

Llew Bevan
1805489
ACBA5010 – Construction Portfolio

Llew Bevan,
Preseli Design Studio,
Narberth,
Pembrokeshire,
SA67 8TT.
22nd March 2022

Swansea County Council,
Civic Centre,
Oystermouth Road,
Swansea,
SA1 3SN.

Dear Sir/Madam,

On behalf of Preseli Design Studio, I am writing to you to outline the measures we will take to ensure that your project meets the relevant BIM Maturity Level 2 standards, and also offer better understanding of what the requirements entail.

Following the launch of Wales' construction procurement strategy in 2013, the Welsh Government have assigned BIM Level 2 requirements and made them mandatory to all of their funded projects. Within BIM Level 2, there are seven key requirements which we will monitor closely throughout our commissioned period and time working alongside yourselves. Included within the Level 2 requirements is a process to exchange information between the entirety of the projects' participants, this process is also required to be unique and assigned specifically to a project. As part of our role, we will be responsible for managing this exchanged information, such as Drawings, Reports, Models and ensuring that the federate model runs smoothly without any clashes.

Due to the complexity of this project, a well set out strategy is paramount to not only how the building works, but also how users will navigate their way around it. As soon as a brief is established, and we can finalise a concept design, we can then appoint our various consultants for their own input and knowledge into the scheme. As a design team, we have a great working relationship with a range of competent contractors in the area which all work to the current standards required by BIM. As part of this level, every detail is included within one combined model; from structural engineers' details, mechanical equipment positions, pipework runs, duct locations etc. This is referred to as a federated model. We as a company will be responsible for managing this federated model, receiving, and analysing all information and liaising with consultants to overcome and rectify any problems should they arise.

Prior to any works beginning on site, an Employers Information Requirements document will need to be provided, in accordance with the requirements of BIM Level 2. An EIR is an agreement which

outlines the contractors' responsibilities and measures they will take throughout and upon completion of the project, to ensure that yourselves as a client will receive the competency you deserve and also your objectives are met. There are several benefits to an EIR document, first of which being it ensures that the models produced and progressed and developed in accordance with the clients needs. It also enables the client to have great involvement in the scheme from the beginning, this in our opinion goes a long way as it illustrates a great working relationship between both parties.

A great level of competency will be shown throughout this scheme, as an EIR covers all areas of the project, ensuring that each aspect is accounted for and included in the plan of works. Three standard structures fall into an EIR; Technical, Management and Commercial. As our role of project managers, it is our sole responsibility to analyse the requirements carefully and manage each section professionally, to guarantee that the adequate standards and maturity levels are met. By having a clear set out EIR from the beginning of the project, it can assist decision making and engage with the client throughout the scheme.

In accordance with current BIM Level 2 requirements, it's recommended that a capability assessment is carried out to verify the approached contractors' capabilities and to determine whether they have the ability and experience to deal with the upcoming project. The criteria broadens to whether or not they have the suitable equipment and resources to having the necessary skills and software to fulfil the needs of the project.

As leaders of this project, we believe that organisation and structure is paramount to make a scheme successful, and to guarantee this, we will construct a document illustrating the projects' short and long-term goals, objectives, timeframes and so forth. This document is called a BIM Execution Plan (BEP). The BIM Execution Plan acts as a direct response to the EIR document, as it determines the methods and procedures we as project leaders will undertake to answer the clients needs. Also, as part of the BEP, specific roles and responsibilities will be set for all teams working in the project, to ensure that each individual understands their position within the project. By clarifying this from the outset, the project can run smoother and team members can focus solely on their own area of works. Not only does a BIM Execution Plan include project milestones and timeframes, but it also highlights how the work will be carried out, e.g. what methods and procedures will be undertaken to guarantee that the project runs alongside the current requirements. This particular stage is known as a delivery strategy.

This would also include a table or schedule highlighting which areas of the project apply to certain consultants and contractors for their own clarification. To us as project managers and BIM Leaders, a BIM Execution Plan will play a vital role in this project as it will include all relevant information and details for the scheme to be a success and most beneficial to yourselves as the client. Not only will we arrange regular meetings with our fellow consultants to monitor their progress, but we will keep close contact with yourselves to keep you updated on all that's going on throughout its' lifecycle.

With reference to the building model itself, the common data environment is a receptacle where all the projects' information is stored. The sole aim of a CDE is to improve the issuing and sharing of information, which represents the delivery strategy and method of the project. One of the biggest advantages of a CDE is that all parties associated with the scheme can have direct access to all information, but also limited to what they can actually manage; for example, a structural engineer could access the receptacle, and view the landscape architects' input, but could not edit as he is not the publisher.

Lastly, all details and project information should be documented in software's' which allow them to analysed easily and set out in a database format. Thus allows us as project managers to monitor the

progress of all areas of the project effectively, and gives us the opportunity to liaise with the consultants should the project fall behind schedule, or should we face any hurdles.

On behalf of myself and Preseli Design Studio, I hope that the above content provides you with all relevant information regarding the requirements of BIM Level 2, and also outlines our objectives for the upcoming project with yourselves. If you have any further queries or questions, please do not hesitate, contact myself directly on 07854091378 or drop me an email: llewbevan@pds.co.uk

We look forward to hearing from you in due course,

Kind Regards,

Llew Bevan,

A handwritten signature in red ink, appearing to read 'L Bevan', with a horizontal line drawn underneath the name.

Architectural Technician – Preseli Design Studio.

Llew Bevan

1805489

Construction Portfolio – ACBA5010

Draft BEP – Ysgol Bae Abertawe.

The sole purpose of a BIM Execution Plan (BEP) is to provide a structure which will enable yourselves as the client, Engineers, Architects etc. to apply BIM Technology to the project, allowing the project to run faster and be more cost-effective. It also outlines the roles and responsibilities each involved party have throughout the projects' entirety.

1.1 General Project Information:

<i>Project Name</i>	Ysgol Bae Abertawe
<i>Project Number</i>	5010
<i>Project Address & Location</i>	Land adjacent to Swansea Observatory.
<i>Project Size (m²)</i>	Approx. 750
<i>Number of Floors</i>	One
<i>Proposal Description</i>	Infant School

1.2 Project Information:

This project is a Welsh Government funded venture which falls under the 21st Century Schools programme, and as our client, you have made us the lead consultant for your scheme. It is our sole responsibility to ensure that the project is coordinated and managed to its required level of BIM maturity, which in this instance is Level 2. The proposed site sits adjacent to the existing Swansea Observatory and sits within the Maritime Quarter of Swansea. The site itself is currently vacant, except for the brick structured boat house, and small remains of an old warehouse towards the north of the site. Thorough site investigation will need to be carried out to ensure that they hold no historical importance, as they are to be demolished as part of the scheme. The overall aim of the project is to create 'Ysgol Bae Abertawe', which will be an infant school that should comfortably house 90 infant pupils and include provision for 48 Nursery aged pupils. Based on the assumptions we have been given, the floor area of the proposed development should not exceed 750m². Current project necessities are the building should only be single-story and have adequate playground space and carparking & drop-off provisions.

2.1 Management & Project Consultants:

<u>Role</u>	<u>Organization</u>	<u>Contact Name</u>	<u>Company Location</u>	<u>E-Mail</u>	<u>Contact Number</u>
<i>Project Manager</i>	Preseli Design Studio	Llew Bevan	Pembrokeshire	llew.bevan@pds.co.uk	07854091378 01239843709
<i>BIM Leader</i>	Preseli Design Studio	Steffan George	Pembrokeshire	steffan.george@pds.co.uk	07556989302 01239843709
<i>Structural Engineers</i>	TSP Engineering	Callum Phillips	Llanelli	callum@tspengineering.co.uk	07922345112 01554780004
<i>M&E Consultants</i>	James & Jones Electricals	Adrian Jones	Carmarthen	adrian@jandjelectricals.co.uk	07443219011 01348322716
<i>Landscape Architect</i>	RT Landscaping	Richard Thomas	Skewen	richardthomas79@RTL.co.uk	07665490071 01792532451
<i>Plumbing Engineers</i>	Gower Plumbing Solutions	James Davies	Gower	jd@gplumbingsolutions.co.uk	07098405613 01639889659

2.2 Project Management:

As appointed project managers, we Preseli Design Studio will be responsible for monitoring the progression of works produced and input from our fellow consultants. The role of project manager entails communicating and working closely with the entire team ensuring that the project runs smoothly and accordingly with the schedule of works. As BIM Leader, we will be accountable for coordinating and managing the federated model; analyzing all inputted information and data, ensuring that there aren't any problems or defects. Monitoring the model closely and frequently, allows any clashes to be rectified early on, enabling budgeting to be kept to a minimum, with no additional occurring costs.

All other consultants will be given their own individual model which they can work on separately in 3D. This gives them a better view of where their components go in the building and how they were to work. For example, a structure engineer will incorporate his steelwork and structural elements to visualize their impact on the design.

An important consideration when project managing a BIM coordinated project is to ensure that BIM doesn't have an impact on the individual's role of managing the project, therefore, the BIM Leader and Project Management roles should be differentiated to reduce the risk of any confusion and misunderstandings. Our main goal as project managers of this project, is to ensure that all aspects are managed correctly and effectively, enabling the scheme to develop successfully and offer our advice and experience to yourselves throughout the project.

3.1 Planning and Documentation:

As a company, we believe that the key to a successful scheme is its ability to run fluently alongside the scheduled plan of works. Upon our appointment, we will construct a spreadsheet listing our aims and objectives for the upcoming duration of the project.

This detailed document will include all stages of the project, from being given the brief, to handing the building over to yourselves as the client. We will also set out goals as to how long each stage should realistically take and how much time we would allow, this will depend on the volume of contractors and consultants we have working on the scheme at one time. In order to ensure that

these short-term goals are achieved, we will observe the plan of works closely, by setting up regular meetings with all consultants to monitor their progress and analyze whether or not their work is up to speed with the requirements. This is where BIM Maturity Level 2 plays its part, as the federated model enables us as project managers to have a better understanding of where the project is at when assessing the scheduled plan of works.

When constructing the plan of works document, we will work closely with our fellow consultants to gain better perception of the timeframe of their specific works. Due to the projects' complexity and scale, a thorough discussion will be paramount at the beginning of the scheme to ensure that all areas are covered, and all pre-commencement measures are in place. We will look closely at all areas of the project, and ensure that all the relevant consultants are on-board from the start, this will allow us to document any updates and changes to the scheme immediately, which will ensure that everybody is aware and kept up to date.

For your clarity, please see below an example of a plan of works:

Ysgol Bae Abertawe Scheme - S010																							
TASK	DATE SET	COMPLETION DATE	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	WEEK 15	WEEK 16	WEEK 17	WEEK 18	WEEK 19	WEEK 20	WEEK 21
Final Brief Established	01/04/2021	08/05/2021																					
Analysis of contractors required	12/05/2021	20/05/2021																					
Approaching contractors for their interest in the project	23/05/2021	05/06/2021																					
Finalise Structural Calculations and requirements with Callum	16/08/2021	20/08/2021																					

4.1 BIM Standards:

As an overview, due to the evolvement of technology and a progression in collaborative working, it was extremely important to set out guidance in which all BIM users should follow and adhere to. The level of standards they should meet, depends on the scale and complexity of the project. In this instance, we are adhered to follow BIM Maturity Level 2 guidance under the Welsh Governments' 21st Century Schools programme. The first published set of standards were split into two sections; first of which outlining the basic principles and concepts users should follow throughout a project. The second being guidance on how to achieve the above and deliver the phase in an appropriate manor.

The UK's BIM Level 2 consists of 8 core standards, ranging for data management and the delivery of the project, to how the works are produced collaboratively. The first standard is *1 PAS 1192-2 – Specification for data management for the capital and delivery phase of construction projects using BIM*. Callum and I will have regular meetings throughout the project to ensure that all works are carried out in accordance with the required standards, and that we deliver the scheme correctly. This standard has several sub-categories, to include British Standards (BS) to all aspects of the project: Identification and classification of library objects for construction, engineering and architecture, Attributes for specification and assessment. A framework specification. Upon commencement of the works, we as Project Managers and BIM Leaders' will ensure that all contractors and consultants are aware of these standards and assist them throughout the scheme and to guarantee that these requirements are met.

The method of working that we as a company are required to adhere to as part of the Level 2 Maturity, is that whichever CAD software that the consultants choose to use for their works, it must have the ability to export documents to a common file format, e.g. IFC (Industry Foundation Class).

We as Preseli Design Studio will show competence in this field, as all of our working consultants have the most up-to-date software packages, allowing a high quality of work to be achieved.

5.1 IT Solutions:

As previously mentioned, it is paramount that all parties utilize software packages that are reliable and collaborative. The best solution for this scheme would be to make certain that all consultants have an up-to-date Revit program; capable of being federated and exported if required, with Auto CAD as a minimum. 3D modelling is a huge benefit for both contractors and also the client, as it allows all federated information and models to be manipulated in a realistic manor.