelling (BIM) has been identified as one of the key technologies that will transform the construction industry. Unsurprisingly, Singapore has jumped onto the bandwagon, with the adoption rate for BIM rising from 20% in 2009 to 65% of all constructions in 2014.<sup>1</sup> The key value of BIM lies in enabling building professionals of various disciplines (architects, structural engineers, structural professionals, M&E engineers and contractors) to explore the building project digitally before it is built. The 3-D model of a project and drawings can be shared among the professionals who can then analyze and resolve potential design clashes before construction begins. BIM facilitates better teamwork among professionals which in turn reduces unnecessary re-works when the project is being constructed.

BIM, with its strong emphasis on collaboration, has not been a construction industry hallmark. Instead, the industry, its practices and its contract documents assume definite and distinct roles and liabilities. As such, concerns as to (i) whether the use of BIM alters traditional allocation of responsibility and liability; (ii) whether the party managing BIM assume additional liability exposure; as well as (iii) how should intellectual property rights be accessed when using BIM, are important legal questions that will be addressed in this Article.

To pre-empt the potential legal issues arising from the use of BIM, the BIM Steering Committee (BIMSC), set up by the Building & Construction Authority (BCA), drafted the BIM Particular Conditions which are the result of a broad construction industry representation consisting of developers, government organisations, consultants and contractors.

All parties to a Project shall incorporate the BIM Particular Conditions into all agreements for services, supply and/or construction where at least one party is involved in the BIM process, by having a clause in the contract which says that the BIM Particular Conditions is one of the documents which forms the contract. The contract must also have clause which identifies the guide to be used (e.g. the Singapore BIM Guide). This clause should be identical in every BIM user's contract.

The BIM Particular Conditions are intended for general use across all procurement methods. Thus, it is not drafted to be comprehensive but instead sets out a basic framework for BIM to be used in Singapore. As such, users of the BIM Particular Conditions are advised to review and adapt the conditions to suit their particular project requirements.

### Issue (i): Whether the use of BIM alters traditional allocation of responsibility and liability

Generally, the BIM Particular Conditions serve to preserve the contractual relationships among the parties to a project. Clause 2.2 of the BIM Particular Conditions states that the BIM Particular Conditions does not change any contractual relationships or shift any risks of the parties in a Project as provided in the Principal Agreements. However, in the event of a conflict between the BIM Particular Conditions and the Principal Agreement, the former prevails. Similarly, should there be any inconsistency between a Contract Drawing and a BIM Model, the former prevails.

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<sup>1</sup> BCA newsroom, international experts: more benefits can be reaped from building information modelling.

As the standard of care applicable to each party regarding any Contribution shall be in accordance with the Principal Agreement or as provided by law, there is thus change no change in risk allocation due to BIM.

#### Issue (ii): Whether the party managing BIM assume additional liability exposure

Clause 3 of the BIM Particular Conditions provides for the appointment of a BIM Manager. The role of the BIM Manager involves calling all parties to the Project to agree upon the terms of a BIM Execution Plan, which would be developed in accordance with the BIM Guide. The BIM Execution Plan outlines the overall vision along with implementation details for the team to follow throughout the project. This is done by defining the roles and responsibilities of the project members for their BIM deliverables.

The party managing BIM ("Model Author") does not assume additional liability exposure as any use by subsequent Model Authors or Model Users, of a portion of the 3-D representation of the Project ("Model Element"), that is inconsistent with the BIM Execution Plan, shall be at their own sole risk and without liability to the Model Author. Clause 5.4 of the BIM Particular Conditions states that subsequent Model Authors and Model Users shall indemnify and defend the Model Author from and against all claims arising from or related to the subsequent Model Author's or Model User's unauthorised modification to, or use of, the Model Author's content. If the BIM Execution Plan requires work beyond the original scope of works, parties can always apply for a modification of the original BIM Execution plan.

#### Issue (iii): How should intellectual property rights be accessed when using BIM

Generally, parties retain copyright in their contribution. Clause 6.1 of the BIM Particular Conditions provides that each party warrants that it owns the intellectual property in its contribution and indemnifies against claims by third parties for alleged infringement of copyrights contained in the party's contributions. In addition, a limited non-exclusive license for the use of the party's contributions is granted to all parties upstream and downstream to carry out the project and only for purposes of the project. Save for the fact that parties are entitled to keep archival copies, the license to use is only for the duration of the project or as permitted by law. Nevertheless, the employer is entitled to use the Final Design Model after project completion if it is allowed in the Principal Agreement between the Employer and the party concerned and in accordance with the terms of the Principal Agreement. In sum, in the absence of express language to the contrary in the Principal Agreement or in the BIM Particular Conditions, nothing in the BIM Particular Conditions, shall be construed to dispossess any party in the project of copyrights or license rights held by that party in its contribution to any model. Other parties that provide contributions to a model shall not be deemed as co-authors in the contributions of other parties to the project.

#### Conclusion

There are many benefits that BIM has to offer to the growing construction industry in Singapore. More importantly, as this article has shown, users of BIM can relish in the fact that the use of BIM does not alter traditional allocation of responsibility and liability, that the party managing BIM does not assume additional liability exposure and that parties retain copyright in their contribution. The author hopes that readers of this Article will gain a greater appreciation of the legal issues surrounding the use of BIM. This will in turn, enable them to make more informed choices, when deciding whether to or not to adopt the use of BIM.