

## DEVELOPMENT OF NEW BIM STANDARDS FOR CONSTRUCTION PROJECTS

Jubin MOTAMED

Construction Consultant, Former Senior Research Fellow, University of Greenwich, London, UK Former Civil Engineering Lecturer, Oakland College, Hertfordshire, UK jubin@triohomes.co.uk

Ardeshir SAYAH MOFAZALI

Foresight Researcher- Creative Technologist, Middlesex University, London, UK ardeshir.sayah@gmail.com

## Keywords: Building Information Modelling (BIM), ISO 19650, PAS 1192

The first two parts of a new international BIM standard ISO 19650 was published in January 2019. The move marks the transition from the PAS 1192 series of standards to international standards.

The first and most important thing about BS EN ISO 19650-1 and 2 is that the processes are practically identical to those defined in BS 1192:2007 and PAS 1192-2:2013 suite of documents.

Those who implement information standards like PAS 1192 and BS EN 19650 into their organisational policies and processes need to recognise that the surface visible changes in BS EN 19650 such as terminology changes do not impact the process. As long as the process is compliant, the terminology does not have to be so.

Under PAS 1192-2, the contractual documents for projects adopting BIM comprised primarily the BIM protocol, the employer's information requirements and the BIM execution plan. Official templates for these documents were never developed. However, there is a standard BIM protocol form, the CIC BIM Protocol, currently in its second edition.

In January 2019, the PAS was superseded by BS EN ISO 19650-2. The new international standards are a gamechanger and anticipated to be widely adopted around the world.

In elevating PAS 1192-2 up to an international standard, there was a need to amend some of the terminology to be more universal.

For example, the BIM protocol is now information protocol, employer's information requirements are now exchange information requirements (EIR) and a contract is now an appointment. Many of the terms used will still be familiar, such as the BIM execution plan (BEP) and the master information delivery plan (MIDP).

Concept guidance has recently been published on BS EN ISO 19650-2 and detailed guidance is anticipated in the summer, including a compliant draft protocol.

Therefore, what should an invitation to tender and subsequent appointment aligned with the ISO 19650 series look like and how would this differ from tenders and appointments in the PAS 1192-2:2013 era? BS EN ISO 19650-2 provides that the appointed party will comprehensively develop its requirements at pre-tender stage, to ensure these are set out clearly at tender stage, with the aim of achieving accurate and useful tenders this way.

The documents together form the information management part of the appointment (i.e. contract) and primarily comprise the project's EIR, information delivery milestones, information standards, information production methods and procedures, reference information and shared resources, and information protocol (see section 5.1 of BS EN ISO 19650-2 for further details.)

BS EN ISO 19650-2 envisages that the invitation to tender will contain, as well as the above documents, additional tender response requirements (see section 5.2.3 of BS EN ISO 19650-2) which set out what is expected from tender submissions.

The aim is to ensure that tenders can be accurately prepared to the scope anticipated by the appointing party. They could include, for example, only wanting risks with high probability or impact to be highlighted in the risk register.

The tender response requirements may therefore be split between those for tender submissions and additional requirements for winning tenders only.



Some activities, such as elements of the BEP, may not be possible or necessary to be carried out at tender stage but tenderers need to be aware of these additional requirements so that they can be priced within the tender.

Once a tenderer has been selected, the question then turns to how the above documents will be compiled into the appointment. Which documents should form part of the appointment? Which documents are simply intended to be non-binding or reference material? Section 5.4.7 of BS EN ISO 19650-2 gives some guidance on this.

So what would a "typical" BS EN ISO 19650-2 compliant appointment look like? In the absence of one source that sets this out, the flowchart (Figure 1) illustrates what documents are likely to form a standard BS EN ISO 19650-2 compliant appointment framework, based on the authors' analysis.

What these documents consist of may vary from project to project. For example, the EIR and BEP may comprise a number of separate collated documents, or may be relatively short documents for less complex projects. This is reflective of the aims of the BS EN ISO 19650-2 to be flexible to the needs of the parties applying it.

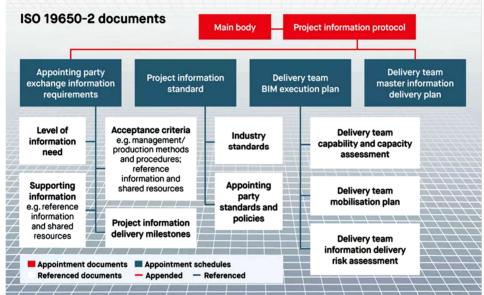


Figure 1. The purpose of this diagram is to show the relationship between the various information management documents within an appointment and is not intended to be legal guidance. Legal advice should always be sought when preparing appointments.

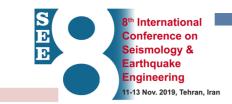
## REFERENCES

ISO 19650-1:2018 (2019). Organization and Digitization of Information about Buildings and Civil Engineering Works, Including Building Information Modelling (BIM) - Information Management Using Building Information Modelling - Part 1: Concepts and Principles.

PAS 1192-2-13 (2013). Specification for Information Management for the Capital/Delivery Phase of Construction Projects Using Building Information Modelling.

PAS 1192-3-14 (2014). Specification for Information Management for the Operational Phase of Assets Using Building Information Modelling.





International Institute of Earthquake Engineering and Seismology (IIEES)