

Draft v11 – NOT FOR PUBLICATION OR USE

Employer's

Design/Construction/Operation and supply team

Information Requirements

Template

This template is intended to aid the documentation of the “Information Requirements” for the Employer and others acting as information customers in a design and supply team. An Information Requirements document can help inform the design and construction suppliers as to what information is required, together with its format and extents, along with sufficient context to support their professional judgment and assessment.

The twin objectives of an EIR are to support the acquisition of asset and product information by employer and customer and to support suppliers to respond with advice, execution plans and delivery.

An EIR is (as defined in BS PAS 1192 part 2) a “pre-tender document setting out the information to be delivered [to the customer], and the standards and processes to be adopted by the supplier as part of the project delivery process”. It is a “document setting out the information to be delivered by the supplier as part of the project delivery process to the [customer].” It may be referenced in the Contract through directly or through a ‘BIM Protocol’

Some employers may have a standing Organisational or Asset Information Requirement (as defined in BS PAS 1192 part 3) which may follow this template, so that only the specifics in Section1 vary across projects. Section 2 may implement ISO 55000, SFG20 and BS8536.

An EIR should:

- *cascade down the supply chain so as to reduce waste and increase efficiency*
- *be concise, clear and unambiguous*
- *be as generic as possible generic across different project and contract types*
- *invite suppliers to show capability (at pre-qualification), plan management (at tender) and execute shared structured asset information (as part of their execution plan).*
- *provide for common naming and classification of documents and assets to aid searches*
- *document the customers and any received policies so as to achieve consistency*
- *clarify customer involvement and checks that are required*
- *indicate the customer's purposes for the information so as engage with the supply chain*
- *indicate acceptable formats to reduce data loss*
- *define completeness for specific purposes for the information*

Overview

This document has two **OVERALL REQUIREMENTS** which are then detailed as a dozen specific **REQUIREMENTS**.

The Employer requires evidence of capability to meet each specific **REQUIREMENT** during pre-qualification, management planning at tender (Pre-Contract BEP), and detailed execution showing how the requirements are met in the suppliers BIM Execution Plan (post contract BEP).

Terms

In this document the 'Employer' or client is the ultimate owner, whereas the 'customer' and 'supplier' are roles anywhere in the supply chain.

Guidance on the Use of standards

In many of the topics below, the Employer is asked to choose between using named industry standards, taking other advice from their suppliers or providing their own policy. Wherever possible International, European and UK standards should be chosen in preference to the advice of the design and supply team, or specific requirements.

Adopting named industry standards: The nominated standard or policy is to be used. These standards are intended to be familiar and efficient. The first (unstarred) option encapsulates the requirements for the delivery of UK Governments Level 2 BIM.

* As advised by the design and supply team in their Execution Plan provided in response to this Information Requirement. The employer/customer has no opinion, but the design and supply team choice should be explained and documented in the Execution Plan.

** As listed/described/referenced: The employer/customer has a specific view on this which is then described or listed. Using the employers own custom lists or policies may incur additional costs, delay and risks in the information delivery over and above industry best practice.

Guidance on naming and description policies

Names and descriptions may be used in filenames or within applications with limit screen space. This suggests that required names and codes should be short and concise and contain no punctuation or spaces. Required descriptions can be longer but should not contain abbreviations, commas, or colons or special characters. Classification of assets should be kept separate from names and should use clear and unambiguous codes.

Section 1: Facility/product, site and project information: Is there any specific information?

Specific information and requirements that are specified by the Employer and primarily affect the next tier of the design and supply team.

OVERALL REQUIREMENT ONE: Show capability, demonstrate a management and execution plan and then use structured asset information to fulfil the requirements:

- **Identification:** *What is the facility/product, site and project?*

The preferred names for the facility/product, site and project will be used to ensure that all documents and information carry the expected identifying names, typically a code or number. There can also be a longer description for each. For the site, this longer description should be the address. Otherwise the design and supply team will choose these.

REQUIREMENT 1: Use the following names:

The facility (either a building or piece of infrastructure) or product that is, or will become, your asset.

- Facility: Name, Description

The site gives the relevant surrounding context, and is usually of limited extent.

- Site: Name, Address and postcode

The project defines the commercial context, and is usually of limited duration.

- Project: Name, Description

- **Pre-Existing Strategies:** *Are there any already known volume, phasing or discipline strategies?*

You may already have some knowledge of how the project, site or facility is to be broken down. Are there any known volumetric divisions of the site, or any known setting out requirements? This could be in the south west corner of the site and may be related to the Ordnance Survey Grid, or another other geospatial system in use. Otherwise a common site datum setting out point benchmark for the site will be defined and used consistently by the design and supply team.

REQUIREMENT 2: Use the following information management strategies:

- Geospatial : OSGB / as advised* / geospatial reference**
 - Employer's selected geospatial referencing convention**
- Common building origin and orientation: grid point, grid line
- Common site origin and orientation: named point and north direction
- Volume strategy: As advised* / As listed**:

- Employer's volumes list: name, description, (extents or disciplines)**

Are there any known names of required phasing divisions of the project, or any known working calendar information? An example might be a regeneration project needing 'decant', 'demolish', 'build'. Otherwise the team will use best practice.

- Phasing strategy: As advised* / As listed**:
 - Employer's list of name, description, (dates/months/weeks)**
- Common calendar and week numbering: ISO 8601 / As advised* / As listed**:
 - Employer's calendar pattern**

Are there any known named project work-package or discipline divisions of the project? An example might be the distinction between contractor-supplied and employer supplied equipment. Otherwise the design and supply team will use best practice.

- Discipline strategy. As advised* / As listed**:
 - Employer's list of work-package name, description, (content)**
- **Collaboration and Involvement:** *Are there any information sharing or security protocols to be used?*

Do you expect to be involved in the specification and use of the means used to deliver your information requirements? What is the expectation for the security and accessibility of the processes and data locations? Advice is that neither 'dropbox', 'sharepoint' nor 'ftp' are adequate, so preference is for professional environments that support compliance to BS1192. Otherwise the design and supply team will follow best practice.

REQUIREMENT 3: Implement the following information management approaches:

- Collaboration process: BS1192 with PAS1192 part 2 and part 3 / As advised* / As described**:
 - Description of specified collaboration process**
- Common Document/Data Environment tool: As advised* / As nominated**:
 - Employer's nominated CDE tool**
- Security: PAS 1192 part 5: S/A/3/2/1/ CESG: IL1/IL2/IL3/IL4/ As advised* / As nominated**:
 - Employer's list of nominated security standards**
- Information and Security management role

- Employer's nominated person with these responsibilities

Section 2: **General:** Are there any general information requirements?

General information requirements additionally affect subsequent tiers of the design and supply teams.

OVERALL REQUIREMENT TWO: Show capability, demonstrate a management/execution plan and then use structured asset information to fulfil the requirements, and ensure these expectations are delegated through the supply chain:

- **Aims and Purposes** – What is the overall aim of these information requirements?

As a guide to the design and supply team, what use for the information is intended? The information is to be provided with the appropriate licence to be used for the purposes identified. An example might be “Information is required for record purposes, statutory compliance, coordination and approvals, construction, handover and use of the facility including end-of-life”. Otherwise the design and supply team will use best practice. Each of these purposes should be restricted by the use of specific classification codes selecting aspects of

- the site such as specific zones or floor/regions
- the facility such as subsets specific systems and type/material
- the project subsets such as specific work-packages and job-type

REQUIREMENT 4: Support the following aim and purposes by accepting and generating, managing and delivering/sharing structured asset information relating to the scopes indicated:

- Aims:
 - Employer’s description of the overall aims of this information requirement
- Purposes intended and full licence required for :
 - Matters of record: As BS1192 part4 /As advised*/No
 - Scope: Description or classification codes
 - Statutory compliance: As BS1192 part4 5.2.2/ As advised*/Yes
 - Scope: Description or classification codes
 - Asset register: As BS1192part4 5.2.2/ As advised*/No
 - Scope: Description or classification codes
 - Capacity and utilization As BS1192 part4 5.3.2/ As advised*/No

- Scope: Description or classification codes
- Security and surveillance As BS1192 part4 5.3.3/ As advised*/Yes
 - Scope: Description or classification codes
- Project Information Model: Yes/ As advised*/No
 - Scope: Description or classification codes
- Asset Information Model: Yes/ As advised*/No
 - Scope: Description or classification codes
- H&S/CDM: As BS1192 part4 5.3.X/ As advised*/No
 - Scope: Description or classification codes
- Construction procurement: Yes/ As advised*/No
 - Scope: Description or classification codes
- Operational management: As BS1192 part 4 5.4.3/ As advised*/No
 - Scope: Description or classification codes
- Maintenance management: As BS1192 part 4 5.4.4/ As advised*/Yes
 - Scope: Description or classification codes
- Repurposing As BS1192 part 4 5.3.4/ As advised*/Yes
 - Scope: Description or classification codes
- Decommission and disposal As BS1192 part 4 5.4.6/ As advised*/Yes
 - Scope: Description or classification codes
- Replacement planning: As BS1192 part 4 5.4.5/ As advised*/No
 - Scope: Description or classification codes
- Predicted cost and environmental impacts: As BS1192 part 4 5.4.2/ As advised*/Yes
 - Scope: Description or classification codes
- Environmental compliance: Yes/ As advised*/No
 - Scope: Description or classification codes
- As-built: Yes/ As advised*/No

- Scope: Description or classification codes
- Others No / As advised* / As listed**
 - Employer's list of other information purposes**
 - Scope: Description or classification codes

- **Classification:** *Are there preferred classification tables for information about the project?*

Otherwise the design and supply team will use facility industry best practice classification tables.

REQUIREMENT 5: Use the following classification tables:

The project stages have been standardised in order to help you and the design and supply team follow a common project plan.

- Stages: *CIC stages/As advised*/ As listed**:*
 - *Employer's list of code and description of stage classification entries***

Roles have been standardised so that there is less ambiguity as to who is doing what.

- Roles: *PAS1192 part 2 section 9.2.3/Uniclass Mx/As advised*/ As listed**:*
 - *Employer's list of code and description of role classification entries***

Suitability codes have been standardised so that there is less ambiguity as to what information is suitable and licenced for.

- Suitability and licence: *PAS1192 part 2 section 9.2.3/As advised*/As listed**:*
 - *Employer's list of code and description of suitability classification entries***

Facility classification codes have been standardised within the construction sector. (Other codes may be used for taxation, land use planning and so on).

- Facility: *Uniclass 2015 En /As advised*/ As listed**:*
 - *Employer's list of code and description of facility classification entries***

Zones and floors/regions are used to organise spaces/locations within the site.

- Zones: *Uniclass2015 SP /As advised*/ As listed**:*
 - *Employer's list of code and description of zone classification entries***
- Floor/regions: *COBie FloorType/As advised*/ As listed**:*
 - *Employer's list of code and description of floor/region classification entries***

Systems and Types are used to organise components within the facility.

- Systems: *Uniclass 2015 Ss/NRM1/As advised*/ As listed**:*
 - *Employer's list of code and description of system/function classification entries***

- Types: Uniclass 2015 Pr /As advised*/ As listed**:
 - Employer's list of code and description of type/material classification entries**

Work-packages and job-types are used to organise tasks within the project.

- Work-packages: Uniclass 2015 Xx/NRM1/As advised*/ As listed**:
 - Employer's list of code and description of work-package classification entries**
- Job-Types: Uniclass 2015 Yy /NRM 1/As advised*/ As listed**:
 - Employer's list of code and description of job-type classification entries**

- **Naming policies** – *Are there naming policies for aspects of the project?*

Naming policies in use for Spaces/locations and Components in older FM application may be more prescriptive than in more modern design authoring tools, where the facility, floor or region should not be included. Floors/regions and Types may be named after their filenames, rather than explicitly. Systems and Zones may be named through the use of layering, rather than explicitly. Layer names may include other information such as classification and graphic styles.

REQUIREMENT 6: Deliver using the following naming conventions:

Zones and floors/regions organise the spaces/locations within the site. Zones sometimes appear as layers in CAD and BIM practice.

- Zones: (layers for Spaces/locations) BS EN ISO 4157-1 1999 /As advised*/ As listed**:
 - Employer's description of naming policy for zones**
- Floors and regions: BS EN ISO 4157-1 1999 /As advised*/ As listed**:
 - Employer's description of naming policy for floors and regions**
- Spaces and locations: BS EN ISO 4157-2&3 1999 /As advised*/ As listed**:
 - Employer's description of naming policy for spaces and locations**

Systems and Types organise the components in the facility. Systems sometimes appear as layers in CAD and BIM practice.

- Systems (layers for components) : PAS 1192 Part 2 section 9.3/As advised*/ As listed**:
 - Employer's description of naming policy for systems**
- Types and assemblies: BS8541 Part 1 section 4.3 / As advised* / As listed**:
 - Employer's description of naming policy for types**
- Components and equipment (items): BS EN ISO 4157-3 1999 /As advised*/ As listed**:
 - Employer's description of naming policy for components and equipment**

Work-packages and Job-Types organise the tasks in the project.

- Work-packages : XX/As advised*/ As listed**:

- Employer's description of naming policy for work-packages**
- Job-types: XX/As advised* / As listed**:
 - Employer's description of naming policy for job-types**
- Tasks: XX/ /As advised*/ As listed**:
 - Employer's description of naming policy for tasks**

Checks - Are there any specific tests of the information deliverables intended?

Note: some tests may be dependent on the use of specific classification tables.

REQUIREMENT 7: Provide evidence that the following checks are being performed :

Compliance and continuity are technical expectations relating to the use of the standards,

- Continuity tests: Automated comparisons between information issues/As advised*/ As listed**:
 - Employer's list of name, description of continuity test(s)**
- Compliance tests: Automated checks of information against schema/As advised*/ As listed**:
 - Employer's list of name, description of compliance test(s)**

Completeness and coherence tests relate to the provision of full data and the absence of clashes. The recommendation is to use a published list to test completeness, called a digital Plan of Work (dPoW). A dPoW typically covers the level of information on attributes (LoI) expected and the level of Detail on shapes (LoD) expected for specific types of asset.

- Coherence (clash and interference) tests: Automated checks/As advised*/ As listed**:
 - Employer's list of name and description of coherence test(s)**
- Completeness tests: NBS BIM Toolkit dPOW (2015) / UK BTG Labs dPoW / No, as advised*/ As listed**:
 - Employer's list of stage, object, property (LoI) or shape (LoD) test(s)**

Veracity relates the final as-built facility/product to the information provided. Consistency is expected between the information delivered and any other documents.

- Veracity tests: Inspection checks/As advised*/ As listed**:
 - Employer's list of name, description of veracity test(s)**
- Consistency tests: Inspection checks/As advised*/ As listed**:
 - Employer's list of name, description of consistency test(s)**

- **Information and documents** – *in what form should the information and documents be delivered?*

The advice is to use IFC and COBie for information, and to use PDF for supplementary documents.

REQUIREMENT 8: Use the following schemas, formats and deliverable naming policy:

- Information schemas: ISO 16739 IFC2x3 and BS1192 part 4 COBie2.4/As advised*/ As listed**:
 - Employer's choice of structured asset information format**
- Document formats: PDF/As advised*/ As listed**:
 - Employer's list of file format extension and description**
- Document and information deliverable naming: PAS 1192 Part 2 section 9.3/ As advised*/ As described**:
 - Employer's description of file naming policy**

Annexes provide some guidance on the standards mentioned. Wherever possible these standards should be chosen in preference to special requirements.

Annex A: Requirable content in COBie

If COBie is required without a formal dPoW, the employer is asked to identify some requirable tables and fields (columns) in COBie. Requirable tables (sheets) and fields (columns) are coloured green. A COBie deliverable is made up of the tables described below: Refer to BS1192 part 4 for lists of all the fields (columns), only the requirable fields are listed for selection.

REQUIREMENT 9: If COBie is required, and there is no explicit dPoW, complete the following additional requirable sheets and fields in COBie:

- Requirable tables and fields: None/As advised*/Some**/All**
- Asset (A1) requirable tables and fields: None/As advised*/Some**/All**
- Supplementary (A2) requirable tables and fields: None/As advised*/Some**/All**
- O&M (A3) requirable tables and fields: None/As advised*/Some**/All**

A1: Asset information

The following tables document named aspects for the facility. Select which required fields are to be completed.

Facility

Facility	Example	Required?
Description	Single storey secondary school	no/as advised*/yes**
ProjectDescription	New build D&B contract.	no/as advised*/yes**
SiteDescription	St Joseph's Secondary School, Garston, Herts, WD25 9XX	no/as advised*/yes**

Floor (region)

Floor	Example	Required?
Description	Entrance level	no/as advised*/yes**
Elevation	0.0	no/as advised*/yes**
Height	4000.0	no/as advised*/yes**

Space (location)

Space	Example	Required?
RoomTag	CL 101	<u>no/as advised*/yes**</u>
UsableHeight	2955.0	<u>no/as advised*/yes**</u>
GrossArea	24.837	<u>no/as advised*/yes**</u>

NetArea	24.837	<u>no/as advised*/yes**</u>
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Zone

Zone	Example	Required?
Description	Basic teaching spaces	no/as advised*/yes**

Type

Type	Example	Required?
ReplacementCost	2760	<u>no/as advised*/yes**</u>
ExpectedLife	15	<u>no/as advised*/yes**</u>
WarrantyDescription	Standard warranty	<u>no/as advised*/yes**</u>
ModelReference	Short Throw Projector	<u>no/as advised*/yes**</u>
Shape	n/a	<u>no/as advised*/yes**</u>
Size	2105mm x 1329mm	<u>no/as advised*/yes**</u>
Color	white	<u>no/as advised*/yes**</u>
Finish	n/a	<u>no/as advised*/yes**</u>
Grade	n/a	<u>no/as advised*/yes**</u>
Material	n/a	<u>no/as advised*/yes**</u>
Constituents	remote controller	<u>no/as advised*/yes**</u>
Features	n/a	<u>no/as advised*/yes**</u>
AccessibilityPerformance	n/a	<u>no/as advised*/yes**</u>
CodePerformance	n/a	<u>no/as advised*/yes**</u>
SustainabilityPerformance	n/a	<u>no/as advised*/yes**</u>

Component

Component	Example	Required?Notes
SerialNumber	S4567901	<u>no/as advised*/yes**</u>
InstallationDate	2012-12-12T13:29:49	<u>no/as advised*/yes**</u>
WarrantyStartDate	2012-12-12T13:29:49	<u>no/as advised*/yes**</u>
TagNumber	247849	<u>no/as advised*/yes**</u>
BarCode	n/a	<u>no/as advised*/yes**</u>
AssetIdentifier	2f7761ec-6323-4dfc-80c0-52ae3703f410	<u>no/as advised*/yes**</u>

System

System	Example	Required?
Description	Small power circuit 1	<u>no/as advised*/yes**</u>

A2: Supplementary information

The following tables document named supplementary information about aspects of the facility. Select which requirable tables and fields are to be completed.

Contact

Contact	Example	Required?
Department	Support	<u>no/as advised*/yes**</u>
OrganizationCode	buildingSMART UKI	<u>no/as advised*/yes**</u>
GivenName	Nicholas	<u>no/as advised*/yes**</u>
FamilyName	Nisbet	<u>no/as advised*/yes**</u>
Street	46 St Margaret's Grove	<u>no/as advised*/yes**</u>
PostalBox	n/a	<u>no/as advised*/yes**</u>
Town	High Wycombe	<u>no/as advised*/yes**</u>
StateRegion	Bucks	<u>no/as advised*/yes**</u>
PostalCode	HP15 6HP	<u>no/as advised*/yes**</u>
Country	UK	<u>no/as advised*/yes**</u>

Assembly (optional content)

no/as advised*/yes**

Assembly	Example	Required?
Description	Masonry - Concrete Floor Block : 250.	<u>no/as advised*/yes**</u>

Connection (optional content)

no/as advised*/yes**

Connection	Example	Required?
PortName1	PN1	<u>no/as advised*/yes**</u>
PortName2	PN2	<u>no/as advised*/yes**</u>

Description	Whiteboards to education resource server 1	<u>no/as advised*/yes**</u>
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Impact (optional content)

no/as advised*/yes**

Resource	Example	Required?
LeadInTime	15	<u>no/as advised*/yes**</u>
Duration	0	<u>no/as advised*/yes**</u>
LeadOutTime	0	<u>no/as advised*/yes**</u>
Description	Specialist replacement team	<u>no/as advised*/yes**</u>

Document

Document	Example	Required?
Description	Short throw White Board Handbook	<u>no/as advised*/yes**</u>
Reference	Short throw White Board Handbook	<u>no/as advised*/yes**</u>

Attribute

Attribute	Example	Required?
Description	Installed weight (excluding packaging)	<u>no/as advised*/yes**</u>
AllowedValues	Less than 20kg / 20kg / 30kg / 40kg	<u>no/as advised*/yes**</u>

Coordinate (content optional)

no/as advised*/yes**

There are no requirable columns in this sheet

Issue (content optional)

no/as advised*/yes**

There are no requirable columns in this sheet

A3: Operational and Maintenance information

The following tables document named operational and maintenance information about aspects of the facility. Select which requirable tables and fields are to be completed.

Spare (optional content)

no/as advised/yes***

Assembly	Example	Required?
Description	projection bulbs	<u><i>no/as advised*/yes**</i></u>
SetNumber	587-1	<u><i>no/as advised*/yes**</i></u>
PartNumber	587-1	<u><i>no/as advised*/yes**</i></u>

Resource (optional content)

no/as advised/yes***

Resource	Example	Required?
Description	Manufacturer's upgrade memory stick	<u><i>no/as advised*/yes**</i></u>

Job (optional content)

no/as advised/yes***

Resource	Example	Required?
TaskNumber	T901	<u><i>no/as advised*/yes**</i></u>

Annex B standards relevant to the Information requirements

- BS1192:2007, PAS1192:2, PAS1192:3, BS1192 part 4
 - BS8541 part 1-6
 - BS EN ISO 4157-1:1998, Construction drawings. Designation systems. Buildings and parts of buildings
 - BS EN ISO 4157-2:1998, Construction drawings. Designation systems. Room names and numbers
 - BS EN ISO 4157-3:1998: Construction drawings. Designation systems. Room identifiers
 - ISO 8601: Dates and calendars
 - CIC stages: (see PAS1192 part 2 section 9.9.* or CIC BIM Protocol Appendix 1)
 - ISO 16739:2005 & 2013 IFC
 - CDM Regulations 2015
 - PAS 1192 part 5
- S Protect any commercially &/or personally (PII) sensitive data
- A Additionally incl. adjacent site(s)
- 3 Additionally protect security sensitive data from CIC 3 onwards
- 2 Additionally protect security sensitive data from CIC 2 onwards
- 1 Additionally protect security sensitive data from CIC 1 onwards