

BIM DE-BUNKED
Demystifying BIM Level 2

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INTRODUCTIONS

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- BA (Hons), MA Arch., MSc BIM and Integrated Design (expected 2016)
- Over 12 years industry experience
- Leads BIM for Lendlease Consulting business unit
- Chair of the BIM4Heritage interest group
- Previously involved in a number of projects most notably the HM Government BIM implementation and the Ministry of Justice BIM implementation
- Member of the Ministry of Justice BIM2AIM Special Interest Group
- Member of the steering group that developed the British Standard (BS1192-4)-COBie

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DEMISTIFYING BUILDING INFORMATION MODELLING (BIM) LEVEL 2

Why BIM?

1994: CONSTRUCTING THE TEAM
1998: RETHINKING CONSTRUCTION
2002: Accelerating Change
2011: Government Construction Strategy

'Waste has been estimated to be as much as 30% of construction cost'

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Why BIM?

Make safe by design a moral imperative

Better enable the D&C process (Delivery Efficiency)

The Day The Waste Ended!

- ✓ Reduce project risks; time, cost, quality, and safety
- ✓ Reduce project waste; material and efforts
- ✓ Increase certainty of outcomes
- ✓ Improve communications
- ✓ Increase visibility of the design and delivery processes
- ✓ Better outcomes

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What is BIM?

BIM is... a 'collaborative way of working, underpinned by the digital technologies which unlock more efficient methods of designing, creating and maintaining our assets. BIM embeds key product and asset data and a 3 dimensional computer model that can be used for effective management of information throughout a project lifecycle – from earliest concept through to operation'.

Source: HM Government – Building Information Modelling – Industrial strategy: government and industry in partnership (2012)

BIM Level 2 for all centrally procured government contracts from April 2016!

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Industry Standards related to BIM Level 2

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BIM Level 2

LEVEL DEFINITIONS

Level 0
Unmanaged CAD probably 2D. With paper as the most likely data exchange mechanism

Level 1
Managed CAD in 2 or 3D format with a collaboration tool providing a common data environment, Commercial data managed by standalone cost packages with no integration

Level 2
Managed 3D environment held in separate discipline's with attached data. Commercial data managed by an CDE. The approach may utilise 4D Programme data and 5D cost elements

Level 3
Fully open process and data integration enabled by IFC or similar. Managed by a collaborative model server. Could be regarded as iBIM (integrated BIM) potentially employing concurrent engineering processes

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The Information Delivery Cycle

and how it works in practice

Information Delivery Cycle, PAS1192-2 (2013)

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BIM Level 2 process

- Agreement on Standards and Process to be used
- BIM Protocol and Model Production Delivery Table included in appointment contracts
- Provision of Employers Information Requirements (EIR) document
- Provision of a Pre-Contract BIM Execution Plan and Project Implementation Plan
- Assessment of suppliers BIM capability before appointment
- Appointment of project Information Manager
- Provision of a Common Data Environment (CDE)
- Development of Post-Contract BIM Execution Plan
- Development of Task Information Delivery Plans (TIDP)
- Development of Master Information Delivery Plans (MIDP)
- Production of the Project Information Model
- Production of the Asset Information Model
- Compliance check against BIM documents and standards

Source: Designing Buildings Limited, 2011

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'Understanding of any component of heritage is beyond understanding the physical characteristics of existing building, because each individual heritage object is a message from the past, and it remains as living witnesses of the age's tradition'.

(The Venice Charter, 1964)

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Why BIM for the Historic Environment?

- Support activities to the understanding of the historic built environment
- Digital representation of historic structures
- Support CRM assessments and decision making
- Assist archaeological/structural analysis
- Enhance building performance
- Support the management of Heritage Information
- Improve communication with the public
- Demonstrate safe methods of working, logistics planning and movement
- Support conservation, restoration, rehabilitation, repair and maintenance activities
- Capture knowledge

(Perceived benefits)

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Challenges and advances of BIM application to the Historic Environment

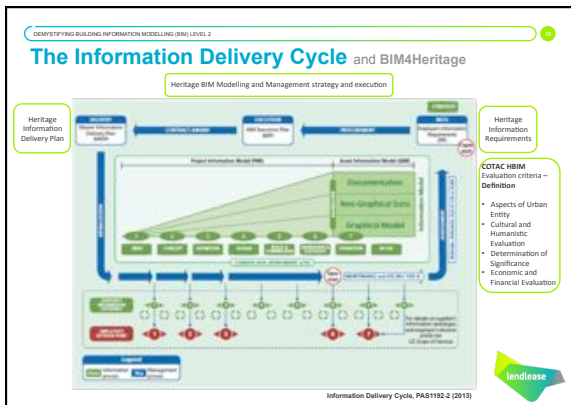
Challenges:

- Cost (data capture, data processing)
- Data Processing (3D Modelling) time
- 3D Model accuracy
- Potential of BIM application to the Historic Environment not fully explored – interfaces of BIM in relation to conservation and heritage science processes not yet identified
- Lack of research and published case studies

Advances:

- Historic England has published the revised 'Metric Survey Specifications for Cultural Heritage', which includes a section on standard specification for the supply of building information modelling (BIM).

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BIM4Heritage

BIM4Heritage is a special interest group established within the BIM4Communities to champion Building Information Modelling (BIM) within the Historic Environment.

Organisations currently involved:

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BIM4Heritage

Group Goals

- Develop consistency of messaging, support and standards of BIM Implementation within the Historic Built Environment.
- Provide opportunities for communicating best practice, and debating issues concerning the adoption of BIM in both private and public sectors, and with increasingly advanced applications of BIM.
- Collaborate with other BIM4 Communities to advance knowledge and influence understanding in the broader context of the industry and built environment, and to initiate the culture change necessary to fully benefit from digital and information technologies and processes.
- Provide leadership in establishing how BIM can be used for heritage conservation, repair and maintenance processes.
- Promote historic structures BIM case studies to demonstrate best practice.
- Establish collaborative links to academia.
- Ensure that the group activity and outputs are coordinated and integrated with the other BIM4 community groups and CIC regional hubs.

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THANK YOU

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