

When BIM BOOMS: Construction law and digital transition

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BIM?

BIM – the abbreviation for “Building Information Modeling” – is gradually becoming an essential element of large-scale construction projects. It is an electronic modeling tool for building data integrating all the stages of a project, from design through completion, to subsequent use of the building. It is not simply an IT tool, but a new planning method.

Concretely, it is a standardised technical database (in IFC format) that is shared between all those involved in the project. They feed this shared database in real time as from the first planning stages until the operation and maintenance phase of the building. This database contains all the objects that are part of the building, together with their physical, technical and functional characteristics and the relationships between all the objects.

“It goes beyond the mere modeling of a building in the form of a 3D visualisation. It enables professionals to define very precisely the technical content of their work, the nature of the material to be analysed and the precise place

where the work will be carried out (reservation), and identify certain problems ahead of the work on the project. This is possible due to the data interchange inherent with the functioning of the digital model, the collaborative process ¹»

Thus, by combining the technical data for the project with the information on time-to-completion and costs, BIM makes it possible to obtain a five-dimensional digital model of the building.

Development in Europe

Several of our European neighbours have already chosen to impose this planning method for certain types of construction, like the United Kingdom, Denmark, Sweden, Finland and the Netherlands. For example, in the United Kingdom, all public buildings have to be delivered in BIM since the start of this year. The Netherlands have imposed the use of BIM since 2011 for public procurement contracts involving a volume of orders exceeding 10 million euros.

¹ <http://www.batiment-numerique.fr/PTNB/notre-organisation.htm>

The BIM revolution is also underway in Germany where the Federal Ministry of Transport and Digital Infrastructure has stepped up the pace since 2016 and put in place a three-stage action plan² aimed at making its use mandatory for infrastructure projects by 2020. The second phase of this plan – known as the pilot phase – is moreover scheduled to begin in 2017.

In France, growing interest for BIM can also be observed. Indeed, under the impetus of Directive 2014/24/EU, which contains provisions in favour of the use of such instruments, and the Delcambre Report³, aimed at the development of BIM, the French Ministry of Housing has also promoted investments in this field.

The BIM test phase was conclusive and a decree of 27 March 2016, transposing Directive 2014/24, confirmed that France has entered the era of BIM, relying more on incentives rather than imposing an obligation. Thus, from 2017 onwards, the use of BIM can be required when a public procurement contract is entered into, if it does not represent a criterion for discrimination between candidates.

The anticipated benefits

According to the information provided by the French Ministry of Housing and Sustainable Habitat on the site dedicated to the *Plan Transition Numérique dans le Bâtiment* (PTNB)⁴, the length of building projects would be shortened by 7%, budget overruns would decrease by 40% and the margin of error would be reduced

by 3%. Thus, the use of BIM would make it possible, on average, to save up to 10% of the value of the contracts.

BOOM? The legal aspects of the use of BIM

The use of this new planning method will necessarily have repercussions on construction law and its traditional contractual structures due to the collaborative nature of the planning and execution of the work on buildings.

This has led to emergence of the role of “BIM Manager”, who is responsible for coordination between the various BIM users and for ensuring data security. The scope and the legal nature of his tasks and the responsibilities he is given must be clearly defined.

In addition, the use of BIM for a construction programme also requires the definition of common rules for collaborative use of the tool by all the parties.

In this regard, mention is often made of the British model, which provides for the creation of multipartite agreements, where the role of each person involved would be defined, and in which each party would agree to comply with the terms and conditions of use of the digital model. Will these multipartite agreements replace the traditional bilateral contracts or will those involved in this field opt for a combination of several agreements?

The question of liability appears to be all-important: All those involved contribute to the model in real time. This is an evolutive process making it possible for each person involved in the project to make a change in the design at any stage in the process. How, under these

² <https://www.bmvi.de/SharedDocs/DE/Publikationen/DG/stufenplan-digitales-bauen.pdf?blob=publicationFile>

³ <http://www.actu-environnement.com/media/pdf/news-23398-rapport-mission-numerique-batiment.pdf>

⁴ <http://www.batiment-numerique.fr/>

conditions, can a possible change in design of the building and the possible blurring of boundaries between those responsible for design on the one hand, and the contractors carrying out the work on the other, be made to fit in with the presumptions of legal liability under Articles 1792 *et seq.* of the French Civil Code? What about the liability of the BIM Manager? Who would have liability for data entry errors and errors in use of the model? These are all questions to which contractual practice will have to find answers.

Another legal field concerned by the BIM revolution is intellectual property. In this regard, as BIM puts in place, in essence, a collaborative system, how can the copyright related to the work produced (or the author of the model) be protected? The database is, furthermore, modifiable by all those involved in the project and it may prove to be difficult to recognise the authorship of any given data. What about the protection afforded by positive law if the data constitute works of the mind within the meaning of the law on designs and models or patentable works?

If no court decision seems to have been handed down in this area as yet, it is no doubt simply a question of time before the questions raised here are referred to the courts. It however remains to be seen how practice will develop to resolve the contractual issues.