

CitA
BIM GATHERING



Building Capabilities in Complex Environments

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Barriers to Benefit from Integration of Building Information with Live Data from IoT Devices during the Facility Management Phase



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Presentation Sections/Chapter

1. Introduction
2. Origins of The Barriers – Industry Perspective
3. DCU Estates Office - Administration
4. HEI – Academic/Administration Partnership
5. Smart Campus/Smart City
6. Conclusion



1. Introduction

Building information is invaluable for many industries, e.g. Facility Management industry. However, there are barriers to take advantage from this information:

- Pertinent semantic format for the maintenance stage (Shen et al., 2010)
- Computerised facility management system integration (Becerik-Gerber, 2011)
- Interoperability, interfaces with other systems Winch (2010) and Shen et al. (2010)
- Availability of the required data for maintenance and usability of the stored data format Parn et al. (2017)



2. Origins of the Barriers – Industry Perspective

Building Information Inability to:

- Collect
- Share
- Access





3. DCU Estates Office – Administration

Building Information Modelling (BIM):

- OIR
- AIR
- EIR



CWMF (PW-CF1) Project Workstage	Plan		Design			Construction		Operate
	Stage 1 – Preliminary Design	Stage 2a – Scheme Design	Stage 2b – Developed Design and Planning	Stage 2c – Detail Design and Tender Documentation	Stage 3 – Tender Issue, Evaluation and Award	Stage 4 – Construction	Stage 5 – Handover and Final Account	Stage 6 – Operations and Maintenance (to End of Life)
Employer's Specific AIM Use								
Existing Conditions Modelling	■	■						
Site Analysis	■	■	■	■				
Space Utilisation Analysis		■	■	■				■
Cost Estimating and Analysis (5D BIM)	■	■	■	■	■	■	■	■
Planning/Phasing (4D BIM)			■	■	■			
Programming and Scheduling			■	■	■	■		
3D Visualisation/Walkthroughs	■	■	■	■	■	■		■
Health and Safety/Buildability Study	■	■	■	■	■	■	■	■
Traffic and Pedestrian Flow Study		■	■	■	■	■		■
Emergency and Disaster Planning		■	■	■	■	■		■
3D Co-ordination			■	■	■	■		
Massing Analysis	■	■	■	■	■	■		
Sustainability(BREAAM)		■	■	■	■	■		
Energy Analysis		■	■	■	■	■		
Electrical Systems Analysis		■	■	■	■	■		■
Mechanical Systems Analysis		■	■	■	■	■		■
Structural Analysis		■	■	■	■	■		■
Clash Detection		■	■	■	■	■		■
Design Review	■	■	■	■	■	■	■	■
Building Regulations/Code Validation		■	■	■	■	■	■	■
Building Systems Review		■	■	■	■	■		■
Asset Management							■	■
Space Management							■	■
Maintenance Scheduling							■	■
Based Modelling							■	■
Building Information & Live Data (BILD)				■	■	■	■	■

Fig. 3.3-001: Employer's Specific Asset Information Model Uses. Source: Peter Mc Donnell RIAU (Arch. Tech.), DCU Estates Office

Building Information & Live Data (BILD)



What is the Solution?



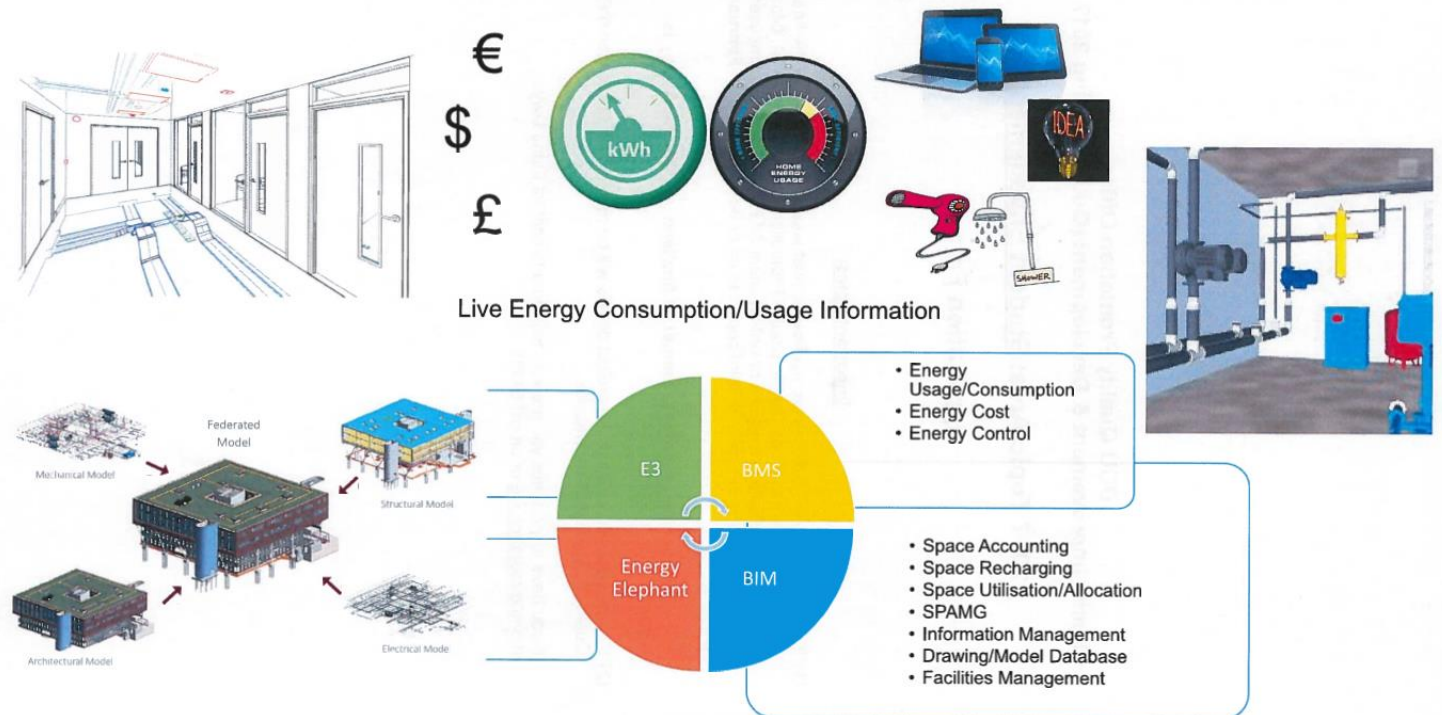
4. HEI – Academic/Administration Partnership

Real-Life Learning:

- Live Labs
- Student Experience
- Staff Experience
- Learning

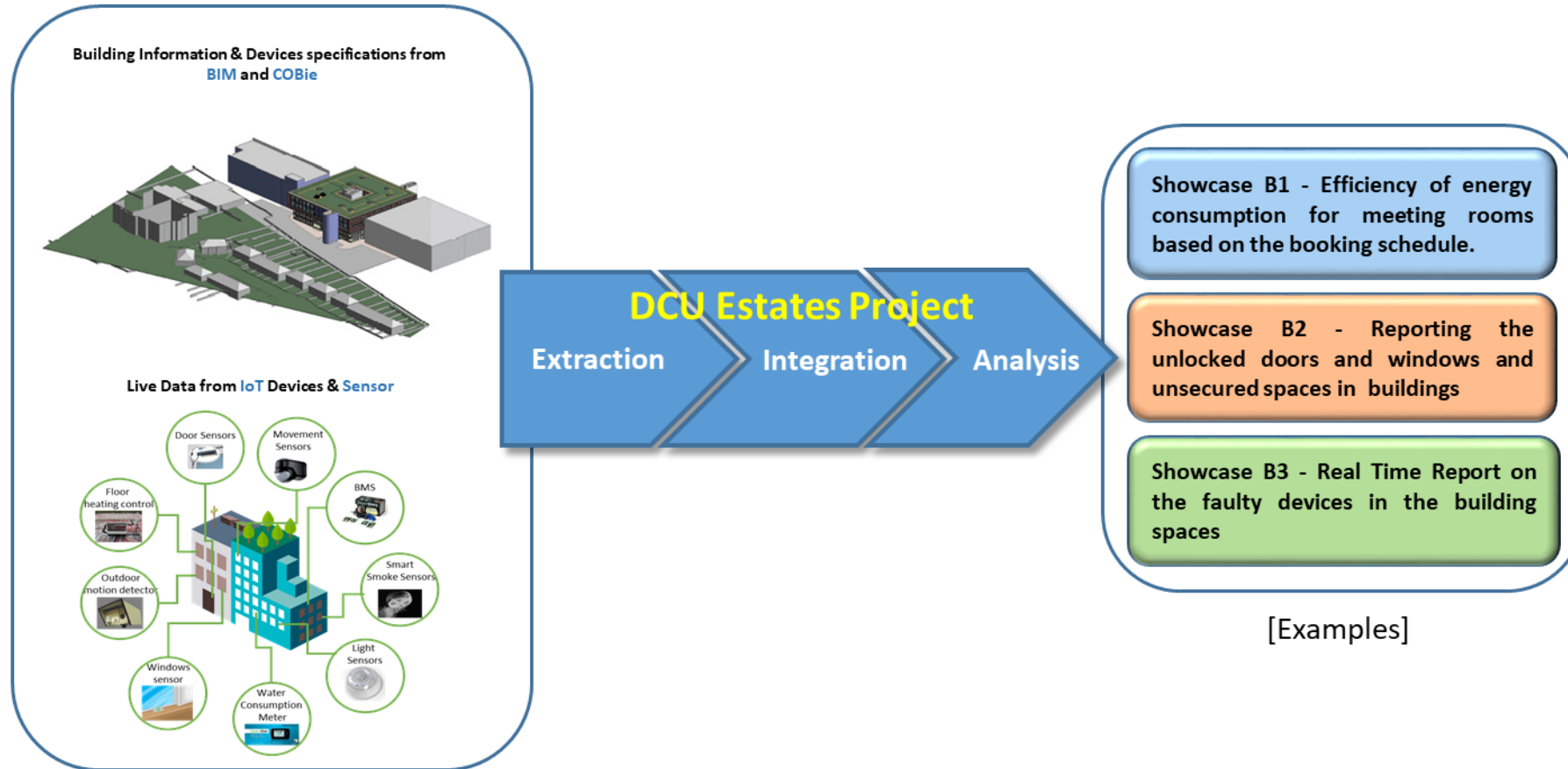


“Visualising Student and Staff Building Energy Usage and Cost” Green Screen



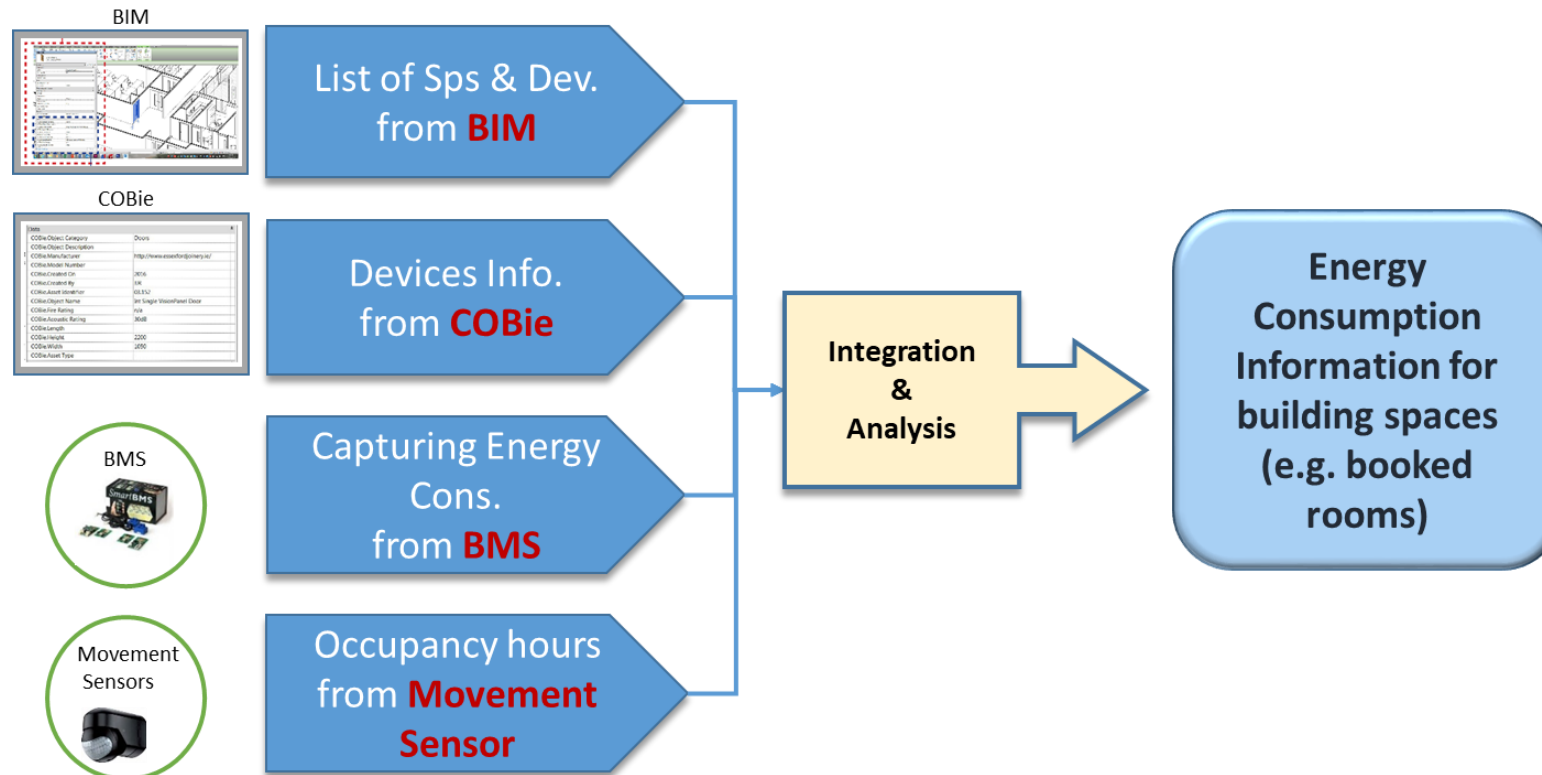


5. Smart Campus



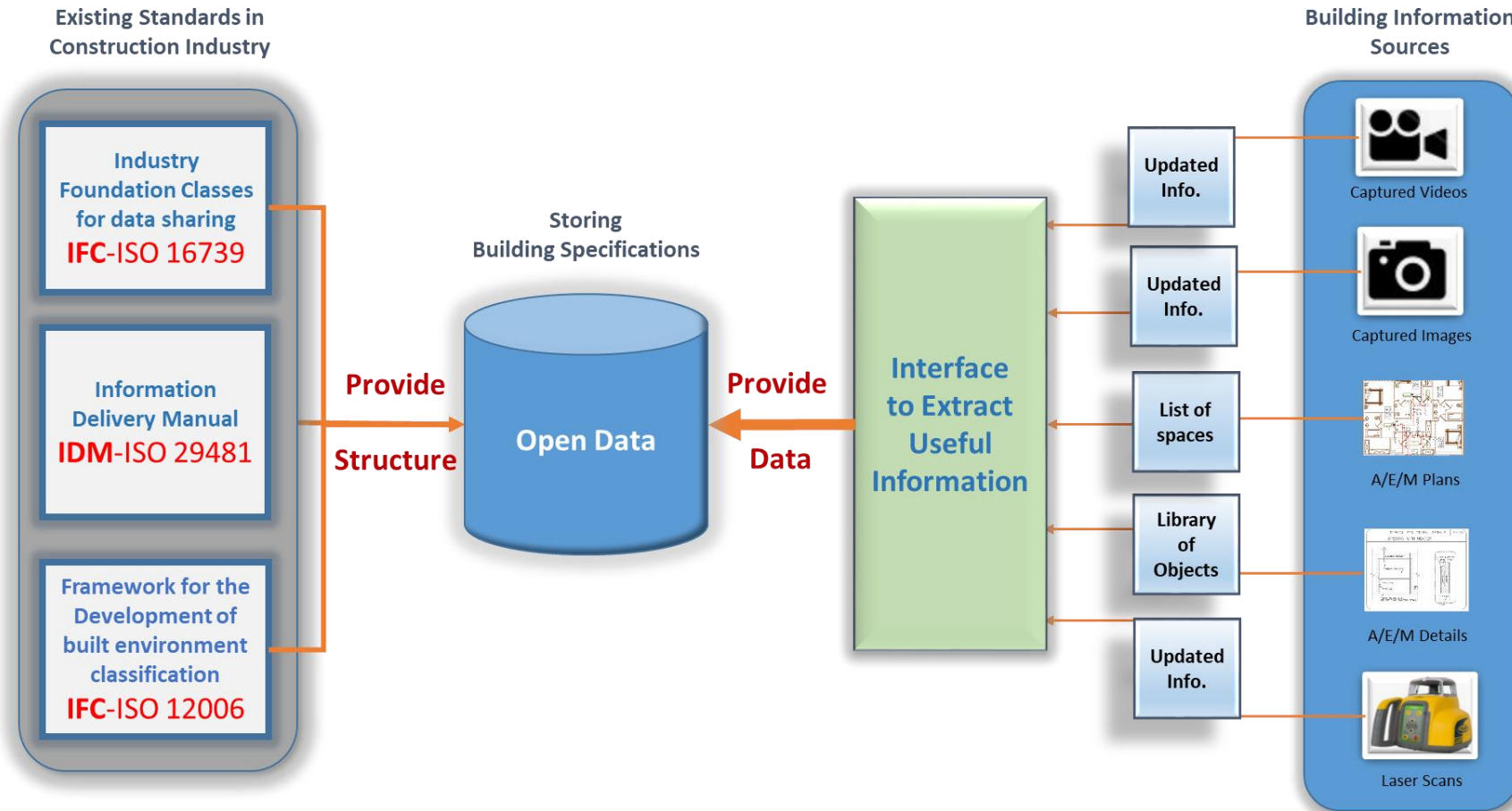


Example





6. Conclusion



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Thank you

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