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Mr Gavin Traylor
Swansea County Council,
IQ Building,
SA1 Waterfront Campus,
Kings Road,
Swansea,
SA1 8EW

Re: Ysgol Y Bae Abertawe – New build

Dear Mr Gavin Traylor:

I am writing to you regarding the new Swansea Bay Primary School development which is currently being proposed by Swansea City Council. As the newly appointed Principal designer for the project, I thought that I would write you this letter to outline my understanding of the design requirements for the scheme including my knowledge of BIM (Building Information Modelling) Level 2. By demonstrating my knowledge on the BIM processes, I will also cover how the design information will be how information will be shared, coordinated, and managed through the appropriate standards. The details of which are emphasised below in greater detail. Annexed to this letter is the BIM Execution Plan (BEP) which further expand on the parameters noted in section 1.0 of Annex 01.

The benefits of using BIM level 2 on this project is to ensure that information and data related to the project can be worked upon collaboratively, by utilising digital technologies to aid in sharing all the relevant project information. This will significantly increase the efficiency of the project, from the pre-construction stage. (Institution, The British Standards, 2021)

As a part of providing a service suitable to BIM Level 2, the information and process that I will provide, must comply with the new ISO 19650 standards which were released in 2019 to supersede the previous standards (PAS 1192 series) what has created an international standard for the process, which also allows for teams from around the world to minimize wasteful activities and increase predictability around cost and time, through a common approach to the management of information. (NBS, 2019) The new standards are currently made from two different sections, ISO 19650-2 which provides the information standards for the delivery phase of the project and ISO 19650-3, which sets out the standards for the maintenance and operational phase of the building.

To uphold the BIM Level 2 (ISO 19650-2) standards, all information based upon the clients brief or 'Employer Information Requirements' (EIR). Following this we can now develop our BIM Execution Plan (BEP) which will set out the approach for the project allowing for a contract to be awarded, allowing a Master Information Delivery Plan (MIDP) to be produced and mobilised, all these documents are mandatory under ISO 19650-2 standards to reach a BIM level 2 status. (McPartland, 2017). All these documents should be produced and distributed to the BIM software after the release of your Information Protocol. According to the UK BIM Framework, the informational protocol should be included in invitation to tender information and then in appointment

documentation for every third party (where the third party is a separate legal entity). (Kemp, 2021)
The documents and roles are further expanded in section 5 of the BEP.

The aforementioned documents and information will now form the Common Data Environment (CDE) whereas mention in Annex 01, there is no particular need to form a CDE due to the nature of the project, however section 6.2 of the Annexed document provides the advisable software if you the client decides to introduce a CDE (Andy, Paul, & Hooper, 2021). I have also noted in section 6 the technology and software I will be using to create the required models and drawings for the project. To ensure that the drawings meet the ISO 19650-2 standards the use of correct naming conventions will be implemented on each piece of documentation, examples of this can be found in section 5 of the BEP.

I look forward to undertaking the design and control of the BIM protocols for this project, to ensure that you have a full understand of the procedure I strongly advise that you read the Annexed BEP. You shall expect the first edition of models and drawings up to RIBS stage 01 by the 6th of May 2021.

Yours Sincerely,

Cieran Stephens

Annex 01

Building Information Modelling Execution Plan (BEP)

5010 – Ysgol Y Bae Abertawe – 21st century schools

Author: Cieran Stephens (Principal Designer)

	Project		Title					
	Ysgol Y bae Abertawe		Post Contract-award BIM Execution Plan					
	Document Type		File name					
	Specification		7001-UWTSD-XX-XX-SP-A-00001					
	Revision	Status	Date of Issue	Scale	Created	Checked	Approved	Sheet no
	P00	S1	29-04-2021	NTS	CS	CS	CS	n/a

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1. Introduction

The purpose of this Building Information Modelling Execution Plan (BEP) is to facilitate the management of information for the project, which defines the BIM strategy and processes for the successful completion of Ysgol Y Bae Abertawe in line with the BIM Level 2 standards, ISO-19650-2 standards, and the objectives of The University of Wales Trinity St David.

This document will outline the following parameters to support the collaborative process to produce the necessary information required by Swansea City Council and to also provide support to the contract administrator:

- Project Information
- Management
- Planning and Documentation
- Standards, Methods and Procedures
- IT Solutions

This document should be used to support the information provided for the further appointments of consultants and contractors, which outlines the requirements for the consultants and contractors. The fundamental standards, naming and data structures shall be continued throughout the project lifecycle.

2. Project Information

2.1 Project Overview

Project Name:	Ysgol Y Bae Abertawe
Project Number:	5010
Project Description:	Design and build of a new single story primary school suitable for 90- pupils within the residential district South of the Maritime Quarter.
Site Name:	Ysgol Y Bae Abertawe
Site Description:	The proposed School location of the school adjacent to the existing observatory within the residential district south of the Maritime Quarter in Swansea. There are remains of warehouse retaining walls and foundations on the site.
Facility Name:	Ysgol Y Bae Abertawe

Table 1- Project information

3. Management

This section of the BEP covers the requirements of ISO-19650-2 5.3.2.

3.1 Roles, Responsibilities and Authorities

The below table outlines the individuals and their organisations undertaking information Management Responsibilities, as set out within ISO 19650-2, Table 1 (Rossiter, 2016)

Name	Company	Role	Resources	Contact Information
Gavin Traylor	Swansea City Council	Client	Client1	<i>Omitted to protect personal information</i>
Cieran Stephens	UWTSD	Architectural	Arch1	<i>Omitted to protect personal information</i>
Cieran Stephens	UWTSD	Structural	Struct1	<i>Omitted to protect personal information</i>
TBC	TBC	M&E	M&E1	<i>Omitted to protect personal information</i>

Table 2 - Project Contacts

The following table of employer representatives and organisations are responsible for the assigned activities as noted in the table. The responsibilities noted within are to meet the requirements of ISO-19650-2 clause 5.2.3. (Croft, Davidson, & Lewis, 2021)

R = Responsible (Undertaking task)

A = Approving Authority (Delegating tasks and validating compliance) C = Consulted (Providing input to achieve the task)

C = Consulted (Providing input to achieve the task)

I = Informed (Kept informed about the tasks and/or outputs)

(University of Cambridge , 2019)

Table 3 - CDE Responsibility

	Responsibilities	Employer	Project Manager	Cost manager	Design team	Lead Designer	BIM Lead	Information Manager	Main Contractor	CDM-C	Facilities Manager	Specialist Contractor
CDE												
Advise on a CDE		A	I				C	R				
Provide a CDE		R	I	I	I	I	I	I	I	I	I	
Set up the CDE		A	C	C	C	C	C	R	C	C	C	
Maintain the CDE			C		I	C	C	R	C			
Download/upload all project information from/to the CDE		R	R		R	R	R	R	R	R	R	
Resources												
Appoint consultants, including Information Manager		R					C					
Ensure that the necessary software and hardware are in place within the organisation to support efficient delivery of the project		R	R	R	R	R	R	R	R	R	R	R
Assess all sub-contracted organisations (design or construct) according to the BIM assessment criteria contained in the Capability Assessment		I	I	R	R	R	R		R			R
Report any emerging skill gaps within the team			I		R	R			R			

Responsibilities	Employer	Project Manager	Cost manager	Design team	Lead Designer	BIM Leader	Information Mana	Main Contractor	CDM-C	Facilities manager	Specialist Contrac
Provide guidance to assist in procuring the right type of training from credible industry professionals	I	I	I	I	I	R	I	I	I	I	I
Co-ordinate training for your own organisation	R	R	R	R	R	R	R	R	R	R	R
Project strategy											
Establish BIM requirements for the project, long term	C	I				R					
Develop, implement and update as necessary the post-contract BEP, which all project team members need to agree to and use	A	I		C	C	R					
Agree and implement the data structure and maintenance standards for the information models	C	I	C	C	C	C	R			C	
Acquire and update as necessary the post-contract BEP to include construction responsibilities	I	I				I	I	R			I
Develop and implement the information delivery plan, sufficient to ensure all deliverables are accounted for		C				I	I	R			I
Acquire and update the MPDT indicating model progression in respect of work packages including Level of Definition with dates of delivery								R			
Develop and implement the BIM implementation programme	A	R				C					
Develop and implement the information exchange protocol		I				C	R				
BIM guidance and monitoring of the project team	I	C				I	R				

Table 4 - Project Strategy Responsibilities

To ensure that the EIR has been satisfied the above confirms the arrangement of the Employers Representative to the supply chain.

Responsibilities	Employer	Project Manager	Cost manager	Design team	Lead Designer	BIM Leader	Information Manag	Main Contractor	CDM-C	Facilities manager	Specialist Contract
Ensure that all drawings are derived from the information models		I		R	R			R			R
Export and publish files according to file data exchange schedule		I		R	R			R			R
Data											
Specify data requirements including the purpose for the information required and the timing of its delivery	A	I	C	C	C	R	I	C	C	C	C
Provide data about facility in both its spatial and physical aspects according to the COBie requirements of the EIR		I		R	R			R		I	R
Provide data specific to a particular system or component in line with individual scope of works								R			C
Delegate aspect of the EIR downwards to the next tier		I		R	R			R			R
Create, acquire and store required information				R	R		R	R	R	R	R
Review and approve the data deliverable prior to submission		I		R	R	C	R	R			R

Table 5- Data Responsibility

3.2 Project Information Modelling (PIM) Strategy

Scheduled below are the deliverables that will be exchanged within the construction period of the project, this will be in line with the specifications outlined in the Employer's Information Requirements.

	Brief & Planning	Model Generation
Graphical Models		Native Discipline Models Federated IFC Model
Non-graphical Data		Federated COBie data
Documentation	BIM Execution Plan	Site Plans, Floor Plans, Elevations, Sections, Door Schedule, Window Schedule

Table 6 - PIM Strategy

3.3 PIM Authorisation process

To ensure that the information that is formed and issued to the PIM is authorised correctly the following steps will need to be followed to conform with the ISO-19650-2 standards and the information provided in the UK BIM Framework Guidance Part D. (Bolpagni & Hooper, 2021)

1. Confirm ability to assess deliverable against IT Constraints.
2. Check deliverable against the Exchange of Information table
3. Review deliverable appropriateness against the Client Strategic Purposes
4. Update suitability code; and
5. Update Revision code.

4.0 Planning and Documentation

4.1 Process for collaboration and information modelling

Every identifiable piece of information within the information model and shall be developed in accordance with the Master Information Delivery Plan (MDIP) which would also be collaboratively developed however due to the nature of this project this has not been included. All documents, information and drawing will be created by utilising the software and formats listed within section 6.0.

Due to the nature of this project, (university assignment) there is no requirement to use a CDE as I will personally developing the models and information from my own software and equipment. However, there is a requirement to form a CDE which is arguably the most important part to BIM a CDE plays a key role in collaboratively sharing information to several appointed parties, again utilising the necessary software, which is noted in section 6.

4.3 Task Information Delivery Plan

For ease of readability the Task Information Delivery Plans (TIDP) have not been included within this document. TIDPs are available on request.

5.0 Methods, Standards & Procedures

The specifications in this chapter are aimed at ensuring the collaborative development of the PIM to satisfy the methods and procedures required to work at BIM Level 2 and the ISO 19650-2 standards.

5.1 – Spatial Location

The location of the project in question is noted within section 2.1, however the additional co-ordinates can be found in the below table.

Reference	Position
Project Base Point	192364.7N, 0265976.9E (mm)
Elevation	0 Elevation

Table 7- Project base point

5.2 File Naming Conventions

To satisfy client brief, all deliverables will be named in accordance with **ISO 19650-2 Clause 3.3.12** (Churcher, Davidson, & Kemp, 2021)

Table 8 - Naming Conventions

Project Number	Originator	Volume	Level	File Type	Role	Classification (optional)	Number
5010	UWTSD	ZZ	00	See ISO 19650-2 Clause 3.3.12	See ISO 19650-2 Clause 3.3.12	<i>See Uniclass 2015, FI Table</i>	<i>See below</i>
			01				
			02				
			ZZ				

The below is a naming convention example for a general arrangement ground floor plan drawing:

5010-UWTSD-XX-GF-DR-A-GAPLAN-01-A

The Below numbers indicate the type of document which is being produced which aid in creating an easy and data rich CDE.

- Plans – 01
- Elevations – 02
- Sections – 03
- Details – 04
- Schedules – 05

6.0 IT Solutions

6.1 Software solutions

The software that is listed in the below table will be utilised to create and issue all information required for project (Ysgol Y Bae Abertawe). Only the software mentioned within the table shall be used for the project deliverables.

Company	Purpose	Software	Version
Autodesk	2D Modelling	Revit	2021
Autodesk	3D Modelling & Creating of Drawings	Revit	2021
Autodesk	Federation & IFC Export	Revit	2021

Table 9 - Software

6.2 Common Data Environment (CDE) Software

Although there is no need for a CDE software due to the nature of the project, the below is an example of the recommended software that can be utilised to ensure that all information and models are shared collaboratively.

Purpose	Software	Version
To form a Common Data Environment	Revizto	5

Table 10 - CDE Software

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