



Client side document scoping (AIR, EIR) and considerations for Delivery Operations

Introduction

The BIM Journey

- The How: Learning
- The Now: Collaboration
- The Future: Strategy
- Lessons Learnt
- Q&A



Who are Estate Management?



Principally we are responsible for:

- Planning and managing the University's estate development programme
- Project managing new build construction and the refurbishment/alteration of existing stock
- Managing the operational and non-operational estate including residential accommodation
- Maintaining the University's teaching, research and administrative buildings
- Delivering a comprehensive security and facilities management service to the University
- Managing catering outlets across the estate
- Managing the operational and research facilities at the [University Farm](#)
- Promoting the University's environmental sustainability initiative, particularly with regard to reducing carbon emissions.

The Estate in Numbers



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Number of buildings in the operational estate



£2.5Bn

Value of the operational estate

22%



Some of the oldest buildings are over 800 years old and Listed buildings cover 22% of the total estate area

640,000 sqm

Gross Internal Floor Area of the Estate



9500

Calls handled by Maintenance Team in a year



Parking spaces managed

3000



£150M

Capital expenditure in 2014/15



8500



320

Number of people employed



£1865

Amount spent on energy consumption every hour



25,000

Letters delivered each week



70%

Percentage of waste recycled

Background

The use of BIM was recommended in Paper BC(13)31 entitled Value for Money (Annex A) and discussed by the Buildings Committee at their meeting in May 2013.

Richard Saxon, Lay Member of the Buildings Committee and also a member of the All Party Parliamentary Committee wrote to the Director of Estate Management and to the Chairman of the Buildings Committee on 15 April 2013 as follows:

*Given all the work now done to define Level 2 BIM working it should be possible for EM to commit to meeting the same target as central government departments: **all projects on BIM by 2016**. This also implies that EM moves towards BIM-based FM. The tools for this may be a little later but are in development now. Government Soft Landings, a development of Cambridge's own idea, is now part of the BIM programme.*



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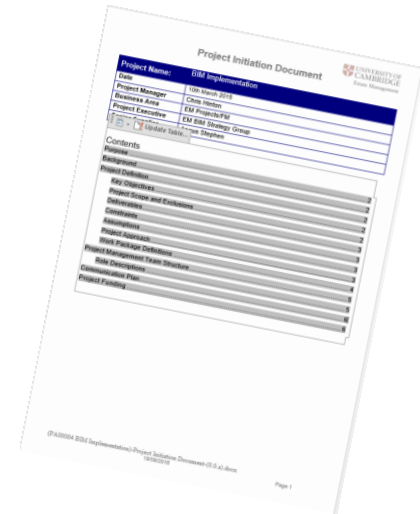


We WANT to do BIM!?

The How: Create a Project Plan

1. Create a UoC BIM Implementation Plan

- Key Objectives
- Project Scope and Exclusions
- Deliverables
- Constraints
- Assumptions
- Project Approach
- Work Package Definitions



The How: What did this mean?

2. Gain an understanding of BIM from a Clients perspective

- Understand and identify Key BIM requirements relevant to Estate Management
- Break down and understand the BIM maturity levels (Where we are?)
- Understand how this impacts the University Estate projects going forward
- How BIM as a process can help the Estate Management in other areas
- What wider business impact would be felt by the team



The How: Assess

3. Assess where we are:

- Current BIM Projects x 2 (At different Stages)
- Draft versions of a EIR, BEP and Capability assessment available
- Drawing standards already in place (Transferable)
- The current drawings repository and asset information
- UoC resources available to contribute
- Projects due to implement BIM



The How: The Supply Chain

4. Consult the supply chain for 2 projects
- Live projects
 - Mutually beneficial
 - Different approaches
 - Simplified BIM
 - Common data requirements

Costing
BEP
Meta Data
Standards
Best Practise
Tools
File Formats



ARUP

AECOM



The How: Action

5. What did we do with all of this information initially:

- BEP: Reverse engineered and rewrote / wrote new relevant BIM Documentation
 - Creation of BIM Document Suite
- Added where relevant Supply Chain Feedback
- Started from the end: FM considered, and objectives set out
- Became Part of BIM Kick Off Meetings
- Mapped out the BIM Process
- Identified UoC BIM Project Deliverables
- Made changes to internal systems to cater for BIM Data



The How: Review

6. Review the current UoC project processes
 - Tender documentation
 - Project requirements / Supply chains requests
 - Internal team support / Capability
 - Project delivery
 - What do we do if we receive a BIM Model?



The How: AIR

7. A separate AIR?

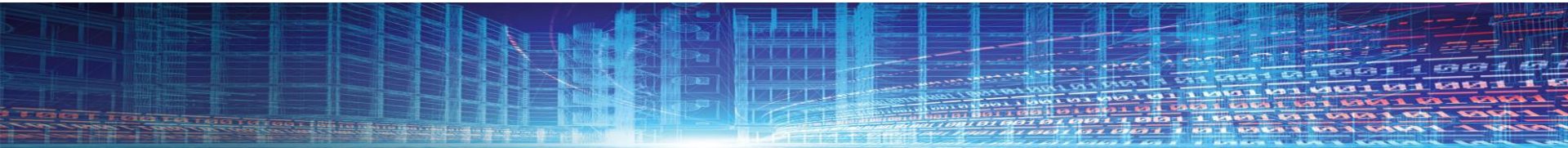
- More specific
- The University have a **Asset Information Requirement (AIR)**
- COBie values outlines / IFC mapping
- Aligned with FM
- Structured information



The Now: Collaboration

Top Level Changes:

- BIM document suite continually evolving, to ensure that it meets the Universities **specific** requirements
- Better integration with projects teams e.g. BIM Kick off meetings are part of the project process
- Project managers are aware and understand BIM
- New Software Tools and internal drawing standards have been implemented
- We are on the Version 10 of the EIR
- All documents correct named (PAS1192)



The Now: The document suite



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Complete BIM documentation suite: (At Present)

EMNNNNN-UOC-ZZ-XX-RP-K-0001_ **Employer's Information Requirements (EIR)**

EMNNNNN -UOC-ZZ-XX-RP-K-0002_ **Asset Information Requirements (AIR)**

EMNNNNN -UOC-ZZ-XX-RP-K-0003_ **Model Production and Delivery Table (MPDT)**

EMNNNNN -UOC-ZZ-XX-RP-K-0004_ **BIM Protocol and Appendices**

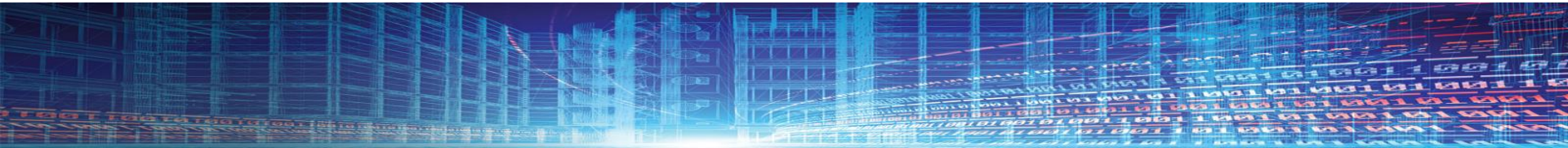
EMNNNNN -UOC-ZZ-XX-RP-K-0005_ **CDE Guide**

EMNNNNN -UOC-ZZ-XX-RP-K-0006_ **Pre-contract BIM Execution Plan Project Implementation Plan (PIP) Supplier BIM Maturity Assessment Form**

EMNNNNN -UOC-ZZ-XX-RP-K-0007_ **Post contract-award BIM Execution Plan (BEP)**

EMNNNNN -UOC-ZZ-XX-RP-K-0008_ **Master Information Delivery Plan (MIDP)**

EMNNNNN -UOC-ZZ-XX-RP-K-0009_ **Task Information Delivery Plan (TIDP)**

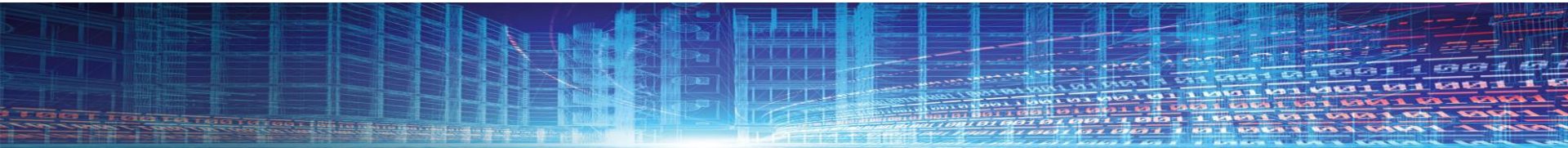


The Now: CDE

In the process of implementing a Client side CDE evaluation with PCSG



- Reviewing new systems and core functionality relevant to the University
- Enable Estate wide metrics
- BIM project areas, of data drops and collaboration
- Process test areas
- Exploring the boundaries of the systems available at the moment
- Possible integration and development with FM



The Now: BIM Maturity



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- Creation of a Supplier BIM Maturity Guide
 - Active on all new BIM Projects
 - Solid and standardised approach to the supply chain
 - Understanding vs the Digital Britain vision
 - Implemented in to project procurement
 - Pre-Contract BEP



The Future: What Next...



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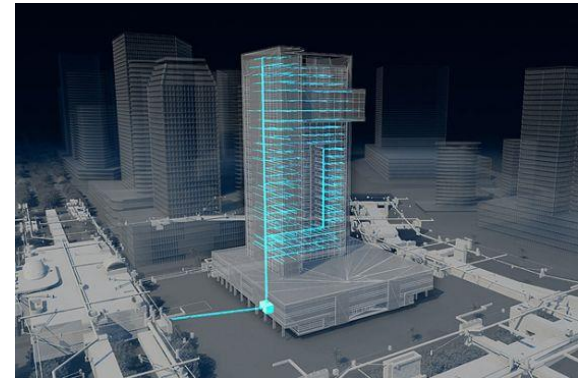
BIM Level 3 & Beyond



The FUTURE:

What is next?

- Our **2020** vision
- Fine tune requirements
- Government guidance from Mark Bew MBE Chairman HM Government BIM Working Group
- Contributing to the digital Britain
- Further FM integration
- Pushing **BIM to its limits to benefit the University**
- **Develop an internal BIM team**



Current BIM Projects: Statistics



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Cavendish III



Value: 300 Million +
Expected Completion
date: 2020
BIM Level 2 - 3

UK Sensing



Value: 90 Million +
Expected Completion
date: 2020
BIM Level 2 - 3

Project Capella



Value: 70 Million +
Expected Completion
date: 2017
BIM Level 2

Off-site: Library Storage



Value: 17 Million +
Expected Completion
date: 2018
BIM Level 2

BIM Lessons Learnt



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- Don't confuse standards
- Keep it simple
- The supply chain is important
- Organisational buy in (Director Level)
- ROI requires understanding of the larger picture
- Be flexible and pragmatic
- BIM is not 3D

We are STILL learning...



Q&A



Thank you...