BIM – Employers Information Requirements (EIR)

Turner & Townsend April 2015
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Contents

- Content and structure of the EIR and the key activities that need to take place to be able to produce and EIR.
- “What” a good EIR contains
- Key steps to a successful Employers Information requirement (EIR) document – aligned to PAS1192-2”.
Why and wherefore...

- **PAS1192-2** – Provides guidance for Information Management requirements associated with projects delivered using BIM

- **What is an EIR?** – The Employers Information Requirements

- **Why is it needed?** – This document sets out the What and Why of a project

- **When is it required?** – Required at the Assessment and Need phase of a project

- **How is it created?** – By formally identifying and documenting the clients needs
EIR sits within a 7 Step Process

**Organisational information requirements (OIR)**
Defines the clients information required to achieve the organization’s objectives

**Asset information requirements (AIR)**
Defines the clients data and information requirements of the organization in relation to the asset(s)

**Employers information requirements (EIR)**
Defines the clients project and BIM objectives

**CIC BIM Protocols**
Provides a contractual mechanism to operate in a collaborative BIM environment

**PQQ - BIM capability assessment**
Set up the right team - assess the supply chains BIM capability

**Common data environment (CDE)**
Central source of information - shared & coordinated data

**Pre contract BIM Execution plan (BEP)/ Post contract BEP**
Process management of the BIM development and digital information
What changes for the Client?

Opportunity

Fees

Define

Interface

Invest to Engage

Manage Information

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What changes for Industry?

- New Roles
- Workflows and Processes
- Appointment
- Information Control
- Format
- EIR
What is an EIR

- Produced as part of a wider set of tender documentation for use during procurement of both Design Team and the Contractor

- Set out clearly to the bidder what models are required and what the purpose of the models will be

- Defines what the client wants from the project information

- Development of EIR will start with the:
  - Assessment of existing asset
  - OR
  - Directly with the employers need
Why is an EIR needed?

- An EIR clearly sets out the requirements of the client
- To ensure that designs are developed in accordance with the clients needs
- Identify the clients purposes for information, promoting engagement with the supply chain
- To ensure information can be used efficiently and effectively to support decision making
- Clarify clients input/involvement and decision points that are required
Employers Information Requirements (EIR)

**VERY Important**

- This is the employer’s statement of what they actually want and their BIM objectives.

- **What** are we doing

- **Why** are we doing it
PAS1192-2 When is an EIR required?

- An EIR is required right at the beginning of a project
- Should be created as early as possible as it forms part of the appointment and tender documents
EIR Contents

Glossary

Project Info

Management

Commercial

Technical

Competence Assessment

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What is an EIRs standard structure?

<table>
<thead>
<tr>
<th>Technical</th>
<th>Management</th>
<th>Commercial</th>
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</thead>
<tbody>
<tr>
<td>• Software Platform</td>
<td>• Standards</td>
<td>• Data drops and project deliverables</td>
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<tr>
<td>• Data Exchange Format</td>
<td>• Roles and Responsibilities</td>
<td>• Clients Strategic Purpose</td>
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<tr>
<td>• Co-ordinates</td>
<td>• Planning the Work and Data Segregation</td>
<td>• Defined BIM/Project Deliverables</td>
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<tr>
<td>• Level of Detail</td>
<td>• Security</td>
<td>• BIM-specific competence assessment</td>
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<td>• Training</td>
<td>• Coordination and Clash Detection Process</td>
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<td></td>
<td>• Collaboration Process</td>
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<td></td>
<td>• Health and Safety and Construction Design Management</td>
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<td></td>
<td>• Systems Performance</td>
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<tr>
<td></td>
<td>• Compliance Plan</td>
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<tr>
<td></td>
<td>• Delivery Strategy for Asset Information</td>
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Technical

- Proposed exchange formats schedule

<table>
<thead>
<tr>
<th>Company</th>
<th>Database</th>
<th>CAD software</th>
<th>Version</th>
<th>Format</th>
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Table 2 – Proposed software versions

<table>
<thead>
<tr>
<th>Models</th>
<th>DWG</th>
<th>DGN</th>
<th>DWF</th>
<th>PDF</th>
<th>IFC</th>
<th>Other</th>
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<tr>
<td>Drawings</td>
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<tr>
<td>Final drawing format</td>
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<tr>
<td>Schedules or spreadsheets</td>
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</table>

- Level of detail

Table 3 – Proposed exchange formats for models and drawings

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Management

- BIM objectives?
- BIM uses?
- Outcomes?
- Who is going to utilise and rely on this model?
BIM uses and outputs.

STAGE 1 - PREPARATION & BRIEF
- Project Employer Information Requirements
- Master Information Delivery Plan
- BIM Execution Plan

Information management
- Establish Common Data Environment
- Project phasing
- Spacial coordination
- Site analysis
- Spacial programming
- Risk analysis
- Cost estimation

STAGE 2 & 3 - CONCEPT & TECHNICAL DESIGN
- Testing building/model performance
- Logistics in a virtual environment
- 3D Coordination
- Sustainability analysis & evaluation
- Pedestrian simulation
- Lighting analysis
- Energy analysis
- Structural analysis
- Logistics & sequencing

Mass modelling
Pedestrian simulation
Lighting analysis
Cost estimation
Logistics & sequencing
Asset management

STAGE 5 - CONSTRUCTION
- Logistics
- Coordination
- Planning
- Site utilisation
- Physical record modelling
- Data transfer & authoring for a CAFM system

Asset management
Planned maintenance
Cost Managers perspective

BIM use: Cost Management

Outcome:

- Improve speed and accuracy of cost analysis and quantification
- Improve reaction time to design changes
- Provide a resource for ‘what if’ analysis to optimise specification decisions and improved value
Commercial - Supply Chain Assessment

PAS91:2013

- Sets out the content, format and use of questions that are widely applicable to prequalification for construction tendering
- Table 8 – Optional Question Module O4: Building Information Modelling, policy and capability. 4 BIM questions

<table>
<thead>
<tr>
<th>Q. No.</th>
<th>Question</th>
<th>Description of information in support of response, which will be taken into account in assessment</th>
<th>YES</th>
<th>NO</th>
<th>Supplier's unique reference to relevant supporting information</th>
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<tbody>
<tr>
<td>O4-Q1</td>
<td>Do you have the capability of working with a project using a “Common Data Environment” as described in PAS 1192:2:2013?</td>
<td>You will be expected to demonstrate that your organization understands the concept of a “Common Data Environment” as described in PAS 1192:2:2013 and is able to exchange information between supply chain members in an efficient and collaborative manner. If you have delivered a project in this way, you may use this to demonstrate your capability. Your explanation should be clear and concise.</td>
<td>☐</td>
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</table>
EXAMPLE: CPIx Assessment Forms

- Guidance of questions which should be asked
PAS1192-2 & EIR

Example EIRs


http://www.bim4real.co.uk/Downloads/e1/eir.pdf
The EIR sets the precedents

- Incorporated into the pre-contract BIM Execution Plan (BEP)
The key question

“What does a good BIM look like?”

“A good BIM complies to the Employers Information Requirements.”
BIM Projects

What we don’t want...

- Design team using BIM software
- No thought given to the type of information placed in the model
- No thought given to the how other people will use the model when it is shared in a collaborative environment

What we want...

- BIM Protocols/EIR/BIM Execution Plan
- Usable model
CIC BIM Protocol document

- The EIR must inform this document
- CIC Protocol sets out roles and responsibilities, but also required information at each stage for each element
- CIC Protocols address copyright and Intellectual property right (IPR) issues
- CIC Protocol should be appended to all team appointments
Conditions for success
4 Conditions for Success

- What are the employers BIM objectives and associated BIM uses?
- What are the needs of different project stakeholders?
- Who is to have a role & responsibility associated with the BIM development?
- CIC BIM protocol document
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