

FIDIC and BIM

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One of the reasons FIDIC are amending the 1999 Rainbow Suite is to help ensure that the contracts meet current international best practise. This was no doubt one of the reasons why FIDIC was the primary organiser of the recent Regional Conference: the Road to Smart Infrastructure in Belgrade¹. Indeed, one of the key themes of the conference was the use of Building Information Modelling, better known as BIM.

How is FIDIC likely to address BIM?

Now, there is no mention of BIM in the pre-released second edition of the 2017 Yellow Book. That is not to say that FIDIC has neglected BIM. Far from it: at least three of FIDIC's committees² have been asked to consider how best to deal with BIM. One particular difficulty for FIDIC is that it is an international form of contract. It is designed for use throughout the many different jurisdictions and cultures that the engineering and construction industry operate. There is far from being any uniform or standard approach. This is why any particular amendment to the Rainbow Suite itself is not expected. FIDIC's approach is more likely to be in the form of a Guidance Note or perhaps a Protocol for use with the FIDIC form.

This would be valuable, not least given FIDIC's engineering background. It would also be of assistance because BIM means so many different things to different people and organisations. Not only was this clear from the Belgrade Conference, but it is also something which has been highlighted by King's College, London, who have prepared an excellent BIM Research Report which was published online on 1 July 2016.³

These differences in understanding and the application and use of BIM need to be understood by anyone putting together a project. The definition of terms, something which is also important on a cross-border project, becomes ever more important with something as new as BIM. Who is the BIM Information Manager? The BIM Co-ordinator? Are they, in fact, one and the same? What do they do?

Remember that BIM is more than simply digital working. The NBS in the UK has said this:

“BIM is an acronym for Building Information Modelling. It describes the means by which everyone can understand a building through the use of a digital model. Modelling an asset in digital form enables those who interact with the building to optimise their actions, resulting in a greater whole life value for the asset ... **BIM is a way of working...**”⁴

This is a helpful definition because it brings together the two main features of BIM. Yes, it is a form of digital tool which will help optimise output, both in terms of working practices as well as the whole life value of the building or asset, but it is also a project management tool. And it is very likely that BIM, alongside other technical advances, will change the way projects are run. It may change the risk profile of a project. But it will not change what you need to bear in mind when considering that risk profile.

Contract Risk Management

Contract risk management never changes, whether using BIM or not:

- No matter what contracts, protocols, guidance notes or otherwise are required on a particular project, it is important to understand your obligations, liabilities and limitations within each document;
- If the contract documents do not align with each other and/or are not considered sufficiently in detail, this can lead to ambiguity and uncertainty;
- Make sure you understand what you are being asked to do as, depending on the terms of your contract, these could be binding documents with obligations contained therein which you need to understand and be alert to.

The use of BIM may well add some additional levels of responsibility, so check the detail.

BIM has many advantages as a project management tool. The graphics or animation enable the project participants to understand and visualise the scope of the project, right at the outset. This may negate the need for costly changes or variations halfway through as an employer realises they actually wanted something slightly different, or the engineer or contractor comes to understand that there is a more efficient way to design and/or construct the building. This is an example of one of the likely changes in the way we work: early contractor (and supplier) engagement. It might also be an example of collaboration, parties working together to make the construction process more efficient and so rewarding.

It is important that your contract as a whole contains a clear set of obligations as to how the engineer or contractor will be expected to implement BIM. These obligations do not require any amendment by FIDIC to the main contract form, but it is important to be clear as to when these obligations start. Ideally, this would be with the project procurement process, but does it also continue into post-

completion operations? In the UK, we have the Government Soft Landings Policy or GSL. The essential principle behind the government's GSL philosophy is that the ongoing maintenance and operational cost of a building during its lifecycle far outweighs the original capital cost. If this is recognised through early engagement in the design process, then there is greater scope to achieve both savings and increased functionality.

What might FIDIC be thinking about?

Certainly, it is already clear from the pre-released second edition 2017 Yellow Book that FIDIC is looking to embrace collaborative principles. Dispute avoidance is a clear priority. The introduction across the Rainbow Suite at sub-clause 8.3 of early warning is another such example. The use of BIM may assist with this, as it may result in parties realising, at an earlier stage in the process, that there might be a problem.

This increased access through BIM to the design of others might affect the common law duty to warn of errors or problems, and parties will need to bear in mind the extent of their potential legal duty to consider those designs.

There are two key related documents that FIDIC will be considering: the use of a Protocol and the BIM Execution Plan. They may also be considering the role of the BIM Information Manager.

The BIM Protocol

Effectively, the BIM Protocol explains who does what, when and how? A protocol should take the following into account:

- Definitions;
- Establish priority of the contract documents;
- Set out the obligations of the Employer;
 - Put a Protocol in place for everyone?
 - Appoint the Information Manager?
- Clearly define the duties of the BIM Information Manager
- Establish the obligations of project team members;
 - Produce the specified models as agreed;
- Provide a framework for collaborative working practice;
- Electronic Data Exchange: interoperability: making sure the data can talk to each other

- Mandate use of Information Management standards;
- Use of models;
 - Who by?
 - Copyright
 - Licences related to permitted purposes
 - Limitations on liability associated with models.

The UK CIC Protocol

In the UK, there is the CIC Protocol. The purpose of the Protocol is to integrate BIM Level 2 with standard form contracts. Essentially, the way it works is to provide a series of supplementary contract documents to be signed by the employer, engineer, contractor, and (ideally) subcontractors, suppliers and anyone else who will be making design contributions. Of course, if using a protocol (or any other bespoke document which attempts to provide a similar role), it is important to understand what the protocol attempts to do in terms of each party's contractual obligations, liabilities and associated limitations.

The CIC Protocol is designed to take precedence in the event of conflict or discrepancy with any contract (clause 2.2). A FIDIC BIM Protocol ought to do the same. Care must, however, be taken, as there remains a risk that interpreting the wording of the Protocol alongside the contract provisions, in particular standard form contracts which are not amended, will be problematic. Clients/employers should note that clause 3 of the CIC Protocol makes it an absolute obligation on them to secure protocols in substantially the same form from all project team members.

The UK JCT Form of Contract currently tries to deal with this issue in this way in the JCTDB 2016. The contract provides a new entry for the identification of a BIM Protocol, and the BIM Protocol is included within the definition of a Contract Document. Clause 1.3 states that the Conditions shall override any other Contract Document (i.e., the BIM Protocol) and clause 1.4.6 incorporates the BIM Protocol's information (in a form or medium conforming to that protocol) where '*documents*' are referred to throughout the contract. The JCTDB 2016 then integrates this defined term, BIM Protocol, throughout the contract.⁵

The CIC Protocol includes limitations on a project team member's liability. Clause 5 provides that the project team member does not warrant the integrity of electronic data transmission, and clause 6.4 provides the right for a project team member to revoke or suspend a licence to use their models in the event of non-payment. Furthermore, clause 4.1.2 provides that the obligation on project team members to deliver models and comply with Information Requirements is limited to "*reasonable endeavours*".

This duty of care is lower than the more typically accepted “*reasonable skill and care*”. Under the FIDIC form, design obligations are subject to a fitness for purpose obligation.

Indeed, parties to the project should ensure that they understand what effect the use of BIM will have on their specific duties in respect of not just the design, but costing, programming and construction too. Also, given the current widespread variance in knowledge and experience, does everyone understand what level of BIM experience and expertise everyone has, and the level that everyone has agreed to provide?

However, regardless of whether the CIC Protocol or your own bespoke protocol is used, all parties need to understand where obligations and duties of care are either heightened or diluted from the industry norm. In addition, with numerous documents setting out the BIM procedures and standards for the project, parties need to ensure they are aware of their obligations within each document and understand how they all fit together, both in terms of priority as well as process. For example, time and deadlines in terms of model production and otherwise are not dealt with in the CIC Protocol, but are left to the BIM Execution Plans.

BIM Execution Plan

The BIM Execution Plan should provide the detail of who does what and when. This will set out the programme and confirm the applicable standards. It should always be a project specific document. It should be prepared by lead designer and should, if this detail is not provided for elsewhere, deal with:

- Model origin, purpose and orientation;
- File naming convention – make sure everyone uses the same terms and abbreviations;
- Templates;
- Authorisation and information approval process;
- Software versions, file and exchange formats;
- Electronic Document Management Systems;
- Who does what, when?

The BIM Execution Plan would not be a part of the sub-clause 8.3 FIDIC programme, but is best viewed as being in addition to but aligned with the Construction Programme and the Design Programme. It was suggested at the Belgrade Conference⁶ that FIDIC could consider making the agreement of a BIM Execution Plan a pre-condition to commencement under sub-clause 8.1. An interesting idea, which rightly highlights the importance of this document, but one which for the time being is perhaps best left to the parties as a particular condition.

BIM Information Manager

Finally, there is the role of the role of the BIM Information Manager. Essentially, the BIM Information Manager is there to co-ordinate the use of BIM on a project. They will be:

- Responsible for preparing and implementing the BIM Execution Plan;
- Responsible for the model management;
- Responsible for integration of individual designs (populating the model);
- Responsible for user access to the BIM Model;
- Data security;
- Maintain a data archive;

Usually, the BIM Information Manager has no design responsibility. They are responsible for the management of information, information processes and compliance with agreed procedures, not the coordination of design. If the BIM Information Manager is to have design responsibility then this **must** be dealt with in the BIM Protocol – otherwise a potential conflict arises as regards to design and design coordination roles.

What is the NEC doing?

The NEC announced at the beginning of March 2017, that they were releasing the new NEC4 on 22 June 2017. This deals with BIM in another way. Their new contract will include a new secondary option specifically to support the use of BIM. This, the NEC have said will provide “the additional contract clauses required to support the production of information for BIM.” As well as dealing with issues such as the Model, ownership and liability, under the new BIM option, the Contractor will be required to an Information Execution Plan either for incorporation in the contract from the outset, or within a period defined by the Client.

Conclusion

There are other issues which FIDIC and others may need to consider, but the key is establishing how the use of BIM can sit alongside the FIDIC form of contract. As noted at the outset, FIDIC’s approach is more likely to be in the form of a Guidance Note or perhaps a Protocol for use with the FIDIC form. This would have the advantage of being capable of adaptation to suit the environment of the particular project in question.

But whatever FIDIC do, it is important not to be seduced by the technological advances BIM is capable of. BIM is only as good as the people who use it. BIM can certainly offer successful design, procurement delivery and operation of projects, but this is only provided the project team work together.

This is why it was once said by Dale Sinclair⁷ that BIM should actually be known as BIM(M): BIM(M) Building Information Modelling and Management. There is considerable sense in that

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