



PROJECT NAME: YSGOL GLANGWILI

Project Address: Carmarthen

Type of Asset: School

Project Number: 5010

Client Name: Carmarthenshire County Council

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Dear Carmarthenshire County Council,

I am writing to express my enthusiasm and to assure you of the company's competence in BIM for the Ysgol Glangwili School Project. We at M&E Consultants, in line with the UK BIM framework intend to fulfil the requirements of the BS EN ISO 19650 with regards to the BIM maturity Stage 2 mandated for all centrally procured UK Government projects. I have been working in the BIM field for several years and as a BIM certified professional have experience in BIM Project Management, 3D modelling and collaboration with project stakeholders.

The company holds an UKAS accredited ISO 19650-2:2018 Information Management certificate that highlights our capacity to fulfil the requirements of the project with regards to the management and sharing of information throughout the project lifecycle in accordance with the standards and regional annexes.

We are aware of how critical it is to guarantee that people possess the abilities and attitudes required to carry out the tasks and activities specified in the information management standards hence, alongside our BIM champion, Anura John, we have a competent group of BIM certified individuals to work on the project that has experience in using BIM software's such as Revit. The task team is made up of capable persons with experience managing projects of comparable size and complexity. We also have a good understand the concepts and principles outlined in BS EN ISO 19650-1:2018 and the requirements in BS EN ISO 19650-2: 2018 for the delivery phase of assets.

In addition to these standards, we are familiar with the UK BIM framework Guidance Part A: The information Management function and resources. We are confident that combined with the current knowledge and experience along with ongoing training and education of project team members we would be able to deliver a project that meets your requirements.

We are aware that the BS EN ISO 19650 marks a transition away from BIM levels and their corresponding definitions and toward an information management framework where data is standardised to enable it to be "exchanged, integrated, and examined for multiple purposes across several technologies." As a result of the change, you must now explicitly state the information you seek and its intended purpose.

We understand that Stage 2 BIM maturity is expected on all publicly funded projects, and it is a framework that measures the extent of BIM acceptance and implementation on a project, to evaluate the project's advancement and pinpoint potential improvement areas. It involves parties working in their own isolated BIM models and then sharing and coordinating information using a Common Data Environment (CDE).

We understand the importance of having a common data environment, such as Industry Foundation Classes (IFC) and COBie, to ensure that project information is accurate, consistent, and accessible throughout the design, construction, and operation phases. BIM-appropriate software skills to use software that is compatible with the project's BIM standards and protocols.

We would utilise the BIM Execution Plan, which is a crucial document, to direct the usage of BIM on your project. It ensures that all stakeholders are aware of their roles and obligations by outlining the project's scope, duties, and deliverables for each step. To eliminate delays and disputes, the BEP also specifies the standards, protocols, and formats that will be used to communicate and coordinate information.

In accordance with the BS EN ISO 19650-2:2018, 5.4.1. We intend to develop and implement the BIM Execution Plan which would generally specify the duties and responsibilities of the various project stakeholders, including architects, engineers, and contractors, in terms of developing, maintaining, and disseminating BIM models

and other project-related documentation. It will also describe how to use tools for data validation and quality control, as well as protocols for data exchange across stakeholders, to coordinate and integrate the data included in BIM models.

In general, the BEP acts as a guide for the project team to follow so that information is exchanged, organised, and managed successfully throughout the project. The BEP would enhance cooperation and coordination among project team members, eliminate mistakes, and raise the project's overall efficiency by establishing the goals, deliverables, and responsibilities for using BIM.

As the lead consultant at M&E Consultants, I'm pleased to reaffirm our dedication to upholding our legal responsibilities under the 2015 Construction (Design and Management) Regulations. To aid in this endeavour, we will apply a BIM strategy to the project. The interaction between the Built Asset Security Manager and the Information Manager, among other BIM-specific responsibilities, will be described in our BIM Execution Plan (BEP). We will confirm the parties and individuals in charge of information management in terms of cooperation, and we'll give specifics on the planned collaboration tool and how it will function in support of the Common Data Environment. In our BEP, we will also show that we are in compliance with built asset security information requirements (BASIR) and mandatory security systems. We will also provide an overview of our coordination and clash detection process, which includes volume strategy, tolerance strategy, technical query routines, and coordination and clash avoidance software. We will also go into depth about our procedures for checking the accuracy of our data, models, and papers, as well as how we disseminate asset information, including instruction on how to use our tools and systems. Finally, we will certify the methods for preparing and disseminating data and information from our writing tools for usage with the listed software platforms.

In conclusion, we intend to have regular reviews and evaluations of BIM performance to ensure that project objectives are being met and to identify areas for improvement. I am certain that the smooth and effective completion of your project would be made possible by our proficiency in BIM, dedication to abiding by the BS EN ISO 19650 standards, and the use of the BEP.

We have also researched and explained in the document attached how to demonstrate the level of information need throughout the RIBA stages of a project as we are aware of your need for full life asset monitoring using a CAFM system.

Thank you for considering my proposal.

Sincerely,

Mariah Edwards.

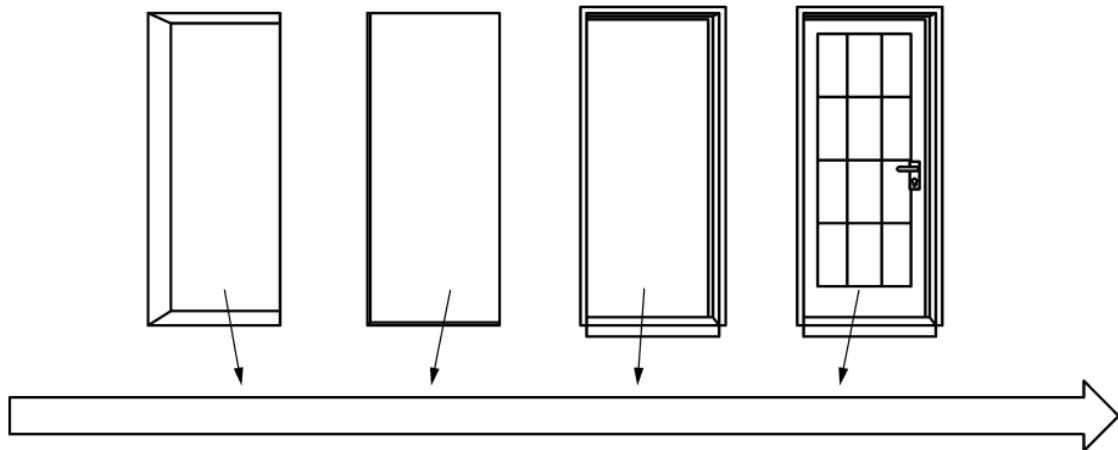
A building project's design and construction are guided by the RIBA 2020 Plan of Work, which is a structured framework broken down into eight steps, with pre-planning at the initial stages and operation and maintenance as the final. It ensures all required actions are completed and that crucial information is not missed. It is a well-known and accepted method for overseeing the design and construction of a building project.

The following is a table showing possible Information need for the Infant school project.

RIBA Plan of Work 2020 Stages	Possible Information need for the project
Stage 0: Strategic Definition & Stage 1: Preparation and Brief	• Structural Calculations • material specifications • Conceptual sketches • Client Brief • Feasibility studies • Site information (zoning, topography, etc)
Stage 2: Concept Design	• performance requirements • project team information • project budget • Building codes and regulations • Conceptual sketches • site plans, floor plans, elevations, and sections.
Stage 3: Spatial Coordination	• Architecture drawings • Structural calculations
Stage 4: Technical Design	• Detailed floor plans, elevations • Costs estimates. • Details and schedules • 3D models
Stage 5: Manufacturing and Construction	• Construction schedules • Bills of Materials • Detailed drawings of components such as doors, windows.
Stage 6: Handover	• Training materials • Operation and maintenance schedules • As-built drawings • O&M manuals • Warranty information
Stage 7: Use	• Warranty information • Operation and maintenance schedules and manuals • Spare parts lists • As-built drawings

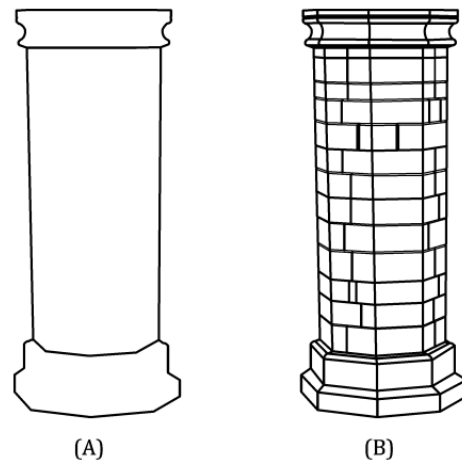


(The Institution of Structural Engineers BIM Panel, 2021)



Each stage of a project requires different levels of information in terms of detail. The BS EN 17412-1:2020 has an illustration of a door at different information delivery milestones.

As the project progresses the detail on the door increases. At the initial stages the door can be represented as a hole in the wall. Then for asset management at the operation stage it can be shown as a simple box representing the door panel. More components are added for visualization as the project progresses. (British Standards Institution, 2020)



This example shows that while each RIBA stage may require different level of information need, varying level of detail may be required for the same object at the same stage but for a different purpose. The image above shows (A) for site planning while (B) is for heritage conservation at the same stage. (British Standards Institution, 2020)



For a door, the appearance can vary depending on the intended use. For example, no appearance is needed for clash detection (A), a thematic colour can be used for function analysis (B), the colour can be used to identify the various materials used in the door's components for building permits (C), and a realistic appearance can be used for rendering purposes (D). (British Standards Institution, 2020)

According to the BIM Protocol and PAS 1192 collection of publications, toolkit bandings were assigned single-digit numbers ranging from 2 to 5. These gave a

clear explanation of the volume of data anticipated from each work step. However, these definitions' online versions were taken down in June 2022.

The information management and digital construction processes in the UK and throughout the globe have greatly advanced since the release of the BIM Toolkit in 2015, thus the tools and instructions created at that time may be less applicable to industry experts working now.

Most of UK practitioners used the strategy of dividing development bandings into non-graphical and graphical information.

Now, breaking down the amount of information requirement and early assessment of the purpose of information for specific users over an asset's life cycle, as well as improving the initial deliverables in UK PAS 1192 documentation, BS EN 17412-1, and UK BIM Framework-associated recommendations.

As a project progresses, the outputs from the 3D model environment—plans, sections, elevations, pictures, and details—tend to grow increasingly aesthetically sophisticated.

The model can be used to record numerous dimensions, item placements, challenging geometry, and intricate schedules and quantities for construction as well as to help with precise pricing and cost information.

It is expected that you would offer the right level of detail at the right stage of the project, reflecting the tasks that have been assigned to you and the requirements.

Each component of the model should provide a level of detail appropriate to the stage of the project and its interaction with other systems, just as you wouldn't expect a fully detailed specification at an early stage if only a description of performance was required for a contractor-designed part of the job. (NBS 2022)

To ensure that every stage of the project is clearly defined and that all parties have access to the data needed to make informed decisions, it would be crucial to include information like those listed above in the EIR documents.

An information matrix can serve as a tool to illustrate the degree of information required at various RIBA stages. On one axis of the matrix, the RIBA phases may be

listed, and on the other, the degree of detail required. Four categories can be used to categorise the different information needs:

1. Basic Information: This would comprise of the project's objectives, budget, and timetable, among other essential details.
2. Detailed Information: would be more precise and covers things like design specifics, building materials, and processes.
3. Technical Information: this section can contain comprehensive technical data, such as computations, specifications, and test results.
4. Information about the final construction, such as test results and as-built drawings, would be referred to as "as-built information."

The exact data needed at each step of the project may then be identified using the matrix.

It is important to remember that the amount of information required could alter as the project progresses. For instance, very basic information can be needed at the Concept Design stage, but as the project moves further, the degree of information needed would rise.

Regular evaluations and updates of the matrix should be carried out to guarantee that the amount of information demand is being adequately displayed throughout the project. To guarantee that the relevant data is gathered and supplied at each step of the project, this may be accomplished by holding regular meetings with the project team and stakeholders. (RICS 2020)

There are several Computer Aided Facility Management (CAFM) software tools available like Archibus that can be used store and manage the design brief, concept design, and cost estimates. The programme may be used to examine and adjust cost and design estimates during the appraisal stage and to create precise designs and technical specifications during the design stage.

It may be used to manage the selection of a contractor and the details of the contract during the procurement stage as well as to coordinate the creation of technical drawings and specifications during the technical stage. CAFM software can be used to manage the work on the job site throughout the construction phase, and during

the close-out phase, it can be used to manage the project's delivery to you the client and allow any unresolved concerns to be addressed. (Agarwal, 2020)

The NBS suggests specifying the members of the project team and the responsibilities of each member using the RIBA Plan of Work Toolbox. A "Project Roles Table," "Responsibility Matrix," and "Multidisciplinary Schedules of Services" templates are all included in the Toolbox. By clearly defining who is responsible for delivery at each stage and providing indications for level of detail (LOD) and degree of information, the Responsibility Matrix enables the planning of design-related issues (LOI).

The Responsibility Matrix is recommended to be set up before the design stages of the project because it will be updated as the project moves forward. It would be essential to review the Responsibility Matrix at the beginning of the technical design stage of a project (RIBA Stage 4), so it is clear who is producing the final information for construction.

On the NBS website you can access the toolkit and other information to assist with the use of the Responsibility matrix. (RICS, 2020)

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