Employer’s Information Requirements (EIR): A BIM case study to meet client and facility manager needs

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Agenda

**Background:** traditional FM problems WLC process

**Context:** FM role in BIM projects: focus on EIR

**Theory:** PAS 1192 standards

**Methodology:** different approaches and stakeholders

**Results:** literature, focus group, case study, peer reviews, Final EIR

**Conclusion:** lessons learnt

**Recommendations and suggested future research**
Background: traditional FM problems
Context: FM role in BIM projects?

Context:
- **FM Late**: in creation process (opening)
- **BIM - Norm**: for design, build, operation
- **BIM Mandate**: UK government April 2016
- **Minefield**: wide range of BIM standards
- **Long term value**: change in thinking
- **Information**: manage assets in operation
- **What, how much and when**
- **FM**: need to be up to speed with BIM!
Theory: start with the end in mind ...
Methodology

Literature:
- FM and BIM
- EIR development

1) Focus group: BIFM
2) Case study: The “Burrell”
3) Interviews/peer reviews

**Final EIR**

For FMs to use in practice
Stakeholder representation

Practitioners: good FM and BIM experience

Representation: interviews across WLC: both FM and construction

Focus group/Case Study: regular review meetings (discuss feedback)

<table>
<thead>
<tr>
<th>Stakeholder group</th>
<th>Key role</th>
<th>Focus Group</th>
<th>Case Study</th>
<th>Peer review</th>
<th>Interviews</th>
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</thead>
<tbody>
<tr>
<td>Client/FM</td>
<td>Client – asset/information needs</td>
<td>1</td>
<td>2</td>
<td>(Total = 7)</td>
<td>2</td>
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<tr>
<td>FM Consultants</td>
<td>FM - information needs</td>
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<td>1</td>
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<tr>
<td>Architect</td>
<td>Design - architectural input</td>
<td>1</td>
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<td>Structural Engineer</td>
<td>Design - structural input</td>
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<tr>
<td>M&amp;E Engineer</td>
<td>Design - M&amp;E input</td>
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<tr>
<td>BIM/CAFM Expert(s)</td>
<td>BIM/CAFM - compliance</td>
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<td>1</td>
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<td>Academic/researcher</td>
<td>BIM/EIR/FM - research input</td>
<td>2</td>
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Results: literature

Eadie et al (2013): in relation to financial benefits, in the BIM process, clients benefit most from BIM followed by facility managers.

PAS 1192-2 (BSi, 2013): 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”

Dawood & Vukovic (2015): note that “lack of in-house expertise is one of the key barriers to BIM adoption”

Akcamete et al (2010): utilization of BIM for operation/maintenance falling behind the BIM implementations for design and construction
Results: practice early EIR development

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<tr>
<th>Technical</th>
<th>Management</th>
<th>Commercial</th>
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<tr>
<td>Software Platforms</td>
<td>Standards</td>
<td>Data drops and project deliverables</td>
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<tr>
<td></td>
<td>• Roles and Responsibilities</td>
<td>• Client's Strategic Purpose</td>
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<td></td>
<td>• Planning the Work and Data Segregation</td>
<td>• Defined BIM/Project Deliverables</td>
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<td>• Security</td>
<td>• BIM-specific competence assessment</td>
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<td>• Coordination and Clash Detection Process</td>
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<td>• Collaboration Process</td>
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<td>• Health and Safety and Construction Design Management</td>
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<td>• Systems Performance</td>
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<td></td>
<td>• Compliance Plan</td>
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<td></td>
<td>• Delivery Strategy for Asset Information</td>
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BIM Task Group (2016)
Results: focus group

- **EIR:** should be client/FM orientated
- **Clients/FMs:** need guidance specific to their needs
- **Standardization:** understand BIM standards, process and how to apply
- **LOD:** confusion over detail/definition and how to apply (NBS)
- **BIM model handover:** How will FM view BIM models EIR
- **Asset Data:** what information is needed (MOJ examples)

**Operational Readiness Steering Group**
Made up of FM professionals from practice
Results: case study

• **How to start?:** need to start early – use as a cooperation tool
• **Complexity:** early versions – not clear enough in specification
• **Appendices:** document reorganized to make reading and use easier
• **BIM knowledge:** “walking through a minefield” – BS8536 (P1 and 2)
• **BIM Terminology:** Use EIR but not OIR and AIR (specific to organization)
• **COBie/CAFM:** need to plan COBie for Glasgow Life CAFM
• **RIBA PoW:** early versions needed realigning to RIBA PoW (2013)
• **2 Stage EIR:** depending on the tender process

_The Burrell Renaissance Project_
Glasgow Life: £66 million refurbishment
2nd Project using BIM: Two stage tender
Results: peer review

• Clarity?: early versions – too wooly – clients need to be clear
• Guidance vs Template: reorganized with “Supplier Evaluation Form”
• Client Responsibilities: need for clients to take more ownership of EIR
• Model ownership: use the CIC protocol – tenders as established text
• Best Practice: use documents in public domain (MOJ) examples

BIM and CAFM specialists
Peer review of EIR in development
Ensure its fit for purpose for practice
Results: “EIR Template & Guidance”

BIFM highlights Employer’s Information Requirements as part of new guidance for FMs working on BIM projects

BIFM has today (Thursday) published a new guide for facilities management professionals working with clients on BIM construction projects.

*Employer’s Information Requirements* (EIR) is a practical 47-page document to support clients using BIM (Building Information Modelling).

Presented in a user-friendly manner, it shows clients how to specify their exact requirements for the design and construction phase of a built asset through to its full life-time operation.

http://www.bifm.org.uk/bifm/news/7604
Conclusion: lessons learnt

1) Fully understanding the BIM process is not easy:
   • Large amount of information to read, understand and internalize

2) BIM requires a paradigm change in thinking:
   • Planning of client information needs for the future right from the start

3) FM professionals (and other stakeholders) not sure:
   • Where to start when it comes to preparing an EIR
   • Good reference examples – practice and case studies

4) FM benefit from a framework of easily digestible guidance documents
   • EIR Template and Guidance (and others)
   • UK Ministry of Justice (2016) framework of BIM documents

All stakeholders in BIM process need to work together
Recommendations

• Development of further guidance:
  • Organisational Information Requirements (OIR)
  • Asset Information Requirements (AIR)

• Refine and improve:
  • Use in real life BIM projects ... Such as the Burrell Renaissance Project

• Web based version:
  • Part of digital plan of works

• Further coopertaion
  • «Practice» and «Academia»
Future research

• Wider FM Awareness of BIM:
  • LJMU, ZHAW, BIFM Questionnaire

• Critical success factors
  • FM involvement
  • PhD research

• Case studies:
  • FM and BIM in practice
  • Searching for partners

BIFM survey to benchmark perceptions of BIM within FM

31-01-17 9:00 BIFM

FM professionals are being urged to take part in a new piece of BIFM research to measure the level of understanding and awareness of Building Information Modelling (BIM) within the FM sector.

The survey, which has been developed in partnership with Liverpool John Moore University and the Zurich University of Applied Sciences, aims to establish a benchmark of the current perceptions of the impact of BIM on the FM sector and the benefits and challenges it presents.

BIFM research and information manager Peter Brogan said: “Working with Liverpool John Moore University and the Zurich University of Applied Sciences through our Operational Readiness group, it was clear from all parties that there was a need to develop a suite of guidance tools to help FM professionals navigate their way through the BIM process.”

250+ responses
Questions?

http://www.bifm.org.uk/bifm/news/7604