



***There has been much coverage of the technological benefits relating to BIM in advance of it becoming mandatory on all government projects from 4 April 2016. In this article Systech Commercial Director, Paschal Walsh, outlines some of the contractual and legal implications that contractors need to be aware of.***



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## BIM to the future...

In the 1960s, Douglas Englebart, shared his vision of the future of computers related to the construction industry. He bravely pioneered a world where his foresight of; *"The Architect next begins to enter a series of specifications and data...when he is finished, the revised scene appears on the screen"*, could be a reality over 50 years later.

In the 1980s Back to the Future movies, Marty McFly travelled through time to a future date of 21 October 2015. We have all travelled well beyond that date to the present day where the UK Construction Industry stands on the cusp of a new age in digital design known as Building Information Modelling (BIM).

The UK Government's 'Building Information Modelling Task Group' definition of BIM is; *"BIM is essentially value creating collaboration through the entire life-cycle of an asset, underpinned by the creation, collation and exchange of shared 3D models and intelligent, structured data attached to them."* In essence, BIM is viewed as a sociotechnical process with a supportive technological base and layers of social components surrounding it.

The 2011 Government Construction Strategy stated that;

1. the UK does not get full value from public sector construction
2. the principal barrier to reduced costs and increased growth was the lack of standardisation and repetition in the product and
3. procurement should not be considered a stand-alone process, but instead was part of a broader asset life cycle

The Government proposed to address these concerns through a profound change in the relationship between public authorities and the construction industry and saw BIM as one of the key tools for achieving this.

The Governments view was that BIM offered the following potential benefits;

- All team members are working from the same data
- Alternative design proposals can be evaluated with comparative ease
- Modelling in three dimensions could eliminate coordination errors and subsequent expensive change
- Design data could be fed direct to manufacturing machine tools
- Improved asset management

Notwithstanding this, the Government recognised that the widespread adoption of BIM technology would be inhibited by the lack of compatible systems, standards and protocols along with the differing requirements of employers, designers and contractors. The Government therefore sought to promote the implementation of BIM by introducing a progressive mandated use programme of fully collaborative BIM for all government projects, with 'BIM Maturity Level 2' required by 4 April 2016.

BIM Level 2 requires a collaborative managed 3D environment held in separate digital tools with data attached and shared through a common file format. It is not necessary for the team to be working on a single shared model however this level may utilise 4D (construction sequencing) and/or 5D (cost) information. BIM Level 2 does not go as far as to utilise 6D (facilities management) information.

The BIM Level 2 standards are contained in a suite of nine documents, the most important of which, from a legal, contractual and insurance perspective, is the CIC BIM Protocol. The Protocol is a supplementary legal agreement that is incorporated into professional services agreements and construction contracts by means of an

amendment that creates additional obligations, duties and rights for the employer, designer and contractor.

The key principles of the application of the Protocol are that;

- All parties that are responsible for the production of building information models on behalf of the employer should have the Protocol incorporated into their contract/appointment
- The same version of the Protocol and Appendices should be incorporated into each contract
- The wording of the Protocol should not be amended,
- The Protocol should detail all building information models that are going to be produced by all parties contracted to the employer on the project
- The Appendices have to be completed with project specific information for all projects which should be available from pre-appointment documentation such as the Employer's Information Requirements

There are a number of issues that flow from the implementation of a BIM based strategy around collaborative working, incorporation into contracts, changes to JCT and NEC forms of contract (including two new compensation events) and specific matters that need to be addressed in the formation of the contract documentation such as; document priority, scope of additional roles and obligations, the new and separate role of the BIM Information Manager, copyright and ownership, intellectual property rights, electronic data exchange and failure, security issues, model deliverables, insurance requirements and termination rights.

The parties to a BIM based contract should be aware of the consequences of the inclusion of BIM specific terms and their purpose must be to promote certainty, reliability and efficiency.

Innovation moves swiftly and the legal framework associated with an advance in technology is often more than a few steps behind. Consequently much work is required to bring contracts in line and this is not helped by UK case law surrounding BIM currently being untested. As a matter of course, BIM specific

terms should; identify the roles and obligations of each of the parties, outline clear allocation of risk and seek to avoid gaps in liability and minimise misunderstandings between the parties with the objective of reducing the likelihood of disputes.

The Government has set a date of 3 October 2016 for all their departments to have the capability to electronically validate BIM information delivered from the supply chain and also has pledged commitment to BIM through the March 2016 Budget announcement of the intention to; *"develop the next digital standard for the construction sector - building information modelling 3 - to save owners of built assets billions of pounds a year in unnecessary costs, and maintain the UK's global leadership in digital construction."* Interestingly however, the Government's previous mooted mandate date of 2019 does not feature within the policy. BIM Level 3 will require a new contractual framework, rather than the current amendment to existing contract documents approach, to ensure consistency, avoid confusion and encourage open, collaborative working.

Internationally, a number of countries have begun their own BIM implementation journey with Spain's National Strategy proposing a mandate date of 2018 and Germany's road and rail projects set for a mandate date of 2020. No other country has stipulated a mandatory use date as early as that set by the UK Government.

We have recently met with insurance firms to discuss BIM professional indemnity cover and whilst the current view is that the effect of BIM Level 2 will be marginal on premiums the full extent of the inevitable BIM Level 3 cover implications will require a great deal of refinement and consideration.

Through our contemporary visualisation and site diary app services, Systech has embraced innovative technological advances for the industry. Congruently, we are currently advising our clients on BIM strategies and the contract and commercial impacts of implementing BIM. Do not get left behind in the race to the future.

**BIM Industry Standards - Level 2 Compliance [BSI Website]**

Item	Reference	Description
1	BS 1192:2007	Collaborative Information
2	PAS-1192-2	CAPEX Specification for Information Management
3	PAS-1192-3	OPEX Specification for Information Management
4	PAS-1192-4	COBie - Code of Practice (Data Deliverables)
5	PAS-1192-5	Cyber Security Strategy
6	CIC BIM Protocol	Commercial and Legal
7	BS 8536	Government Soft Landings
8	Digital Plan of Work	Toolkit - Level of Detail for Geometry and Data
9	Uniclass 2015	Toolkit - Classifications

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