

BIM-Enabled Projects and Construction Contracts in the Middle East

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As governments and developers in the GCC continue to mandate the use of Building Information Modelling (“BIM”) on sophisticated construction projects, a basic understanding of the contractual concepts and alternative procurement models, which deal with the legal issues arising out a BIM-enabled project, is a must.

When Dubai Municipality mandated the use of BIM through Circular No. 196, succeeded by Circular No. 207, on certain categories of building in the Middle East, consultants were generally welcoming, since they understood the advantages that a BIM-enabled project could deliver. This trend has continued and we are now seeing major developers aiming to one day facilitate a working level of BIM similar, or equivalent to, that found in the UK.

In the UK, it is generally understood that the government has been pushing for a working standard of BIM that requires each project member to create a virtual 3D model of their work using object-oriented software and to follow a managed approach to information creation and exchange. It is generally understood that this reflects a level 2 working standard. While the benefits of that level of BIM maturity have been well documented, in practice the collaborative approach required for its adoption has not been readily embraced in the Middle East.

Most projects in the region currently only require BIM up to a level where the model is a managed computer aided design (CAD), with some going slightly further requiring a three dimensional aspect of that design. However, the tide is slowly turning and, while the Middle East may be some way off establishing BIM working levels equivalent to that of the UK, it is essential for the further development of BIM within the region that the ideas of collaboration, information creation, and exchange are fully understood so as they can be embraced.

FIDIC and BIM

In trying to understand how BIM is to be addressed in construction contracts in the Middle East, we first look to the Federation Internationale Des Ingenieurs-Conseils (FIDIC) Rainbow Suite of contracts. The FIDIC suite of contracts is the pre-eminent standard form of contract governing all manner of construction works within the UAE and the wider Gulf region.

With the recent launch of the Second Editions of the Red, Yellow and Silver Books (the “Second Editions”), we saw some significant changes to these standard forms. Notably, however, FIDIC did not address the use of BIM in the General Conditions and only made reference to BIM through a special Advisory Notice within the Special Provisions.

The Advisory Notice suggests that FIDIC is taking its time in finalising its position in relation to BIM but indicates it is currently preparing two documents to address the use of its form of contract for BIM-enabled projects, namely a “Technology Guideline” and a “Definition of Scope Guideline Specific to BIM”, which are to be released “shortly”.

These documents, at least in title, seem to suggest FIDIC is taking a similar approach to that of some other popular standard form contracts in the UK, namely the Joint Contracts Tribunal (“JCT”) and NEC Engineering and Construction Contract (“NEC3”), by including a protocol document and an execution plan that clearly addresses the contractual issues inherent in implementing BIM.

FIDIC's cautious approach allows it to address some of the criticisms aimed at the BIM protocols embraced by other standard form contracts which, as has been discussed in a previous article published by this practice, have arguably failed to provide sufficient detail to be used effectively.

Further, FIDIC has the opportunity to build on the collaborative contractual approach that has been a theme in its amendments to the Second Editions. For example, the new early warning procedure may be aided by the use of BIM as an early warning tool, identifying potential clashes between design and construction at an earlier stage in the construction cycle.

As FIDIC notes itself, BIM is "founded on a team approach and successful projects utilizing BIM encourage collaboration". BIM can only be as good as the parties who use it and, with the amendments to the Second Editions encouraging a more collaborative approach, FIDIC has a real chance to distinguish itself as the leader in BIM adoption by ensuring that the Technology Guideline and the Definition of Scope Guideline Specific to BIM address collaborative information sharing in the BIM common data environment and deliver a foundation of trustworthiness, safety, and security over the digitally built assets.

Key Risks for BIM

While the benefits of a collaborative approach to BIM are well established, a certain level of caution must be taken and expectations must be managed. In this regard, FIDIC has identified and released its list of key risk areas which it sees as being applicable to any BIM-enabled project, which are as follows:

- misunderstanding of the scope of services;
- use of data for an inappropriate purpose and reliance on inappropriate data;
- ineffective information, document, or data management;
- cyber security and responsibility for "holding" the models or data; and
- definition of deliverables, approval, and delivery.

While we expect the drafting of FIDIC's Technology Guideline and Definition of Scope Guideline Specific to BIM to address these issues, it is also important to consider these issues at the early stage of any BIM-enabled project that does not use the FIDIC form.

Accordingly, extrapolating the key risks identified by FIDIC, parties who are considering the use of BIM on their next projects should give particular consideration to the following:

Process and Data

BIM, at its heart, is a management tool that establishes processes. In order to utilise BIM to its fullest potential, any protocol should include clear and accepted processes, which establish each party's responsibilities. For example, the parties should establish a mechanism for dealing with changes in design and variations, which also considers how to notify all design team members of that change. This may include the appointment of a BIM manager or risk apportionment to a particular party. The parties should also specify the design information to be included within the building model, which party will host or store that model and data, and what security should be provided to ensure there are back-ups of the data.

Interoperability

There remains a risk of a loss of data integrity where different systems and software are used. This is especially so on international projects where companies from different countries are often working together. To reduce this risk, parties should specify compatible software programs that may be used on the model and provide a procedure to minimise the risk of errors in the data infecting the design.

Standardisation and Consistency

Given the collaborative nature of BIM, it is important to have a single dictionary. The parties should agree

a dictionary of defined terms, confirm the deliverables, and specify how compliance is demonstrated. As a practical note, contractual conditions should include that the terms and deliverables agreed are to be included in all subcontracts that have a design responsibility.

Copyright and Ownership

Traditionally, the position has been that each party will own the copyright for each element of the design of the model for which they are responsible.

Where parties are to be working on a part of the model for which another party is responsible for the design, the protocol may grant a non-exclusive license. This may also extend to where the owner is to use the model for maintenance purposes before handing over of the project. The parties should define when ownership of the model will vest in the employer or end user.

Risk Allocation

Parties should incorporate a provision for the inclusion of a form of warranty for the data provided in the model by the various designers.

Collaboration

To assist with collaboration, parties should require all designers to attend coordination meetings and to work with any BIM manager who may be appointed.

By carefully considering the key risks identified by FIDIC and the items listed above, parties are well placed to start the conversation on how they wish to best manage the contractual issues that will inherently arise during a BIM-enabled project.

Al Tamimi & Company's Construction and Infrastructure team regularly advises on BIM. For further information please contact Euan Lloyd (e.lloyd@tamimi.com).