

Employer's Information Requirements

Core Content and Guidance Notes

This document is a guidance template for an Employer's Information Requirements (EIR) and should be used to draft a particular Employer, Framework or Project EIR. The final document is the responsibility of the Employer to produce and own.

Note: This is an example document rather than exemplar

Revision	Date	Amendment
V0.3	27/01/15	Reformatted and redrafted
V0.4	13/04/15	Reference to RIBAE NBS BIM Toolbox Added
V0.5	09/01/16	General update
V0.6	08/04/16	Incorporating comments from Simon Rawlinson

V0.7	29/03/17	Update ready to share with Departments and for use in the Generic Digital Pathway. Requires sign-off prior to publication.
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Table of Contents

1. Introduction.....	4
1.1. Document Purpose.....	4
1.2. Responding to this document	5
2. BIM Vision and Objectives	6
3. Client's Strategic Application.....	7
4. Information Requirements.....	8
4.1. Information Exchanges, Project Deliverables & Information	8
4.2. Information Delivery Plan	9
4.3. Level of Definition, Detail and Information	9
4.4. Health & Safety and Construction Design Management	9
5. Management.....	10
5.1. Standards.....	10
5.1. Roles and Responsibilities	10
5.2. Collaboration Process	11
5.3. Planning the Work and Data Segregation.....	12
5.4. Security	13
5.5. Coordination and Clash Detection Process	14
5.6. Compliance Plan (Quality Assurance)	14
5.7. Delivery Strategy for Asset Information	15
5.8. Provision of MIDP and Project Plan.....	15
5.9. Training.....	16
6. Technical	16
6.1. Software Platforms.....	16
6.2. System Performance.....	17
6.3. Data Exchange Format	18
6.4. Co-ordinates.....	18
7. Commercial.....	19
7.1. BIM Execution Plan.....	19
7.2. BIM Specific Competence Requirements	19

1. Introduction

Guidance generally: Throughout this document, guidance has been included as blue panels like this and will need to be deleted prior to issue.

1.1. Document Purpose

BIM Execution Plan Requirements: Supplier BEP response to specific EIR sections are shown in dashed highlighted boxes.

Guidance 1: This document should be used as a template to generate the particular Employer's Information Requirements generically for a particular Employer and/or a particular Project or Framework. This document and its contents is guidance only and drafters must take full responsibility for any use.

This document confirms the Employer's Information Requirements (EIR) as a sub-set of the Employer's Requirements or equivalent contract documentation and introduces information requirements, reasons and purpose to the Project Team or Supplier, along with technical and commercial particulars that need to be addressed.

Required information and other standards are referenced in this document. Detailed extracts are not included. The document does confirm the Employer's bespoke requirements where necessary.

EIRs are an important element of Project BIM Implementation as they are used to set out clearly to the bidder what models are required and what the purposes of the models will be; these requirements can be written into the BIM Protocol / BIM Protocol for Security-minded Projects and implemented through the BIM Execution Plan (BEP).

The EIR is used to set out clearly to the Project Team or Supplier what information (models, documents and data) is required generally and also at each project stage, possibly via a stage based Information Delivery Plan (IDP).

Areas where adjustments are likely to be required include:

- **Type of Asset**
This document was prepared on the assumption that the asset is a building – this will not be the case for all employers.
- **Security-minded approach**
This document includes the content which should be incorporated into a project-specific EIR if a security-minded approach is to be implemented.
- **Project Stages**
Information exchanges and associated information requirements are to be mapped against the project stages of a particular employer.
- **Information Requirements**
Information exchanges are to be aligned against the needs of the project, e.g. new-build versus on-going asset management.
- **Procurement Strategy**

Information exchanges are to be aligned with the procurement strategy adopted by the employer (e.g. Cost-led, Integrated Insurance, two stage open book).

- IT Requirements

Collaboration tools and other employer-specific requirements are to be specified. For example, any collaboration site provided by the employer.

- Detailed Alignment of Documents

Terminology for information, stages, documents and roles described in the EIRs should match that used in specific appointment documents.

- Detailed Technical Information Requirements

Space object properties are likely to vary by employer and asset type.

Guidance 2: For Framework or term contract relationships, the EIR may form two parts; a framework level document modified from time to time through a controlled process, and the Information Delivery Plan forming the project or supply specific component.

Guidance 3: If the plan is using the RIBA Enterprises/NBS BIM Toolkit to generate the IDP this should be clearly stated and referenced in the EIR. The BIM Toolkit IDP will have been drafted by the Employer, to be used by the Project Team or Supplier to then cascade the plan down through the supply chain as the Master Information Delivery Plan and Task Information Delivery Plan. The BIM Toolkit is available from NBS.com.

1.2. Responding to this document

In accordance with PAS 1192-2:2013 the Supplier is to include an outline BIM Execution Plan (BEP) in their proposal. Throughout this document specific responses are sought from the Supplier through their BIM Execution Plan.

BIM Execution Plan Requirements

Text confirming what the Employer requires confirmed by the Supplier in their BIM Execution Plan.

Guidance 1: The EIR should be specifically responded to as laid out in the EIR for both Pre and Post Contract BEPs. Where there is doubt or lack of clarity PAS1192-2 should take precedence. A full BEP may not be required as part of a tender submission and the Employer should use their discretion when asking for additional content.

The Pre Contract BEP should include the following content:

- Specific response to this EIR with a cross referenced index;
- Specific response to the Information Delivery Plan commenting where deliverables are over or under specified, or impractical to deliver with alternative delivery proposals;
- A Project Implementation Plan – see PAS 1192-2:2013;
- Project goals for collaboration and information modelling;

- Major project milestones consistent with the project programme where in variance to the IDP;
- Project Information Model deliverable strategy where in variance to the IDP.

A compliant Post Contract BEP in support of this project tender will demonstrate how the requirements of this EIR and IDP will be met. The BEP and its response to the EIR will form part of tender scoring and hence selection.

2. BIM Vision and Objectives

It is the vision that the use of BIM on this project will enable the Employer to receive the required information deliverables (models, documents & data) at the appropriate time in the right formats in order to:

- engage with the appropriate stakeholders;
- drive project delivery and efficiency;
- make the right project gateway decisions;
- supply appropriate information at handover to operate, maintain and assess the performance of the delivered asset;
- integrate the delivered asset and its information into the Employer's asset estate.

Guidance 1: *Provide an overview of the vision you wish to deliver through the use of BIM. This could be either based on a project requirement to deliver structured data to support strategic, operational or asset management decision making or to deliver improvements in project performance by implementing a Level 2 BIM approach. The vision should be clearly stated and specific to the project/programme.*

The objectives for the implementation of BIM are:

Guidance 2: *Provide an overview of the objectives you wish to deliver. The objectives should be SMART specific, measurable, actionable realistic and time bound.*

Examples could include:

- *Deliver validated and verified structured information and data to support project gateway decisions, engage with project stakeholders, build the project into the Employer's Asset Information Model, and to populate operational and line of business systems that will support strategic, operational and asset management decision-making and streamlining following the practical completion of the construction works and installations*
- *Authorise Main Contractor's Technical Design using BIM tools*
- *Understand and confirm full programme, sequence and logistics implications using BIM tools*
- *Form the basis for post operational performance evaluation and learning*
- *Assess and address safety and security issues using BIM tools*
- *Check the proposed scope compared to briefing requirements using BIM tools*

3. Client's Strategic Application

The primary use of the information (models, documents & data) will be for the following purposes:

Guidance 1: The purpose of this section is to describe the expected purposes of the information provided as models, documents and data and to support the CIC BIM Protocol/BIM Protocol for Security-minded Projects which do not specifically state the purposes for which models and data will be used.

Setting out proposed purposes in the EIRs informs the scope of the licences defined in the Protocol.

The table below is an example set.

Ref.	Purpose of Data
P01	Registration To allow accurate audit and reporting based on the assets registered.
P02	Use and Utilisation To support comparison of actual utilisation with records of the intended use, capacity and planned utilisation of the Facility and to support Government Soft Landings usage reviews.
P03	Operations To support the understanding of the anticipated cost of operations based on the normal operations of the Facility and to support Government Soft Landings operations reviews.
P04	Maintenance and Repair To support the understanding of the anticipated cost of maintenance and repair based on the recommended maintenance tasks.
P05	Replacement To support the understanding of the anticipated cost of asset replacement based on the expected service life of assets.
P06	Assessment and Re-use To support the assessment of the Facility at the end of its planned use.
P07	Impacts To support the management of the economic and environmental impacts of the Facility throughout its lifecycle.
P08	Business Case To support the on-going evaluation of the business case, which is dependent upon the continual development of P01 and P07 above.
P09	Security and Surveillance To support the assessment of security and surveillance.
P10	Regulation and Compliance To support the maintenance of the health and safety of the users of the Facility.

Guidance 2: In circumstances where the employer intends to use elements of the model for a wider set of purposes e.g. use of elements of design on more than one project or to build a model library, the additional use should be stated, together with the wording of the proposed licence.

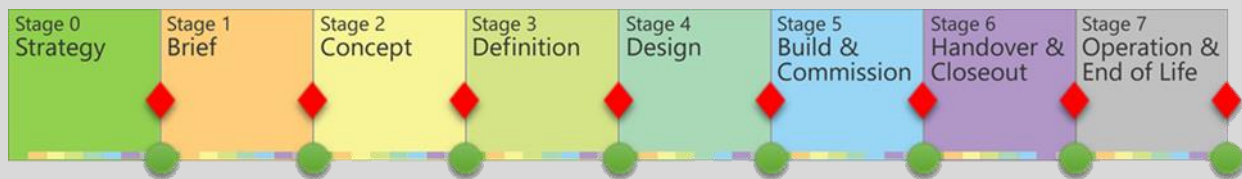
4. Information Requirements

4.1. Information Exchanges, Project Deliverables & Information

Guidance 1: Information Requirements for the project should be referenced here.

The purpose of this section is to communicate the timing and content of information exchanges between the Project Team / Supplier and the Employer and how information exchanges are aligned to work stages. Information may flow both ways.

To ensure that the industry as a whole adopts a common way of working the unified CIC/APM 8 stage plan is adopted even if the stage names need to be 'localised' as with the adoption by the RIBA. This is shown in the figure here:



Each stage gateway should be advised by a developed set of Employer Plain Language Questions (PLQ). These gateway decision points are shown as red diamonds.

The data required to populate the information exchanges will vary at each stage in accordance with the 'Plain Language Questions' that need to be supported by the data drops. These address the performance requirements which a project is required to meet to comply with the brief and wider regulatory requirements. The project team is required to provide information in the model to demonstrate compliance with questions associated with the information exchanges.

Whilst information can be shared at any time during the course of a stage, formal published information deliverables should be exchanged prior to the end of a stage to advise the decision gateways. These published exchanges are referred to as Information Exchanges and are indicated by green circles or 'footballs'. Employers may not require information exchanges at every stage, but they are implied.

Deliverables required to inform the stage PLQ should be scheduled in the Information Delivery Plan (IDP). This can take a number of forms but should always include the requirements of the CIC BIM Protocol Master Production and Delivery Table.

The IDP should ideally include:

1. A listing of information deliverables to answer Employers 'Plain Language Questions'
2. Format requirements, constraints or scope for each deliverable
3. Where discipline native models are required (addressing the BIM Protocol MPDT)
4. Where open standard formats are required in addition to a pdf format
5. Where federated model visualisations are required to support stakeholder engagement
6. The Level of Definition (Level of Detail and Level of Information) of each deliverable
7. The intended role or appointed supplier for the information deliverable

Information to which specific security requirements will apply should be identified by the Employer in as Built Asset Security Information Requirements (BASIR) and also any specific security requirements related to individual information exchanges.

Guidance 1 Continued:

Level 2 BIM information deliverables consist of 3D models - in their native discipline (un-federated) format, drawings - cut from the models, and other documents, in PDF or other specified open standards format, and structured data - again cut from the models, in COBie to BS1192-4:2014 format.

Open standard 2D/3D model equivalents such as federated visualisations should also be provided where specifically required, in an agreed format, to assist stakeholder engagement.

Public employers cannot require specific proprietary format files, but may state the formats they are able to use/access as a guide to information suppliers.

4.2. Information Delivery Plan

The IDP is appended to this EIR. The Design Team or Supplier should review this plan and confirm its ability to provide the information using appropriate resources, in the appropriate formats at the appropriate stage decision gates. Any proposed variation from or addition to the plan should be clearly noted and brought to the Employer's attention in the responding to the pre-tender BEP. It is intended that this Employer's IDP informs the preparation of the Suppliers Master Information Delivery Plan (MIDP) for preparation and submission of information to the Employer at the appropriate stages.

4.3. Level of Definition, Detail and Information

Information delivery requirements are indicated using Level of Model Detail (LOD) and Level of Information Maturity (LOI) aligned to the normal delivery stage eg LOD3 for stage 3 and LOI4 for stage 4 and all as defined in the RIBAE/NBS BIM Toolkit

***Guidance 1:** The Level of Definition indicates the level of maturity required for a particular information deliverable at a particular plan of work stage. This is commonly referred to as LOD. Hence the level of model definition normally achieved at stage 3 would be referred to as LOD3. This can be used to indicate advanced or deferred maturity requirements, from the norm, for a particular deliverable.*

This concept can be extended to alternatively indicate level of model detail or information development with LOD (Detail) and LOI (Information). This approach is used in the BIM Toolkit and the UNICLASS2015 classification system.

This approach can also be used in refurbishment or small works projects to restrict or omit the required level of model detail whilst maintaining level of information progression in information exchanges. LOD0 might omit model detail say to reference existing space identifiers only and LOD1 might use 2 point bounding box 'sugar cube' geo-locators.

4.4. Health & Safety and Construction Design Management

Information deliverables in respect of H&S/CDM are detailed in the Information Delivery Plan and will be used to manage the employer's and supplier's H&S/CDM obligations. The supplier should confirm how these will be used in the responding BIM Execution Plan.

Reference should be made to PAS1192-6:2017 'Specification for collaborative sharing and use of structured hazard and risk information for Health and Safety', once it is published

BIM Execution Plan Requirements

The Supplier shall confirm how their obligations under the Construction (Design and Management) Regulations 2015 will be supported by implementing a BIM approach for the project.

5. Management

This section deals with setting the standards to be used for the definition and delivery of the project, along with how the co-ordination and review processes will be managed.

5.1. Standards

The purpose of this section is to define the BIM Standards that are incorporated into the Information Requirements, Appendix 2 of the CIC BIM Protocol/BIM Protocol for Security-minded Projects.

The core documents and standards that are mandated to be used on the project are:

- PAS 1192-2:2013
- PAS 1192-3:2014
- BS 1192-4:2014
- PAS1192-5: 2015
- Supported by BS 1192:2007

Guidance 1: *Use of these standards can be incorporated into the contract via the CIC BIM Protocol/BIM Protocol for Security-minded Projects. Adoption of other standards related to Building Information Modelling can be encouraged if specifically relevant (this list is not exhaustive):*

- *BS 7000 series (Design Management Systems)*
- *BS 8534:2011 (Construction Procurement policies)*
- *BS 10012:2009 (Data Protection)*
- *PAS 55-1:2008 (Asset Management)*

5.1. Roles and Responsibilities

The purpose of this section is to bring to the attention of the project team the allocation of roles associated with the management of the model and project information. The roles themselves may be addressed in specific appointments and ERs.

BIM Execution Plan Requirements

Details of how any BIM-specific roles will be delivered and coordinated shall be included in the BIM Execution Plan (BEP) and should, where applicable, set out, in particular, the relationship between the Built Asset Security Manager and the Information Manager.

The following roles in connection with BIM will be taken on directly by the supplier:

- Client's Technical Adviser (TA)
- Project Delivery Manager (PDM)
- (Supplier) Information Manager (IM)
- Lead Designer (LD)
- Task Team Manager (TTM)

The following roles in connection with BIM will be taken on directly by the employer:

- Built Asset Security Manager (BASM) – when PAS1192-5:2015 applies
- Employer Information Manager (EIM)
- Employer Project Manager (EPM)

Guidance 1: PAS 1192-2:2013 provides a useful cross-tabulated summary of the roles as they apply across Project Team Members.

This section should include references to existing documentation which defines the responsibility and scope of appointments associated with the supplier roles. The roles themselves may be addressed in specific appointments and ERs.

Contact details should be given of those allocated employer roles for the project.

5.2. Collaboration Process

The purpose of this section is to define how, where and when project information will be shared.

The Project Team or Supplier is expected to manage the Project Common Data Environment (PIM) for each stage of the project and through the Supplier Information Manager. The management and system providing this service may change with the appointment of different Project Teams or Suppliers for different stages or phases. There will only be one Project CDE in operation at any one time managing one version of the truth.

Details of the collaboration process sufficient to demonstrate competence and capability must be provided in the Pre BIM Execution Plan. It is expected that full details of the process will be included within the completed Post BIM Execution Plan.

BIM Execution Plan Requirements

The Supplier shall confirm the parties and persons who will be responsible for information management for the project.

Pre BEP details of the process received should include details of:

- Form and process of sharing information between Project Team members
- Proposals to manage restrictions around the sharing of data and information relating to sensitive assets and systems required in connection with the Employer's security requirements
- Form and process of publishing information to the Employer
- How the requirements of the Information Delivery Plan will be met and tracked
- Extent and form of model coordination and federation

- Frequency of collaboration and information exchange
- Details of model review workshops and other collaborative working practices eg use of model federation and coordination at design and/or site meetings

Guidance 1: Processes will be defined in detail in the Post BIM Execution Plan (BEP)

BIM Execution Plan Requirements

The Supplier shall confirm their proposed collaboration tool and how they intend it to operate in support of the Common Data Environment in accordance with PAS 1992-2:2013 and BS 1192:2007. Details shall be included to confirm how the Archive information will be transferred to the Employer upon the Practical Completion of the construction works and installations.

5.3.Planning the Work and Data Segregation

The purpose of this section is to set out requirements for the bidder's proposals for the management of the modelling process.

Information should be managed in accordance with the processes described in PAS 1192-2:2013, PAS 1192-5:2015 and BS 1192:2007.

The Information Delivery Plan confirms the information delivery, information packaging and information exchange requirements for models, documents and data. All published transmittals will be accompanied by a COBie spreadsheet confirming the included exchange files.

Where the employer has specific requirements for work management, including security aspects, the requirement and request for proposals should be identified in the Information Delivery Plan.

The following are required and should be confirmed in the Ref BEP:

- **Model Management**
 - Detail of procedures co-ordinated by the Information Manager
- **Volumes, Zones and Areas**
 - Definitions of zones and the management of adjacency within the discipline models
 - Confirmation of the definition of the project volume structure
 - Requirements in connection with the use of separate project volumes for sensitive assets and system
- **Naming Conventions**

There will be a single project file name convention based on the BS1172:2007 & PAS1192-2:20013 but extended to include reference to the IDP deliverable and LOD as follows:

 1. **Project Number:** the Employer project reference will be used in all cases
 2. **Originator:** as assigned by the Employer in the Information Delivery Plan
 3. **Volume:** Supplier assigned as PAS1192-2:2013 optional Volume/Zone or 00 for all volumes or if omitted
 4. **Location:** Supplier assigned as PAS1192-2:2013 optional Level/Region/Location or zz for multiple, or xx if omitted
 5. **Type:** Supplier assigned as PAS1192-2:2013 document/model/information type
 6. **Role:** Supplier assigned as PAS1192-2:2013 Role

7. **Document Number:** Supplier assigned unique & sequential file alphanumeric document number
8. **Status:** Supplier assigned as PAS1192-2 Status/Purpose of Issue but see below
9. **Rev:** File revision
10. **IDP Ref:** IDP Delivery Ref
11. **LOD:** Level of Definition as LOD.LOI eg LOD2.3
12. **Title:** Supplier assigned and optional free text descriptive title or name

Note: fields 8-13 are an extension to BS1192/PAS1192-2. Fields 1 & 2 are Employer assigned.

- Purpose of Issue (Field 8 of standard file name)
 - For WIP & Shared issues use PAS1192-2:2013 Table 3 WIP & Shared status codes
 - For Published use the following purpose codes for publishing of stage exchanges

A0	Published Stage 0 Strategy
A1	Published Stage 1 Brief
A2	Published Stage 2 Concept
A3	Published Stage 3 Definition
A4	Published Stage 4 Design
A5	Published Stage 5 Build
A6	Published Stage 6 Handover
A7	Published Stage 7 Operation

- Publishing processes
 - The contents of stage Information Exchanges are defined in the Information Delivery Plan
 - These will be published by the Supplier Information Manager from the Supplier CDE to complete the particular delivery stage.
 - All published file packages will be accompanied by a COBie file which will be used to validate the delivery.
 - The Supplier Information Manager will upload all information packages to the Employer CDE notifying the Employer Information Manager
 - The Employer Information Manager will validate the package and produce a Red Amber Green (RAG) acceptance report to the Supplier Information Manager.
 - Green packages will be published into the Employer CDE AIM Published file area and the COBie data and file linkages published into the Employer CDE AIM data area for onward use.
 - Amber or Red package should be remedied in the Supplier CDE and resubmitted for retest.
 - Acceptance failure and resubmission of deliverables in accordance with the Information Delivery Plan is unlikely cause a variation/compensation event.

Confirmation of use of these procedures should be confirmed in the Pre BIM Execution plan.

5.4.Security

The purpose of this section is to communicate client specific security measures required in order to secure the data.

Guidance 1: *The bid submission should demonstrate how the supplier will comply with, and deliver, these security requirements. It should also set out how the requirements of the Built Asset Security Information Requirements (BASIR) will be achieved in respect of software platforms, their configuration, operation and maintenance.*

The EIR should include:

For all built assets, the measures required by the Employer to protect personal and commercial information. Details of the security standards that apply to information used on the project. For example:

BIM Execution Plan Requirements

The submission should demonstrate the supplier's compliance with mandated security systems and Built Asset Security Information Requirements (BASIR). The completed BIM Execution Plan will set out compliance processes and the means by which compliance is monitored and managed.

5.5.Coordination and Clash Detection Process

The purpose of this section is to ask the supplier to define their co-ordination process, in order to meet employer requirements for quality control?

The following should be detailed in the Pre BIM Execution Plan:

- Details of the clash detection process including:
 - Software
 - Process overview
 - Responsibilities
 - Outputs
- Technical query workflow
- Tolerance strategy
- Clash resolution process
- How this process will align with the Employers contractual and process requirements, such as ongoing / periodic technical review.

BIM Execution Plan Requirements

The Supplier shall confirm coordination and clash avoidance processes, with reference to:

- *Volume strategy*
- *Tolerance strategy*
- *Technical query workflows*
- *Responsibilities for coordination and clash avoidance*
- *Software to support coordination and clash avoidance*
- *Outputs from coordination and clash avoidance processes*

5.6.Compliance Plan (Quality Assurance)

The purpose of this section is to enable the supplier to communicate how the integrity, and hence quality, of the model and other data sources will be maintained.

All published information exchanges will be validated using the included COBie file against the Information Delivery Plan for the stage information exchange. Only compliant exchanges will be accepted.

The supplier should confirm his own internal model file and data standards and compliance procedures including references to standards and compliance software in the BIM Execution Plan.

This should refer to:

- Quality assurance/control procedure
- Associated software
- Level of assurance
- Security and information assurance requirements
- Period of aftercare (the number of years that the model should be managed for)

The Employer or Employer Project or Information Manager should be given reasonable access to the Supplier CDE to enable compliance monitoring and audits.

***Guidance 1:** The above should be populated with appropriate requirements, indicating where any specific detail is required in a contractor's interim BIM Execution plan as part of a bid submission. If aftercare is required, the period for which it is required should be stated.*

BIM Execution Plan Requirements

The Supplier shall confirm their quality assurance processes for Data, Models and Documents.

5.7. Delivery Strategy for Asset Information

This section defines the information exchange standard for asset information and enables the employer to obtain proposals with regards to asset information delivery into the employer's FM environment.

The information exchange format for provision to the Asset Information Model (AIM) will be as defined in the Information Delivery Plan. It will be transmitted and contained in the published information exchange COBie file, together with associated exchange information files.

***Guidance 1:** Define the details of systems/databases/information formats in use so that the contractor can demonstrate compliance with information management requirements.*

Text describing AIM delivery strategy should be populated with appropriate requirements and constraints, including, where appropriate, security requirements, indicating where any specific detail is required in a contractor's interim BIM Execution plan as part of a bid submission

***Guidance 2:** If the BIM Toolkit is specified then add the following: Object Information detail is defined in the RIBAE/NBS BIM Toolkit Component Library and can be downloaded from thenbs.com.*

5.8. Provision of MIDP and Project Plan

The following templates should be used by the Supplier to ensure information coordination and consistency.

5.8.1. Master information Delivery Plan (MIDP)

The Master Information Delivery Plan should be prepared by the supplier in response to the Information delivery Plan and should follow a similar or related format.

5.8.2. Project Plan (PP)

A Project Plan will be provided to the Supplier to allow an appreciation of the strategic programme intent for the project and to enable the development of the Suppliers programme proposal.

In the absence of the Project Plan the Information Delivery Plan will be used by all team members to manage and monitor progress and information delivery for the duration of the project.

5.9. Training

The purpose of this section is to provide bidders with details of training that will be provided in connection with project systems, or training requirements which the bidder will be required to deliver as part of their appointment/contract.

The supplier will be responsible for maintaining and delivering appropriate information handling and access training to all interfacing parties including any Employer staff, for the operation and access to the Supplier CDE.

Training for access and operation to the Employer CDE will be provided by the Employer to interfacing Supplier staff.

Details of any general security awareness and induction requirements, as well as any role-based security requirements, as set out in the Employer's Built Asset Security Management Plan (BASMP).

If proprietary model viewing software is proposed in variance to that shown as held by the Employer in this document then reasonable access and training is to be provided by the Supplier at no cost. Information should be progressively shared and published from the Supplier CDE to the Employer CDE so that in normal circumstances the Employer will not need access to the Supplier CDE other than for compliance purposes.

Guidance 1: The EIRs should communicate clearly that the responsibility for training associated with other modelling and analysis tools rests with the consultant/constructor.

BIM Execution Plan Requirements

The Supplier shall confirm the training that they will provide for their tools and systems that the Employer and others will be expected to use which will include, but not be limited to:

- *The BIM Execution Plan*
- *The Supplier's collaboration tool*

6. Technical

This section establishes technical information requirements, including the software, data drop contents and level of detail.

6.1. Software Platforms

The purpose of this section is to communicate software platforms and versions where these are known and where they might influence the preparation of a bid. For public bodies OJEU rules preclude specification and selection based on proprietary systems use.

Platforms and versions used by the employer across the programme of projects include the following:

- The Employers CDE is available at [URL] and provided by [ABC SAAS Solutions].
- [XYZ Professional MODEL Viewer] is currently used for model federation and visualisation

The ability of the bidder to work with these platforms should be made clear in the response.

Designers and Constructors should align their model attribute data to be consistent with the data exchange format COBie UK 2012. However the COBie data takes precedent.

The BEP should confirm the process of data compilation between models and COBie.

Guidance 1: In accordance with an open approach to software solutions, the EIRs should not dictate a software solution to the supply chain. However, depending on the stage of the project, the Employer will be able to state the versions and platforms used to prepare information exchanges that the supplier will receive. The employer will also be able to define the versions and platforms used for employer collaboration and facilities management.

BIM Execution Plan Requirements

The Supplier shall confirm how data and information from their authoring tools will be prepared and published so that it can be used with the software platforms outlined.

6.2. System Performance

The purpose of this section is to communicate to bidders any constraints in the employer's systems or specific IT requirements which may need additional resources or non-standard solutions.

The following employer-side IT system restrictions and requirements need to be taken into account when developing the BIM Execution Plan:

- Model size no physical size restriction but practically 100Mb max
- Software uses IFC federated model visualisation can be viewed in the Employer CDE
- Access to free viewers [XYZ] files can be viewed and federated by the Employer
- Security restrictions As required in Built Asset Security Management Plan (BASMP) and Built Asset Security Information Requirements (BASIR)

Guidance 1: The above should be populated with appropriate requirements and constraints, indicating where any specific detail is required in a contractor's interim BIM Execution plan as part of a bid submission.

6.3.Data Exchange Format

The purpose of this section is to define the formats used to deliver the Information Exchanges Information will be required in the following formats but as defined in the Information Delivery Plan:

- Native – 3D discipline (un-federated) model files for all design and analysis models
- COBie – COBie-UK-2012 version 2.4 complete with reference to the exchanges files
- PDF files – no older than version 7.0 as a default
- In addition other open standard files as defined in the Information Delivery Plan

On projects where PAS 1192-5:2015 is applied, information about sensitive assets and systems will be required in the format specified in the BASIR

Guidance 1: *Government Employer Requirements mandate information in a COBie format (a relative of IFC) for all information exchanges. This is a standards based structured data container and used to provide an open standard for information exchange between parties irrespective of publishing or receiving system. The Construction-Operations Building Information Exchange (COBie) format facilitates the delivery of project and asset information (files and data) to support Employer and Stakeholder decisions and information transmittal during planning, design, construction, and commissioning for delivery to facility owners and operators.*

Guidance 2: *Under the BIM Protocol/BIM Protocol for Security-minded Projects, a project member undertakes to generate data provided in all three formats from the same data set.*

Guidance 3: *The COBie file will be used to validate the information (files & data) published to the Employer at each plan of work stage. See section 5.4 for details of the validation and acceptance process using COBie and the Information Delivery Plan.*

6.4.Co-ordinates

The purpose of this section is to encourage the adoption a common coordinate system for all BIM data with consistent adoption for all models. Defines requirements for the common coordinate system for all BIM data.

The minimum requirement is spatial coordination stated as follows:

- Intersection of grids XX and YY - xxxxxx.xxxE and xxxxxx.xxxN
- Intersection of grids AA and BB - xxxxxx.xxxE and xxxxxx.xxxN
- Ground floor FFL = xxx.xxx

Other coordination standards defined in the BIM Execution Plan should include:

- Origin rotation
- Offsets
- Datum information
- Units to be used

3D geo-location co-ordinates to be shown to no less accurate than 10mm (0.01m) in all directions.

7. Commercial

This section looks at the information requirements, defines purposes for data and the content of key deliverables.

7.1. BIM Execution Plan

The Supplier shall prepare, deliver and maintain a BIM Execution Plan (BEP) for the project that responds to this Employer Information Requirements.

The Supplier shall review their BEP regularly and additionally when there is any change to their contract.

7.1.1. BIM Execution Plan Requirements

Pre and Post Building Information Execution Plans are to be provided in response to the Employer's Information Requirements identifying the Supplier proposals clause by clause. Where CPix templates are used the subsections of the EIR response section should be deleted and the clause by clause response included. The Pre BIM Execution Plan will be scored as part of the tender submission.

BIM Execution Plan Requirements

The BEP Requirements are detailed throughout this document in highlighted panels like this one. The Supplier shall respond to the requirements and include any further information that they deem necessary within the BEP with the aim of the project.

7.2. BIM Specific Competence Requirements

This section details the information that a bidder should be required to provide as part of a bid submission.

7.2.1. BIM Capacity and Experience

Responses will need to describe how mature an organisation is, and what capabilities are held specifically where this is in accordance with the standards sighted in this EIR.

Tenderers should include the following detail:

- BIM experience - organisational and personnel
- BIM capabilities
- Security understanding, capability, competence and experience
- Out-sourced roles

The information requested in this section is detailed further in the Project Implementation Plan described in PAS 1192-2:2013.

7.2.2. Evidence of BIM Execution Planning

Responses will include examples of BIM execution planning specifically where this is in accordance with the standards sighted in this EIR.

Tenderers should include the following detail:

- BIM Execution Plans
- Lessons learnt

The information requested in this section is detailed further in PAS 1192-2:2013.

7.2.3. Confirmation of BIM Toolset

Responses will describe the processes and procedures that make up the bidder's BIM and information management toolkit specifically where this is in accordance with the standards sighted in this EIR

Tenderers should include the detail on procedures aligned with core project stages as follows:

- BS1192:2007
- PAS1192-2:2013
- BS1192-4:2014 & COBie UK 2012
- Other bespoke processes

The information requested in this section is detailed further in PAS 1192-2:2013.

7.2.4. Details of BIM Workload and Resourcing

Responses will describe the resources (and what levels) that are available to the project

Tenderers should include the following detail:

- Resource matrix with level, number, utilisation
- Outsourcing details or services etc.

The content of the assessment is described as the supplier BIM assessment form described in PAS 1192-2:2013.

7.2.5. Principal Supply Chain

Responses will describe the supply chain's ability to link into the process and how will this be assessed

Tenderers should / could include the following detail:

- Key supply chain partners
- Expected outputs
- Assessment process

The information requested in this section is detailed further in PAS 1192-2:2013.