BIM
Implementation Strategy

Scope

This document outlines the steps that Avantgarde Tiling is taking toward the implementation of BIM, inclusive of its intrinsic systems and procedures, in meeting BIM related requirements set by the industry and UK Government BIM Mandate.

Goals and expectations

The company recognises that setting out clear and realistic expectations is key to a successful implementation of BIM, hence the following goals have been defined:

- Eliminate collisions/conflicts on site.
- Increase collaboration and communication on the project.
- Speed up and simplify the design effort.
- Become more competitive on the market.
- Maintain a culture of continuos improvement by treating each project as a reference for the future and lessons learned.
- Gain the experience necessary for bigger and more challenging projects.
- Comply with the UK Government BIM Mandate

Software and Technology

The company acknowledges that as *"Appointed parties"* contractors are, to some extent, dependent on the system used by the *"Lead appointed parties"* as defined in ISO 19650.

BIM Authoring software

The Company has decided on Autodesk's Revit as its default Authoring Software.

The Company recognizes that, although one of the key points of utilizing the BIM methodology is its propensity for interoperability, this functionality is not completely developed and staying within the Autodesk suite of products ensures a seamless experience.

As the most used BIM Authoring Software, the Company encourages its team members to make use of the extensive support both from Autodesk itself, as well as an engaged community of users spread out across forums, messaging boards and specialized community support platforms.

File and Document Management System

Internally the Company has developed its own File and Document Management System hosted on the Microsoft Workhub Platform.

In a project environment the Company will comply with the File and Management System defined by the Common Data Environment selected by the Appointed Party for the project.

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People

The company recognizes that people are the greatest value of any organization and as such implementing BIM requires the right guidelines and a well-defined strategy in order to make the transition to BIM as smooth as possible for its people, while offering them substantial support to adapt to changes brough by the new BIM reality.

The company also acknowledges that BIM will generate fundamental shifts in the working patterns and tools utilized by all its staff inclusive but not limited to Project and Site Manager, Design Manager, Surveyor, Planner, Quality Manager, H&S Manager, Estimator.

Training

The company understands that each each role in the organization will require different BIM knowledge and capabilities and as such tailor-made training will need to be offered to staff based on the requirements set by their job description, inclusive but not limited to specific software.

The company's BIM manager will be may give an introductory course on "*What is BIM and why we should use it*" as well as "*How to communicate on a BIM project*".

The company's senior management will promote the use of BIM technology by clearly communicating to all employees why it was decided to introduce BIM and emphasize its advantages and challenges.

Responsibilities

The company acknowledges that while each project is carried out by a group of people with different experience, expectations, and way of thinking, to pursue the same goal, a first step is a common understanding of what is required of whom.

As such the following responsibilities have been set out for the BIM key personnel. Based on the complexity of specific projects some of the roles below may be distributed between additional staff members or compressed so that one staff member will be handed more than one role.

BIM coordinator

Generally, the BIM coordinator will be responsible with the preparation of drawing documentation for the needs of the company and support other staff and construction workers in understanding and utilising BIM extensive functionality.

A detailed description of its role involves:

- Digital model management.
- Multidisciplinary coordination.
- Preparation of construction documentation for the purpose of carrying out works.
- Quality control and revision of models.
- Preparation of as-built documentation.
- Staff support in working with BIM models.
- Training of construction workers in the use of models and software.
- Cooperation with cost estimators, schedulers, suppliers, subcontractors and the client

BIM Manager

The BIM manager oversees the entire BIM process, it's procedures and people involved with BIM. The duties to be undertaken by the BIM manager are summaries below:

- Coordination of designers in the use of BIM technology for 'design and build' projects.
- Support and management of BIM coordinators on construction sites.
- Creating a BEP document – BIM Execution Plan – describing work practices within a company.
- Raising awareness of the use of BIM technology throughout the organization with proper training and knowledge transfer.
- Support of the tender department when bidding on new projects.

Design Manager

The design manager is responsible with the overall management of the design process on 'design and build' projects, with key tasks related to the use of BIM technology in the Company.

The most important of these include:
- Decision on the BIM-ambition on the project and necessary modeling requirements.
- Conducting the first kick-off BIM-meeting with relevant participants of the construction process.
- Active use of the model during meetings and for managing the design process.
- Carrying out visual inspection of the model with a view to current design activities.
- Checking whether the exchange of models between disciplines and their update is proceeding as planned (e.g. once a week).
- Control of design status in accordance with the agreed schedule.

Documentation

The company recognizes that effective communication is of crucial importance, and as such the understanding of expectations, responsibilities, and requirements by all participants in the construction process is crucial to achieve success and the planned level of implementation of BIM technology.

The company acknowledges the following key supporting documentation as per BS EN ISO 19650, to be made available by the "Lead appointed party" on appointing a contract:

- *Project information requirements* – contains the information needed to answer or inform high-level strategic objectives within the appointing party in relation to a particular asset project.

- *Exchange information requirements* – sets out the requirements for production of project information in such a way so as to be incorporated into appointments and aligning with trigger events representing the end of project stages (in the delivery phase).

- *Responsibility matrix* – identifies information management functions, and either project or asset information management tasks, or information deliverables as appropriate.

- *Assignment matrix* – helps establish the scope of services needed where a prospective appointed party or third party is appointed to undertake all or part of the information management function. See the example in Annex A of ISO 196502 at Table A.1.

- *Master information delivery plan* – an aggregated version of the task information delivery plans for each task team.

- *BIM execution plan* – a plan that explains how the information management aspects of the appointment will be carried out by the delivery team.

- *Information protocol* – a means of capturing requirements in respect of ISO 19650-1 and ISO 19650-2 into appointments and contracts.

The company also acknowledges that as an *"Appointed party"* it has responsibility in issuing the *"Task information Delivery Plan"*

UK BIM Level 2 Mandate and BS EN ISO 19650

The company recognises the UK Government's central mandate of introducing BIM Level 2 maturity on all centrally funded projects, and as such the Company is committed to achieving the requirements for BIM Level 2 maturity set through its mandate.

Notwithstanding the above, the company also acknowledges that the publication of ISO 19650 set of standards and its respective regional/national Annexes alongside the UK Guidance Framework, the BIM maturity levels as previously understood, are being made redundant and eliminated from future use in the UK, alongside the withdrawal of the almost the entire suite of UK's Publicly Available Specification (PAS) 1192 forming the previous BIM national standards as per below.
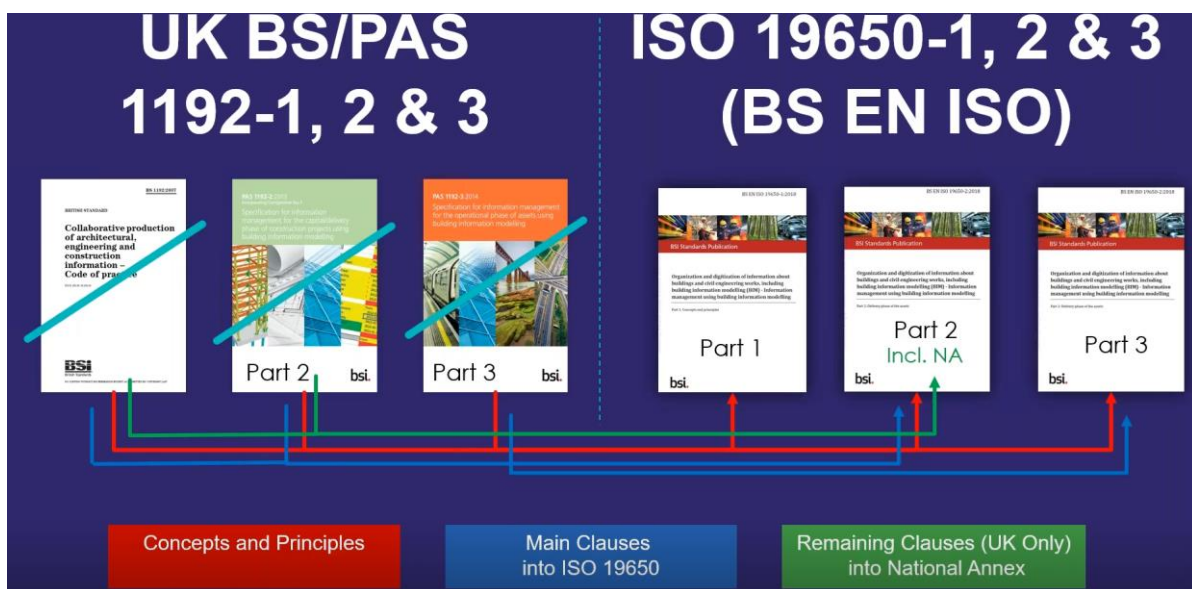
Open Data

The company acknowledges that organizations can derive significant improvements in cost, value and operational performance through the use of open shareable asset information and supports the open data principle at the centre of ISO 19650 information management, and a prerequisite for Level 2 BIM Maturity as formerly defined.

Data is considered open when it is not restricted to specific software solutions while proprietary data is restricted to specific software solutions. Examples of open data file formats include HTML, PDF, PPTX, MP3, and IFC.

The company therefore supports and adopts open data for asset design, construction, and operation in the form of IFC, IDM, MVD, BCF, bsDD.

COBie

The company adopts Construction Operations Building Information Exchange (COBie) as a non-proprietary information standard for exchanging facility information to achieve the publication of a subset of BIM focused on delivering asset data as distinct from geometric information, covered by BS 1192-4 and a prerequisite of Level 2 BIM Maturity as formerly defined.

BS 1192-4 provides guidance and recommendations for the UK government's usage of COBie for exchanging facility information between the employer and the supply chain. The timing and number of specific exchange points (referred to as COBie data drops) are aligned to project stages and will vary depending upon the requirements of individual government clients to suit their internal processes and approvals. At a minimum, there will probably be four data exchanges: at the end of preparation and brief, at the end of conceptual design, at the end of design development, and at handover.

CDE (Common Data Environment)

The company supports the use of CDE as a combination of technical solutions and process workflows providing an information exchange platform for the BIM delivery process.

It is also recognized that the common data environment (CDE) is a prerequisite for Level 2 BIM Maturity as formerly defined.

The company also acknowledges that, as per ISO 19650-2 a CDE is provided and managed by the appointing party (or a third party acting on their behalf), for the management of all information containers that are developed and exchanged with the appointing party throughout the life of the project from each delivery team.

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