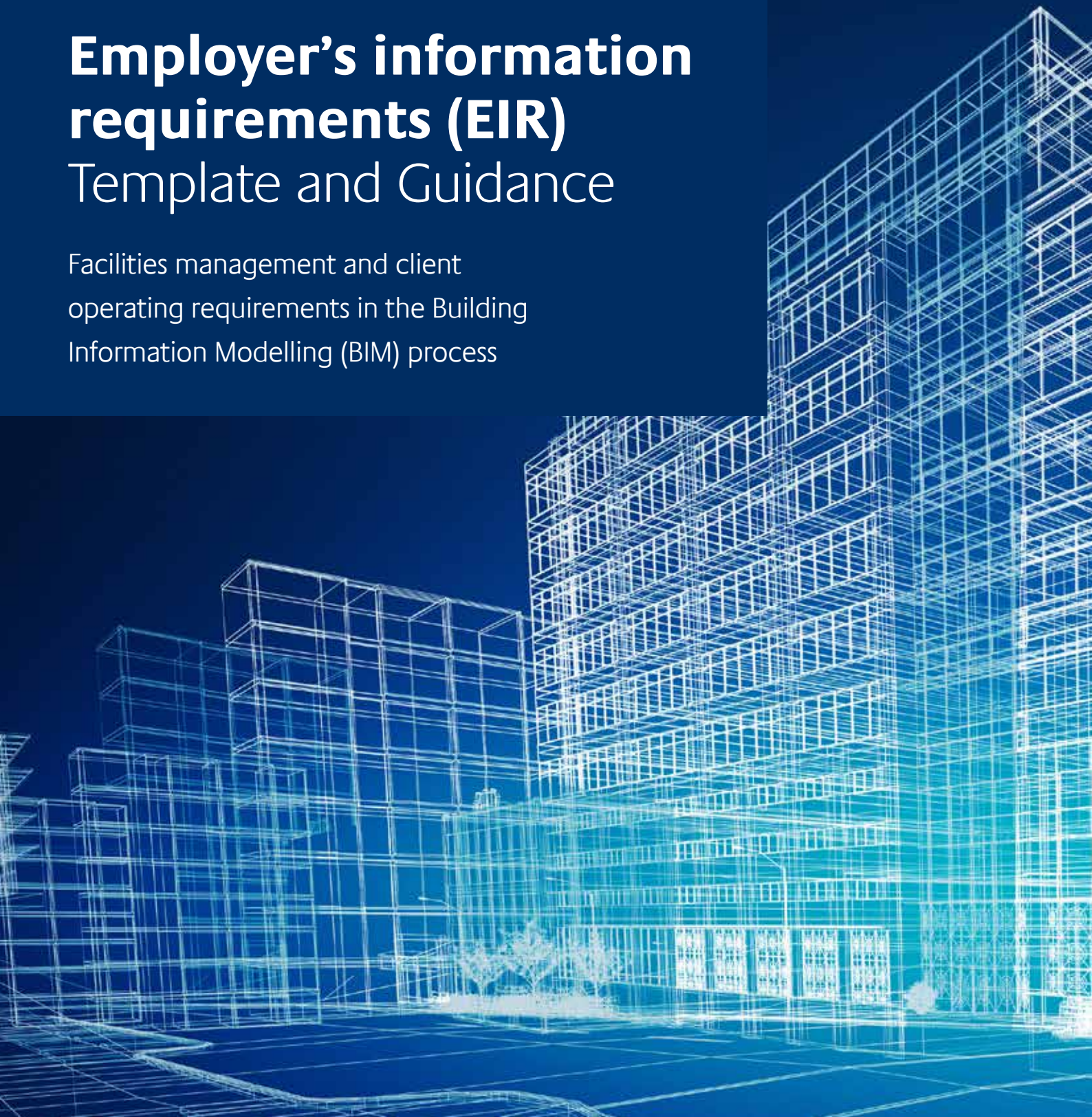


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Employer's information requirements (EIR) Template and Guidance

Facilities management and client
operating requirements in the Building
Information Modelling (BIM) process



ISBN: 978-1-909761-27-8

Edition: First

Date: March 2017

BIFM, Charringtons House, 1st Floor South, The Causeway,
Bishop's Stortford, Hertfordshire CM23 2ER

T: +44 (0) 1279 712 620

E: membership@bifm.org.uk

www.bifm.org.uk

Authors:

Simon Ashworth, Academic Researcher (PhD Student),
Zurich University of Applied Sciences (ZHAW) Switzerland



Dr Matthew Tucker,
Liverpool John Moores University



Peer Reviewers:

Graham Kelly, Associate, BIM Academy

The members of BIFM Operational Readiness Steering Group



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Employer's information requirements (EIR)

Based on Facility management and client operating requirements in the Building Information Modelling (BIM) process

Enter your own details and that of the project.

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Document control

The following table shows the issues and version changes for this document.

Version No	Date of first issue	Purpose of issue	Amendment detail
First	February 2017	First issue	N/A

General guidance and notes (this section to be removed)

This section and associated notes used throughout the document (which are shown in red text) should be deleted from the final version of the employer's information requirements (EIR) prior to issue.

This section and the notes are only provided for general guidance on setting up the EIR. *Throughout the document, the text in blue indicates reference to a specific document.*

This documents aim is to assist FM professionals and clients by providing an *EIR* template which can be edited and amended by the client or facility manager to meet individual requirements for a project that is using the BIM process. It helps define and specify the client's essential information requirements for a BIM project and can be used as part of the project tender process. Consultants and contractors should respond to the *EIR* with their *BIM execution plan (BEP)*. In addition, this document provides a supplementary *supplier BIM assessment form* which can be used

to help the client assess suppliers' BIM competence.

It is not intended to provide general guidance on the BIM process. Such guidance can be found in other BIFM guidance documents on the BIFM website (www.bifm.org.uk/knowledge). Further detailed guidance can also be found in relevant BIM standards and guidance documents (see appendix B).

General notes

1. The document should be read in conjunction with other BIFM documents addressing the BIM process (eg, the *EIR overview*, *The Role of FM in BIM Projects* and *Operational readiness guide*).
2. It provides useful information and guidance to FM professionals with respect to preparing *employer information requirements* from a FM and client perspective for a project where the BIM process is being implemented.

3. The project team should establish at the start of the project if the client requires the transfer of information into existing systems for computer-aided facilities management (CAFM), integrated workplace management systems (IWMS), or any other enterprise management systems. It should be established if such systems are capable of accepting data in the COBie schema format. If they are not, then it needs to be established how information and data will be properly transferred during the BIM process.
4. Where a CAFM/IWMS will not be in place, consideration should be given to amending appropriate sections of the document to agree where the data will be used and held.
5. Most of the BIM standards and guidance documents referred to in appendix B can be downloaded for free from <http://bim-level2.org/en/standards>, BSi or other online websites.
6. BIM models can be large. Therefore, thought should be given for each project as to how models might be broken down using an agreed sub-dividing system. (This might be done by zone, floor, discipline etc.) The *EIR* section on model size should reflect the maximum proposed model size.
7. Levels of accuracy/tolerance in BIM models need to be assessed at the outset. Practice has shown that too-tight levels can lead to issues where BIM software shows clashes which in reality are not occurring. This should be discussed and agreed with parties prior to the production of BIM models within the project.
8. The plain language questions (PLQ) referred to in appendix G can be used as guidance when thinking about the BIM process and putting together the EIR.
9. The table on the following page summarises some of the key FM activities which FM should initiate for the project in line with the RIBA Plan of Work.

RIBA stage and description	Purpose
Stage 0 Strategic definition	<p>FM involvement at high level to check existing asset and BIM strategy (articulate and describe the <i>organisation information requirements (OIR) and asset information requirements (AIR)</i>). <i>BS 8536</i> should be read and consideration given to the information needed at handover and if the principles of government soft landings (GSL) are to be followed. Consideration should be given to what asset data will be needed (eg, asset lifespan, costs, recycling, replacement etc.) BIM standards should be referred to and questions asked to allow the start of drafting the <i>EIR</i> template. This phase is absolutely critical as it sets the tone for the project in terms of ensuring engagement between all the stakeholders to deliver real value from the BIM process.</p>
Stage 1 Preparation and brief	<p>FM/client to structure information for project tender documentation. FM to assist with the <i>project brief</i> which should be completed in line with guidance in <i>RIBA PoW 2013</i>. Another useful document at stages (0, 1 and 2) is RIBA's <i>Client conversations: insights into successful project outcomes</i>. This describes development from the initial to the final status.</p> <p>The <i>project brief</i> is critically important and should not only be derived from the client's aspirations but as a result of questions asked of them. Ideally, the client should articulate what they need from the building in terms of performance, sustainability, environment (working), ease of use, replacement/demolition strategy, reporting needs etc. The answers to these project specific questions will then form part of the tender questions as opposed to using a generic question set.</p> <p>FM should identify known CAFM/IWMS/other enterprise management systems to be used at stage 7. Check if existing systems are capable of accepting data using COBie. Where no such tool(s) exist or a new one is to be provided, the facility manager should clarify the system as early as possible, and establish how this is to be funded and what training will be provided to necessary FM staff.</p> <p>Thought should be given to using a common data environment (CDE) for the project and how this will be managed during the project and after handover.</p> <p>FM should consider the requirements of the CAFM/IWMS and other systems to communicate with access control, BMS, CCTV, alarms and control systems and other relevant systems.</p> <p>FM should assist capex approval of the <i>outline business case</i>.</p>
Stage 2 Concept design	<p>FM to work with design team to give FM input on design concepts through the CDE. This is mainly a reviewing role – eg, asking questions such as “What if?”, “How will we?”, “What does the client/FM need/expect?” etc.</p>
Stage 3 Developed design	<p>FM to work with design team to give FM input on developed design through the CDE. FM should also develop the process on behalf of the client for working with the contractor (and CAFM/IWMS suppliers) to plan the data transfer into nominated system/s.</p>

<p>Stage 4 Technical design</p>	<p>FM to check the design’s fitness for purpose and cost efficiency from a Whole Life Cost (WLC) perspective. This may include fabrication, manufacturing details, verification of systems and elements including commissioning, operation and maintenance information etc.</p>
<p>Stage 5 Construction</p>	<p>FM to check construction progress and compliance of updated production information and to ensure contractor provides correct information for commissioning and handover procedures. The process of implementing the CAFM/IWMS should be considered as the building is being constructed and assets are put in place as this is when the history of the building starts. As such, data can be captured and maintained from this point forward. Pre-completion commissioning and the testing programme should be considered. Note information and data will be required well ahead of the planned completion and handover.</p> <p>BIM model clash recording and resolution as well as snagging and incident reporting should be included in the records of the building. As operations & maintenance (O&M) requirements are compiled, confirmed and validated they should be incorporated into the CAFM rather than being a separate, disjointed entity.</p> <p>At this stage, the level of definition (LOD) is sufficiently detailed and appropriately formatted to be pushed into the relevant data management systems. This stage should be equivalent to a sign off of data that will be used to manage the remainder of the lifecycle.</p>
<p>Stage 6 Handover and closeout</p>	<p>From a FM perspective, this stage should be seen as the “in inspection” of the “as-built information”- ie, accepting the building/facility/asset into service. There should not be any questions at this stage, but simply confirmation and verification.</p> <p>FM should ensure the handover process has already validated and transferred relevant data into CAFM/IWMS or other enterprise management system as defined in the <i>EIR</i>. The handover process should allow for CAFM/IWMS integration with other systems as required. All <i>O&Ms</i> should be completed and signed off with the client and FM team within the CDE - or appropriate sign of system. FM should also test that they can access all BIM models passed to them.</p> <p>Handover should be considered as a handover of a completed project, with the solutions implemented, tested, validated by the client and, after staff training, signed off as completed. As an example of the detail to be considered: when door schedules are finalised, and at a time required by the programme (the planning of such detail should be started early in the process), 2D DWG drawings with all doors (requiring client supplied locks) numbered and scheduled shall be supplied for lock ordering purposes.</p>
<p>Stage 7 In use</p>	<p>FM should test CAFM/IWMS systems to ensure all data can be used to optimise the assets. There may be updates to the practical completion data drop as required during the defects liability period and/or GSL (if applicable). This period is where the FM should focus on refining the CAFM/IWMS system and data quality.</p> <p>BIM as a process must include FM all the way through to ensure the operational teams receive the high quality and accurate data they need to succeed.</p>

1 Introduction - Purpose and scope

1.1 The purpose of the EIR

This document provides the *employer's information requirements (EIR)* for the project using the Building Information Modelling (BIM) process. In line with the definition in *PAS 1192-2:2013 (pg4)* the *EIR* is a “pre-tender document setting out the information to be delivered, and the standards and processes to be adopted by the supplier as part of the project delivery process”. It outlines the client’s strategic approach. It also specifies the management, technical, commercial and project information and deliverables required for the project in a way that is specific, measurable, achievable and realistic.

The *EIR* must be adhered to and followed by all parties in the project. The *EIR* will form part of the tender documentation for the specified project and forms the basis for consultants and the contractor to

develop and submit their initial *BIM execution plan (BEP)*. The contractor must detail how it proposes to meet the client requirements, particularly in terms of how it plans to achieve them. The completed *EIR* and subsequent *BEP* are key documents used to assess the contents and quality of the tender response.

The *EIR* should be read together with information detailed separately in the *employer requirements* document: the two are not the same. Nothing in the *EIR* is intended to relieve the contractor or its supply chain of responsibility to comply with the client’s standards including *inter alia* those relating to the client’s handover procedure.

1.2 Use of the terms client, client's representative and contractor

The terms of employer and client throughout this document are interchangeable. Client is commonly used in many contexts, whereas employer tends to be used in specific terms such as *employer's information requirements*.

The term contractor within this document shall be taken to mean the contractor as defined in the contract and CIC *Building information model (BIM) protocol*.

The role and exact titles may differ, depending on the project. There may be a project lead or other such role. The client can amend titles to meet the needs of the specific project.

The client may decide to appoint a client representative (as outlined in *BS 8536: Briefing for design and*

construction, Code of practice for facilities management (Buildings infrastructure)). If this is the case, the term client can be read as client representative. Where a client representative is appointed, this function will act as an intelligent client with respect to client and FM needs. It might be performed by an individual or an organisation, depending on the complexity of the project. For the purpose of this document, the term client refers to the party requesting and paying for the work. The client representative may be a separate role created to help support and report to the client.

2 Client BIM and asset management strategy and objectives

The client's BIM strategy in this *EIR* is based on its existing *asset management strategy* and takes into account both *organisational information requirements (OIR)* and *asset information requirements (AIR)* as described in the BIM process. These form the basis of the *EIR*.

A key strategic objective is to ensure that the client's asset information model (AIM) and enterprise management systems (CAFM, IWMS etc.) can be populated with relevant and high quality information generated during the BIM process. BIM models and other information generated by the project team will help optimise the management, operation and maintenance of the client's buildings, assets and infrastructure.

The terms *OIR*, *AIR*, *EIR** and *AIM* are defined in *PAS Standards 1192-2** and *1192-3* as follows:

OIR: Data and information required to achieve the organisation's objectives.

AIR: Data and information requirements of the organisation in relation to the asset(s) it is responsible for.

EIR: Pre-tender document setting out the information to be delivered, and the standards and processes to be adopted by the supplier as part of the project delivery process.

AIM: Data and information that relates to assets to a level required to support an organisation's asset management system.

The strategy includes the following objectives:

- To deliver the project in line with the principles of a BIM Level 2 compliant design and construction project.
- To set up an integrated and collaborative workflow to ensure a smooth handover to the facility management team for the in-use phase of the asset.
- To ensure a whole lifecycle approach to optimise the cost and asset management of the scheme utilising BIM information.
- To improve co-operation between team members and improved design co-ordination.
- To reduce build cost, improve cost certainty and reduce waste
- To ensure a more rapid design development appraisal including building, floor and room area calculations and visualisations of spaces.
- To optimise the construction programme with sequenced completion and occupation, including clear phasing that suits an agreed financial profile.
- To ensure that the handover of an AIM that can be maintained throughout the life of the building.
- To plan and implement the smooth transfer of relevant and accurate project data into the client's CAFM/ IWMS system and other enterprise management tools as necessary.
- To promote BIM for improving the safe management and implementation of the project and for the provision of safety information during in-use.
- To deliver the project in line with the soft landings approach.

The client should amend/edit this list to reflect its asset management and BIM strategic needs.

3 Project details

3.1 Project information

The following table outlines key information about this project.

The client should complete the details in the table.

Project name:

Project address:

Project number:

Contract type:

Proposed design start date:

To best known date

Proposed construction start:

To best known date

Proposed completion and handover date:

To best known date

3.2. Project contact list

The following table outlines key personnel who will be involved in the project team for this project using the BIM process. They should all be detailed in the contractor's *BEP*. All queries about the *EIR* should be directed to the client-nominated contact for clarification.

The contractor should complete details for other key representatives in the table.

Project Role – **Client**

Company:

Client to complete

Contact:

Name:

Email:

Tel No:

Project Role – **Architect**

Company:

Contact:

Name:

Email:

Tel No:

Project Role – **Contractor**

Company:

Contact:

Name:

Email:

Tel No:

Project Role – **Infrastructure**

Company:

Contact:

Name:

Email:

Tel No:

Project Role – **Structural Engineer**

Company:

Contact:

Name:

Email:

Tel No:

Project Role – **Other**

Company:

Contact:

Name:

Email:

Tel No:

Project Role – **Cost Consultant**

Company:

Contact:

Name:

Email:

Tel No:

4 Management requirements

4.1. Applicable standards and guidelines

In order to establish a consistent approach to collaboration, all parties in the project, and including the contractor's supply chain, must adopt and carry out their work in line with the recognised industry guidelines and standards as listed in appendix B. These standards are similar to those that would be incorporated into appendix 2 of the CIC BIM Protocol.

4.2. CIC building information model (BIM) protocol

The *building information model (BIM) protocol* produced by the United Kingdom's (UK) Construction Industry Council (CIC) will be used by the client. (The client should amend if another arrangement is in place but the CIC protocol is highly recommended.) It helps to identify the BIMs that are required to be produced by members of the project team and puts into place specific

obligations, liabilities and associated limitations on the use of the models. This ensures that everyone follows the same standards and ways of working and has the clear right to do so. The protocol will be incorporated into all direct contracts between the employer and the project team members.

The CIC protocol has two appendices. The contents of this *EIR* should incorporate the needs listed in appendix 1 and 2. The client should check it feels this is the case, and - at its own discretion - it may deem them unnecessary. If the appendices are omitted, the client must refer specifically to this *EIR* to ensure it is covered. For information, the appendices are:

1) Model production and delivery table: this must include references to all building information models that are required by the client at each stage of the project.

2) Information requirements: these should detail the information management standards that will be adopted on the project.

A copy of the CIC BIM Protocol document can be downloaded using the following link: <http://www.bimtaskgroup.org/wp-content/uploads/2013/02/The-BIM-Protocol.pdf>

4.3. Project roles and responsibilities

This section stipulates the allocation of project roles for the management of the model and project information. These roles and responsibilities should be defined within the contractor's pre-contract and post-contract *BEP*.

This is an indicative table. The client and project team should amend this table to meet the specific project requirements. The contractor should supply details of key contacts as required in its *BEP*.

Role	Company/ Organisation	Responsibilities
Client	Client name	<ul style="list-style-type: none">▪ Appoint key project team members▪ Complete and issue the EIR▪ Assess BIM tender returns▪ Assess contractor's BIM competence
Facility Manager		<ul style="list-style-type: none">▪ Provide guidance as to the OIR and AIR and use PLQ to establish the clients information needs▪ Support the client in the production of the EIR▪ Attend meetings and work with the design team supply chain and information manager(s) to ensure planned assets are fit for purpose, meet the clients needs and that the information provided will allow optimisation of assets in operation.

		<ul style="list-style-type: none"> Review tender documents from an FM and operational perspective regarding operational viability and WLC issues
Architect	TBC	<ul style="list-style-type: none"> Set up the site set model with the agreed co-ordinates system (survey and project base points) to be used by all parties to the project Develop the architectural model Overall BIM process co-ordination Control model quality Ensure all datasets are provided to the required LOD for use in client CAFM/IWMS or other enterprise management systems Attend BIM clash-detection meetings to resolve any clash issues
Information manager	TBC	<ul style="list-style-type: none"> Specific information on this role should be outlined in line with recommendations in the <i>CIC BIM Protocol</i> Provide advice and support to project team on BIM standards, best practice, guidance and training needs
Cost consultant	TBC	<ul style="list-style-type: none"> Provide information and data (including changes) to the project team on budgets and costs with respect to the design and associated implications of change
Contractor	TBC	<ul style="list-style-type: none"> Set up the pre-contract <i>BEP</i> in response to the client EIR Set up the project <i>model production and delivery table (MPDT)</i> and <i>master information delivery plan (MIDP)</i> to show how the models will be developed across the <i>RIBA Plan of Work (PoW)</i> stages and work packages with associated LOD and specific dates of delivery Develop the post contract <i>BEP</i> Provide all datasets to the required LOD for use in client CAFM/IWMS or other enterprise management systems Planning, managing and co-ordinating the creation of models from the supply chain

		<ul style="list-style-type: none"> ▪ Providing 4D construction simulation to show how the project will develop ▪ Managing and co-ordinating the construction process using BIM to include assisting health and safety and CDM
Structural/civil engineer/s	TBC	<ul style="list-style-type: none"> ▪ Develop structural model ▪ Attend BIM clash-detection meetings to resolve any clash issues ▪ Provide all datasets to the required LOD for use in client CAFM/IWMS or other enterprise management systems
MEP engineer/s	TBC	<ul style="list-style-type: none"> ▪ Develop MEP model/s ▪ Attend BIM clash-detection meetings to resolve any clash issues ▪ Provide all datasets to the required LOD for use in client CAFM/IWMS or other enterprise management systems
Landscape architects	TBC	<ul style="list-style-type: none"> ▪ Develop landscape model ▪ Attend BIM clash-detection meetings to resolve any clash issues ▪ Provide all datasets to the required LOD for use in client CAFM/IWMS or other enterprise management systems
Pre-fabrication sub-contractor/s	TBC	<ul style="list-style-type: none"> ▪ Provide necessary information for model co-ordination ▪ Attend BIM clash-detection meetings to resolve any clash issues ▪ Provide all datasets to the required LOD for use in client CAFM/IWMS or other enterprise management systems

4.4. Existing client CAFM/IWMS or enterprise management systems

A key objective of the client is to achieve the smooth transfer of relevant asset information developed during the design and construction phases of the project into nominated management systems. This might include a computer-aided facility management (CAFM) system, an integrated workplace management system (IWMS) or other enterprise management systems. As part of the project the client will confirm such nominated systems are capable of importing data using the COBie schema format for transfer to their nominated systems. Some asset data may be provided as attributes of objects in the model, or other data may be provided outside of the models in other formats (eg, databases, PDFs etc).

The client's nominated CAFM/IWMS tool (or other system) is: **Client to complete the name of the CAFM/IWMS tool (or other enterprise management system) here or amend this section if the tool is not known or in place at the start of the project.**

The contractor will be responsible for co-ordinating the provision of asset information from its supply chain and ensuring the information is provided in the correct and agreed formats in line with the *BS 1192-4* COBie schema. The contractor may be required (and should allow time in the programme accordingly) to meet and co-ordinate with the client team to help ensure the transfer process works.

The process should take into account that the transfer should be planned well ahead of the actual contract handover date. This will ensure: that the COBie output is ready and correctly structured; that the process of populating the client's CAFM/

IWMS happens prior to the asset going live in operation; and that checking and validation is carried out. The exact time lines should be agreed for the individual project.

4.5. Model creation and ongoing management

The contractor shall be responsible for enabling, creating and/or delivering project 3D model/s that increase in detail and approval from design to as-built status. The contractor must agree and liaise with the client to agree the process for validating the asset data at the various data drops throughout the BIM process. The client is responsible for the final verification of the data. This is a key requirement for the capture of relevant detail to enable the mapping of model data to the client's CAFM, IWMS or other enterprise management systems or platforms.

4.5.1. Planning the work and data segregation

The contractor should manage the planning of modelling work and data segregation in line with industry standards, guidelines and best practice as laid out in *BS 1192: 2007*, *PAS 1192-2:2103* and *PAS1192-3:2014* and other documents in appendix B.

The contractor's *BEP*, *MPDT* and *MIDP* should align with the needs of the client, focusing on the following project-specific processes as a minimum:

- Model management
- Collaboration process
- Model size
- Model viewing
- Volumes, zones and areas
- Naming conventions
- Information publishing processes
- Security of model information
- Training

4.5.2. Model management plan

The project team should develop a *model management plan* which should include a process for ensuring model files are of a manageable size. The plan should detail how the models and data will be broken down into manageable files. The expectation is that this will be co-ordinated by the nominated information manager.

4.5.3. Collaboration process

All team members need to collaborate and share project information. The project team is required to implement and manage a project common data environment (CDE) as described in *PAS 1192:2:2013*. This must facilitate collaboration and information-sharing between members of the project team. It is essential that common BIM standards covering detailed processes within each organisation are established and agreed in advance. This should take the form of the established industry standard *AEC (UK) BIM Technology Protocol v2.1 June*

2015. Common modelling standards must be adopted by the contractor and its supply chain. Key aspects to be addressed in the contractor's *BEP* are:

- Modelling methodologies (eg, three placeholders)
- Naming conventions
- Levels of development (LOD)
- Incorporation of metadata
- Use of material properties
- Use of BIM object libraries to the NBS BIM Object Standard
- Communication and meetings

(Client to edit as appropriate for the specific project.)

4.5.4. Model size

The individual models (native and industry foundation classes (IFC) should be no larger in size than 300mb. (Client to edit as appropriate for the specific project.) This will ensure all members of the project team, especially those with hardware limitations, are able to access the information efficiently. It is the

responsibility of the project lead to identify this and proactively manage this requirement, using appropriate volume strategies.

4.5.5. Model viewing

The contractor should confirm how models will be shared with and viewed by the client and other project team members. Where this requires the provision of a specific viewing platform, the contractor should allow for any costs associated with providing this to project team members and training them in its use. The client is happy to use a recommended free viewing platform. (Client to edit as appropriate for the specific project.)

4.5.6. Volumes, zones and areas

The contractor will provide proposals for the definitions of zones and the management of adjacencies within the model. In addition, the contractor will provide the definition of the project volume structure. It is

envisaged that the volume strategy will be developed to accommodate the maximum agreed model file size.

4.5.7. Naming conventions

The contractor is required to provide all information electronically, with naming conventions aligned to [BS 1192:2007](#). All drawings should clearly indicate in the title block whether they have been extracted from the model files. If they have, drawings should clearly indicate, in the title block, the model files (by file name/no) they have been extracted from.

In the case of federated models or visualisations, they should clearly confirm the model/drawing files (by file name/no) they have been federated from.

4.5.8. Model co-ordination, quality control and clash-detection process

As part of the *model management plan* the members of the project team should establish an agreed protocol for co-ordinating and sharing models, including how they will be controlled for quality. The protocol should take account of sharing models internally within the project team and, where necessary, sharing with other parties outside the project team, as well as how this is controlled to ensure security of information.

The contractor's *BEP* should also clearly communicate how the integrity of the model and other data sources will be maintained including details of:

- Model and data compliance, including references to standards and to compliance
- Software used by the contractor and their supply chain

- Quality assurance/control procedures
- Software used to support quality control procedures
- How the contractor is monitoring the state of as-built construction so that this can be reflected in the model/s

It is expected that all project team members will use clash-detection software as appropriate to determine field conflicts by comparing the 3D models. The contractor should outline its preferred method of co-ordination and clash-detection within the *BEP*. In all cases, comments, issues and viewpoints are to be exported and exchanged through defined file formats. The contractor must also provide its protocols and clash-detection guidelines to its supply chain before the first co-ordination meeting.

The whole project team, including the contractor and its supply chain, must provide proposals for how

models and information will be co-ordinated, managed and reported throughout the project lifecycle.

The proposals should include details of:

- The clash-detection process including -
- Software to be used
- Process overview
- Responsibilities of all parties
- Outputs (including file formats)
- Frequency of co-ordination workshops
- Expected attendees
- Technical query workflow
- Tolerance strategy
- Clash-resolution process

The project team is to demonstrate visually its use of the latest federated multi-disciplinary 3D model for co-ordination purposes. This should be done in formal progress meetings where the team will review the development and model progress. The contractor will be responsible

for setting up and leading these meetings. The latest federated model must be made available at all progress review meetings in accordance with the agreed process in order to demonstrate the proposed design and its state of progress and also to address co-ordination issues.

4.5.9. Use of BIM to help health and safety

The client expects an innovative approach for use of the BIM process and associated model/s to help with issues around health and safety (client to add CDM as appropriate) aligned with the work stages. This should include but not be limited to access and maintenance strategy, equipment routes, site orientation/welfare, temporary works, designer risk assessment and risk scheduling. If the model is not being used for this purpose, the contractor should explain why. The data and records capture processes also need to be documented.

4.5.10. Delivery of asset information to the client

The contractor will provide the client with asset information in the required exchange format/s to meet the client's strategic needs.

The contractor will ensure that COBie outputs (property sets and asset information) can be provided as requested by the client at agreed data drop stages. The information should be provided in the COBie format identified in *BS 1192-4:2014 Collaborative production of information. Fulfilling employer's information exchange requirements using COBie, code of practice*. This information should be outlined within the contractor's *master information delivery plan (MIDP)*. The client's needs in terms of the model property set and asset information are laid out in the *information delivery schedule for maintainable assets* in appendix C.

The contractor should check the client's process for formally giving feedback on the data provided at each data drop and how it will be validated. The contractor should outline in its *BEP* how it will work with the client to ensure the validation process can be effectively proved and operated. The process should ensure that there is a recorded feedback process to rectify any shortfalls prior to moving forward at final information handover.

The client requires the contractor to complete the following COBie schema sheets:

- Instruction sheet
- Contact sheet
- Facility sheet
- Floor sheet
- Space sheet
- Zone sheet
- Type sheet
- Component sheet
- System sheet
- Other sheets

(Client to amend to specific project.)

The client may elect to establish its own specific data fields. If these are required to align with capturing data specific to the management of its assets, they should be considered in line with the standard COBie data fields. Care should be taken when applying any changes to ensure that COBie exports will maintain the integrity and traceability (asset tagging/numbering system or convention) of the data for all stages of the project.

4.5.11. Information publishing process

The contractor should develop an internal and external information publishing process which is aligned to the principles of *BS 1192:2007*. It should define the stages (in line with *RIBA Plan of Work: 2013*) and dates in the project programme when BIM information will be exchanged, in what format and for what purpose.

4.5.12. Security of model information

The whole project team including the contractor and its supply chain must take account of the client's needs for security of sensitive data. The project team should follow the guidance as laid out in *PAS 1192-5:2015 Specification for security-minded Building Information Modelling, digital built environments and smart asset management* (See appendix F).

The use of detailed BIM models of buildings (particularly sensitive ones - for example, CCTV/security installation information) carries the potential for misuse if security is not fully considered early in the process. A clear and appropriate process must be agreed to ensure the security of the information contained within the models.

The client should insert here any specific local security guidance, reference documents or rules with

respect to project security that the contractor and its supply chain should follow.

4.5.13. Training

If the contractor and/or its supply chain are unfamiliar with the project's software packages, they are expected to undertake any training they require, at their own cost.

The contractor will also make arrangements to provide the client and its FM team with training in regards to:

- The common data environment (CDE) that the contractor will be using
- How to access and view all models during the project (including provision of BIM viewers as necessary)

The client should add to this list if required.

The contractor should confirm in its *BEP* how such training will be

arranged and delivered. This must include describing how access will be given for reviewing and giving feedback on any design issues.

4.5.14. Model audits by the client

The client will audit the models at regular intervals, as it deems fit, during the design and build process. The dates and content for such audits will be agreed directly with the contractor. The contractor's tender should accommodate any such audits requested by the client.

5 Technical requirements

5.1. Software

The project team needs to define which software platforms will be used for the building information models and also note any other software platforms used by the project team. It is important to recognise that different experts may use different software for their work on BIM projects.

The contractor is required to confirm and identify in the *BEP* which BIM-enabled platforms it will use to carry

out the listed uses in a 3D environment, as shown in the table below. Where the contractor identifies additional uses, it may want to list these and any software it deems appropriate.

The contractor must ensure that for all models, the authoring software used is capable of producing an open source file format (IFC) or, as a minimum, be able to support the production of information from the 3D model elements, in the required *BS 1192-4* standard.

Purpose for use	Platform	Version
Facilities management	TBC	TBC
Design authoring – building	TBC	TBC
Design authoring – site* (landscape/infrastructure/utilities)	TBC	TBC
3D Co-ordination	TBC	TBC
Design review	TBC	TBC
Model validation	TBC	TBC
Environmental performance	TBC	TBC
Construction simulation	TBC	TBC

*As with the architectural, structural and building services, the external landscape and/or infrastructure of the project should also be designed and delivered in 3D, including all underground utilities/services.

5.2. IT and system performance constraints

All project team members should be aware of the following constraints in the client's IT systems or specific IT requirements which may need additional resources or non-standard solutions:

Client to insert detail here as required.

The contractor should define its collective strategy for the IT systems' performance and propose this within the *BEP*. It should consider ways of accommodating the client's IT limitations as noted above, especially when it comes to reviewing, sharing and issuing BIM information to the client.

5.3. Data exchange formats

For all information exchanges, the information will be required in the following formats derived from the same dataset:

Format	Version
Native format	Version will be defined in the response
IFC format	Latest version (currently IFC 2x3)
COBie	Latest version (currently BS 1192-4)
PDF	Latest version required

The IFC format is an industry-wide open and neutral data format that is fast becoming the de facto standard for rich data exchange (NBS). Further information can be found on the [buildingSMART website](#).

The "native format" refers to the original software used for production of models.

5.4. Common co-ordinates system

This section stipulates the project common co-ordination system to be used for all BIM data to ensure consistent adoption across all models. Every party must use the specified system to ensure the delivery of a BIM-enabled project.

Depending on the project stage, the co-ordination system might be specified by different parties. The security of the co-ordinates might be considered sensitive and should be treated accordingly. The common

co-ordinates system to be used on the project is:

The chosen common co-ordinates system should be inserted here.

The co-ordinate base point to be used is shown in the table below:

The table below is an example using the ordnance datum Newlyn (ODN). This should be amended to the needs of the specific project.

Base point	Co-ordinate axis	Co-ordinate value
[A]	Easting (m)	
	Northing (m)	
	Elevation/datum (m)	

All parties will be required to establish a known location point [A] and define this correctly in their site set up or other models which will be distributed and shared to the project team to aid with co-ordination. It is advised that the contractor and its supply chain should check the location of all models continuously throughout the design process, ensuring there are no clashes or conflicting project co-ordinates. The

project should also consider and provide for the future integration of GIS-based systems that the client may require in the future.

5.5. Levels of definition

All parties should use the level of detail and level of information definitions as outlined in the NBS BIM toolkit. Details can be found on the NBS website at www.toolkit.thenbs.com and in appendix E.

Different LODs can be selected for each and every element if required as not all assets will be modelled to the same level of detail. The contractor should outline in its *BEP*, *master information delivery plan (MIDP)* and *model production and delivery table (MPDT)* the specific LOD for information at each RIBA stage of the project.

The client requires the level of detail of the models to be up to **LOD 4 by stage 6** (client to amend this to meet

the project specific needs). However, if more detailed geometry is required by the contractor to support the construction, this will be accepted.

5.6. Specified model and information formats

The client BIM and asset management strategy requires information to be delivered to the file formats as listed below:

Model(s) / deliverable	Required format and notes
Discipline-specific authored models	<ul style="list-style-type: none"> Co-ordinated 3D domain model/s of the buildings, assets or infrastructure in editable formats The models should have appropriate exchange file formats and be capable of being aggregated and brought together in order to allow the project teams to view them They should allow for viewing, clash- detection and issue management with recorded comments IFC and native formats
3D federated model	<ul style="list-style-type: none"> The federated model should allow the project teams to view and carry out clash-detection and issue management with recorded comments IFC and native formats
2D drawings or documents	<ul style="list-style-type: none"> Derived from the 3D model/s and fabrication and manufacturer drawings PDF, DWG and native formats Appropriate exchange formats

Dependant on the project complexity, 3D models may not be required. The client should specify its project needs.

Information can be derived either from the 3D model object attributes in the relevant format (eg, COBie 2012/BS 1192-4) or provided outside the model (eg, O&M manuals or other databases). In order for contractors to price clearly at tender the client should stipulate if any data is to be provided outside the model/s. Where this is the case, it should be made clear how this information will be captured to meet the client's needs; and, if required, how the data will be transferred to client-nominated management systems.

5.7. Site information, floor and room data information

Appendix D lists requirements in respect of:

- Site information - the minimum site information as a digital default will include (for using in the client AIM or CAFM/IWMS):
- Unique site, building and floor data information - the minimum digital data set as a default for all floor layouts
- Room data - the minimum digital data set for all rooms
- Specific information requirements - should be defined based on the individual client needs. Basic room usage, space/volumes etc. The contractor should discuss with the client whether this could also include coverings and fittings (ceilings, floors etc)

6 Commercial requirements

6.1. Exchange of information in line with RIBA project stages

Information for the project will be exchanged in line with *BS 1192-4:2014*. This requires the use of COBie when providing information exchanges. The project should plan for COBie data drops at each of the *RIBA Plan of Work 2013* stages as shown in the table below. The contractor's *MIDP* should include proposals for what information is to be handed over and when. This should then be discussed with the client to ensure that it agrees that

the *MIDP* meets its strategic planning needs.

This table can be altered by the client, depending on the specific project and what stage the *EIR* is being issued at. For example, in some cases where the project design is well developed, stages 0-3 will not need to be included. The columns for “frequency” and “purpose” should be reviewed and altered by the client and project team if it's thought appropriate.

RIBA Stage	RIBA Stage Description	Frequency	Purpose
Stage 0	Strategic definition	At the end of stage	Validation of data and information
Stage 1	Preparation and brief	At the end of stage	Validation of data and information
Stage 2	Concept design	At the end of stage	Validation of data and information
Stage 3	Developed design	At the end of stage	Validation of data and information
Stage 4	Technical design	At the end of stage	Validation of data and information
Stage 5	Construction	At the end of stage	Validation of data and information
Stage 6	Handover and closeout	At the end of stage	Validation of data and information
Stage 7	In use	N/A as all data should have been handed over	Validation of data and information

6.2. Supplier BIM assessment form

To help the client understand and assess the competency of the project team, all bidders will be required to complete the *Supplier BIM assessment form* found in appendix H and return it to the client. The information should include the competencies of everyone in the project team.

6.3. BIM tender assessment

The client can amend this section and associated weighting table to suit the specific project needs.

The project tender assessment by the client team will include assessing:

- The initial pre-tender response to the *EIR* in terms of the contractor's *BEP*
- The information in the *supplier BIM assessment form*

The following evaluation weightings will be used by the client in assessing the tender response and BIM capabilities

Score	Response	Match to the requirements
0	No response	No answer or totally inappropriate answer
1	Unacceptable	Significant concerns regarding the response/solution
2	Poor	Some reservations about the response/solution – may require further clarification prior to award
3	Fair	Meets the expected requirements
4	Good	Good response/solution which comprehensibly meets the requirements with an increased probability of meeting the desired outcome

Appendices

The following appendices are attached for reference purposes:

Note: The client should amend the references as they see fit for the specific needs of the project.

Appendix A:

abbreviations

Appendix B:

applicable standards and guidelines

Appendix C:

information delivery schedule for maintainable assets

Appendix D:

site information, floor and room data information

Appendix E:

level of definition (LOD)

Appendix F:

security requirements

Appendix G:

plain language questions (PLQ)

Appendix H:

supplier BIM assessment form

Appendix A: abbreviations

The following list is for abbreviations used in the document

AIM	Asset information model
AIR	Asset information requirements
AMS	Asset management system
BEP	BIM execution plan
BIM	Building Information Modelling
CAFM	Computer-aided facilities management
CDE	Common data environment
EIR	Employer's information requirements
FM	Facilities management
GIFA	Gross internal floor area
GSL	Government soft landings
IFC	Industry foundation classes
IWMS	Integrated workplace management system
LCC	Life cycle costings
LOD	Level of definition
LOI	Level of information
MEP	Mechanical, electrical and plumbing (applying to systems)

MIDP	Master information delivery plan
MPDT	Model production and delivery table
O&M	Operations and maintenance
OIR	Organisation information requirements
PIM	Project information model
PLQ	Plain language questions
POW	Plan of work (PoW refers to RIBA Plan of Work 2013)

Appendix B: applicable standards and guidelines

The project team should be aware of and follow the guidance provided in the following industry recognised standards and best practice documents during all stages of the project. The contractor should outline in its *BEP* how these standards and guidance (and others that might be relevant to BIM projects) will be used.

Document	Title
BS 8536-1:2015	<i>Briefing for design and construction, Part 1: Code of practice for facilities management (Buildings infrastructure)</i> : provides FMs/others with useful recommendations for briefing for design and construction to ensure that the design takes account of the expected performance of the asset/facility in use over its planned operational life
BS 8536-2:2016	<i>Briefing for design and construction. Code of practice for asset management (Linear and geographical infrastructure)</i> It gives recommendations for briefing for design and construction in relation to energy, telecommunication, transport, water and other utilities' infrastructure to ensure that design takes into account the expected performance of the asset in use over its planned operational life. It is applicable to the provision of documentation supporting this purpose during design, construction, testing and commissioning, handover, start-up of operations and defined periods of aftercare.
BS 1192:2007	<i>Collaborative production of architectural, engineering and construction information - code of practice</i>
PAS 1192-2 2013	<i>Specification for information management for the capital/delivery phase of construction projects using Building Information Modelling</i>
PAS 1192-3 2014	<i>Specification for information management for the operational phase of assets using Building Information Modelling</i>

BS 1192-4:2014	<i>Collaborative production of information. Fulfilling employer's information exchange requirements using COBie. Code of practice</i>
PAS 1192-5:2015	<i>Specification for security minded Building Information Modelling, digital built environments and smart asset management</i> : helps project members plan the security requirements for a BIM project
CIC BIM Protocol	<i>CIC Building information model (BIM) protocol</i> : a supplementary legal agreement that should be incorporated to the professional services appointments and construction contracts
Uniclass 2015	<i>Uniclass 2015</i> : a unified classification system for the UK industry covering all construction sectors. It ensures information is structured, indexed and standardised in a way all industry sectors can easily access in a common format and integrates with the BIM toolkit. Further information - NBS: https://toolkit.thenbs.com
AEC (UK) BIM protocols	<i>AEC (UK) BIM protocols</i> : provide UK BIM standards for the architecture, engineering and construction (AEC) industry to ensure consistent platform-independent guidance for implementation and use of project BIM protocols and technologies. Further information - AEC (UK) https://aecuk.wordpress.com
Government soft landings	<i>Government soft landings</i> : aim to help the smooth transition from the design and construction phase to the operational phase of a built asset. Further information - http://www.bimtaskgroup.org
RIBA PoW 2013	<i>RIBA Plan of Work 2013</i> : used solely as guidance for the preparation of detailed professional services contracts and building contracts
AIA G202:2013	<i>AIA G202:2013</i> : details definition and provides illustration of characteristics of model elements of different building systems at different levels of development
BS 8210:2012	<i>Guide to facilities maintenance management</i>
BS 8587:2012	<i>Guide to facility information management</i>
BS ISO 55000	<i>Asset management BS ISO 15686 Life cycle costing Part 5</i>

Any relevant standards which reviewed and complied with. emerge during this project are to be reviewed by the project team and adopted where beneficial to the delivery of the project. Any updates to the above standards are to be

Appendix C: information delivery schedule for maintainable assets

A copy of the client's information delivery schedule for maintainable assets should be inserted here for reference.

This is a significant task which should be planned and undertaken by the client. A recent example of best practice was provided in an Excel format by the Ministry of Justice and is available at the following link:

Public files:

<https://download.4projects.com/document/publicfiles.aspx?DocumentID=e01e5cc7-bf8e-4673-9003-367509058169&VC=true>

FILE REF: STD_BIM_P004,4.1,4.2,4.3_v1.7_16.06.2016-G0500.xlsx

The site also includes a list of other documents which may be of interest to the client team.

Appendix D: site information, floor and room data information

Site information

The minimum site information as a digital default should include (for using in the client AIM, CAFM or IWMS):

- Site name
- Site status
- Land area (ha)
- Site grouping
- Address including postcode
- GIA of proposed asset(s)
- Site cross-reference
- Unique property reference number (UPRN)

Floor data information

All floor layouts should include the following minimum digital data set as a default:

- Site code
- Block number
- Floor level
- Floor code
- Floor description

- Gross internal area (GIA (m²))
- Gross external area (GEA (m²))

Room data information

All rooms should include the following minimum digital data set as a default:

- Site code
- Block number
- Floor level
- Room number
- Zone name
- Room description
- Room area (m²)
- Space utilisation
- Functional suitability
- Quality
- Room height (m)
- Volume (m³)

Appendix F: security requirements

The contractor is obliged to apply the principles and requirements of PAS 1192-5: 2015 Specification for security-minded Building Information Modelling, digital built environments and smart asset management.

The following links give advice regarding security compliance:

- From the BIM task group as to the need to comply with *PAS 1192-5:2015*
www.bimtaskgroup.org/pas1192-5_faqs
- From the Centre for the Protection of National Infrastructure (CPNI)
www.cpni.gov.uk/Templates/CPNI/pages/Default.aspx

The contractor should ensure it has clarified and checked the client's security requirements with the client before creating the model and also ensure its supply chain complies with all security requirements.

The following list is for general guidance:

The list below is indicative only and should be edited by the client to ensure it meets its requirements.

The contractor, consultants and agency staff providing services may use their own computing facilities to deliver services with the following conditions:

- These computing facilities must be their “tools of trade” - ie, separate from personal computing facilities used by themselves or their families etc for leisure or other personal uses; and must employ best-practice security controls such as up to date anti-virus control, personal firewall, access control, disk encryption and up-to-date software patches.
- Use of these computing facilities should be limited to activities involving client data such as producing reports, reviewing documents, sending and receiving

emails, and should not involve storing and processing large volumes of client data - for example, database extracts.

- The disk encryption employed must conform to a standard specified by the client.
- Where the computer connects to a remote network, for example, the contractor's company network, then an encrypted link must be used.
- No data will be stored in the cloud or stored outside the UK or transferred via non-secure FTP.
- Computer hard disk drives should be securely erased before disposal or recycling if they have held any personal or protectively marked data. The client should be consulted on the procedure to be followed.
- If the data warrants a Government protective marking, the disk encryption employed must conform to CAPS except in exceptional circumstances – for example, short timescales, lack

of alternative product etc, in which case a FIPS140-2 certified product may be employed as a short-term interim measure. In this instance, senior management approval must be obtained and documented in an email to the client's email account. If long-term access to protectively marked data is required, client computing facilities must be provided.

- No emails containing protectively marked or personal data, or any other type of sensitive information, should be sent un-encrypted over the internet.
- Any removable media used to transport data outside of secure buildings must be encrypted with a product certified to FIPS 140-2. Once no longer required, these devices should be securely disposed of. CD/DVDs and floppy disks should be cut into four pieces and disposed of as normal waste.
- In compliance with the Data Protection Act, any personal data

must be deleted when no longer required and must not be used for any other purposes other than that for which it was collected. It must not be retained beyond the duration of engagement with the client.

- Where there is a need to provide access to large volumes of personal or protectively marked data, only client computing facilities must be used. Removable media provided by the client must be returned to the client after use.
- Paper records containing sensitive or personal data should be stored, transported and disposed of securely. Sensitive waste paper should be collected separately from normal waste, and stored securely pending destruction by shredding or burning. As with electronic records, particular care should be taken when moving bulk paper records.

Appendix G: plain language questions (PLQ)

PLQs can be used at relevant RIBA stages to help guide a project.

A recent example of best practice was provided in terms of a list of PLQs against each of the RIBA PoW 2013 Stages by the Ministry of Justice and is available at the following link:

Public Files:

<https://download.4projects.com/document/publicfiles.aspx?DocumentID=e01e5cc7-bf8e-4673-9003-367509058169&VC=true>

Appendix H: Supplier BIM assessment form

The client can amend the assessment form to suit the specific needs of its project. The form should be regularly reviewed if used on different projects to ensure the content is up to date and valid for the client's current project

The supplier BIM assessment form should be completed and returned to the nominated client contact.

The form aims to capture the capability of the supply chain to deliver the project within a BIM working environment, offering the opportunity for organisations to demonstrate their capability and knowledge. The document will be used to assess the appropriateness of the supplier to the identified project, the client's aspirational aims and the EIR. The form has been developed in accordance with guidance identified within PAS1192-2 clause 6.4 and questions asked within PAS91 table 8.

All sections of the form must be fully and comprehensively completed. Any sections which are left blank will receive a zero score. Likewise, answers which are not comprehensive (deemed unacceptable) will receive a low score.

Supplier BIM assessment form

Enter your own details and that of the project.

Contents

1 Supplier BIM assessment52
2 Supplier IT assessment63
3 Supplier resource assessment.....66

Document control

The following table shows the issues and version changes for this document.

Version No	Date of first issue	Purpose of issue	Amendment detail

1 Supplier BIM assessment

1.1 The supplier BIM assessment form should be completed and returned to the nominated client contact.

The form aims to capture the capability of the supply chain to deliver the project within a BIM working environment, offering the opportunity for organisations to demonstrate their existing capability and knowledge. It will be used to assess the appropriateness of the supplier to the identified project, to the client's aspirational aims and to the employer's information requirements. It has been developed in accordance with guidance identified within PAS1192-2 clause 6.4 and questions asked within PAS91 table 8.

All sections of the form must be comprehensively completed. Any sections which are left blank will score zero. Likewise, answers which are not comprehensive (deemed unacceptable) will receive a low score.

Company's BIM representative	Person completing the form
Name:	Name:
Tel number:	Tel number:
Email:	Email:
Web URL:	Web URL:

1.2 Has your organisation used BIM?

Yes No

1.2.1 If yes, how long has your organisation used BIM? (Please give specific dates.)

1.2.2. What does BIM mean for your organisation? (For example, business value, opportunities, benefits, risks.)

1.3 What is your current status and future plan for BIM rollout?

1.3.1 Who leads BIM in your organisation at strategic and operational level?

Strategic BIM representative	Operational BIM representative
Name:	Name:
Tel number:	Tel number:
Email:	Email:

1.4 Please list your organisation’s experience of the following BIM/CAD uses:

BIM/CAD Use	Yes/No	Length of time used
2D CAD draughting	Yes <input type="checkbox"/> No <input type="checkbox"/>	
3D model authoring	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Spatial planning	Yes <input type="checkbox"/> No <input type="checkbox"/>	
BIM object libraries	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Data classification	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Environmental analysis	Yes <input type="checkbox"/> No <input type="checkbox"/>	

BIM-enabled design reviews	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
Visualisation	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
3D co-ordination	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
Construction simulation (4D)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
Cost management (5D)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
Asset management (6D)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
Digital fabrication	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
Space management in-use	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
Pedestrian simulation	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
Rapid prototyping	Yes <input type="checkbox"/>	No <input type="checkbox"/>	

1.5 How do you normally collaborate on a project and what techniques and tools do you normally use? (Include software, management system, protocols etc.)

1.6 Provide details of projects executed within a BIM-enabled environment in the table below. (Please provide a maximum of five suitable examples, each of which should have its own table.)

Project name	Details
Sector	
Client/project title	
Contractor	
Project value	
Contract/fee value	
Contract duration	
BIM uses (stage implemented, software platforms used, types of information exchanged)	
Standards and protocols used	
Benefits realised by BIM	
Challenges faced by BIM	
Project name	

Project name	Details
Sector	
Client/project title	
Contractor	
Project value	
Contract/fee value	
Contract duration	
BIM uses (stage implemented, software platforms used, types of information exchanged)	
Standards and protocols used	
Benefits realised by BIM	
Challenges faced by BIM	
Project name	

Project name	Details
Sector	
Client/project title	
Contractor	
Project value	
Contract/fee value	
Contract duration	
BIM uses (stage implemented, software platforms used, types of information exchanged)	
Standards and protocols used	
Benefits realised by BIM	
Challenges faced by BIM	
Project name	

Project name	Details
Sector	
Client/project title	
Contractor	
Project value	
Contract/fee value	
Contract duration	
BIM uses (stage implemented, software platforms used, types of information exchanged)	
Standards and protocols used	
Benefits realised by BIM	
Challenges faced by BIM	
Project name	

Project name	Details
Sector	
Client/project title	
Contractor	
Project value	
Contract/fee value	
Contract duration	
BIM uses (stage implemented, software platforms used, types of information exchanged)	
Standards and protocols used	
Benefits realised by BIM	
Challenges faced by BIM	
Project name	

1.6.1. If your organisation has no BIM experience, explain your future strategy for implementing BIM. (Please include planned dates for implementation, planned uses, potential software types, procedures and training strategy.)

1.7 Has your organisation adopted BIM, protocols or procedures and established documentation to assist implementation? Yes No

1.7.1. If yes, please describe the documentation which has been developed and, where possible, list document types and content headings.

1.7.1. If no, explain why you do not work to a BIM standard.

1.8 Has your organisation experience of working to any of the following standards within a project?

Standard/ guidance documents	Experienced and used? yes/no	On how many BIM projects?
BS 1192:2007	Yes <input type="checkbox"/> No <input type="checkbox"/>	
PAS 1192-2	Yes <input type="checkbox"/> No <input type="checkbox"/>	
PAS 1192-3	Yes <input type="checkbox"/> No <input type="checkbox"/>	
BS 1192-4	Yes <input type="checkbox"/> No <input type="checkbox"/>	
PAS 1192-5	Yes <input type="checkbox"/> No <input type="checkbox"/>	
CIC BIM protocol	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Government soft landings	Yes <input type="checkbox"/> No <input type="checkbox"/>	
BS 8536:	Yes <input type="checkbox"/> No <input type="checkbox"/>	

1.8.1 If yes, please summarise your experience of each one and the specific use.

1.8.2. If no, explain your current awareness of them and, if proposed, your plans to incorporate them or reasons why you believe they are not required.

1.9. What measures do you have in place to ensure adherence with your BIM standard and how do you demonstrate this? (For example, QA or audit processes?)

1.10 Are you prepared to comply with an imposed project BIM standard

Yes No

1.10.1 If no, please explain why?

1.11 Has your organisation implemented a BIM staff training programme?

Yes No

If yes, provide details below (including any planned training).

Type of training	Date	Number of delegates	Training organisation (including in-house)

1.11.1 Do you assess and document staff competence for BIM/CAD?

Yes No

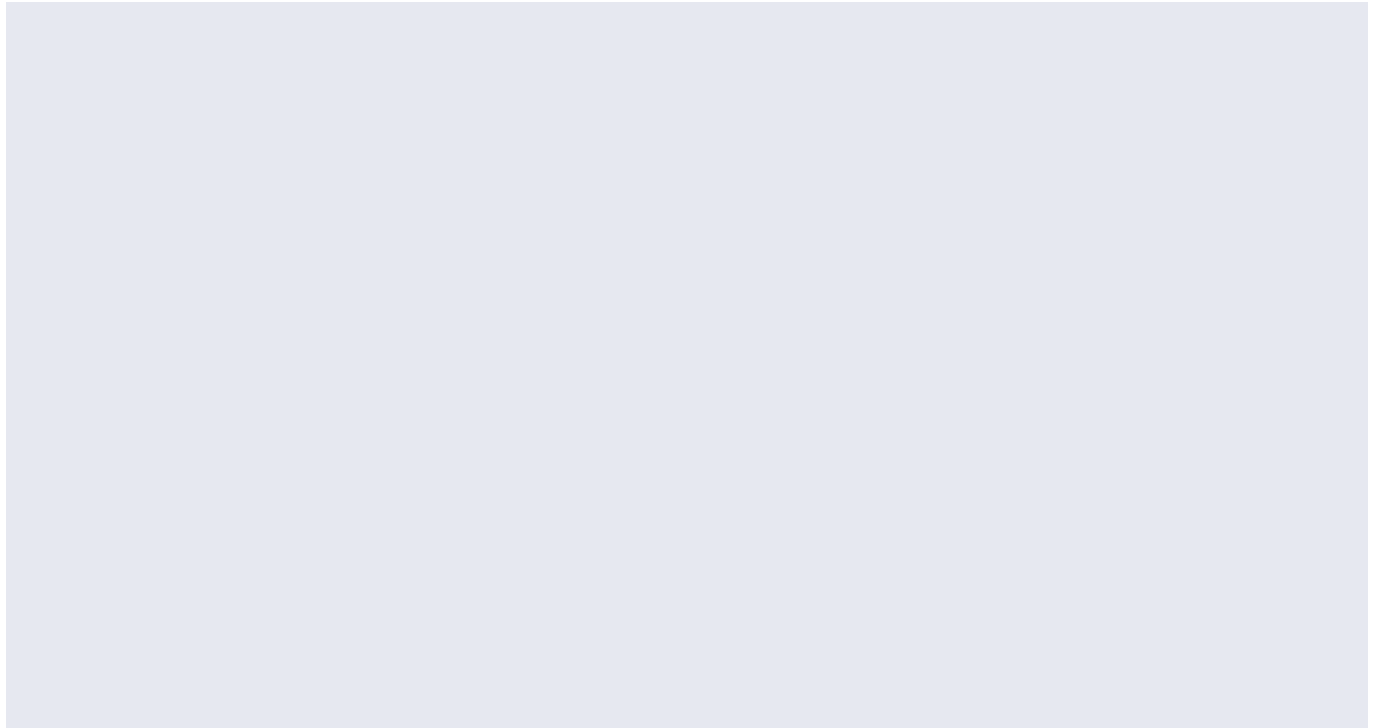
1.11.2 If yes, describe the method used to assess staff.

1.12 Are you prepared to issue your native BIM format files?

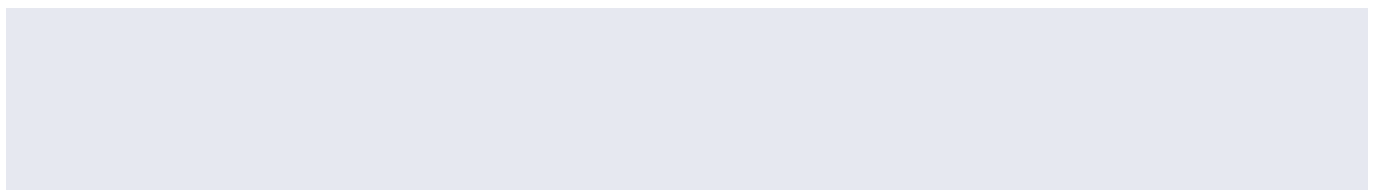
Yes No

1.12.1 If no, why not?

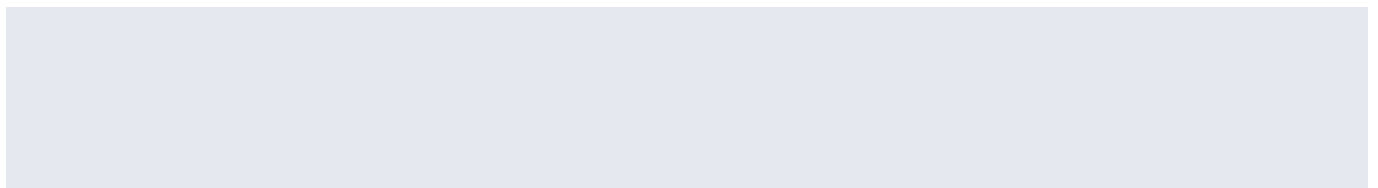
1.13 Explain your approach to managing BIM model development (where applicable) and whether this follows an iterative process, for example, RIBA Digital Plan of Work.



1.14 In a brief paragraph please explain your experiences (if any) with linked, attached and embedded attribute data within 3D models.



1.15 How have your design/contract agreements been influenced by BIM? (Please give dates.)



1.16 Do you consider there are any issues of IP rights relating to ownership of BIM deliverables?

1.17 Have there been any changes to your design/project deliverables with respect to BIM?

1.18 What impact has BIM had/will have on projects you are involved in?

1.19 How does BIM affect your staffing on a project?

1.20 How has BIM affected design fees (if applicable)?

2 Supplier IT assessment

2.1 This section provides a method of assessing an organisation's information exchange capability and supply chain IT maturity. The IT assessment highlights differences and similarities between different suppliers' IT systems, which can be used to align protocols, standards, and information exchanges.

2.2 This has been developed in accordance with guidance identified within PAS1192:2.

2.3 Please identify which software packages your organisation uses to deliver the specific BIM uses in the table provided.

BIM Use	Vendor	Product	Version	File formats	Number of staff trained	Number of software licences
3D modelling						
Spatial planning						
Object libraries						
Data classification						
Environmental analysis						
Design reviews (BIM-enabled)						
Visualisation						
3D co-ordination						
Construction simulation (4D)						

Cost management (5D)						
Asset management (6D)						
Digital fabrication						
Space management and tracking in-use						
Pedestrian simulation						
Rapid prototyping						

2.4 Provide details of forms of communication used to share information (for example, type of software used, functionalities, structure, hierarchies and infrastructure requirements).

Form of communication	Type/comments
Email	
File-sharing websites	
Common data environment (CDE)	
Electronic document management systems (EDMS) or extranet	
Other (please specify)	

2.5 Provide details of file sharing protocols (for example, file naming, approaches to redistribution of information, willingness to use standards which are different to those in-house).

2.6 Please identify and provide details on the following:

System type	Specification used	Comments (include quantities if applicable)
PC, laptop and tablet hardware specification		
Firewalls		
Local area network specification		
Wide area network specification		
Internet connection type and speed for main, regional and local offices		
Email systems		
Printing facilities		
Online conferencing facilities		

2.7 Are all your BIM software tools covered by a yearly maintenance agreement? Yes No

2.7.1 If no, why not?

3. Supplier resource assessment

3.1 This section provides an overview and assessment of the key personnel within a project team. This has been developed in accordance with guidance identified within PAS1192:2.

3.2 Who are your key personnel responsible for BIM systems?

Personnel (name)	Discipline	Role	Qualification / level of competence	Years of experience

FM Professional Standards

The template and guidance relates to the Building Information Modelling (BIM) professional standard within the Property Portfolio Management functional area.

Full details of the FM Professional Standards can be found at www.bifm.org.uk/FMStandards

Qualification reference

This template and guidance also helps support those studying BIFM qualifications and is particularly appropriate to those studying:

- > Level 4 qualifications, specifically unit 4.25
- > Level 5 qualifications, specifically unit 5.23

For more information on BIFM qualifications, visit www.bifm.org.uk/qualifications

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BIFM

Charringtons House
1st Floor South
The Causeway
Bishop's Stortford
Hertfordshire CM23 2ER

T: +44 (0) 1279 712620
E: membership@bifm.org.uk
www.bifm.org.uk

ISBN: 978-1-909761-27-8



Price: £29.99