

Farrells BIM Framework 2017

At Farrells we have adopted Building Information Modelling (BIM) in a variety of projects across the practice to facilitate more efficient collaboration, co-ordination, and delivery between consultants at all work stages.

To ensure maximum collaboration and integration of work with the consultant team, Farrells have implemented several processes standards and process for all BIM projects. We have an in-house core BIM team led by a **BIM Accredited Professional Manager** with an accreditation from BRE who is responsible for BIM standards development, implementation and enforcement and supporting project standards coordination with clients.

Our core BIM Team develop, coordinate, and produce our **Employers Information Requirements (EIR)** responses, **BIM Execution Plans (BEP)**, **Model Production Delivery Tables (MPDT)** and additional documents that are required to ensure an efficiently delivered BIM project.

Autodesk Revit is our main BIM authoring tool with access to several versions and update releases dependant on what is agreed among the consultant team on commencing a project.

To ensure a smooth collaboration process we propose the formats used by all disciplines are the **native BIM authoring files** and **.IFC file** format. Formally recognised schema, namely **COBie UK 2012 v 2.4**, will be used as **asset data** format for the duration of the project and building life cycle.

Farrells strongly encourage the use and implementation of a **Common Data Environment (CDE)** as a means for exchanging data be implemented at the beginning of a project. Newforma is our in-house CDE platform, although we have used Aconex, Viewpoint (4Projects), Conject, Asite and BIM 360 on other multiple projects.

A correctly managed CDE is essential for efficient collaboration, this is the role of the **BIM Delivery Manager**, who is also responsible for ensuring all stakeholders are compliant and ensuring effective communication with the client.

We manage the BIM process to the level defined in the **UK standards documents** including BS1192:2007, PAS1192-2 and BS8541-1. Through these, we ensure that the CDE collaboration is structured through a single source of information and ensure that all our digital files follow recognised naming conventions and are structured correctly to enable efficient data sharing whilst working in a collaborative environment. This allows full integration across multidisciplinary teams to best industry practice and maximise the value and capabilities of the BIM model.

Having delivered numerous projects to BIM Level 2 at various stages of the design process, we recognise that co-ordination is best achieved with a fully resourced internal team to correctly manage both the model and co-ordination of consultant models.

As lead designers of the core team we take responsibility for the **co-ordinated delivery** of all information, managing information development and information approvals, confirming design deliverables and approving information for issue within the common data environment. This acts a single point of contact for all consultants and contractors with the authority to make both design and technical decisions to facilitate the streamlined flow of communication.

We can provide an **Information Manager** to the project whose role will be to facilitate the management of the federated model from all discipline and the production of project outputs. The information manager will be responsible for managing the operation, standards, and culture of the common data environment throughout the consultant team

On commencing each project at preparation and brief stage we will hold a **BIM strategy and protocol** meeting to establish a high-level strategy agreed with the consultant team and will lead co-ordination on the development of the BEP, an agreed system of nomenclature, development of model scope and the MPDT. With clients, we can assist with defining the EIR and clarifying the extent of future authorised uses.

At Scheme and Detail design stages we will develop the model scoping, data requirements and agree a co-ordination process with the design team to allow analysis of the model geometry and clashes. To ensure fully integrated models from all disciplines we agree an appropriate shared co-ordinate system and based points, model alignment and setup the initial file. The co-ordination cycle includes agreeing a suitable CDE and resolution cycle that all disciplines can achieve.

The process gives all participants a clear, agreed framework that all must work to and an understanding of the client's approach to the BIM objections. It defines scope to what they are expected to model, the level of detail and the how the process will be managed.

Our **clash co-ordination** processes have been developed and refined to allow for the most efficient resolution to the analysis done internally using Autodesk Navisworks Manage and/or Solibri Model Checker depending on the project requirements. This then allows all participants the ability to review the federated models.

Resolution timetables are agreed to by all participants, and any issues reported allows maximum transparency to the process and provides an audit trail of all unresolved issues. At the end of key work stages and the end of a project, we will undertake an End of Stage Resolution report where all outstanding clashes are compiled.

Project Milestones will be outlined at the beginning of a project; these milestones may change and alter as a project advances.

To ensure projects are properly validated and controlled as they develop, data is extracted from the evolving building information model and submitted to the client at key milestones. This submission of data is described as a '**data drop**' or 'information exchange'.

At Farrells our core BIM team consistently have reviews and audits of models to ensure the data being delivered complies with not only the industry standards but also the high standards we set ourselves.