



Advice Note

Employers Information Requirements

Revisions

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Purpose of EIR Guidance Document

The RIAI Employers Information Requirements Guidance document should be used to help Employers complete a EIR in accordance with PAS1192-2:2013. This document cross references with PAS1192-2:2013 and provides examples and guidance notes on how to complete each section. An EIR should be tailored to suit each project which will vary by many factors including project size, complexity and contract type which may have different employer requirements.

This document and the EIR template has been prepared and structured in accordance with the minimum contents specified in PAS 1192 -2:2013, clause 5.3.

Purpose of an EIR

PAS1192-2:2013 requires the provision of a clear definition of the **employer's information requirements** (EIR) and **key decision points** (to **form part of the contract** possibly through adoption of the CIC BIM Protocol). The EIR evaluates the proposed approach, capability and capacity of each supplier, and their supply chain, to deliver the required information, prior to contract award.

EIRs are produced as part of a wider set of documentation for use during project procurement and shall typically be issued as part of the employer's requirements or tender documentation. The development of the EIR shall start either with the assessment of an existing asset, leading to the development of the employer's need, or directly with the employer's need if no existing asset or asset information model is to be considered.

The EIR shall be incorporated into the tender documentation, to enable suppliers to produce their **pre-contract BIM Execution Plan** (BEP) upon which their proposed approach, capability and capacity can be evaluated. 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 bidder's BIM Execution Planning, confirming its completeness.

The contents of the EIRs should be aligned to employer decision points which in turn will coincide with project stages. The EIR should be consistent with other appointment and contract documents in use on the project, which in turn should be aligned with industry standards such as the RIAI or PWC project stages. Information requirements should be specific, measurable, achievable, realistic and time-bound against, for defined project stages and information exchanges.

The employer, or the employer's representative, shall be responsible for ensuring that information requirements are included in project contracts in such a way as to avoid duplication of responsibilities.

Scope

This document should be only used as a guide when preparing an EIR and not as the basis for an EIR. The RIAI Employers Information Requirements template should be used to commence an EIR document.

The Employers Information Requirements guidance document is intended to support Employers undertaking **BIM Level 2** in accordance with PAS1192-2:2013. It is recommended that Employers become familiar with a BIM Protocol such as the Construction Industry Council (CIC) BIM Protocol which should be included as part of the agreement or contract between the Employer and the project team members. The **BIM Protocol** should include a **Responsibility Matrix** identifying model uses,

Levels of Model Definition and responsibility for modelling for each Project Stage /Information Exchange. The Project BIM Protocol should also identify the Project Information Manager.

PAS1192-2:2013 Clause 5.3 defines the minimum contents of the Employers Information Requirements.

The EIR document is divided into 3 sections:

- A. Information Management (*Required by PAS1192-2 Clause 5.3 a*)
- B. Commercial Management (*Required by PAS1192-2 Clause 5.3 b*)
- C. Competence Assessment (*Required by PAS1192-2 Clause 5.3 c*)

In addition, Project Information *has* been added to the start of the EIR to provide key information about the project. If the information is included elsewhere in the tender documentation e.g. Prelims, this section can be omitted provided a reference to this information is included.

The clauses in each section follow the order as set out in PAS1192-2:2013. The content within each clause has been colour coded for clarity and includes:

- a reference to the relevant clause in PAS1192-2:2013,
- the purpose for including the clause in the EIR,
- a description and guidance of the clause,
- *examples of content to be included in an EIR,*
- advise on expectations for the information provided in the EIR or a request for a response by the bidder and
- *references to subsequent documentation where the information will be used.*

Employers should seek independent advice from their **insurance** provider and where necessary legal advice on the professional risks associated with working in BIM using the CIC BIM Protocol, a bespoke BIM Protocol or not using a BIM Protocol. Each organisation using BIM collaboratively should be familiar with guidance contained in the 'Outline Scope of Services for the Role of Information Management' and 'Best Practice Guide for Professional Indemnity Insurance when using BIM' published by the Construction Industry Council.

This document is generic in nature and is intended as guidance for an Employers Information Requirements document. Prior to its use, the document should be reviewed thoroughly to ensure that it is fit for purpose on the intended project. It is not the intention of this document to state how each organisation will implement BIM with their respective organisations but organisations are encouraged to ensure that their internal procedures support this document and standards for Level 2 BIM in the interest of project quality control and improving collaborative processes.

RIAI BIM Committee

The BIM committee is working together to realise a unified, usable, co-ordinated approach to Building Information Modelling in a design environment.

Committee	
Michael Earley (chair)	Scott Tallon Walker Architects
Ralph Montague	Arcdox

Bernard Voortman	Cummins & Voortman Ltd.
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Update Procedure

Proposed changes to this document should be submitted in writing with accompanying examples, discussion or other supportive material to info@riai.ie for the attention of the RIAI BIM Committee. Feedback will be gathered and continuously reviewed; they will be collated to form new revisions at appropriate intervals.

Copyright

This format of this document is based requirements of PAS 1192-2:2013.

It is important to note that this document will only become truly useful if as many companies adopt it as possible. To that extent, it may be freely distributed and used in any format necessary, provided credit is given to the RIAI BIM Committee.

Credits

We wish to thank the members of Construction Project Information committee CPIC (2013) www.cpic.org.uk:

- Royal Institute of British Architects
- Royal Institution of Chartered Surveyors
- UK Contractors Group
- Institution of Civil Engineers
- Chartered Institution of Building Services Engineers
- Chartered Institute of Architectural Technologists
- Chartered Institute of Building

Disclaimer

All the advice outlined in this document is for information only. The authors and contributing companies take no responsibility for the utilisation of these procedures and guidelines. The examples included are only examples and are not intended to provide content which is suitable for every building or contract type. Their suitability should be considered carefully before embarking upon any integration into your current working practices.

Project Information

The following project information should either be included in the EIR or referenced in other tender documentation where it is included. Project Information should be completed by the Employer.

Employer

The Employer is an individual or organization for whom the contract is executed and delivered.

Client

The Client is the individual or organization commissioning a built asset. The client may be different from the employer.

Project Name

The EIR should include a unique name which identifies this project as distinct from other projects which the employer or client may undertake.

Project Location

The EIR should include a full address of the project site.

Project Description

The EIR should include a description of the project or refer to other tender documentation where the description is included. The description should include building type(s), site constraints, building uses, etc.

A - Information Management

A1: Level of Definition (LOD)

Required by PAS1192-2 Clause 5.3 a) 1).

The purpose of this section is to define requirements for data exchanges. This information is used to populate the Responsibility Matrix which will be included in Appendix 1 of the BIM Protocol.

The level of model definition required in a model at an information exchange shall be defined in the EIR and in further detail in the Responsibility Matrix as Appendix 1 of the CIC BIM Protocol (Second Edition). The level of graphical information and data to be delivered at each information exchange will be defined with reference to industry standards.

When data is exchanged will vary according to project requirements and the client's own needs. The exchange should happen at the decision points identified in the Organisation Information Requirements (OIR). The responsibility for the Initial Responsibility Matrix sits with the Employer. Following Contract Award, The Project Delivery manager should confirm resource availability and capability in relation to the Initial Responsibility Matrix.

PAS 1192:2 proposes data exchange in line with the following stages:

1. Brief
2. Concept
3. Definition
4. Design
5. Build and Commission
6. Handover and Closeout
7. Operation and In Use

The RIBA Plan of Work proposes six data exchanges at the following stages of a project:

1. Design Brief
2. Concept
3. Design development / technical design
4. Production information / tender documentation
5. Practical completion
6. Post-practical completion.

The supply chain are likely to have their own information exchanges on a more frequent basis than the exchanges made with the employer.

Accurate recording of the Level of Definition is important. PAS1192-2:2013 defines the Level of Definition as a collective term used for and including "level of model detail" and the "level of information". PAS1192-2:2013 also refers to Level of Model Definition as "The minimum level of detail needed by the team or the employer for each model's purpose shall be defined" and "The level of graphical information and data to be delivered at each information exchange will be defined with reference to industry standards".

Model Originators will typically be required to complete models strictly to the level of detail required at a particular stage. Similarly, information users will typically be required to only rely on information completed to the contractually defined level of detail. The Responsibility Matrix defines the scope of

the models for the purposes of the contract. It is important that the Responsibility Matrix is comprehensive and is regularly updated. The Responsibility Matrix also defines for the purposes of the contract the levels of detail used for the various phases of the project.

Example:

The following Project Stages will be incorporated into Appendix 1 of the BIM Protocol and will be used to populate the Responsibility Matrix:

Project Stages
Brief
Concept
Definition
Design
Build and Commission
Handover and Closeout

In accordance with Clause 9.9 of PAS1192-2:2013, the minimum level of detail needed by the employer for each model's purpose shall be defined as follows:

Levels of Model Definition		
Level of Detail (LOD)	Level of Information (LOI)	Description
1	1	Brief
2	2	Concept
3	3	Definition
4	4	Design
5	5	Build and Commission
6	6	Handover and close-out
7	7	Operation and in-use

The Project Stages, Level of Detail and Level of Information will be used to populate the Responsibility Matrix included in Appendix 1 of the BIM Protocol. Refer to the NBS Toolkit for LOD and LOI definitions.

No response is required in the Pre-contract BIM Execution Plan.

The Responsibility Matrix included as Appendix 1 to the BIM protocol should include the above employer requirements.

A2: Training Requirements

Required by PAS1192-2 Clause 5.3 a) 2).

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 EIR should include details of training for specified client specific applications that will be used on the project. The EIR should communicate clearly that the responsibility for training associated with other modelling and analysis tools rests with the consultant/constructor.

Examples:

1. *The Information Manager shall be provided with training at the Employers expense in the Employers FM system ASAP following the BIM Kick-off meeting.*
2. *The bidder shall submit training costs for a suitable Common Data Environment (CDE) as defined in BS 1192:2007+A2:2016 and one which will comply with the collaborative workflow as specified in PAS 1192-2:2013 in order for the Employer to ascertain the cost to the Employer and the Employer's representatives.*
3. *All costs associated with developing the BIM capabilities to deliver on the Employer's Information Requirements should be included in the contract and supply chains tender.*

If required, the Pre-contract BIM Execution Plan should confirm any additional training.

Costs for additional training must included in the bid.

A3: Planning of Work and Data Segregation

Required by PAS1192-2 Clause 5.3 a) 3).

The purpose of this section is to set out requirements for the bidder's proposals for the management of the modelling process (e.g. model management, naming conventions, etc.)

A statement that information should be managed in accordance with the processes described in PAS 1192-2:2013 and BS 1192:2007+A2:2016. Where the employer has specific requirements for work management, the requirement and request for proposals should be identified.

Examples (Descriptive):

1. *Information should be managed in accordance with the processes described in PAS1192-2:2013 and BS 1192:2007+A2:2016.*
2. *File naming for models and extracts for models should be in accordance with BS 1192:2007+A2:2016. The bidder should include an example of a single project file naming strategy which is in compliance with BS 1192:2007+A2:2016.*
3. *The bidder should provide a methodology for how models will be managed. The expectation is that this will be coordinated by the Information Manager.*
4. *The bidder shall provide a methodology for dividing the building into manageable volumes and how these volumes shall be defined and managed for all model authors.*

The Pre-contract BIM Execution Plan should confirm that the project will be managed in accordance with the prescribed standards and where applicable provide proposals for how specific requirements for work management will be undertaken.

Agreed detailed proposals will be included in the Post-contract BIM Execution Plan.

A4: Coordination and Clash Avoidance

Required by PAS1192-2 Clause 5.3 a) 4).

The purpose of this section is to define the required coordination process, together with requirements for quality control.

The EIR should include requests for details of project management processes which should include a comprehensive response as to how the project will be managed effectively.

Example (Descriptive):

The bidder should provide details for the following project management processes:

- *Details of the clash detection process including:*
 - *Software*
 - *Process overview*
 - *Responsibilities*
 - *Outputs*
- *Technical query workflow*
- *Tolerance strategy*
- *Clash resolution process*

The Pre-contract BIM Execution Plan should respond to the request for details above.

Agreed processes will be defined in the completed Post-contract BIM Execution Plan.

A5: Collaboration Process

Required in response to the EIR by PAS1192-2 Clause 5.3 a) 5).

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

It should be stated clearly that the Collaboration Process shall be carried out in accordance with BS 1192:2007+A2:2016.

It should be stated clearly if the Employer is providing or procuring the CDE and the specifics of that CDE should be included if known. If the bidder is requested to provide the CDE, it should be stated clearly if costs should be included for in the tender. It should be noted if the bidder is to provide a specific CDE system or a type of CDE system.

The Project Information Manager is responsible for managing the operation, standards and culture of the common data environment.

The bidder should be requested to provide the following details:

- Form of sharing.
- Frequency of collaboration and information exchange.

- Details of model review workshops and other collaborative working practices.

Example 1 (Descriptive):

The Collaboration Process shall be carried out in accordance with BS 1192:2007+A2:2016.

Project information will be shared via a Common Data Environment (CDE) which should allow information to be exchanged in accordance with BS 1192:2007+A2:2016. The Information Manager will be responsible for managing the CDE in accordance with the Outline Scope of Services for Information Management by the Construction Industry Council. The costs for procuring and providing the CDE will be borne by the successful bidder.

The CDE must provide the following functionality:

- *Include licenses to access the CDE for all task team members and the employer team.*
- *Provide a secure login system.*
- *Comply with security requirements in section 2.7 of the EIR.*
- *Provide a means of recording metadata for files. At a minimum, the CDE should record the revision and suitability code for each file exchanged.*
- *Allow current and previous revisions to be viewed and downloaded.*
- *Provide a system for approval of documents in accordance with BS 1192:2007+A2:2016.*
- *The CDE should include a viewer for the federated model which can be accessed by registered and authorised users.*
- *Provide an audit trail for files sufficient to determine:*
 - *individual and organisation who shared the document*
 - *date and time when the document was shared*
 - *list of recipients*
 - *individuals who viewed, downloaded and approved documents.*

The bidder should provide a schedule identifying the frequency of collaboration and information exchange.

The bidder should provide a schedule of meetings/workshops for project collaboration identifying the frequency for each type of meeting. A BIM Kick-off meeting is mandatory to agree roles, responsibilities and authorities.

The exchange of information should be optimised to ensure that meeting participants have sufficient information to collaborate for both the purpose and maturity of the process e.g. clash reports for the areas being discussed, completed COBie and other FM data required by the employer for review prior to completion of a data exchange. The bidder should indicate when information is exchanged prior to meetings.

Example 2 (Prescriptive):

The Collaboration Process shall be carried out in accordance with the Employers CDE Procedure which is included in the tender documentation. Project information will be shared via the Employer's Common Data Environment (CDE) which should allow information to be exchanged in accordance with BS 1192:2007+A2:2016. The CDE is [name of CDE]. The Information Manager will be responsible for managing the CDE in accordance with the Outline Scope of Services for Information Management by the Construction Industry Council.

The bidder should provide a schedule identifying the frequency of collaboration and information exchange.

The bidder should provide a schedule of meetings/workshops for project collaboration identifying the frequency for each type of meeting. A BIM Kick-off meeting is mandatory to agree roles, responsibilities and authorities.

The exchange of information should be optimised to ensure that meeting participants have sufficient information to collaborate for both the purpose and maturity of the process e.g. clash reports for the areas being discussed, completed COBie and other FM data required by the employer for review prior to completion of a data exchange. The bidder should indicate when information is exchanged prior to meetings.

The Pre-contract BIM Execution Plan provided as part of the bid submission should confirm the requirements, indicating where any specific detail where required.

Agreed processes will be defined in the completed Post Contract BIM Execution Plan.

A6: Health and Safety

Required by PAS1192-2 Clause 5.3 a) 6).

The purpose of this section is to enable the employer to define how BIM-based working will support Health and Safety monitoring aligned with the work stages. Data and records capture processes also need to be documented.

This EIR should include details of how BIM enabled processes will be used to manage the employer's and bidders Health and Safety obligations, sufficient to demonstrate competence and capability at tender.

PAS 1192-6:2018 which is the specification for collaborative sharing and use of structured Health & Safety information using BIM may be specified. Employer's should become familiar with the contents of this standard and how it can be applied to models.

Examples:

The supplier pre-contract BIM Execution Plan should include:

- *Confirmation that PAS 1192-6:2018 - Specification for collaborative sharing and use of structured Health & Safety information using BIM will be incorporated into the BIM processes.*
- *Integration of person(s) undertaking role of Health and Safety Coordination into the BIM Collaboration process.*
- *Identify key meetings where Health and Safety is reviewed as part of the collaboration process.*

- *Process for recording and incorporating decisions from Health and Safety matters arising from meetings above.*

The Pre-contract BIM Execution Plan should respond to the request for details above.

Agreed processes will be defined in the completed Post Contract BIM Execution Plan.

A7: Security Requirements

Required by PAS 1192-2 Clause 5.3 a) 7).

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

Security operates on a number of levels ranging from national security issues (e.g. protection against terrorism and detecting hostile acts by nation states), to tackling organized crime, and to preserving the value, longevity and ongoing use of an enterprise's assets, whether tangible (e.g. a building or physical stock), or intangible (e.g. preventing the loss or disclosure of intellectual property and nationally or commercially sensitive information). It also includes the handling of privacy issues (e.g. the protection of personally identifiable information).

Employers should review if there is a requirement to comply with PAS1192-5:2015 which identifies a number of threats which may impact which may need to be considered by the Employer and/or supply chain:

1. **Hostile reconnaissance:** For sensitive or potentially sensitive built assets, the employer or asset owner shall seek advice to gain an understanding of the range of traditional and evolving techniques of hostile reconnaissance to which the business, asset, asset-related digital information or personnel could be vulnerable.
2. **Malicious acts:** The employer or asset owner shall be aware of the increased business risks associated with the failure or impaired performance of systems which depend on information technology arising from malicious acts caused by a range of external and insider threats, such as damage caused by malware, hackers or disaffected personnel
3. **Loss or disclosure of intellectual property:** The employer or asset owner shall be aware of the need to protect its own and others' intellectual property which it holds or which may be developed, and shall understand the potential consequences of the loss of, unauthorized access to, or improper use or reuse of that information.
4. **Loss or disclosure of commercially sensitive information:** The employer or asset owner shall be aware of the need to protect pricing, price sensitive or market sensitive data, especially during a tender or procurement process, and shall understand the potential consequences of the loss of, or unauthorized access to, that information.
5. **Release of personally identifiable information:** The employer or asset owner shall be aware of the need to safeguard personally identifiable information, in particular when responding to requests for information under Environmental Information Regulations [2] or Freedom of Information Act [3].
6. **Aggregation of data:** For sensitive or potentially sensitive assets, the employer or asset owner shall seek advice to gain an understanding of the increased risks and sensitivity that occur through aggregation of data.

Where compliance with PAS1192-5:2015 is required, the Employer should include a role of Built Asset Security Manager. The person undertaking this role should be named in Appendix 3 to the BIM

Protocol.

An Employer may also require that specific security certificates are in place e.g. ISO 27001:2013 certification or Cyber Essentials Plus certification prior to submitting the bid or contract signing. This may apply to all members of the supply chain and consideration must be given to the time and costs involved in to attaining certification.

Examples (add to, omit or change relevant examples):

Any file when uploaded to the collaboration site or other electronic document management system, is to be secure to the standard required by the employer. The CDE should conform to the following requirements/standards:

- *ISO 27001 Compliance*
- *Tier 4 Disaster Recovery*
- *EU - US Safe Harbour Compliance (Data Protection Act)*

The employer shall provide a confidentiality / non-disclosure agreement will be included in agreements/contracts with successful bidders.

The successful bidder will provide Cyber Essentials Plus Compliance Certificates for the supply chain.

The successful bidder will adopt a security policy based on PAS 1192-5:2015 - Specification for Security-minded building information modelling, digital built environments and smart asset management.

The Pre-contract BIM Execution Plan should demonstrate the bidders compliance with mandated security systems.

A8: Information to be either excluded or included from information models

Required by PAS 1192-2 Clause 5.3 a) 8).

The purpose of this section is to communicate a schedule of client specific assets that should be included or excluded from the Project Information Model (PIM) and the Asset Information Model (AIM). This section also enables the employer to obtain proposals with regards to asset information delivery into the employer's FM environment.

The EIR should include confirmation of the information exchange format and reference to requirements for the Asset Information Model (AIM).

A list of inclusions and exclusions for client manageable assets may be included.

Text describing AIM delivery strategy should be populated with appropriate requirements and constraints, indicating where any specific detail is required in a bidder's Pre-contract BIM Execution plan as part of a bid submission.

In addition, proposals should be included in the Pre-contract BIM Execution Plan setting out proposals for how best to deliver information into the following defined facilities maintenance environment.

Define the details of systems/databases/information formats in use so that the bidder can demonstrate compliance with information management requirements.

Examples (add to, omit or change relevant examples. Some examples relate to construction phase only):

- *The asset information should be delivered in the COBie format to PAS 1192-4:2014 standards as part of the Information Exchanges identified in the Responsibility Matrix. Assets identified in the Employers Asset Model should be populated with data appropriate to the level of Model Definition for each Data Exchange. Assets shall include Uniclass 2015 codes provided.*
- *A mandatory field is required which provides a link from the assets identified in the Asset Information Model to the relevant documents of the Operations and Maintenance manual. In addition, a field is also required which includes a Unique Asset Identifier which will be provided by the Employers Facility Management Systems provider.*
- *In order to verify the locations of services, a Point cloud survey should be undertaken by the main contractor before services are closed up. The As Built model should be verified against the point cloud surveys.*
- *Buildings, floors, rooms and manageable assets should be coded in accordance with the Employers Asset Requirements provided in the tender documentation.*
- *The client/designers can confirm that the contract drawings for the xxxxxxxxxx have been derived as far as practically possible from the models and they are dimensionally accurate, however the contractor should be aware that additional information (notes/details) may be contained within the drawings schedules and specifications that may not be in the model and must refer to the contract drawings and schedules and specifications in all instances. The drawings and specifications and schedules are the contract documents.*
- *The client/designers can also confirm that the following contract drawings for the xxxxxxxxxx have not being derived from the models. The drawings and specifications and schedules are the contract documents and the BIM for this part of the works issued for information only and cannot be relied upon as being consistent with the drawings.*
- *The bidder and their supply chain should confirm with their tender submissions that they have reviewed the models provided, for constructability, logistics and health & safety, and ideally those should be linked to the construction programme and estimates as part of their tender submission, to demonstrate their understanding of the project and BIM.*
- *If any alternative proposals are being suggested as part of the tender, the bidder and their supply chain should ideally develop those aspects of the model from tender issue to tender return, incorporating any proposed construction alternatives, or additional information added to existing model elements if applicable. A developed COBie output will also be required as part of the tender.*
- *The client can confirm that a fully editable [software & version] of the architectural, structural and MEP services design intent models will be made available to the successful contractor. The Models for the project has been develop to tender stage, approximating LoMD 4 'Production' (as defined by PAS 1192-2:2013; Figure 20 – Levels of model definition for building and infrastructure projects). The Models cannot be relied upon beyond these levels of definition. The contractor may use these models to develop further into a construction coordination model if they so choose, however the contractor is responsible for developing*

their own construction BIM in conjunction with the subcontractors, and in taking on the design intent models, they take full responsibility for checking these before incorporating information into construction, fabrication and installation models. The contractor and subcontractors are expected to add site plant, equipment, carnage, temporary works, scaffolding health and safety equipment etc. into the model and edit the model as required to show sequencing of works in conjunction with the construction programme. Cost estimates may be linked to the model so that value earned demonstrations can be provided at any stage.

- *It is the contractor's responsibility to develop and maintain the construction model during the construction phase of the project and ensure that other members of the supply chain develop their portions of the work in a model formats that can be federated into the overall construction model. Models should be produced before fabrication/installation, and should form part of the standard submittals/approvals process of fabrication or "shop drawings". As far as practically possible, all fabrication and shop drawings should be derived from the construction models.*
- *All members of the supply chain will be required to input the asset information (as required by the EIR) into the model during the construction stage and update the model should any changes occurred during construction and installation to reflect these changes so that at building handover the model and the digital data contained therein is accurate as built information*
- *The end deliverable will be a federated object-based construction BIM and AIM, in the formats specified in the EIR, with associated digital asset information in COBie format and construction, fabrication and installation drawings derived as far as practically possible from the models. Testing commissioning certificates and product information sheets should be cross-referenced to the objects in the model through a unique identifying code (element ID) in the project database.*

The Pre-contract BIM Execution Plan provided as part of the bid submission should confirm the requirements and constraints, indicating where any specific detail where required.

The Post-contract BIM Execution Plan should include the above employer requirements.

A9: Systems Performance

Required by PAS 1192-2 Clause 5.3 a) 9).

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 EIR should include the following employer-side IT system restrictions and requirements need to be considered when developing the BIM Execution Plan:

- Model size
- Software uses
- Access to free viewers

Example (Prescriptive):

Individual model sizes shall not exceed 200MB. The federated Model size shall not exceed 500MB. Models issued via the CDE for clash detection shall be IFCx2x3 format.

The CDE should include a viewer for the federated model which can be accessed by registered and authorised users.

The Pre-contract BIM Execution Plan provided as part of the bid submission should confirm the requirements and constraints, indicating where any specific detail where required.

The Post-contract BIM Execution Plan should include the above employer requirements.

A10: Compliance Plan

Required by PAS 1192-2 Clause 5.3 a) 10).

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

The EIR may require a compliance plan based on descriptive requirements or alternatively include a prescriptive compliance plan such as the RIAI Compliance Plan.

Where a prescriptive compliance plan has been provided, the Pre-contract BIM Execution Plan provided as part of the bid submission should confirm compliance with the standards and checks included in the compliance plan. Otherwise a compliance plan should be provided which responds to the EIR. The RIAI Compliance Plan Guidance and Template documents should be used as guidance.

Example 1 (Descriptive)

In accordance with clause 9.2.2.2 of PAS 1192-2:2013, to pass through the Approval Gate (Gate 1), a check, review and approval process shall be carried out before issue to the SHARED area.

The checks shall include:

- a) Model suitability check;*
- b) Standard Method Procedure (SMP) check;*
- c) Technical content check;*
- d) COBie completeness check;*
- e) Drawings extract checks along with any additional documentation that is shared as a co-ordinated package of information; and*
- f) Approval by the Task Team Manager and Lead Designer.*

In accordance with clause 9.2.2.3 of PAS 1192-2:2013, To pass through the Authorized (Gate 2), the information in the Client Shared Area shall be authorized by the employer or the employer's representative.

The following quality control checks shall be carried out prior to information being issued to the Client Shared Area for authorisation by the employer or employer's representative:

- a) Model suitability check;*
- b) COBie completeness check;*

Each bidder should provide details of the checks which should be cross reference against the following headings:

- a) Role Responsible*
- b) Associated software*

c) *Level of Assurance / Frequency*

Example 2 (Prescriptive):

The bidder should confirm compliance with the standards and checks included in the compliance plan included in the tender documentation.

The Post-contract BIM Execution Plan will set out compliance processes and the means by which compliance is monitored and managed.

A11: Coordinates

Required by PAS 1192-2 Clause 5.3 a) 11).

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

The EIR should include standards for the coordinate system to be used. Levels of accuracy may also be included.

Example:

Each Project Information Model shall adopt the common Project Shared Coordinate System which is based on survey information using Irish Transverse Mercator (ITM) coordinates. The minimum requirement is spatial coordination stated as follows:

- *The Architect should as early as possible share a model containing of Grids and Levels. This model should be used to acquire project coordinates.*
- *All task teams will adopt the established Project Shared Coordinate system across all Project Information Models to allow them to be referenced without modification.*
- *The model will use real world coordinates systems and be produced to a true height above datum based on Irish Transverse Mercator (ITM) coordinate system. Coordinates should be based on an accurate survey and not Ordnance Survey maps.*
- *Building Levels should relate to the Irish Transverse Mercator (ITM) coordinate system.*
- *The models should be oriented correctly to the true north.*
- *Units to nearest mm. Coordinates should be based on RICS 1:100 Survey accuracy.*

Additionally, the EIR may also contain a definition of any coordinate origin/system (3 dimensions) that the employer requires to be used to place graphical models, for example Ordnance Survey locators, geospatial and location with respect to an agreed origin.

Example:

<i>Point</i>	<i>Location Description</i>	<i>Easting (mm)</i>	<i>Northing (mm)</i>	<i>Elevation or site datum</i>
1				
2				

No response is required in the Pre-contract BIM Execution Plan.

The standards and methodology should be included in the Post-contract BIM Execution Plan. Specific detailed information e.g. point coordinates should be included in the post contract BIM Execution Plan.

A12: Software Formats

Refer to PAS 1192-2 Clause 5.3 a) 12).

B - Commercial Management

B1: Exchange of Information

Required by PAS 1192-2 Clause 5.3 b) 1).

The purpose of this section is to communicate the content of data exchanges and how data exchanges are aligned to work stages.

The EIR should include details of the information requirements:

- Schedule of work stages (RIAI/GCCC/PWC/RIBA/CIC/ bespoke WBS)
- Alignment of data exchanges to the work stages
- Key purposes of data exchanges (See section B2)

The EIR should also include Specific information requirements from the data exchanges, defined as responses to the 'Plain Language Questions'. The data required to populate the data exchanges will vary at each stage in accordance with the 'Plain Language Questions' that need to be supported by the data exchanges. 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 data exchanges.

Example:

Project Stages are defined in Section 2.1 Level of Detail.

Information will be exchanged with the Employer at the following stages:

Project Stages / Data Exchanges		
Stage	Information Exchange	Purpose
Stage 1: Inception	#01 (Assessment and Need)	Provide Designers with Employer Requirements
Stage 2: Outline Proposals		
Stage 3: Scheme Design	#02 (Concept Design)	Approval of Outline Business Case
Stage 4: Detail Design	#03 (Developed Design)	Record of Approved Planning Permission
Stage 5: Production Information		
Stage 6: Tender Action	#04 (Technical Design)	Record of Tender Package
Stage 7: Project Planning		
Stage 8: Operations on Site	#05 (Construction)	Validate quality of information at Practical Completion
At Handover	#06 (Handover and Operations)	Verified information for Operations and Maintenance

The information, format and responsibility for providing that information is defined in Appendix 1 - Information Exchanges.

For each of the data exchanges, information will be required in the following formats:

- *Native - 3D model files product specific for all design and analysis models in accordance with section B3*
- *Information Exchange - COBie in excel format in accordance with BS 1192-4:2014*
- *2D drawings, schedules, reports, programmes and visualisation in PDF files - no older than version 7.0*

No response is required in the Pre-contract BIM Execution Plan. The table above is a statement of minimum requirements for information that should be exchanged at the data exchanges identified in section 2.1 of this document. Exchange of Information should be reviewed at each project stage. Any updates should be agreed with the supplier at each project stage.

B2: Client's Strategic Purpose

Required by PAS 1192-2 Clause 5.3 b) 2).

The purpose of this section is to describe the expected purposes of the information which is based on Employers Strategic Need and also determines how information can be used. Refer to Figure 7 in PAS1192-2:2013.

Clause 10.20 of the CIC BIM Protocol (Second Edition) defines Permitted Purpose as a purpose related to the Project (and/or the construction, refurbishment, extension, operation, management and/or maintenance of the Project) which is consistent with:

- (a) the applicable Level of Definition of the relevant Project Information;
- (b) the applicable status code of the Project Information in accordance with BS1192:2007+A2:2016;
- (c) the applicable functional state of the Project Information in accordance with BS1192:2007+A2:2016; and
- (d) the purpose for which the relevant Project Information was prepared.

The CIC BIM Protocol does not specifically state the purposes for which models will be used. Setting out proposed purposes in the EIRs informs the scope of the licences defined in the Protocol.

Example:

Description of successful outcomes for the use of BIM are:

- *Deliver structured data to populate operational systems that will support 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 such as authoring model aggregation, viewing and collaboration technology.*
- *Understand and confirm full programme, sequence and logistics implications using BIM tools. 4D and 5D not mandated.*
- *Assess and address safety, security and sustainability issues using BIM tools.*
- *Check the scope in models compared to briefing requirements using BIM tools and outputs derived from the models through graphical and non-graphical forms.*

- *Understand cost planning and estimation using BIM tools.*

It is expected that the primary use of the data will be for the following purposes:

- *P01 Approved Outline Business Case*
- *P02 Tender Package*
- *P03 Appoint Contractor*
- *P04 Agree Maximum Price for Contractor Proposals*
- *P05 Practical Completion*
- *P06 Operations and Maintenance*
- *P07 Regulation and Compliance*

No response is required in the Pre-contract BIM Execution Plan.

The purposes included in the EIR can define the use to which the models are licensed as part of the BIM Protocol. Employers should consider including the purposes in Appendix 1 of the BIM Protocol which should be correlated with the Responsibility Matrix.

B3: Software Formats

Required by PAS 1192-2 Clause 5.3 b) 3).

Define the platform for the Building Information Model as well as other software platforms to be used. 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.

Public sector employers may not wish to or be able to specify software packages to be used by their suppliers, but may instead specify the formats of any outputs.

Private sector employers may choose to specify software packages and/or output formats. In accordance with an open approach to software solutions, the EIR's may wish to not dictate a software solution to the supply chain.

Depending on the stage of the project, the Employer should state the versions and platforms used to prepare data exchanges that the bidder will receive. The employer should also define the versions and platforms used for employer collaboration and facilities management.

When appointing a design team or integrated project team, only collaboration, information exchange and FM versions and platforms should be described in the EIRs.

The Employer may wish to include requirements for software used to verify data being transferred from the PIM to the AIM. Add-on software may be required to upload models and run tests to verify data against requirements in Section A8.

Example:

The bidder should provide information on the software formats for each of the task team members.

<i>Task Team</i>	<i>Primary BIM Software and version</i>	<i>Coordination / Clash Detection Software and version</i>	<i>Specialist Software and version</i>
<i>1</i>			
<i>2</i>			

3			
4			

Software or software formats provided by the Employer should be included in the EIR. The software for each task team should be included in the pre-contract BIM Execution Plan.

The software formats should be confirmed in Appendix 2 of the BIM Protocol and in Section 5 of the Post contract BIM Execution Plan.

B4: Responsibility Matrix

Required by PAS 1192-2 Clause 5.3 b) 4).

The purpose of the Responsibility Matrix is to set out the relationship between disciplines and production of information or models in line with the defined project stages.

Preparation of a design Responsibility Matrix is the responsibility of the Employer / Employers Representative and should begin early in the development of the project. It may start with a simple, strategic overview of design responsibility for the main design elements. As the project progresses however, it should increase in detail to allocate responsibility for specific elements, systems and products, setting out the level of detail and format of design information to be produced and any requirement for collateral warranties.

The NBS BIM Toolkit may be used. It should be noted that the project stages do not correspond to the current RIAI project stages so if the toolkit is prescribed, the CIC/RIBA 2013 stages should be correlated to the equivalent RIAI stages.

Example 1:

The Employer has prepared an Initial Responsibility Matrix based on the RIAI Responsibility Matrix Template, which is included in the tender documentation. The Data Exchanges, Stages and Level of Model Definitions defined in section A1 are included. Prior to Contract Award, the successful bidder will be required to complete the name of organisations or individuals undertaking each role and confirm capability to delivery on each item in the Responsibility Matrix. The completed and agreed Responsibility Matrix will be incorporated into Appendix 1 of the BIM Protocol which will be appended to the contract/appointment.

Example 2:

The NBS BIM Toolkit has been used to prepare a Digital Plan of Work (DPoW) which includes the Responsibility Matrix. A copy has been included with the tender documents. The following table should be used to map RIAI stages to the project stages in the NBS Toolkit.

Project Stages		
Stage	Stage Description	NBS Toolkit Project Stages
		Stage 0: Strategic Definition
Stage 1	Inception	Stage 1: Brief
Stage 2	Outline Proposals	Stage 2: Concept

Stage 3	Scheme Design	Stage 3: Definition
Stage 4	Detail Design	Stage 4: Design
Stage 5	Production Information	
Stage 6	Tender Action	
Stage 7	Project Planning	Stage 5: Build and Commission
Stage 8	Operations on Site	Stage 6: Handover and Closeout
		Stage 7: Operation and In Use

Prior to Contract Award, the successful bidder will be required to complete the name of organisations or individuals undertaking each role and confirm capability to delivery on each item in the Responsibility Matrix. The completed and agreed Responsibility Matrix will be incorporated into Appendix 1 of the BIM Protocol which will be appended to the contract/appointment.

The bidder should provide a methodology for maintaining the Responsibility Matrix.

A completed Responsibility Matrix should be prepared by the supplier in preparation of the Post-contract Execution Plan.

B5: Standards and Guidance Documents

Required by PAS 1192-2 Clause 5.3 b) 5).

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.

Relevant standards should be included by the Employer. Particular attention should be given to minimum standards required for Level 2 BIM projects. Not all standards may apply e.g. PAS 1192-5:2015 is required where security of information is of concern.

Example (omit any standards that are not applicable):

The following are definitions of the core documents and standards that are to be mandated on the project and will be incorporated into the BIM Protocol - Appendix 2.

- 1) *BS 1192:2007+A2:2016 - Collaborative production of architectural, engineering and construction information - Code of practice.*
- 2) *PAS 1192-2:2013 - Specification for information management for the capital/delivery phase of construction projects using building information modelling.*
- 3) *PAS 1192-3:2014 - Specification for information management for the operational phase of assets using building information modelling*
- 4) *BS 1192-4:2014 - Collaborative production of information Part 4: Fulfilling employer's information exchange requirements using COBie – Code of practice.*
- 5) *PAS 1192-5:2015 - Specification for security-minded building information modelling, digital built environments and smart asset management.*
- 6) *PAS 1192-6:2018 - Specification for collaborative sharing and use of structured Health and Safety information using BIM.*

- 7) *BS 8541-2:2011 - Library objects for architecture, engineering and construction Part 1: Identification and classification – Code of practice*
- 8) *BS 8541-2:2011 - Library objects for architecture, engineering and construction – Part 2: Recommended 2D symbols of building elements for use in building information modelling*
- 9) *BS 8541-3:2012 - Library objects for architecture, engineering and construction – Part 3: Shape and measurement – Code of practice*
- 10) *BS 8541-4:2012 - Collaborative Production of Architectural, Engineering and Construction Information Part 4 – Employer information requirements (COBie).*
- 11) *BS 8541-5:2015 - Library objects for architecture, engineering and construction — Part 5: Assemblies – Code of practice*
- 12) *BS 8541-6:2015 - Library objects for architecture, engineering and construction – Part 6: Product and facility declarations – Code of practice*
- 13) *BS 7000-4:2013 - Design management systems Part 4: Guide to managing design in construction*

Other Publications:

- 14) *Building Information Model (BIM) Protocol (Second Edition) - Construction Industry Council*
- 15) *Outline Scope of Services for the Role of Information Management - Construction Industry Council (CIC)*
- 16) *Best Practice Guide for Professional Indemnity Insurance when using BIM - Construction Industry Council (CIC)*
- 17) *NBS Toolkit including Uniclass 2015 classifications - <https://toolkit.thenbs.com>*

A number of the above standards published by BSI are freely available from <http://bim-level2.org>

No response is required in the Pre-contract BIM Execution Plan.

The standards should be incorporated into the BIM Protocol - Appendix 2.

B6: Roles, Responsibilities and Authorities

Required by PAS 1192-2 Clause 5.3 b) 6).

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.

At the induction meeting as many of the information management roles shall be identified and confirmed as possible.

Task Teams are any team assembled to complete a task. Examples: Architectural Task Team Structural Task Team or Multi disciplinary Task Team to design a specialist part of the project, say bespoke curtain wall. This may also include the specialist and professional design teams collaborating to complete that Task.

Clarity of roles, responsibility and authority are an essential aspect of effective information management. Roles should be embedded into contracts, either through a specific schedule of services or more general obligations. Information management roles are likely to be embedded into more extensive project roles – design team leader, principal contractor, etc.

PAS 1192-2:2013 identifies the types of roles that should be considered and likely responsibilities. It should be remembered that PAS1192-2:2013 should be read in conjunction with other contract documentation such as the Plans of Work and Schedule of Services. The roles indicated in PAS 1192-2:2013 are for guidance only and will differ from project to project depending upon market sector, project size and the supply chain tier you are positioned in. Key to the allocation of roles, responsibility and authority is the appropriateness and ability of the organization to be able to deliver. In smaller businesses many of these roles may be executed by the same individual.

On projects led with the CIC BIM Protocol (Second Edition), a key role is the Information Manager. The Information Manager has a role in facilitating the management of the federated model and the production of project outputs. The Information Manager is also responsible for managing the operation, standards and culture of the Common Data Environment (CDE). The Information Manager is not a standalone role and is expected to shift from design team to contractor prior to start on site. Under the BIM Protocol, a client is obliged to appoint an Information Manager.

The organisation identified as 'design lead' or 'contractor lead' depending on the project stage should undertake the role of Information Management.

Example (Descriptive):

The Pre-contract BIM Execution Plan should confirm the roles, responsibilities and authorities as defined in PAS 1192-2:2013 clearly indicating any changes from the standard. The Pre-contract BIM Execution Plan should identify person(s) for each role. CVs for the persons identified should be included as part of the bid submission.

Example (Prescriptive):

The following Roles, Responsibilities and Authorities are defined in Section 7.5 of PAS 1192-2:2013. All the roles defined and their respective responsibilities and authorities, are stated only in connection with information management.

Supplier (push)

Role	Responsibility	Authority
Project Information Manager	<p>Enable reliable information exchange through a common data environment.</p> <p>Maintain and receive information into the Information Model.</p> <p>Enable integration and coordination of information within Information Model.</p> <p>Configure information for Project Outputs.</p> <p>Populate the information exchange format for the Information Model.</p>	<p>Enforce the Project BIM Execution Plan and ensure delivery of the Information requirement in the EIR.</p> <p>Accept /reject information exchanges within the common data environment.</p> <p>No design responsibility or right to issue instructions.</p>
Project Delivery Manager	<p>Assure delivery of information exchanges.</p> <p>Confirm suppliers ability to deliver information requirements.</p>	<p>Accept /reject information exchanges within the common data environment.</p>

Lead Designer	<p>Manage information development and information approvals. In accordance with clause 9.2.2.2, Approval Gate 1 a check, review and approval process shall be carried out before issue to the SHARED area.</p> <p>Confirm design deliverables.</p> <p>Overall lead for configuration management.</p> <p>If a clash is detected which cannot be resolved by the Task Team Interface Manager then the lead designer shall be involved in the discussion to reach agreement and make the necessary changes to the models.</p>	<p>Approve design changes proposed to resolve clashes.</p> <p>Confirm status and approve information for issue within the common data environment.</p>
Task Management (Project Team members)		
Task Team Manager	<p>Production of design outputs related to a task team specific, package based or time-based task.</p>	<p>Change the status of their team's signed-off information, update the revision and issue the information and model(s) to the PUBLISHED part of the CDE.</p>
Task Information Manager (Information Management)	<p>Direct the production of task information in compliance with standards and methods.</p> <p>Direct the production of task information using agreed systems.</p>	<p>Confirm that information is suitable for issue within a common data environment.</p>
Task Interface Manager (Spatial Coordination and Clash Detection)	<p>Manage spatial coordination on behalf of a task team.</p> <p>Propose resolutions to coordination clashes.</p>	<p>Propose resolutions to clashes.</p>
Information Originator (Geometry and information)	<p>Develop constituent parts of the information model in connection with specific tasks.</p> <p>Production of project outputs.</p>	<p>Ownership of model information.</p>

Employer (pull)

Role	Responsibility	Authority
Employers Representative	<p>In accordance with clause 9.2.2.4 of PAS1192-2:2013, authorise information in the Client Shared Area of the CDE.</p>	<p>Confirm status and approve information within the common data environment.</p>
Employers Technical Advisor	<p>Support the employers representative in technical matters in relation to information management.</p>	

The Pre-contract BIM Execution Plan should identify person(s) for each supplier role. CVs for the persons identified should be included as part of the bid submission.

Bidders should include Roles, Responsibilities and Authorities including persons identified for each role in the Pre-contract BIM Execution Plan and attached CVs for each person identified.

C - Competence Assessment

C1: Competence Assessment

Required by PAS 1192-2 Clause 5.3 c) 1).

The purpose of this section is to assess details of the collaboration process from the bidder sufficient to demonstrate BIM competence and capability at tender.

A supplier BIM assessment form shall be completed by all appropriate organizations within the supply chain, so as to demonstrate their competence in and understanding of BIM and provide a comparable document by which to assess their capability. The supplier BIM assessments should be summarised in a single document as part of the bid.

The EIR may require a competence assessment based on descriptive requirements or include a prescriptive Supply Chain Capability Summary (SCCS) form.

Example 1 (Descriptive)

Each bidder should provide a supply chain capability summary (SCCS) which should include:

<i>Item</i>	<i>Description</i>	<i>Response</i>
<i>BIM Capability and Experience</i>	<i>Responses will describe how mature an organisation is, and what capabilities are held.</i>	<p><i>Bidders should include the following detail:</i></p> <ul style="list-style-type: none"> • <i>BIM experience - organisational and personnel</i> • <i>BIM capabilities</i> • <i>Outsourced roles</i> <p><i>Guidance: The information requested in this section is detailed further in the Project Implementation Plan described in PAS 1192-2</i></p>
<i>Evidence of BIM Execution Planning</i>	<i>Responses will include examples of BIM execution planning</i>	<p><i>Bidders should include the following detail:</i></p> <ul style="list-style-type: none"> • <i>BIM Execution Plans</i> • <i>Lessons learnt</i> <p><i>Guidance: The content of the BIM Execution Plan at tender and start on site stages are described in PAS 1192-2</i></p>
<i>Confirmation of BIM Toolset</i>	<i>Responses will describe the processes and procedures that make up the bidder's BIM and information management toolkit</i>	<p><i>Bidders should include the detail on procedures aligned with core project stages as follows:</i></p> <ul style="list-style-type: none"> • <i>BS 1192:2007+A2:2016</i> • <i>PAS 1192-2 (2013)</i> • <i>COBie UK 2012</i> • <i>Other bespoke processes</i>
<i>Details of BIM Workload and Resourcing</i>	<i>Responses will describe the resources (and what levels) that are available to the project</i>	<p><i>Bidders should include the following detail:</i></p> <ul style="list-style-type: none"> • <i>Resource matrix with level, number, utilisation</i> • <i>Outsourcing details or services etc.</i> <p><i>Guidance: The content of the assessment is described as the supplier BIM assessment form described in PAS 1192-2</i></p>

<i>Principal Supply Chain</i>	<i>Responses will describe the supply chain's ability to link into the process and how will this be assessed</i>	<i>Bidders should include the following detail:</i> <ul style="list-style-type: none"> • <i>Key supply chain partners</i> • <i>Expected outputs</i> • <i>Assessment process</i>
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Example 2 (Prescriptive)

The RIAI Supply Chain Capability Summary (SCCS) form should be included in the tender along with the Employers Information Requirements.

Bidders should provide a Supply Chain Capability Summary (SCCS) based on either the descriptive requirements or the RIAI Supply Chain Capability Summary (SCCS) form.

C2: Changes to associated tender documentation

Required by PAS 1192-2 Clause 5.3 c) 2).

The purpose of this section is to identify insertions related to BIM Level 2 into the tender documents.

A PQQ may be used for an initial expression of interest. PAS 91:2013 may be used.

A Project Implementation Plan (PIP) in accordance with section 6.3 of PAS 1192-2:2013 should be included with the tender.

All bidders should include a Pre-contract BIM Execution Plan in response to an EIR. The EIR should be prescriptive on the format of the Pre-contract BEP template used e.g. RIAI Pre-contract BIM Execution Plan template or template provided or Pre-Contract Building Information Modelling (BIM) Execution Plan (BEP) version 2.0 April 2013.

Examples (add to, omit or change relevant examples. Some examples relate to construction phase only):

The following changes and documents are included in the tender documentation:

- *Where the bidder or members of the supply chain do not currently have BIM capabilities they should include a statement of how they intend to develop these capabilities, or meet these requirements, as part of delivering on the BIM execution plan. All costs associated with developing the BIM capabilities to deliver on the employer's information requirements should be included in the contract and supply chains tender.*
- *Bidders should be aware, and make all their supply chain aware, that this project will be carried out using a Level 2 BIM (Building Information Modelling) process, prior to submitting their tender.*
- *In accordance with Section 6.2 of PAS 1192-2:2013, bidders are required to submit a pre-contract BIM execution Plan (BEP), in the format of the RIAI Pre-contract BIM Execution Plan template, to demonstrate how they intend to deliver on the Employers Information Requirements (EIR). The pre-contract BEP shall be submitted by the bidder to the employer on behalf of the whole supply chain.*
- *In accordance with sections 6.3, 6.4, 6.5, 6.6 and 6.7 of PAS 1192-2:2013, the bidder and their supply chain will be required to complete a Project Implementation Plan (PIP) in the format of*

the template identified in section C1 of this document, to indicate that they have the personnel, IT resources and BIM expertise to deliver the on the BIM execution plan.

- *The BIM Execution Plan should identify person(s) for each role identified in section B6 Roles, Responsibilities and Authorities.*
- *The bidder will be required to take on the role of information manager during construction stage or appoint someone to take on the role on their behalf (Scope of service of Information manager included in tender documents). The information manager construction stage will be required to execute and manage the BIM Execution Plan (BEP) and operate and maintain the Common Data Environment (CDE) established at design stage.*
- *The bidder will be required to incorporate a BIM Protocol, namely the CIC BIM Protocol which may include agreed amendments to the protocol. The BIM Protocol will include a Responsibility Matrix identifying model uses, levels of definition (LOD) and responsibility for modelling for each Project Stage / Information Exchange. The Project BIM Protocol will also identify the Project Information Manager for the duration of the project contract. All parties that are responsible for the production of Building Information Models on behalf of the Employer should have the Protocol incorporated into their contract / appointment. The same version of Protocol and Appendices should be incorporated into each contract. The following appendices will be included with the Protocol:*
 - *Appendix 1- Responsibility Matrix. This must include references to all Building Information Models that are required by the Employer at each stage.*
 - *Appendix 2- Information requirements. This details the information management standards that will be adopted on a project.*
 - *Appendix 3 - Security Requirements. Where security minded provisions apply. Refer to PAS 1192-5:2015.*
- *The bidder will be required to take on the role of Information Manager as the stakeholder to develop and maintain the BIM Execution Plan and to act as the central point of contact for all BIM related issues during construction stage or appoint someone to take on the role on their behalf. The role of the Information Manager is described in the PAS 1192-2:2013- Specification for Information Management for Capital/Delivery Phase Construction Projects using Building Information Modelling and also in the Outline Scope of services for the Role of Information Manager published by the Construction Industry Council (CIC).*
- *The bidder will need to make allowance in their programme of sub-contractor appointments for development of the model regarding sub-contracted elements of work, for coordination and approval before works commence on site.*
- *In order to verify the locations of services, a record survey should be undertaken by the main bidder before services are closed up. The As Built model should be verified against the surveys to agreed tolerances and a report prepared for submission to the employer.*
- *The bidder will be required to provide meeting facilities with IT and projection facilities to allow access to the construction model, and wireless internet connection on site to allow controlled mobile device accessibility to BIM information to all areas of the work.*
- *If any alternative proposals are being suggested as part of the tender, the bidder and supply chain should ideally develop those aspects of the model from tender issue to tender return,*

incorporating any proposed construction alternatives, or additional information added to existing model elements if applicable.

No response is required in the Pre-contract BIM Execution Plan. The above is a summary of the changes to the procurement process for the project based on PAS 1192-2:2013.

C3: BIM tender assessment details

Required by PAS 1192-2 Clause 5.3 c) 3).

The purpose of this section is provide bidders with information on scoring and weighting of information provided in relation to BIM as part of the tender.

BIM tender assessment details should be including as part of overall tender assessment details in order to indicate both the weighting and important of information required for BIM and the importance and weighting of BIM within the overall bid submission.

Example:

As part of the tender submission each bidder is required to provide a pre-contract BIM Execution Plan in response to the requirements of this Employers Information Requirements (EIR) document which will help the Employer allow each bidders proposed approach, capability and capacity to be evaluated in relation to BIM. The BIM Execution Plan should also include a completed Supply Chain Capability Summary proving BIM delivery capability.

The Pre-contract BIM Execution Plan shall be scored in accordance with the following scoring criteria and weighted at 10% of the overall tender evaluation scoring.

Scoring

Assessment	Descriptor / Indicator	Score
<i>Nil Response / Very Poor</i>	<i>Nil or very poor response that failed to address the question</i>	<i>0</i>
<i>Poor</i>	<i>A poor response with limited evidence of relevant experience and capability</i>	<i>1</i>
<i>Satisfactory</i>	<i>Response provided satisfactory evidence of relevant experience and capability</i>	<i>2</i>
<i>Good</i>	<i>Response provided good evidence of relevant experience and capability with appropriate supporting detail</i>	<i>3</i>
<i>Very Good</i>	<i>Response provided very good evidence of relevant experience and capability well supported with appropriate detail</i>	<i>4</i>
<i>Excellent</i>	<i>Response provided excellent evidence of relevant experience and capability well supported with comprehensive detail</i>	<i>5</i>