



Welcome to the October 2015 edition of *Insight*, Fenwick Elliott's newsletter which provides practical information on topical issues affecting the building, engineering and energy sectors.

**This issue looks at the key measures that have been introduced by the government in the run-up to BIM Level 2 since we last looked at BIM in the 23rd issue of *Insight*,<sup>1</sup> and the government's strategy for BIM Level 3.**

Whilst the industry seems to be lagging behind, the government is already thinking well past BIM Level 2 and has released its Digital Built Britain Strategic Plan ("*Digital Built Britain*"), which puts the building blocks in place for BIM in the future by prescribing tools and standards that it hopes will encourage consistent BIM adoption and direct those in the industry towards BIM Level 3.<sup>4</sup>

### The seven ingredients of Level 2 BIM

During the course of the past 19 months, the government's BIM Task Group has laid out seven vital ingredients of Level 2 BIM which will be mandatory for all government procured projects from January 2016 and with which the industry in general should be familiar:

#### (i) CIC BIM Protocol ("*the CIC Protocol*")<sup>5</sup>

The CIC Protocol (which was published by the Construction Industry Council in March 2013 specifically for the use of Level 2 BIM) is a contract addendum which establishes the contractual and legal framework for the use of BIM, and clarifies the obligations of team members. The CIC Protocol is intended to take precedence over other contract documents in relation to BIM issues, and envisages the appointment of a BIM Information Manager whose role is to (i) manage the processes and procedures for information exchange on projects, and (ii) implement the Project Information Plan which dictates who does what and when as regards BIM.

If (as is hoped) the CIC Protocol is embraced by the industry, it should set the standard for BIM best practice for the future.

#### The publicly available standards ("*PAS*")<sup>6</sup>

The PAS prescribe how information should be shared on BIM projects and their use is encouraged by the CIC Protocol as examples of best practice which aim to eliminate problems that may be caused by the use of different (and sometimes contradictory) BIM practices, standards and software.

#### (ii) PAS 1192-2:2013

PAS 1192-2: 2013 was introduced on 28 February 2012 and defines the information management requirements that are associated with the capital and delivery phase of assets. Its use enables employers to define their lifetime asset information and operational informational requirements, allowing BIM to be planned with the final outcome of the building firmly in mind.

#### (iii) Government Soft Landings Policy ("*GSL*")

GSL (which the government announced in September 2012 would apply to all government projects from 2016) is the government's management approach to the specification and measurement of building performance and is based on the government's philosophy that the ongoing maintenance and operational cost of a building during its life cycle far outweighs the original capital construction cost: if this can be recognised during the design process, there will be greater scope to achieve cost savings and improved functionality.

GSL's<sup>7</sup> primary focus therefore is on functionality and effectiveness (buildings should be designed to meet the needs of their occupiers with effective, productive working environments); environmental factors (buildings should meet government performance targets in energy efficiency, water usage and waste production); facilities management (there should be a clear, cost-efficient strategy for managing the operations of buildings); and finally, commissioning, training and handover (projects should be delivered, handed over and supported such that they meet the needs of end-users).

During the design and construction phase, the interests of the ultimate end-user are represented by a "*GSL Champion*", whose role is to ensure the goals identified at the beginning of the project are maintained and incorporated into the design and construction phase.

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## BIM: the countdown to January 2016 and beyond

The use of BIM by the construction industry appears to be on a steady upward trend,<sup>2</sup> but the "*BIM readiness*" survey report<sup>3</sup> which has just been published by the Electrical Contractors' Association suggests that only 16% of firms in the building service sector are fully ready to use BIM, which makes for startling reading in the lead-up to BIM Level 2 becoming mandatory for all government procured projects from January 2016.



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The GSL Champion will also need to ensure that any post-completion data associated with the building is managed and properly earmarked during the build.

### *(iv) PAS 1192-3: 2014*

PAS 1192-3: 2014 serves as a continuation of PAS 1192: 2013 (and should therefore be read in tandem with it) in that it was introduced in March 2014 to provide a specification for information management for the operational phase (i.e. handover onwards) of construction projects in a nod to the growing importance that is being attached to BIM and facilities management.

PAS 1192-3: 2014 supports GSL by encouraging greater engagement with BIM from the outset of the project by ensuring that the data and information required (i) to achieve the organisational information's objectives and (ii) to support the organisation's asset management system are linked to the Employer's Information Requirements ("EIR"). The EIRs form part of the appointment and tender documents on a BIM Project to which the BIM model also links.

### *(v) BS 1192-4*

BS 1192-4 is a British Standard released in September 2014 which concerns the UK usage of Construction Operations Building Information Exchange, an internationally agreed scheme for the exchange of information between the employer and the supply chain using the standard Excel-based format COBie.

COBie is an open format for data delivery. It is the best standard to use to enable the transfer of information from one software platform to another, since it provides a common structure for the exchange

of information about new and existing facilities, and does not require knowledge about sending or receiving applications and databases of members of the project team. COBie also serves as the standard against which data delivery and compliance can be tested.

### *(vi) PAS 1192-5: 2015*

PAS 1192-5: 2015 is a companion document to (and should therefore be read in conjunction with) PAS 1192-2: 2013, PAS 1192-3: 2014 and BS 1192-4, and came into effect in May 2015. PAS 1192-5: 2015 is the specification for security-minded BIM which enables BIM to be mobilised in a secure manner by adopting a need-to-know approach to the sharing and publication of data and information with a view to deterring hostile behaviours. It is process-driven and sets out six steps which enable the development of an approach that will minimise the risk of misuse, loss, unintentional disclosure or theft of information which may impact upon the safety and security of the project. The first step is an assessment of the extent of the security-minded approach that is required, followed by an assessment of the security risk to the built asset; a decision on appropriate and proportionate mitigation measures that are commensurate with the risk appetite; a formal record of the organisation's security strategy and management plan for the built asset; implementation of appropriate and proportionate policies, processes and procedures; and regular review in response to incidents, breaches and significant internal or external changes.

In cases where assets are pre-existing, or are already being managed or modified, the security process should be carried out prior to the commencement of asset data collection, or following a change in the operating or contracting arrangements. The latter may include a change in the asset management system, facilities or asset management/maintenance contract; the integration of asset control/management systems with

other asset management systems; or a significant change in the use or occupation of an asset.

The security process should be overseen by a Built Asset Security Manager whose role is to provide a holistic view of the security issues and threats relating to assets, and who will be accountable for any ensuing security decisions that are made.

### *(vii) The BIM Toolkit*

The BIM Toolkit was launched in April 2015 and is the final piece of the jigsaw which completes the government's BIM Task Group Level 2 programme. It aims to (i) provide employers with the ability to develop EIRs at an early stage of the project prior to appointing the project team, and (ii) enable the project team to agree responsibilities and deliverables through the project timeline to ensure everyone is clear on who is doing what and when.

The Toolkit comprises two parts: the Digital Plan of Work and the Uniclass 2015 classification tables.

### *(a) The Digital Plan of Work*

The Digital Plan of Work was released in July 2015 and fulfils the requirement of PAS 1192-2: 2103 for a task information delivery plan. It is currently in public Beta 3 format for use and feedback by users ahead of its formal launch this autumn and a copy can be downloaded free of charge from the NBS website.<sup>8</sup>

The purpose of the Digital Plan of Work is to enable the practical implication of Level 2 by assisting employers to procure digital data by defining what data they require at different work stages. Various editable templates and standards are incorporated into it, and tasks and information requirements are allocated in accordance with the agreed contractual responsibilities, which allows the project team to manage and validate responsibility for information development and delivery at each stage of the asset life cycle. It is open to the owner of the Digital Plan of Work to invite named



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individuals in the project team to have read-only access to the Toolkit via their own PC, Mac or mobile device, and those named individuals can post comments and updates on the tasks and deliverables within the Digital Plan of Work to aid communication, making the Toolkit collaborative.

### *(b) Uniclass 2015 classification tables*

The BIM classification system is based on a common language of classification known as Uniclass, which enables the project team to describe the various objects they use in a uniform manner. The use of Uniclass will make the BIM model much easier to use as the project team will be speaking the same language.

The classification tables are currently being completed in response to user feedback on the Digital Plan of Work. When the tables are in their final form, they will incorporate definitions for over 5,000 construction objects at each delivery stage of a project and will sit alongside the Digital Plan of Work.

### **The future: Digital Built Britain (DBB)**

On 26 February 2015, the government launched DBB which is its strategic high level plan for BIM Level 3. DBB builds upon the "data exchange" process that is characteristic of Level 2 BIM by the use of Model Views which facilitate the sharing of information at various key stages in the project. DBB introduces a set of new, advanced, international "open data" standards to facilitate the sharing of data; establishes a new contractual framework and commercial models for BIM projects to ensure consistency of working with BIM and collaborative working; calls for the training of public sector clients in the use of new BIM techniques and technologies; and highlights that new technologies need to be identified to transform the approach to social infrastructure, development and construction.

It is the government's hope that Level 3 BIM will enable digital design to be interconnected to all elements of the built environment, and will extend the use of BIM into the operation of assets over their lifetime, which is where the majority of costs arise.

### **Conclusion**

From the legal perspective, GSL (Level 2 BIM) is likely to create contractual issues since it raises a brand new concept of responsibility for the whole life cycle of buildings which involves the setting of targets and measuring performance against those targets in a new post-occupancy period. The post-occupancy period is intended to last for three years post-completion (i.e. two years in excess of the traditional defects liability period) and amendments to the standard forms will be necessary to provide for the associated extended monitoring on site (which may or may not overlap with the defects liability period). Amendments will also be necessary to provide for the precise maintenance and operational requirements and standards that need to be met during the life cycle of a building, which may lead to a shift towards routine fitness for purpose obligations and absolute warranties which are currently construed very narrowly by the courts in the absence of very clear words to the contrary.<sup>9</sup> Insurance arrangements may also change in response to what will probably be a much greater scope for the allocation of contractual risks and responsibilities over a longer period of time which will need to be insured.

As for DBB and Level 3 BIM, DBB introduces truly collaborative models of working which focus on a brand new concept of project feedback and the capture of performance-based intelligence which does not have a place in the current standard forms and therefore quite substantial amendments will be necessary. Project insurance may also become increasingly popular at BIM Level 3 as it may be the most effective way to cover a collaborative team in which there is no allocation of fault.

Watch this space!

### *Footnotes*

1. See [http://www.fenwickelliott.com/files/insight\\_issue\\_23.pdf](http://www.fenwickelliott.com/files/insight_issue_23.pdf).
2. BIM has been central to the success of Gatwick Airport's £1.2bn capital investment programme and the refurbishment of Gatwick's North Terminal.
3. The "BIM readiness" survey was published on 15 October 2015 by the Electrical Contractors' Association alongside the Chartered Institution of Building Services Engineers, The Building Services Research and Information Association ("BSRIA") and a host of trade bodies. The results are to be shared with key players inside government and the wider industry and will enable BSRIA to plan the way forward to BIM maturity.
4. The government predicts this will lead to savings of around 30% of the whole life of construction projects — see Construction 2025 — Industrial Strategy: Government and Industry in Partnership (HM Government).
5. Further details about the CIC Protocol can be found at [http://www.fenwickelliott.com/files/insight\\_issue\\_23.pdf](http://www.fenwickelliott.com/files/insight_issue_23.pdf).
6. Further information on PAS 1192-2: 2013 can be found at <http://www.fenwickelliott.com/research-insight/newsletters/insight/23>.
7. Which can also be seen in Stage 7 of the RIBA Plan of Work 2013.
8. <https://toolkit.thenbs.com/>.
9. Most recently, in *MT Højgaard A/S v E.ON Climate and Renewables UK/Robin Rigg East Limited* and another [2015] EWCA Civ 407, the Court of Appeal was reluctant to impose an absolute warranty on the facts in circumstances where the contract was not worded with sufficient clarity, but it acknowledged that if a contract was sufficiently clear, a contractor could be liable for failing to achieve a specific result (i.e. a particular service life) even though it had otherwise complied with the relevant standard.

### *Useful link*

1. <http://www.fenwickelliott.com/research-insight/newsletters/legal-briefing/2015/07>