

Exchange Information Requirements (EIR)

Company-Name

Author: Author

Title: Technical and Delivery Manager

Telephone: Phone number

Email: Author@Example.com

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1 VERSION CONTROL

Version	Authored	Date	Approved	Version Comments
P01	Author	23/03/2023		Draft Issue for approval and comments
P02	Author	03/05/2023		Amended to suit Company-Name comments
P03	Author	06/06/2023		Final amendments from Company-Name.
P04	Author	22/01/2025		LOD Detail added
P05	Author	24/01/2025		BSA and Golden Thread ref removed

2 INTRODUCTION

2.1 Context

This Exchange Information Requirements (EIR) document is designed to be included as part of the project documentation for the contractual management of the Lead Appointed Party (Architect) and Appointed Parties (Consultants & Sub-Contractors). For the avoidance of doubt, Company-Name are responsible for all consultant and sub-contractor appointments.

EIR's are an important element of Project BIM Implementation and sets out a strategic purpose for BIM, key vision and objectives, information requirements, key information delivery milestones as well as information management principles that need to be addressed by the Lead Appointed Party (Architect) and the associated Appointed Parties (Consultants & Sub-Contractors). The content of an EIR will be incorporated into other Tender documents.

The EIR is a key document with regards to communicating information requirements as well as establishing information management requirements.

The EIR will act as a good basis from which to review the contents of the BIM Execution Planning at each project stage, confirming its completeness and compliance with all information requirements.

This EIR shall also be read in conjunction with the Asset Information Requirements - AIR (Ref 001-SYM-XX-XX-BI-Z-0001-AIR), which has influenced the generation of this EIR.

2.2 Responding to the EIR

1. Company-Name shall communicate key documentation in respect of BIM and Information Management to all potential Appointed Parties (Consultants and Sub-Contractors) as part of the Tender process.
This shall include:
 - a. The Exchange Information Requirements (EIR)
 - b. The Asset Information Requirements (AIR)
 - c. Reference information and shared resources required to support the ITT
 - d. Tender response requirements and evaluation criteria

2. All potential Appointed Parties (Consultants & Sub-Contractors) shall compile their Tender response to communicate the following BIM and Information Management documentation:
 - a. The Project BIM Execution Plan Template (Pre-Appointment)
 - b. The Delivery Teams Capability and Capacity Assessment
 - c. The Delivery Teams Mobilisation Plan
 - d. The Delivery Teams Information Delivery Risk Assessment

3. Following successful appointment, the Lead Appointed Party (Architect) will need to work with the Appointed BIM Specialist, Appointed Parties (Consultants & Sub-Contractors) and Company-Name to compile the following documentation:
 - a. Confirm the Project BIM Execution Plan (Post-Appointment) – (Appointed BIM Specialist and Appointed Parties)
 - b. Finalise the Delivery Teams Detailed Responsibility Matrix - (Company-Name)
 - c. Establish the Task and Master Information Delivery Plan(s) – (Company-Name)
 - d. Sign up to the Information Protocol to support BS EN ISO 19650-2 the delivery phase of assets. – (Design Team)

Any comments raised on the Pre-Appointment BEP that were received during the Tender process will be discussed during the Tender Clarification process. Any agreed changes and processes for each project will be written into the project post appointment BIM Execution Plan prepared by the appointed delivery team. There may be an amendment to the project post appointment BEP when the project moves into Construction to capture the requirements from the supply chain. The BEP is required to be written in direct response to this EIR and in accordance with BS EN ISO 19650 suite of standards.

Any requirements for sub-contractors to utilise BIM will be captured within their Scope of Works that is issued as part of their Tender package.

A compliant BEP should demonstrate how the requirements outlined in the EIR will be met at each project stage and follow the information management process identified in BS EN ISO 19650-2:2018.

2.3 Information Management to the UK BIM Framework

1. The BS EN ISO 19650 series of standards are an international series of good practice, defining information management principles and requirements through the whole lifecycle of an asset, supporting successful implementation of Building Information Modelling (BIM) to ensure the delivery of just the right information concerning the design, construction, operation and maintenance of buildings and infrastructure using appropriate technologies.
2. The UK BIM Framework and its overarching approach to implementing BIM in the UK shall form the core process in the delivery of information and implementation of BIM for all Company-Name developments.
3. Company-Name (Appointing Party), the Lead Appointed Party (Architect) and any subsequent Appointed Parties (Consultants & Sub-Contractors) that form the delivery team shall follow the Information Management Process identified in BS EN ISO 19650-2:2018 and the following activities through the delivery phase of the project:
 - a) Assessment and need
 - b) Invitation to tender
 - c) Tender response
 - d) Appointment
 - e) Mobilisation
 - f) Collaborative production of information

- g) Information model delivery
- h) Project close-out

4. For further details and description of the activities above refer to BS EN ISO 19650-2:2018.

2.4 Core Content

The core content and requirements are split into the following sections:

Technical	Management	Commercial
<ul style="list-style-type: none"> • Software Platforms • Information Exchange Format • Co-ordinates • Level of Information Needs <ul style="list-style-type: none"> ◦ Level of Detail (LOD) ◦ Level of Information (LOI) • Training 	<ul style="list-style-type: none"> • Standards and Specifications • Functions (roles) and Responsibilities • Planning the Work and Data Segregation • Security • Coordination and Clash Detection Process • Collaboration Process • Health and Safety Construction Design Management • Systems Performance • Compliance Plan • Delivery Strategy for Asset Information • File Naming • As Built Survey information • 3D Co-ordination 	<ul style="list-style-type: none"> • Data Drops and Project Deliverables • Appointing Parties Strategic Purpose • BIM Use • Defined BIM/ Project Deliverables • BIM-Specific Competence Assessment • Risk Register

2.5 Project Information & Contacts

The project information and contacts must be defined in the BIM execution documentation so that full alignment and main contacts are defined.

The following information is required to be included in the project post appointment BEP.

Appointing Party:	Company-Name	Phasing:	N/A
Tenant:	TBC	Project Duration:	TBC
Project Name:	TBC	Form of Contract:	TBC
Project Number:	TBC	Contract Number:	TBC
Building Typology:	TBC	Plan of Work:	RIBA
Site Address:		Current RIBA Stage:	TBC
Number of Storeys:	TBC	Project Start Date:	TBC
Int. Floor Area:	TBC	Project Completion Date:	TBC
Approx. Project Value:	TBC	Project Handover Date:	TBC
Lead Constructor:	TBC	Lead Design Team:	TBC
Facilities Management Provider:	TBC	Facilities Management Software:	TBC

2.6 The Primary Objectives

Company-Name are expecting BIM contributions to be:

- a. Improved stakeholder engagement using enhanced visualisation through the 3D model.
- b. Improved project delivery and efficiency through the development of a high quality, verified Project Information Model (PIM) consisting of all the required deliverables (models, documents and data) identified in this EIR.
- c. Enhanced collaboration, coordination and design development through regular exchange of information and advanced three-dimensional modelling techniques.
- d. Improved, digital management of the project/ estate through the creation of a high quality, verified Asset Information Model (AIM) consisting of the required information deliverables (models, documentation and data) provided at handover to operate, maintain and assess the performance of the delivered asset.
- e. Integration of the Asset Information Model (AIM) into the Asset Facilities Management and Maintenance Processes.

3 TECHNICAL

3.1 Software Platforms

The delivery teams are required to utilise discipline specific software platforms to perform various tasks throughout the delivery of the project. The table below identifies which software platforms are required to be used for specific purposes:

Purpose / Use	Software Platform Requirement	Version Requirement
Design Authoring	The Lead Appointed Party (Architect) along with the Appointed BIM Specialist is responsible for identifying all BIM Software platforms that are to be used on the project. This is to be recorded within the BIM Execution Plan with agreement of the Appointed Parties and Company-Name.	The Appointed Parties (Consultants & Sub-Contractors) are required to utilise the agreed version of the authoring tool agreed for the project. The Lead Appointed Party (Architect) and Appointed BIM Specialist are required to set the strategy as part of the BIM Execution Plan for software upgrades across the project to ensure interoperability during the collaborative working phases.
Model Federation		
Clash Detection		
Construction Sequencing (This is a mandated deliverable. The specific construction sequencing is captured via the 'Package Briefing' documents that are produced by Company-Name and presented to the Appointed Parties).	The chosen software must be able to deliver the model and information requirements defined in this document and the AIR.	It is essential that all information providers and information receivers are aligned and using the same version of the software to avoid any interoperability issues. If this needs to be changed it should be agreed with all engaged parties and approved by Company-Name.
Design Simulation/ Engineering Analysis	The Appointed Parties (Consultants & Sub-Contractors) are enabled to utilise the best available analysis products to perform simulation and engineering analysis as required, provided submitted outputs meet the requirements of the Data Drop/ Information Exchange formats.	Any required appendices relevant to COBie are to be referenced and appended to this document. Refer to the AIR document provided.
Facilities Management	Any specific requirements (project by project) will be communicated to the Appointed Parties (Consultants & Sub-Contractors) as needed and included within the Tender documentation provided.	

Space Management	Any specific requirements (project by project) will be communicated to the Appointed Parties as needed and included within the Tender documentation provided.	
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3.2 Information Exchange Formats

Information Type	Format Requirements	Version Requirement
Geometrical Models	Editable Native Formats	Version(s) to be defined in the project specific BIM Execution Plan and approved by Company-Name.
	Industry Foundation Class (IFC)	IFC 2X3 in Basic FM Handover View
Federated Models	Suitable application to federate the models and run coordination checks (e.g Navisworks, Solibri, Revitzo etc)	Version(s) to be defined in the project specific BIM Execution Plan and approved by Company-Name.
Non-Geometrical Data	Information data drop aligned to the AIR in an Excel spreadsheet format (this does not need to be federated into a single spreadsheet)	The spreadsheet shall be delivered in an XLSX format. If COBie is required on the project the COBie UK 2012 template shall be utilised. Refer to the AIR document provided.
Documentation	For all records of each issue PDF & DWG of all drawings are to be uploaded to the CDE. Where possible the editable native format	Version(s) to be defined in the project specific BIM Execution Plan and approved by Company-Name.
Visualisation Movies/ Animations	WMV/ MP4	
Visualisation Images	TIFF/ JPEG/ PDF	

At the end of the project Company-Name will require the native Revit models to be upgraded and issued in the latest available file format as part of the 'As-Built' model, along with a federated model.

It should be noted that 3D models for 4D planning are required by Company-Name, when requested the Revit files will be required in an .dwg or .fbx file format. In addition, a shared parameter may need to be generated in the model to accommodate grouping, this will be on a project-by-project basis. The Lead Appointed Party (Architect) is to work with the Appointed BIM Specialist in the working on the structure of the files as the following points will need to be reviewed.

- a. Separate Revit model files per block (EG: Block B1.rvt, Block B2.rvt etc...)
- b. All model elements must be correctly assigned to a level (level, base constraint, reference level, host) – certain elements will span through multiple levels.
- c. Model elements must be suitably categorised and separated.
- d. Structural core walls are to be tagged in a unique family reference. Separate to any structural walls or columns.
- e. Model elements are to be tagged to blocks.
- f. Room areas must be tagged, including the area (m²) and type of internal fit out of apartments tenure. Corridor, lift, stair core and riser's to be tagged.
- g. Apartments must be labelled with their respective model elements split according to the apartment typology/ plot. (EG: walls should not span across multiple apartments).
- h. Bathroom pods to be linked to apartment types.
- i. Utility pods to be linked to apartment types.

3.3 Coordinates

To ensure all models and data are co-ordinated and federated, the project and site datum points shall be recorded in the project BEP and required to cover the following information. (Revit users should define the site & project datum points and where possible should be referenced back to a grid line).

Project Co-ordinates	Controlled point 1	TBC	
	Controlled point 2	TBC	
	Controlled point 3	TBC	
	Rotation from True North	TBC Degrees	(Clockwise)
	Ground Floor FFL	0.000	
	Datum Information	TBC AOD = Ground Floor FFL	
	Dimensions in:	mm	
	Levels in:	m	
	Angles in:	degrees	

3.4 Level of Information Need

The level of information need defines the level of maturity required for an information deliverable at a particular plan of work stage. It provides a framework that defines the extent and granularity of information and helps to prevent the delivery of too much information.

The Digital Plan of Works which is embedded in the NBS BIM Toolkit can be used as a reference for information, outlining the requirements for specific model elements. These can be searched by Uniclass2015 classification on the <https://toolkit.thenbs.com/definitions> which will list LOD and LOI requirements details for a given object.

The level of information need can be broken down into three categories for clarity, these are

- The level of Definition
- The level of Detail (LOD)
- The level of Information (LOI)

3.5 The Level of Definition

Covers the geometrical use of the model and the maturity of the data at each stage gate and data drop, this is aligned to the project stages

Company-Name refer to the 7 Levels of Definition as described below aligned to the RIBA plan of works:

- **Stage 1:** Typically includes only documentation like the project brief and scope.
- **Stage 2:** Associated with a very high-level design or feasibility study. Approximate volumes or shapes will represent the assets. Some asset information may be attached to the geometric information.
- **Stage 3 (Basic Design):** Equivalent to a preliminary design. Elements are modelled showing approximate volumes, quantities, sizes, etc. Also, some asset information may be attached to the models. Models now used to start the coordination/ clash process.
- **Stage 4 (Technical Design):** Meaning a detailed design ready for construction. Elements are modelled to a level of detail sufficient for construction. They should include building specifications and information about access, maintenance, operation, etc. Fully embedded in the clash process with a view of full coordination prior to the contractor supply chain (Appointed Party) getting engaged in the project.
- **Stage 5:** Detailed design including the Sub-Contractor's (Appointed Party) specific design elements. At this stage, manufacturers' specific assets will replace generic asset models if required. The model will be utilised to generate 'for construction issue' drawings and utilised by the site team in digital construction processes. Asset information shall be populated to suit the AIR and associated agreed workflow of extraction.
- **Stage 6:** The model will include as-built data. This model will include an accurate representation of the built asset. It should also include the relevant information that will be utilised in the CAFM platform as specified in the information needs.
- **Stage 7:** The model can be utilised by the Appointing Party (Company-Name) and maintenance team for inductions and awareness sessions with the as-built environment. It is this model that shall be kept up to date if required for life cycle of the building.

3.6 The Level of Detail (LOD)

LOD 100 elements are not necessarily geometric representations. Examples are information attached to other model elements: symbols showing the existence of a component but not its shape, size, or precise location; or space reservation volumes. In essence, if information about an element can be derived from the model but the element is not at LOD 200 it is said to be at LOD 100. Any information derived from LOD 100 elements must be considered approximate.

LOD 200 elements are generic placeholders but are recognizable as the components they represent (e.g. a pump, a light fixture, a beam, etc.). Any information derived from LOD 200 elements must be considered approximate.

LOD 300 elements are sufficiently developed to fully convey the design intent for the represented item. Note that while neither the LOD definitions nor this Specification specify who models the element, designers rarely generate model elements higher than 300.

LOD 350 is intended to define requirements for model elements that are sufficiently developed to support construction-level coordination. This LOD usually requires craft knowledge, thus the caveat in the LOD 300 interpretation above that designers rarely generate elements at LODs higher than 300. It should be remembered, though, that neither the LOD definitions nor this Specification specify who models the element – if a design team has craft knowledge available they might choose to develop elements to LOD 350 or higher.

LOD 400 describes a model element developed to the level of shop drawings – in most cases, if a project's specifications call for shop drawings of an item, the project team might model the item at LOD 400. Thus most models contain few LOD 400 elements.

LOD 500 does not indicate a higher level than LOD 400, rather it indicates that the element's geometry is determined through observation of an existing item rather than design of a future item. The LOD 500 definition requires that the model element's accuracy be specified. (as-built Verification)

Company-Name do not need fabrication details included in the elements; however, the exact location of the as-built elements needs to be considered. An agreed tolerance shall be defined in the Project BEP for verification and agreed with Company-Name.

The use of 360 photos and laser scanning is not required to verify the as-constructed state of the model, but traditional surveying techniques shall be utilised to show the model represents the actual true size, shape, form, and location of elements when producing the as-built information as a minimum. Company-Name may audit the model against the as-built state via mobile devices.

While the principle of the required information needs is defined above, Company-Name do not want to over define the Level of detail (LOD) of specific elements and the table overleaf helps define the acceptable minimum LOD for the project at handover (RIBA Stage 6), again the LOD is as stated in the NBS BIM toolkit. Each project will issue out a set of Package Briefing Documents that will define the detail of the specific LOD required for that project.

As a guide the following table has been generated to break down the elements of the building into the required LOD for the modelled geometry.

	Level of Detail (LOD)
Sub Structure (Desirable, Not Essential) Building & Landscape Foundations Underpinning Concrete Works Substructure Masonry Ground floor and any ground floor works Crane & Hoist Base (LOD 2 acceptable) Retaining Walls Below ground drainage External Channels Manholes	3/4

Threshold Drains Localised RC Upstands	
Basement Excavation Works Waterproofing systems and Bars Masonry as well as any special finishes to retaining wall.	3
Basement Retaining Wall	3/4
Structural Frame Total structural load Structure modelled independently Connection details modelled Interfaces with suspended floors Bracing Holding down bolts RC Slabs RC Walls Localised RC Upstands	4/5
Upper Floors of Non Framed Buildings Suspended floor by type Joist layout and detailing size and type Spacing and necessary intermediate supports Bordered finishes Trimming details size and type (for stairs and floors) Joist layout Edge details	4/5
Stairs and Ramps Stairs by type, construction, total rise per story and finish. Balustrades, handrails and similar. Edge details.	4/5
External Walls	4
Windows and External Doors Windows and external doors with unique identification reference. Windows and External doors separated by type, glazing treatment, thermal performance, security requirements, wall treatment, size and location. Separate glazing types N/A – Included in specs, schedules and within the above AOVs Access hatches	4
Internal Walls and Partitions Walls by type and floor to ceiling height Acoustic encasement (RWP + SVP transfers) Fire curtains Letter boxes Access panels/hatches	4
Internal Doors (Including door jamb stud)	5
Wall Finishes	3
Floor Finishes	3
Ceiling Finishes	3
Fixed and Furniture	3
Kitchens	4/5
Sanitary Fittings and Fixtures	4/5
Mechanical and Electrical Layout/Details Incoming Gas, Water and Non potable locations and detailing. Incoming Gas, Water and Non potable water metering and locations. Above ground foul drainage. Heat source type. Fuel distribution pipework & storage Combined Heat & Power (CHP) Installations	4
Mounting Firing equipment, pressure equipment. Controls to Heat Sources. Fire Breaks where Services enter Apartments and Communal Spaces. Sprinkler system. Flues & Chimneys including forced draft Extract	4
Preparatory Groundwork's	3

Soft Landscaping, Planting and Irrigation	4
Fencing Railings, Boundaries and Walls	4
External Finishes	3
Roofs Area of roof finish by type. Roof structure Build-up of roof	4
Signage	3
External Stairs	4
Street Furniture	3
Hard Landscaping	3
Cycle Storage	4
Lighting (Internal, External and Communal)	4
Fire Services	4
Security CCTV	3

To align to the latest standards Company-Name would like to summarise their information needs against BS EN 17412-1 2020 where we need to consider 5 areas for the Geometrical information, these are shown below:



Taking each section Company-Name would like to try and simplify the needs so the deliverables are defined.

- **Detail** – The detail of the geometrical element shall be modelled to suit the coordination and clash detection purpose, no manufacturing or fabrication details need to be defined in the element.
- **Dimensionality** – Wherever possible the element defined shall take on a 3D representation to ensure coordination and clash management is effective on the project.
- **Location** - Location describes the position and orientation of an object. Location can be absolute, against a reference point, or relative, against another object. Each object in the model shall be placed to one of the above examples.
- **Appearance** – Company-Name are looking to receive models that represent the real material colours or textures embedded in the appearance of the modelled elements.
- **Parametric Behaviour** – The parametric behaviour of a modelled element can be left to the author of the element; Company-Name do not have any requirements to have a fully parametric model delivered other than to achieve the required deliverables/ information such as that included within schedules.

NOTE – If assistance or clarity is required, please reach out to Company-Name and the Appointed BIM Specialist who will explain the requirements.

3.7 Level of Information (LOI)

The Level of Information (LOI) should be aligned to requirements defined in the AIR document (Ref 001-SYM-XX-XX-BI-Z-0001-AIR) and its appendix (Ref 001-SYM-XX-XX-BI-Z-0003-Asset).

The table in 001-SYM-XX-XX-BI-Z-0003-Asset has been populated with the project stages to help define when the specific data field should be populated and available on the project.

3.8 Training

Each Appointed Party (Consultants & Sub-Contractors) is responsible for ensuring all task team members are suitably qualified and competent to perform daily duties in accordance with the requirements within these Information Requirements; this includes the appropriate software training and familiarisation with workflows, standards and Information Management requirements.

4 MANAGEMENT

4.1 Standards & Specifications

To ensure that information produced by the project can be integrated into Company-Name FM/ Asset Information Management System, the following specification(s) are required to be referenced as part of the implementation on the project:

Document Ref
Asset Information Requirements (AIR) - 001-SYM-XX-XX-BI-Z-0001-AIR

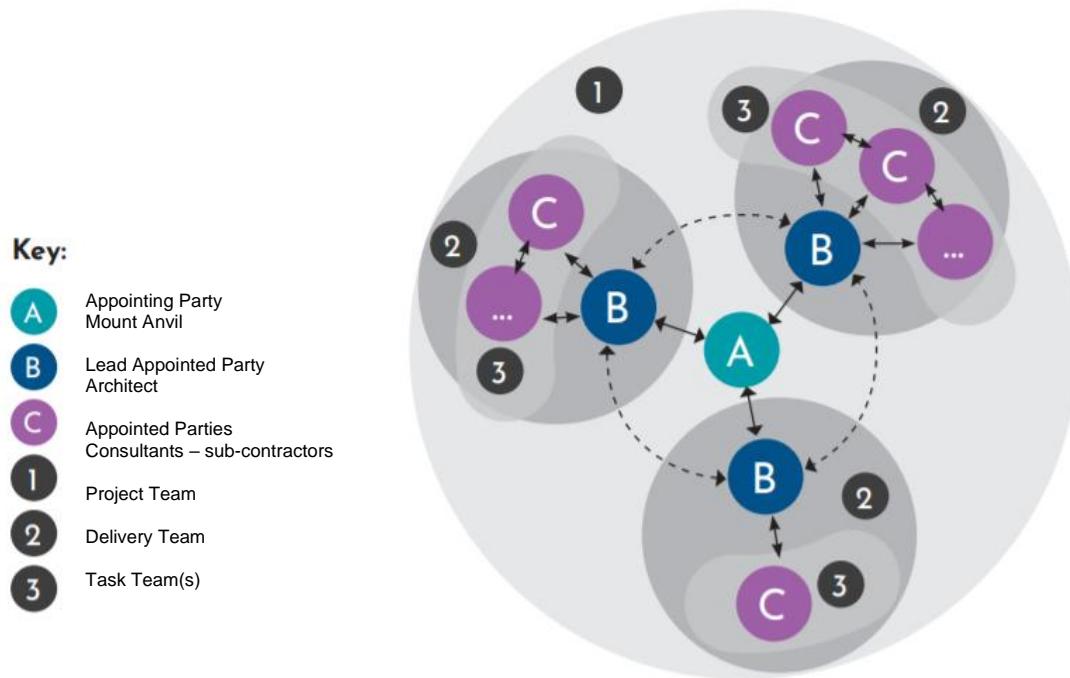
In addition, the following Industry standards and specifications are required to be adopted on the project to ensure consistent collaborative production of information:

M=Mandatory R=Recommended	Application										
	Guidance	Collaboration	Project Stages	File Naming	Object Naming	Drawing	Classification	LOD / LOI	CDE	Costing	Asset Security
Standards											
BS EN ISO 19650-0	R	R									
BS EN ISO 19650-1:2018	M	M	M						M	M	M
BS EN ISO 19650-2:2018	M	M		M					M	M	M
AECUK CAD Standard (non BIM Generated drawings)						M					
NBS DPOW - https://toolkit.thenbs.com/definitions							R	M			
COBie-UK 2012 – BS EN ISO 19650-4:2022 (If required see AIR)											M
BS8541-1:2012					R						
BS8541-2:2011					R						
BS8541-3:2012					R						
BS8541-4:2012					R						
Information Protocol to support BS EN ISO 19650-2. Only mandated from stage 5	M	M	M								
Uniclass 2015 (ISO 12006-2:2018)							M				
BS EN ISO 19650-5:2020											R
RIBA Plan of works			M								
BS EN 17412-1 2020								R			

Note: There are no specific Security Protocols required by Company-Name at this time, but BS EN ISO 19650-5:2020 processes are recommended and should be considered and where applicable applied by suppliers.

4.2 Functions (Roles) & Responsibilities

The Functions (Roles) and responsibilities are split into 3 main areas, the (A) Appointing Party (Company-Name), (B) Lead Appointed Party (Architect), and (C) other Appointed Parties (Consultants & Sub-Contractors). The diagram below is taken from BS EN ISO 19650.

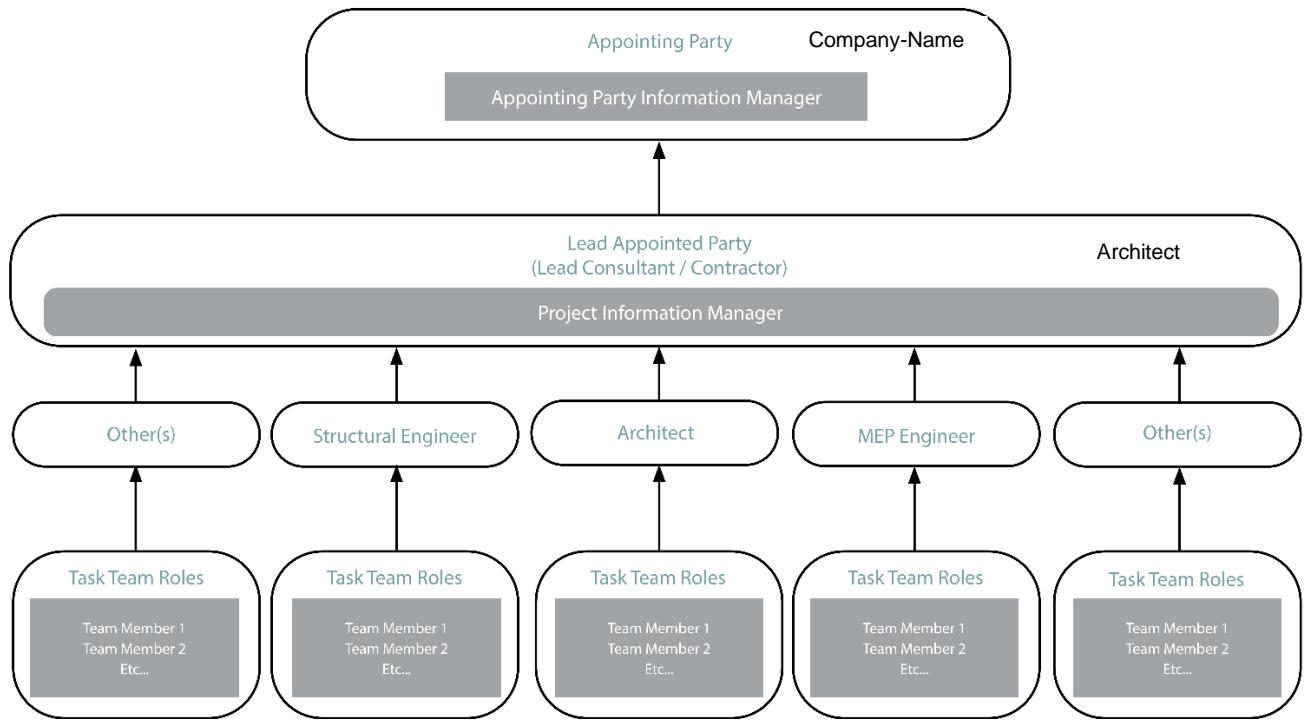


Role	Responsibility
Appointing Party (Company-Name)	<p>Company-Name will be responsible for creating the Exchange Information Requirements (EIR) and Asset Information Requirements (AIR) to suit the requirements needed by Company-Name (The Appointing Party) and any JV Partners.</p> <p>During the Design and Construction stage of each project, the Appointing Party (Company-Name) will primarily behave in an Exchange Information Management role, they have the following responsibilities:</p> <ul style="list-style-type: none"> • Keep aware of new technology to deliver Information Requirements. • Establish and ensure that the Exchange Information Requirements (EIRs) are achievable across all stages of the Project (Design, Procurement, Construction, In Use). • Establish and ensure that the Asset Information Requirements (AIR) are achievable, and reasonable for the purpose with which the information will be utilized during the post-construction phase of the Project. • Ensure that the information and data exchanges at the Project Milestones are compliant with the EIRs. • Periodically check that the information being utilised for co-ordination and collaboration is compliant with the EIRs. • Work with the appointed BIM Specialist to ensure that the Lead Appointed Party (Architect) and Appointed Parties (Consultants and Sub-Contractors) information aligns to the EIRs and is fulfilled within the BIM environment for migration from the Project Information Model to the Asset Information Model. • It is Company-Name's responsibility to ensure a Lead Appointed Party (Architect) as defined within the document is appointed at all stages of the project.
Technical Manager	For certain projects, aspects of this role may be delegated and assigned to multiple individuals as long as there is no duplication of effort or responsibility. For example individuals with job titles such as Information Manager, BIM Co-ordinator or BIM Manager could be assigned to support the Technical Manager during delivery.

Role	Responsibility
(Company-Name)	<p>All role descriptions, name of assigned individual and associated responsibilities must be recorded in the project specific BIM Execution Plan (BEP).</p> <p>The Technical Manager where possible should have some knowledge of working within a BIM environment and should be experienced in managing multiple disciplines to produce the information and data required as defined in the EIR. The Technical Manager may have advanced knowledge BIM processes and technologies; however, this is not critical for the function of the role.</p> <ul style="list-style-type: none"> • Understand the requirements of the EIR and AIR and ensure that information/data being produced throughout the project conforms to the requirements given in the two documents. • Initiate, agree and implement the Master Information Delivery Plan (MIDP) covering all information, data, and deliverables to meet the requirements of the EIR and AIR. <ul style="list-style-type: none"> ◦ The MIDP will be based upon Task Information Delivery Plan(s) produced by the Consultant(s) Task Team(s) Manager(s) ◦ The MIDP can be incorporated in the Information Release Schedule (IRS) if required. • Input into the BIM Execution Plan (BEP) which satisfies the requirements of the EIR and AIR. • Ensure that the information and data produced by the Appointed Parties (Consultants & Sub-Contractors) is uploaded to the CDE in line with the MIDP and reject information exchanges within the CDE which do not conform. • Ensure that the information and data is being produced to the Level of Detail (LOD) defined in the EIR/AIR at the appropriate Stage and/ or “Information Exchange”. • Ensure that the information and Information Exchanges at the Project Milestones are compliant with the EIR/ AIR. • Develop and agree the process for incorporating as-constructed, testing, validation and commissioning information. • Support the Project Team with the implementation of the agreed BEP to ensure conformity to the EIR and AIR • Input into design changes proposed to resolve clashes.
Lead Appointed Party (Architect)	<p>The projects Lead Appointed Party (Architect) will be responsible for the items listed below.</p> <p>General Responsibilities</p> <ul style="list-style-type: none"> • To understand the requirements of the EIR and AIR and ensure that information/ data being produced throughout the project conforms to the requirements given in the two documents. • Work with the Appointing Parties (Consultants and Sub-Contractors) to establish and maintain a Common Data Environment (CDE). • Ensure the CDE conforms to the Data Security requirements given within the EIR. • Ensure that the information and data exchanges at the Project Milestones are compliant with the EIR and AIR. • Together with the Appointed Parties (Consultants and Sub-Contractors) evolve the project BIM Execution Plan from the pre-appointment BEP template issued during the Tender process. • Advise and support all parties to work to the agreed BIM Execution Plan. • Validating the structured information data drop provided by the other Appointed Parties (Consultants and Sub-Contractors). • Establish a workflow for compliant data drops for the relevant Information. • Together with the Appointed BIM Specialist provide monthly status reports of BIM development. • Establishing processes and procedures to enable reliable information exchange between Project Team Members, the Customer and other stakeholders. • Manage Common Data Environment processes and procedures, validate compliance with them and advise on non-compliance together with the appointed BIM Specialist. • Establish, agree and implement the information structure and maintain standards for the Information Model. • Validate compliance with information requirements and advise on non-compliance. • Implement methods of record keeping, archiving, and audit trails within the CDE.

Role	Responsibility
Appointed Parties (Consultants and Sub-Contractors)	<p>The Appointed Parties will be responsible for maintaining progress and the required quality of information and data produced. The Appointed Parties are expected to liaise with the Technical Manager (if engaged on a project) the Lead Appointing Party (Architect) and the Appointed BIM Specialist (Appointed Party) on a regular basis. The Appointed Parties are required have advanced knowledge of BIM technologies and processes or otherwise have experience in a BIM Management role.</p> <p>The Appointed Parties may change at the award of the appointment and/ or at the Construction stage of the Project. Should the Lead Appointed Party change, it is their responsibility to ensure that all information and data is transitioned to the CDE to the correct LOD as specified in the EIR/ AIR at the relevant stage.</p> <p>The Appointed Parties shall:</p> <ul style="list-style-type: none"> • Understand the requirements of the EIR and AIR and ensure that information/ data being produced throughout the project conforms to the requirements given in the two documents. • Help develop the BIM Execution Plan with the Lead Appointed Party (Architect), appointed BIM Specialist and the Technical Manager to ensure the Execution Plan captures capabilities/ software of the consultants and supply chain. • Ensure their own task team produces a TIDP. • Take a leading role in planning, configuring and maintaining project files produced by the Task Teams • Facilitate/ identify appropriate levels of staff training and support to comply with the project execution strategy. • Ensure that necessary software and hardware are in place to support efficient delivery. • Ensure the Task Teams are creating information and data to the defined LOD in the EIR/ AIR at the relevant stage of the project. • Ensure models produced by Task Teams are clash resolved before being issued for co-ordination and reject models which are not. • Combine clash resolved models produced by the Task Teams into a single federated model. • Take a leading role in ensuring that all Task Teams update their model(s) to resolve clashes identified within the clash report. • Ensure all data and information from individual Task Teams is collated and issued to the CDE to suit the Project Milestones, and reject any information and/ or data which does not conform to the EIR and/ or AIR. • Approving information for issue within the CDE • Manage information development and information approvals • Confirm design deliverables • Approve design changes proposed to resolve clashes <p>Company-Name require that Tier 1 and Tier 2 supply chain partners define the function (roles) within their project delivery team.</p> <p>Please note that it is permissible to combine one or more functions (roles) below into a single role if the workload permits.</p>
Task Team Roles	<p>The Task Team is responsible for:</p> <ul style="list-style-type: none"> • Understanding the requirements of the EIR and AIR and ensure that information/ data being produced throughout the project conforms to the requirements given in the two documents. • Development of Task Team Information Delivery Plan (TIDP), • Model checking and review prior to submittal to the BIM Co-ordinator/ Lead Designer • Issue approved information within the CDE • Production of design outputs related to a discipline-specific, package-based or time-based task.

The table below defines a possible hierarchy for the function (roles) in the delivery team structure.



To ensure there is clear ownership of functions (roles) and responsibilities these have been identified in the following RACI table. Please note the responsibility may change from the design team to the main contractor/sub-contractors once we get into the construction stage of the project (This should be aligned with the project scope of works documents). These points are marked with a *.

For the avoidance of doubt, Company-Name will not provide a design management solution such as BIM 360 or ACC (BIM Collaborate Pro) this will be the responsibility of the Appointed BIM Specialist. The appointed delivery team are required to utilise the 'Pro' version of the chosen solution to ensure the full efficiencies are being utilised. The Appointed Parties are responsible for providing their own licenses to the required software.

Icon	Icon Meaning	Description
R	Responsible	The person who does something as part of their job or role to do a specific task or activity.
A	Accountable	The person who is expected to justify actions taken or decisions made to deliver the completed task or activity.
C	Consulted	Groups or people whose opinions are sought by the person responsible for the task or activity.
I	Informed	Those groups or people that should be kept up-to-date on progress with the task or activity.

SYMETRI ADDNODE GROUP	Appointing Party (Mount Anvil)	Appointing Party (BIM Specialist)	Lead Appointed Party (Architect)	Lead Appointed Party (Contractor)	(Appointed Parties Consultants Sub- contractors)	Task Teams
CDE (depends on stage of project)						
Provide a CDE (Asite)	R	I	I	I	I	I
Set up the CDE (Asite)	R	I	I	I	I	I
Maintain the CDE (Asite)	R	I	I	I	I	I
Download/ upload all relevant project information from/ to the CDE (Asite)	R	R	R	R	R	R
Provide a CDE (BIM)	I	R	C	I	I	I
Set up the CDE (BIM)	I	R	C	I	I	I
Maintain the CDE (BIM)	I	R	C	I	I	I
Download/ upload all relevant project information from/ to the CDE (BIM)	R	R	R	R	R	R
Resources						
Appoint consultants, including Information Manager	R					
Ensure that the necessary software and hardware are in place within (your own?) organisation to support efficient delivery of the project	R	R	R	R	R	R
Assess all subcontracted organisations (design or construct) according to the BIM assessment criteria contained in the Capability Assessment	R	R	I	R	R	I

SYMETRI ADDNODE GROUP	Appointing Party (Mount Anvil)	Appointing Party (BIM Specialist)	Lead Appointed Party (Architect)	Lead Appointed Party (Contractor)	(Appointed Parties Consultants Sub- contractors)	Task Teams
Report any emerging skill gaps within the team	I	R	R	R	R	R
Co-ordinate training for your own organisation	R	R	R	R	R	R
Project BIM Strategy (depends on stage of project)						
Establish BIM requirements for the project, long term	R	R	R	I	I	I
Develop, implement and update as necessary the post-appointment BEP, which all project team members need to agree to and use*	A	R	C	C	C	I
Agree and implement the data structure and maintenance standards for the information models*	C	R	R	R	I	I
Develop and implement the information delivery plan, sufficient to ensure all deliverables are accounted for*	C	I	R	R	C	I
Acquire and update the MIDP indicating model progression in respect of work packages including Level of Definition with dates of delivery*	I	R	R	R	C	I
Develop and implement the BEP*	A	R	R	R	R	R
Develop and implement the information exchange protocol	C	C	C	R	C	I
BIM guidance and monitoring of the project team*	I	R	R	R	I	I
Responsible for ensuring that all subcontracted organisations (design or construct) meet the requirements set forth in the BEP*	I	R	R	R	C	I
Provide any existing information including historical data and existing conditions models.	R	I	I	I	I	I

	Appointing Party (Mount Anvil)	Appointing Party (BIM Specialist)	Lead Appointed Party (Architect)	Lead Appointed Party (Contractor)	(Appointed Parties Consultants Sub- contractors)	Task Teams
Model Geometry						
Create a site set-up model with coordinated, measurements and bearings to be used disseminated to all design team members	I	I	R	I	I	I
Provide a virtual model according to the Levels of Development, the MIDP and the nongeometric requirements	I	I	R	I	R	R
Share information models for coordination			R	R	R	
Implement the BEP within (your own?) organisation	I	I	R	R	R	R
Full coordination of the design and design team			R			
Create clash rendition reports of the federated models*		R	I	I	I	
Ensure the implementation of BIM acknowledges Facilities Management (FM) and operation and maintenance deliverables*	C	C	R	R	R	
Incorporate subcontract (design and construct) models			R		R	
Ensure that all drawings are derived from the coordinated Information		I	R	R	R	
Export and publish files according to file data exchange schedule	I	I	R	R	R	R

	Appointing Party (Mount Anvil)	Appointing Party (BIM Specialist)	Lead Appointed Party (Architect)	Lead Appointed Party (Contractor)	(Appointed Parties Consultants Sub- contractors)	Task Teams
Model Data						
Specify data requirements including the purpose for the information required and the timing of its delivery	R	R	C	I	C	I
Provide data about facility in both its spatial and physical aspects according to the information requirements of the AIR. *	I	I	R	R	R	
Provide data specific to a particular system or component in line with individual scope of works			R		R	I
Create, acquire and store required information		R	R	R	R	R
Review and approve the data deliverable prior to submission			R	R	R	
Create, acquire and store required information		R	R	R	R	R
Review and approve the data deliverable prior to submission			R	R	R	

SYMETRI ADDNODE GROUP	Appointing Party (Mount Anvil)	Appointing Party (BIM Specialist)	Lead Appointed Party (Architect)	Lead Appointed Party (Contractor)	(Appointed Parties Consultants Sub- contractors)	Task Teams
Quality Assurance & Control						
Adhere to the QA/ QC procedure contained within the EIR	C		R	R	R	R
Ensure all dataset requirements are completed in full according to the LOD and information needs		I	R	R	R	R
Report on changes to budget, cost and design	A		A	R	R	R
Audit and coordinate virtual models, including full intermittent clash detection according to the BIM programme		R	R	R	R	R
Report on general model quality in terms of geometry, materiality and metadata	I	R	C	C	R	
Report on adherence to the project BEP with regards to model information needs, model completeness and BIM standards compliancy	I	R	C	C	R	
Review of received data against the EIR data requirements	R	R	R	R	R	R
Support the Lead Designer by undertaking third party 3D coordination and clash detection processes to assist design coordination reviews		R	I	C	R	C
BIM Meetings						
Make use of information models during design team and the appointing parties team meetings	I	R	R	R	R	R
Hold BIM workgroup meetings		R	R	R	R	C
Hold key work stage BIM steering group meetings	C	R	R	C	R	C
Hold lessons learned meeting following completion of phases	R	R	R	R	R	R
Reporting and Governance						
Provide monthly status reports of BIM development	I	R	R	R	R	

4.3 Planning the Work & Data Segregation

The Planning of Work and Data Segregation is required to be implemented in accordance with specification of BS EN ISO 19650-1:2018 where-by discipline specific models are created (Arch/ Structural & MEP) and Zones, Floors and spaces are introduced as a mechanism to further segregate the data and feed into the modelling approach.

The Method for Planning the Work & Data Segregation shall be detailed in the Projects BIM Execution Plan which must be agreed with Company-Names BIM Specialist as the following elements may be needed to segregate and separated per block and even floor.

- Structural elements
- Slab
- Core walls
- Walls
- Columns
- Piles & pile caps
- Structural framing
- Architectural elements
- Exterior walls
- Exterior doors
- Windows
- Balconies
- Landscaping
- Internal elements
- Bathroom pods
- Apartments

4.4 Security

The Appointed Parties are responsible for the implementation of a security minded approach to BIM and for ensuring effective measures are in place to appropriately protect information, which is sensitive in nature.

There are no specific security constraints associated with this project, all information does not need to be protectively marked.

4.5 Coordination & Clash Detection Process

The Lead Appointed Party (Architect) is required to ensure that all submitted information has been fully coordinated with other systems to the specified origin points and that a Clash Detection/ Clash Resolution procedure is in place and agreed with the Appointed BIM Specialist to aid the identification of design errors and put in place a method for resolving those design errors prior to commencement of construction. This process must be clearly defined in the BIM Execution Plan (BEP).

In terms of the specific clash tolerances these will vary and are required to be captured within the BEP along with the Company-Name 'Package Briefing' documents.

The intention is to have specific clash detection allowances within the BEP, the BEP will also explain the frequency of the clash detection workshops, specific actions involved, processes, etc.

4.6 Collaboration Process

The Lead Appointed Party (Architect) along with the Appointed BIM Specialist is required to be responsible for the collaborative working arrangements on the project. This includes the provision of a Common Data Environment where the project information is Shared/ Published and available to other team members. The collaborative working process is required to follow the specification within BS EN ISO 19650-1:2018 adhering to naming convention requirements and status, version coding for suitability of use. It is up to each Appointed Party to provide their own licences of design management software such as BIM 360/ ACC Collaborate (Pro Licenses) as previously defined.

All task team managers (consultants/ sub-contractors) are required to contribute information to the Common Data Environment to ensure the entire team has access to and is working from the latest available Information.

Company-Name will host a CDE (which will be on the Asite Platform) for the project which will capture shared and published information. All suitable information must be uploaded to this environment as a record throughout all RIBA stages of work as per the Scope of Works documents and Employers Requirements. Company-Name would also expect all contractual issued documentation to be uploaded to this system as released on the project.

The Appointed BIM Specialist is responsible for setting up, managing and maintaining the project CDE, that will manage WIP and shared data and can be utilised for published data for works on site, but the Company-Name system (Asite) must be considered in the suggest workflow. The Technical Manager will ensure applicable standards, workflows, and guidance for the chosen CDE (Asite) is provided and followed; this can be documented in a CDE guide. The appointed BIM Specialist is required to complete the same process for the BIM CDE which should be developed collaboratively with the BEP to ensure alignment of processes. The CDE will be chosen and implemented following appointment of the lead appointed party depending on project stage.

All Project Stakeholders and Appointed Parties are responsible for the following:

- Uploading and issuing all relevant information via the CDE.
- Safeguarding a copy of the information on a secure server within their own organisation
- Downloading relevant files from the CDE.
- Using file naming conventions as detailed within the BEP and Information Management Protocol.
- Uploading the information in file formats are described in the BEP and Information Management Protocol.
- Ensuring that none of the uploaded files are corrupted or contain any viruses or malware.
- Ensure that the last valid revision of each file is uploaded.
- Report to Company-Name and the appointed BIM Specialist any issues encountered in form or content of files within the CDE.

The Lead Appointed Party (Architect) shall report the following upon discovery:

- Issues in information models (form or content) which may cause inaccuracies.

- Insufficient data or geometry within information models.
- Discrepancy in information or information structure which may cause issues.
- Out of date information.

If 3rd party access is required to the project CDE for the Customer or Customer Representative a login/ password will be issued by the responsible party.

The Lead Appointed Party (Architect) and the Appointed BIM Specialist shall detail the collaboration process in sufficient detail to demonstrate capability and competence within the BIM Execution Plan. This shall include but is not limited to:

- a. Form and process of Information Exchange between the Delivery Team.
- b. Form and process of Information Exchange with Company-Name.
- c. Extent, form and frequency of model coordination, federation and exchange.
- d. Frequency of collaboration and information exchange between the Delivery Team.
- e. Details of model review workshops and other collaborative working practices (coordination meetings, model federation etc.)

4.7 Information Exchanges Timings and Frequency

Company-Name require that information is exchanged between all relevant project team parties across the design and construction periods of the project. On the outset of the project the frequency of information exchange should be suitable for the purpose for which the information is required. For example, 3D models may be exchanged weekly to inform design development.

Company-Name also require specific project milestone/ stage information exchange with defined deliverables as detailed in the Information Requirements and Deliverables section of the Exchange Information Requirements (EIR).

The project team must ensure effective and efficient information exchange via the project Common Data Environment (CDE) and if required, test information exchanges must be carried out to ensure there is no delay in Company-Name receiving information when required.

4.8 Health & Safety Construction Design Management

The Technical Manager is required to utilise where possible the Building Information Models to inform decisions relating to the planning and execution of Health & Safety Construction and Design Management in accordance to CDM Regulations 2015 demonstrating the design can be constructed and maintained to meet Health & Safety requirements. This may also be based on other documentation delivered on the project.

There is no Appointed Party requirement to install Health and Safety information within objects, this information will be delivered as the project H&S file, but this is optional if the project team see value in the deployment. If the Appointed Party have developed any form of H&S marker to be placed in the model this should be discussed with the Company-Name and the Appointed BIM Specialist for alignment and acceptance.

4.9 Systems Performance

Company-Name (Appointing Party) along with the Lead Appointed Party (Architect) and Appointed BIM Specialist are required to ensure that all systems used in the collaborative production of information are suitable for use and fit for the intended purpose, minimising downtime. This includes making sure that models are manageable on IT systems and specification of hardware to enable effective performance of data use.

- Specified Native Models shall not exceed 350MB in file size
- Federated Models (NWD) shall not exceed 500MB in file size

4.10 Compliance Plan

The Lead Appointed Party (Architect) along with the appointed BIM Specialist are required to define a method for ensuring compliance of the Information and provide Company-Name with assurance that the execution of Building Information Modelling meets the specified requirements set out within this document and the AIR.

All submitted information is required to be fully compliant with the specification within this Exchange Information Requirement.

During the pre-appointments and tender response all parties are to provide copies of their QA/ QC procedures to show compliance with the applicable standards and ISO qualifications. This will include the completion of the Company-Name BIM assessment forms. (This is not required by any Appointed Parties already on the project before this EIR was issued and distributed).

4.11 Delivery Strategy for Asset Information

The Strategy for delivery of asset information is that the Suppliers are required to implement all the Company-Name standards identified within this Exchange Information Requirements to ensure successful delivery of Asset Information; this includes the application of the Company-Name Asset Information Requirements and other standards and specifications as specified.

Company-Name require a structured data drop against defined maintainable assets this is defined in the AIR, please refer to this document for more details on specified fields required for completion.

All required Fields as defined in the Asset Information Requirements document 01-SYM-XX-XX-BI-Z-0001-AIR must be installed into model objects to enable the Appointing Party (Company-Name) to use the federated model during facility operation.

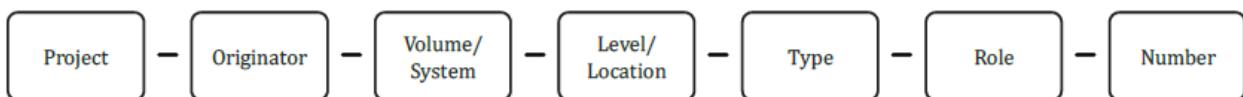
Data drops must be generated at the end of each RIBA Plan of Work project stage, to support a progressive development approach and end of stage compliance audits. This can be agreed at project level to suit requirements.

All assets will need reference to Uniclass 2015, if COBie is required on the project then within the COBie data drop all assets shall have the associated SFG20 code applied this will be assigned to the COBie.componenet.AssetIdentifier field. Refer to the AIR document provided.

There are no requirements to link the O&M documents to the model or associated asset data, if this is required it will be defined in the tender requirements documentation.

4.12 File Naming (information containers)

File naming shall be aligned to BS EN ISO 19650-2:2018 national annex as defined below, full details shall be defined and agreed in the project BEP.



4.13 As Built Survey Information

As Built Survey information is required to be submitted prior to handover and close out to capture any on-site changes, which have occurred, and specifically capture areas and services, which have been covered up as part of the construction. As examples this applies to buried utilities and ceiling voids. The method of collecting and providing information can be proposed by the Lead Appointed Party (Architect), but Company-Name are happy that traditional survey techniques and information capture from as-built red line drawings are sufficient way to update the asset information model for handover.

Company-Name have the right to take the model out onto the project site and check the model against the as-built constructed state using their own methods of verification.

If the project is a refurbishment of an existing facility, Company-Name want to take the opportunity to digitally capture the existing shell, core, structure, room layout and convert this into a digital interpretation of the building. This can be done via a laser scan and then converting this into a digital BIM model. Existing asset data will need to be reviewed as to the amount of information captured against them and shall be agreed with them.

4.14 3D Co-ordination

The following 3D coordination process shall be implemented to support successful collaboration of all parties:

- Model authors shall comply with the requirements and standards defined in this EIR.
- Object authors are responsible for the quality assurance of their models prior to upload to the CDE.
- Work in progress models shall be uploaded to the CDE and shared with the Design team for coordination.
- The Lead Appointed Party (Architect) shall coordinate all models and share the issue report with all authoring parties three days prior to the fortnightly coordination meetings (this may be reduced to suit the project requirements). The exact requirements are to be defined within the project specific BEP.
- Authoring consultants shall record the coordination process within the BEP, including the process to confirm that the model is current, and all parties are working to the latest model.
- Following validation of the coordinated models, Shared models shall be issued to the wider team via the CDE.
- Models will be verified monthly by Company-Name via the Appointed BIM Specialist for completeness, quality and coordination with other models.
- Data drops will be reviewed by Company-Name with the Appointed BIM Specialist and signed off at the end of each work stage.

5 COMMERCIAL

5.1 Data Drops & Project Deliverables

Data drops/ Information Exchanges are required to be fully defined as part of the BIM Execution Plan in the form of a Master Information Delivery Plan (MIDP) aligned with the delivery programme.

The Lead Appointed Party (Architect) and Appointed Parties (Consultants & Sub-Contractors) are required to transmit (Shared/ Published) information at the end of each Project stage to Company-Name along with the appointed BIM Specialist in compliance with the specified formats, standards and to the required Levels of Definition as specified within this document.

The transmitted information will be audited at the end of each Project stage from stage 3 onwards by the appointed BIM Specialist. A compliance report is required to be issued to Company-Name and the appointed BIM Specialist identifying any areas of non-compliance which must be rectified.

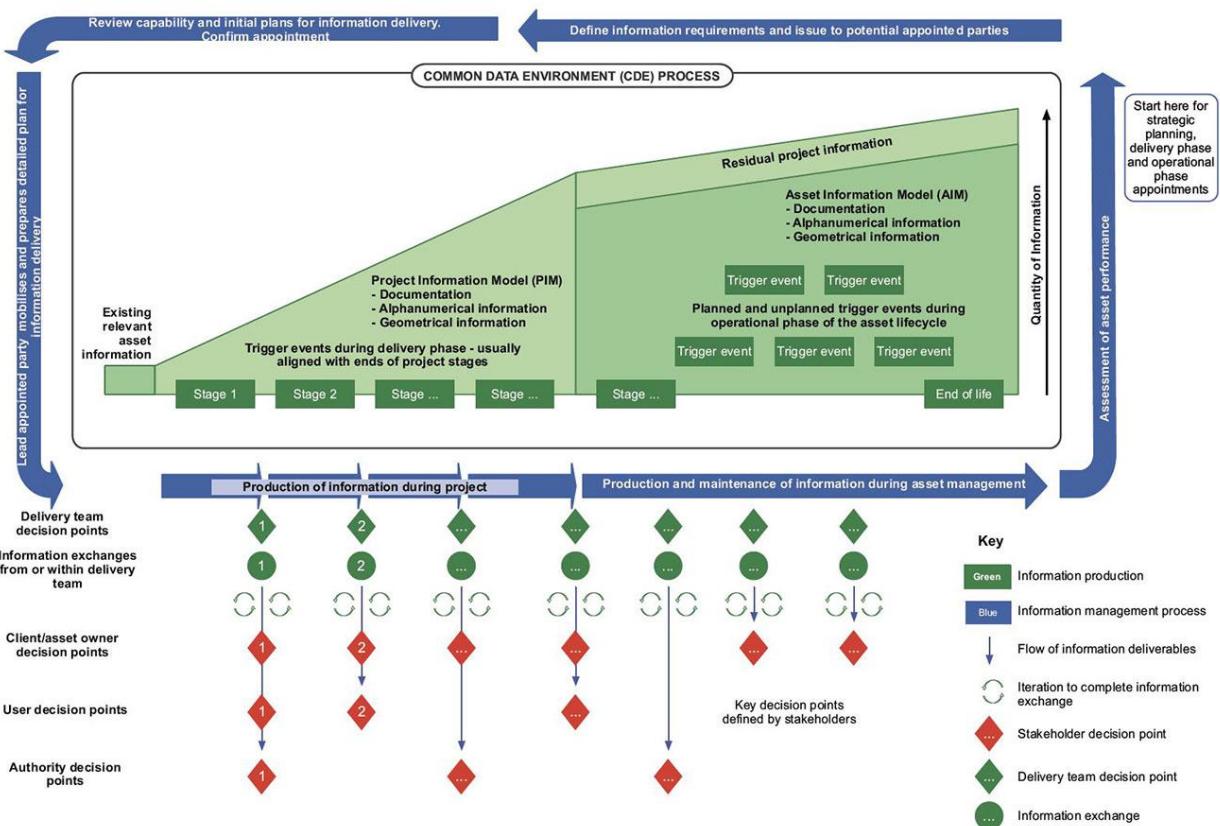
5.2 Appointing Party (Company-Name) Strategic Purpose

The adoption of a common approach to BIM and Information Management across all Company-Name projects will allow the process, procedures, deliverables and outcomes to support at a strategic level, the following:

- Consistency of approach across multiple asset types, consultants and contractors to aid a lean approach to project management.
- Inform exemplar information management.
- Increase the longevity of information in a changing industry landscape.
- Create safer to manage and maintain assets including, management of capacity and utilisation, statutory compliance and regulatory responsibilities, maintenance, repair and replacement, repurposing and decommissioning and disposal.
- Promote a higher quality of design.
- Allow for heightened stakeholder engagement to provide customer focus.
- De-risk and assist with the financial viability of development.
- Support reporting and meeting existing (and any new) organisational KPIs.
- Increase inter-development and independent asset coordination.
- Assurance and quality
- Efficient transfer of consistent and complete handover information including O&M documentation, data and H&S files.

5.3 Key Decision Points

1. The timing and content of information exchange between the Lead Appointed Party (Architect), the Appointed Parties (Consultants & Sub-Contractors) and Company-Name shall be aligned to the Information Delivery Milestones aligned to the RIBA plan of Works 2020.
2. Information Delivery Milestones are aligned to the RIBA Plan of Work 2020 work stages. Work stages purposefully coincide with the Company-Name decision gateways to formally close a stage and commence another.
3. Information Exchange forming an Information Delivery Milestone shall be used to by Company-Name to provide evidence for each Decision Gateway and to support the decision to move to the next project stage.
4. Work Stages, Information Exchanges and Decision Gateways are described below.



5.4 From Design to Construction

Following appointment of the project team, Company-Name want to harness the benefits of a BIM and IM enabled approach on all projects at the very earliest opportunity, but realise that imposing certain standards, processes and requirements too early in a project lifecycle can cause inefficiency in work, especially during initial design development, the planning submission process and the possibility of wider stakeholder engagement incurring Appointing Party change.

With the above in mind, it has been Company-Names approach not to audit any of the information produced in stages 1 and 2. Intelligent drawing production, 3D modelling, scheduling etc, should all still be used by the project teams in RIBA Stages 1 and 2 to inform internal deliverables, create efficiencies and maximise reuse of information and fundamentally any outputs need to meet minimum IM standards as detailed within the Exchange Information Requirements (EIR) including a unified naming and numbering standard as defined.

5.5 BIM Use

BIM can bring many benefits to the delivery of a project and the following points shall be considered by the appointed parties and detailed in the BEP response if and how the following BIM uses have been considered:

BIM Use	Description
3D Co-ordination and Clash Management*	The bringing together of all the discipline models into a federated single model and running clash detection on the environment during all stages of delivery
Asset Management*	Putting in required information against the assets to assist in the operation and maintenance of the facility post-handover
Assurance and Data Validation	Rule based model checking and auditing
Data Classification*	Adding structured grouping to the elements in the model
Design Authoring*	Using information loaded objects in a 3D environment to assist in other BIM uses
Design and Construction Reviews*	To utilise the BIM environment to carry out reviews of the design that will impact on the constructability of the project
Drawing Generation*	Drawings where possible shall be derived from the BIM models
Energy Analysis	Use the BIM to run energy analysis on the performance of the facility
Existing Conditions Capture	Capture the site, infrastructure, surrounding building, and interfacing service that will influence the project
Lighting Analysis	To run light analysis utilising the 3D generated design
Pedestrian Simulation	To look at pedestrian simulation to aid access and escape routes
Construction Sequencing	The specific construction sequencing is captured via the 'Package Briefing' documents.
Quantity Take Off	To take off the elements in a model
Planned Maintenance*	To capture maintenance requirements on the assets
Record Modelling*	Accurate modelling of the physical asset – by traditional survey techniques
Sustainability Evaluation	Use the model for the environment statement – BREEAM certificates Etc
Visualisation*	Generation of elements in the model are to reflect the material and texture of the items

Any BIM use marked with * are mandatory and shall be detailed in the BEP response.

If technology is being used and additional file formats are required, this shall be highlighted to the design team by Company-Name.

5.6 Defined BIM/ Project Deliverables

As a minimum the following BIM Deliverables are required to be supplied at Project RIBA Stages, but will not be audited at RIBA stages 1 and 2, the Appointed Parties (Consultants & Sub-Contractors) can start to setup their models ready and in preparation for the future drops and the COBie deliverable if required:

- Geometrical Information – the Individual Building Information Models and Federated Models
- Non-Geometrical Information (Alphanumeric) – the Exported data (COBie) from the Building Information Models if required on the project.
- Documentation – the exported documents from the Building Information Models

All Models, Drawings, Documents and Data deliverables are required to be identified in the Master Information Delivery Plan (MIDP) aligned to the project programme.

Upon final submission, all General Arrangement sheets, section, views and elevations produced within the BIM Model shall remain within the BIM Model and shall not be discarded at the point of information exchange. Note: Drawing outputs issued to the CDE with revision and status controls take precedence over linework supplied within a BIM Model environment.

Visualisations will be required at key project stages to communicate to project Stakeholders design intent and allow for end-user feedback, these typically will be provided by all consultants and even sub-contractors. All agreed visualisations should be identified in the MIDP and aligned programme delivery dates.

5.7 BIM Specific Competency Assessment

The Appointed BIM Specialist is required to implement a (task teams) supplier/ sub-contractor BIM Competency Assessment process as part of their engagement and is required to submit details of the assessment to the Appointing Party (Company-Name) to demonstrate the capability of the team, providing assurance that the Exchange Information Requirements can be executed.

Company-Name will supply a template to capture the competence of Appointed Parties (Consultants & Sub-Contractors).

5.8 Digital Risk Register

The Appointed BIM Specialist is to ensure a project digital risk register is established and maintained for the duration of the project.

APPENDICES

Glossary

Term	Acronym	Definition	Source
Appointed Party		Provider of information concerning works, goods or services.	BS EN ISO 19650-1
Appointing Party		Receiver of information concerning works, goods or services from a lead appointed party. [the 1192 term was: client (project), asset owner/ operator (asset) or Employer]	BS EN ISO 19650-1
Appointment		Agreed instruction for the provision of information (3.3.1) concerning works, goods or services Note 1 to entry: This term is used whether or not there is a formal appointment between the parties.	BS EN ISO 19650-2
Asset Information Model	AIM	Information model relating to the operational phase	BS EN ISO 19650-1
Asset Information Requirements	AIR	Information requirements in relation to the operation of an asset.	BS EN ISO 19650-1
Building Information Modelling (Delivery Team's)	BEP	Plan that explains how the information management aspects of the appointment will be carried out by the delivery team	BS EN ISO 19650-2
Building Information Modelling (Pre-appointment)	BEP	Plan that explains how the information management aspects of the appointment will be carried out by the delivery team Note 1 to entry: The pre-appointment BIM execution plan focuses on the delivery team's proposed approach to information management and their capability and capacity to manage information.	BS EN ISO 19650-2
Computer Aided Facility Management (system)	CAFM	The CAFM System is a platform that will manage space and maintenance of asset during the lifecycle of the building.	
Client		Actor responsible for initiating a project and approving the brief.	BS EN ISO 19650-1
Common Data Environment	CDE	Agreed source of information for any given project or asset, for collecting, managing and disseminating each information container through a managed process.	BS EN ISO 19650-1
Common Data Environment (Project's)		The CDE that serves the overall requirements of the project and supports the collaborative production of information.	BS EN ISO 19650-2
Common Data Environment Solution		The CDE solution provides the technology to support the processes of CDE workflow.	BS EN ISO 19650-1
Common Data Environment State		The state of the information containers, Work in Progress, Shared, Published or Archive state	BS EN ISO 19650-1
Common Data Environment Workflow		The CDE workflow describes the processes to be used for the function of the CDE solution	BS EN ISO 19650-1
Delivery Phase		Part of the lifecycle , during which an asset is designed, constructed and commissioned	BS EN ISO 19650-2
Delivery Team		Lead appointed party and their appointed parties.	BS EN ISO 19650-1
Delivery Team's Capability and Capacity		The delivery team's capability to manage and produce information and its capacity for timely delivery of the information	BS EN ISO 19650-2
Delivery Team's Risk Register		Risk register containing the risks associated with the timely delivery of information, in accordance with the appointing party's exchange information requirements, and how the delivery team intends to manage these risks.	BS EN ISO 19650-2
Design Intent Model		Use of the project information model to convey the design intent.	BS EN ISO 19650-1
Exchange Information Requirements	EIR	Information requirements in relation to an appointment.	BS EN ISO 19650-1
Federation		Creation of a composite information Model from separate information containers.	BS EN ISO 19650-1

Term	Acronym	Definition	Source
Federation Strategy		The concept of volumes for sub-division of an information model is now described in terms of the reasons for which separate information models might need to be federated. This was an easier concept for non-UK countries to understand.	BS EN ISO 19650-1
Information Container		Named persistent set of information retrievable from within a file, system or application storage hierarchy. EXAMPLE - Including sub-directory, information file (including model, document, table, schedule), or distinct sub-set of an information file such as a chapter or section, layer or symbol.	BS EN ISO 19650-2
Information Delivery Milestones		Scheduled event for a predefined information exchange	BS EN ISO 19650-2
Information Delivery Plan		A plan responding to the EIR that reflects the scope of the appointment within the asset life cycle. Includes the preparation of the Information Management Solution, the BEP (its included resources), the MIDP/ TIDP, mobilization plan and potentially the LAP's EIR	BS EN ISO 19650-1
Information Exchange		Act of satisfying an information requirement or part thereof (verb)	BS EN ISO 19650-1
Information Model		Set of structured and unstructured information containers.	BS EN ISO 19650-1
Information Requirement		Specification for what, when, how and for whom information is to be produced	BS EN ISO 19650-1
Key Decision Point		Point in time during the life cycle when a decision crucial to the direction or viability of the asset is made. Note 1 to entry During a project, these generally align with project stages	BS EN ISO 19650-1
Lead Appointed Party		"lead appointed party" which is an appointed party directly appointed by the appointing party.	PD ISO 19650-0
Level of Information Need		Framework which defines the extent and granularity of information	BS ISO 19650-1
Master Information Delivery Plan	MIDP	Plan incorporating all relevant task information delivery plans	BS EN ISO 19650-2
Master Production Delivery Plan	MPDT	Stage by stage plan on the deliverables with LOD/ LOI defined. (Now known as Responsibility Matrix)	
Organization Information Requirements	OIR	Information requirements in relation to organisational objectives.	BS EN ISO 19650-2
Project Information Model	PIM	Information model relating to the delivery phase Note 1 to entry: During the project, the project information model can be used to convey the design intent (sometimes called the design intent model) or the virtual representation of the asset to be constructed (sometimes called the virtual construction model).	BS EN ISO 19650-1
Project Information Requirements	PIR	Information requirements in relation to the delivery of an asset.	BS EN ISO 19650-1
Project Journal		The list of 'multiple journal entries into the archive recording information containers in any of the other states.'	BS EN ISO 19650-1
Project Team		appointing party and all delivery teams	BS EN ISO 19650-2
Project's Information Production Methods and Procedures	PIPMP	The methods and procedures for: a) the capture of existing asset information; b) the generation, review or approval of new information; c) the security or distribution of information; and d) the delivery of information to the appointing party.	BS EN ISO 19650-2
Project's Information Standard	PIS	The any specific information standards required by the appointing party's organization	BS EN ISO 19650-2
Reference Information		Existing asset information	BS EN ISO 19650-2:2018

Term	Acronym	Definition	Source
Responsibility Matrix / Assignment Matrix		Chart that describes the participation by various functions in completing tasks or deliverables. Note 1 to entry: A responsibility matrix can indicate accountability, consultation and informing, alongside the obligation to complete tasks or deliverables.	BS EN ISO 19650-1:2018
Responsibility		The obligation to complete tasks or deliverables.	BS EN ISO 19650-1:2018
Shared Resources		Process output templates (BIM execution plan, master information delivery plan, etc.); — information container templates (2D/ 3D geometrical models, documents, etc.); — style libraries (lines, text and hatch, etc.); or — object libraries (2D symbols, 3D objects, etc.).	BS EN ISO 19650-2:2018 cl 5.1.6 c)
Status Code		Meta-data describing the suitability of the content of an information container.	BS EN ISO 19650-1
Structured Information		Vectorized file, geometric models, schedules, databases etc.	BS EN ISO 19650-1
Task Information Delivery Plan	TIDP	Schedule of information containers and delivery dates, for a specific task team	BS EN ISO 19650-2
Task Team		Individuals assembled to perform a specific task	BS EN ISO 19650-1 cl 3.2.7
Transition		Transition is used to denote change (in the state of the information container)	PD ISO 19650-0 table 2
Trigger Event		Planned or unplanned event that changes the asset or its status during its lifecycle, which results in information exchange. Note 1 to entry: During the delivery phase, trigger events normally reflect the ends of project stages.	BS EN ISO 19650-1 cl 3.2.13
Un-Structured Information		Image, video clip, sound recording etc.	BS EN ISO 19650-1
Virtual Construction Model		Use of the project information model to convey the virtual representation of the asset to be constructed. Progressed by the constructor from the design intent model.	BS EN ISO 19650-1

For further information on acronyms please refer to ISO 19650 suite of standards.