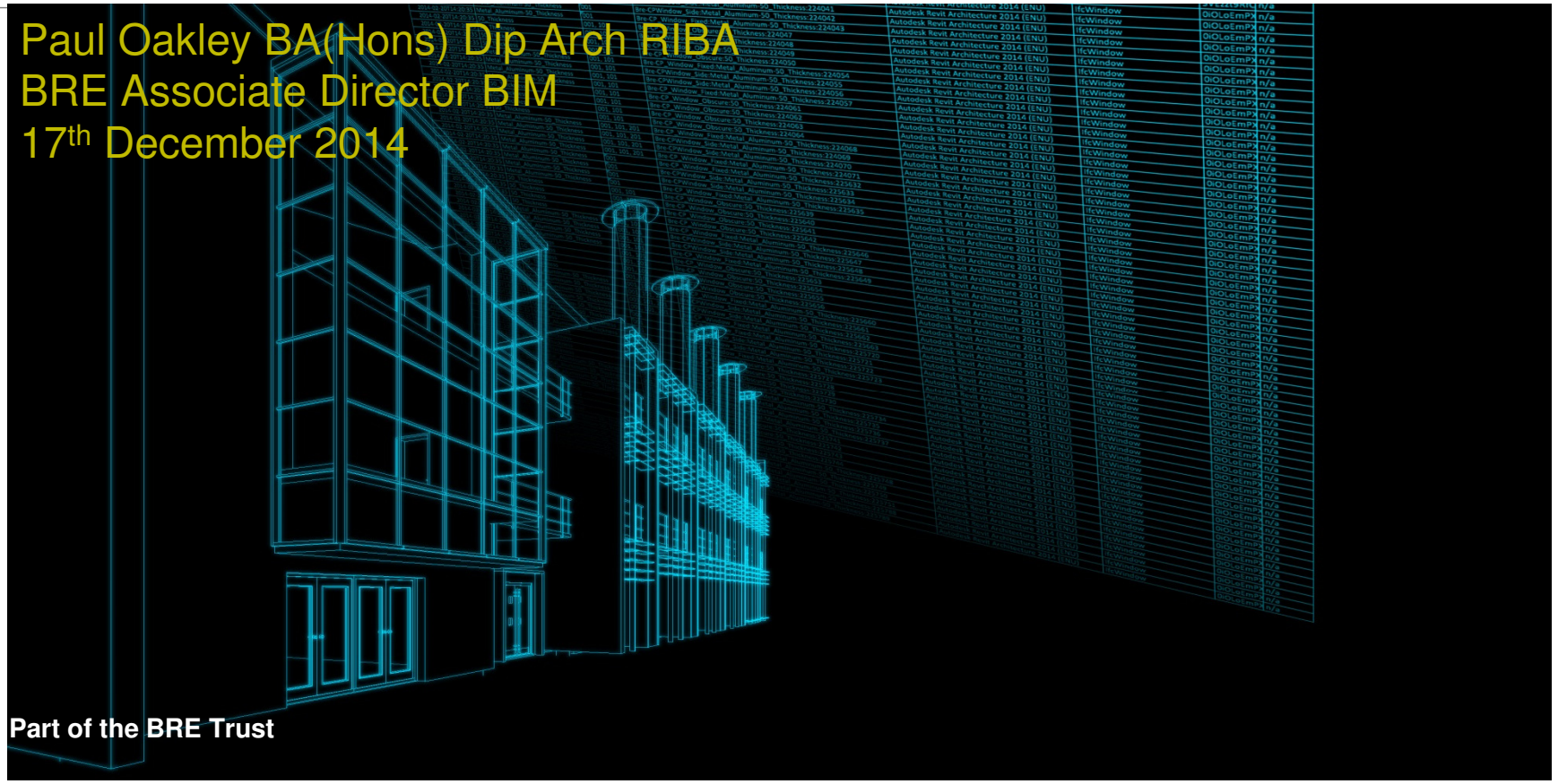
BIM – Are you BIM Level 2 Ready?

Paul Oakley BA(Hons) Dip Arch RIBA
BRE Associate Director BIM
17th December 2014



Part of the BRE Trust

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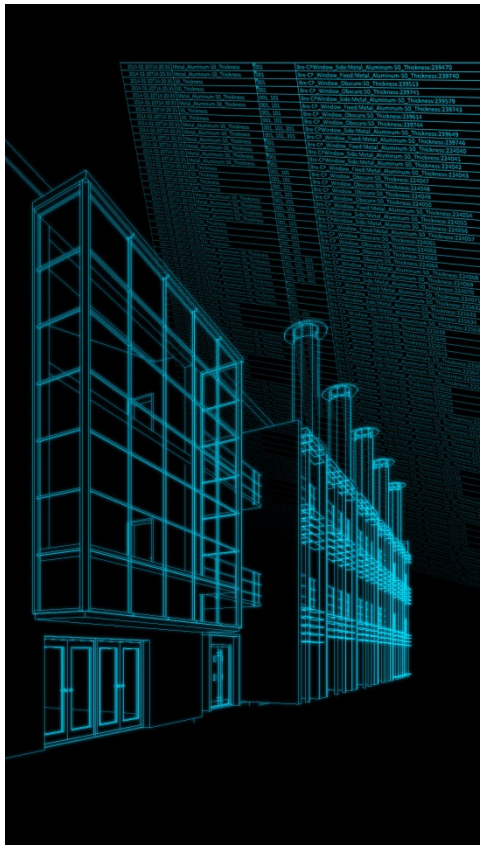
BIM – Are you BIM Level 2 Ready?

AGENDA

- Who am I / BRE BIM Team / buildingSMART?
- What's required for BIM Level 2
- Getting Ready for BIM Level 2
- Assessing a companies BIM Capability?
- How BRE can help

Questions



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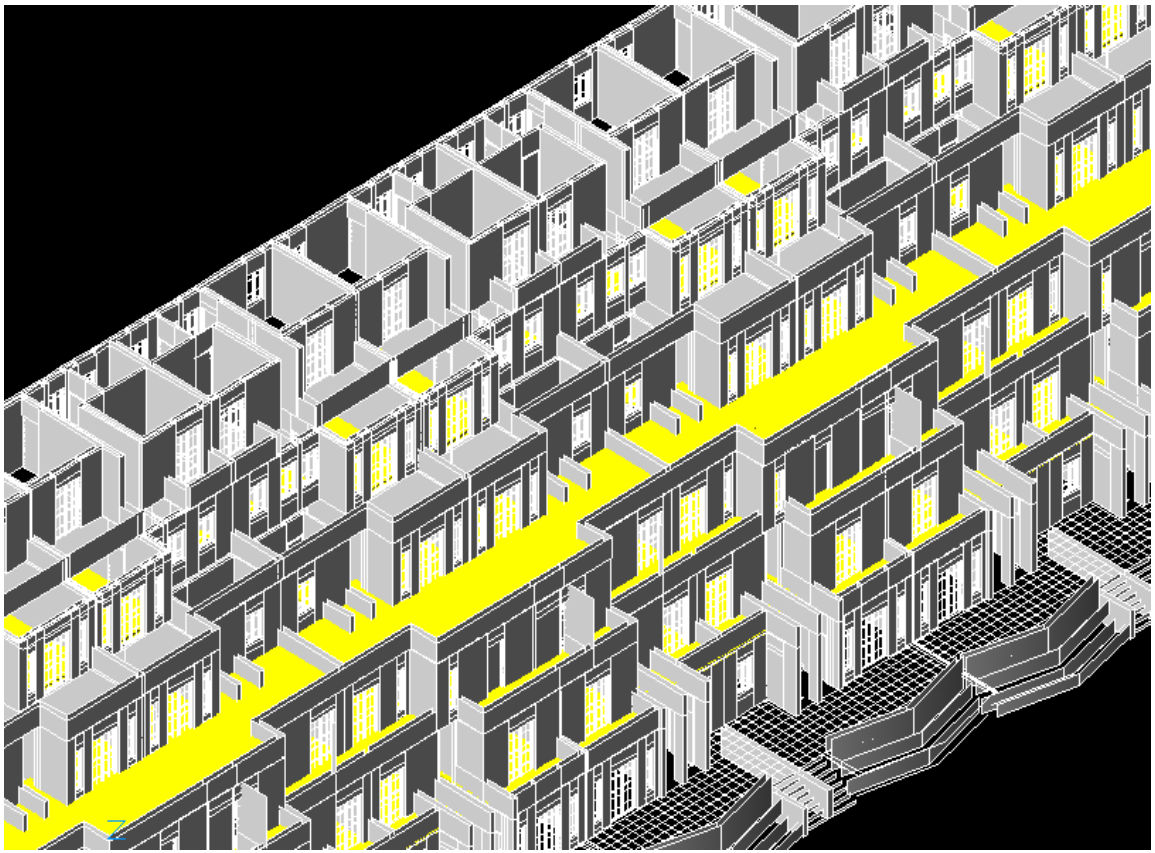
Paul Oakley - Experience

Architect / CAD Manager
- 10 Years L.A .
- Large International Practices
- CAD / BIM Consultancy

Software (Autodesk)
- AutoCAD
- AutoCAD Architecture
- Revit

BIM / CAD Skills
- Software Training
- Standards
- Implementation
- Project Consultancy
- Application Development



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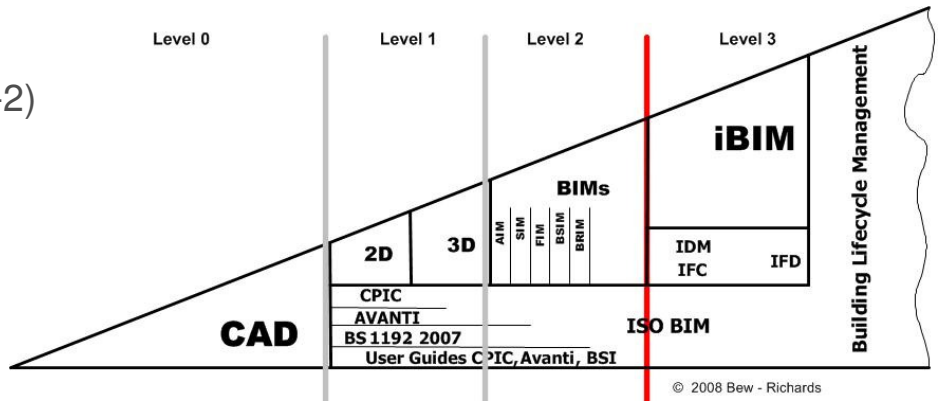
Industry Involvement

Industry Groups

- Teamwork 2000
- ADT Community Group
- ADT Technical Forum
- The BIM Community
- CE Avanti Management Team
- CPIC Uniclass Working Party
- CPIC BS1192 Working Party
- BSI (Various Committees including PAS 1192-2)
- CIC BIM Working Party
- AUGIuk Director
- AUGIuk Chairman (2010-12)
- Building Smart UKI - Board



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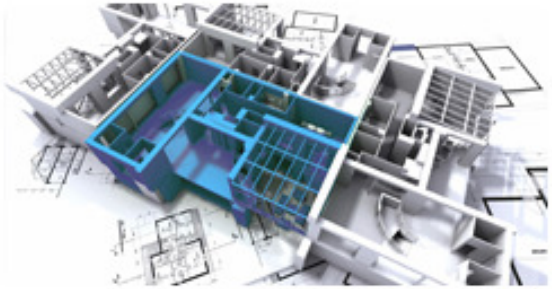
BRE BIM Services (www.bre.co.uk/bim)



About BIM

BIM Certification with BRE Global Ltd

BIM Education with BRE Academy

BIM Consultancy with BRE

BIM Projects with BRE

buildingSMART
UNITED KINGDOM & IRELAND

buildingSMART UK & Ireland

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buildingSMART UKI

- Part of BuildingSMART International
- Membership Organisation
  - Large Companies (250+) = £1,500
  - SMEs (-250), Universities, Charities etc. = £550
  - Individuals = £100
- User Group
- Technology Group

BRE run from Jan 2013.

- Chairman – Mark Bew (BIM Task Group)
- Secretary – Nick Tune (BRE)

buildingSMART UNITED KINGDOM & IRELAND

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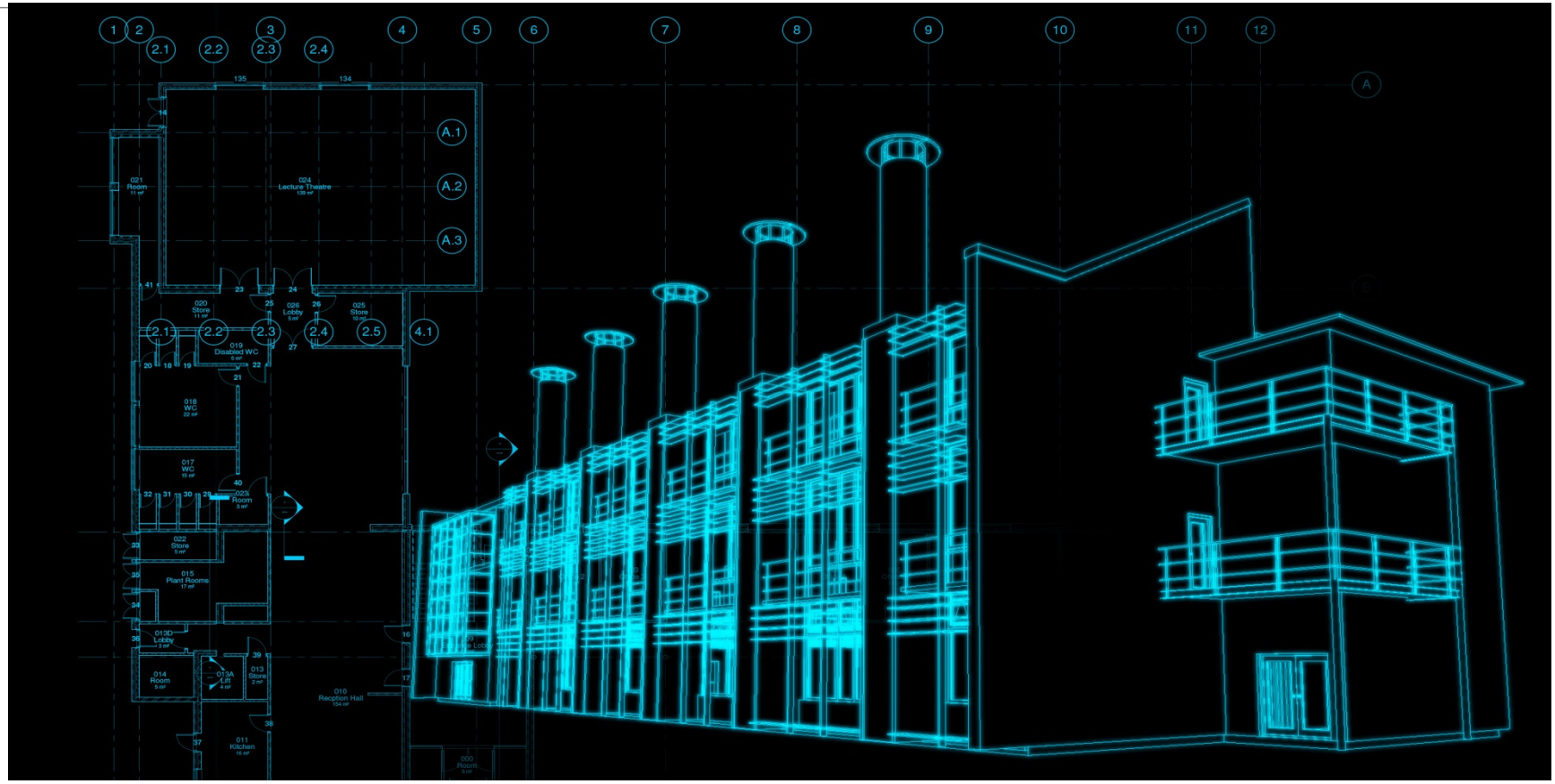
The Need for BIM Level 2?



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Which BIM?

Term used to define:
–Software
–3D Models
–Process

Acronym for…

–Building Information Modelling

–Building Information Management

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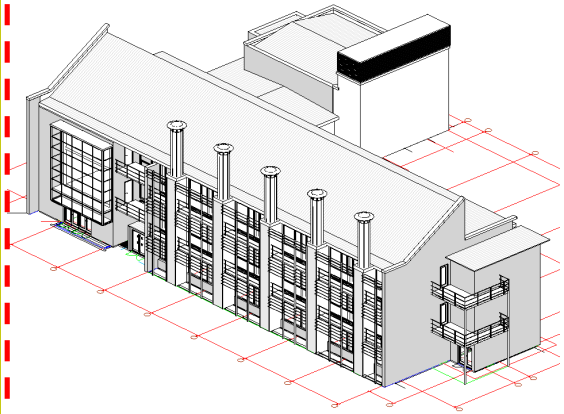
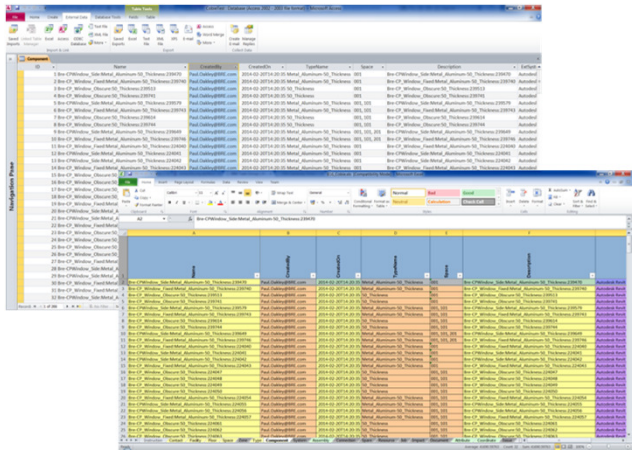
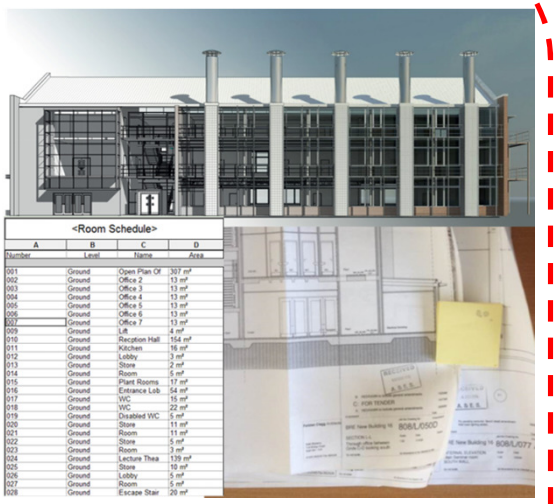
BIM



Graphical Model



Non Graphical Model



Documentation

~~Building~~ Information Model

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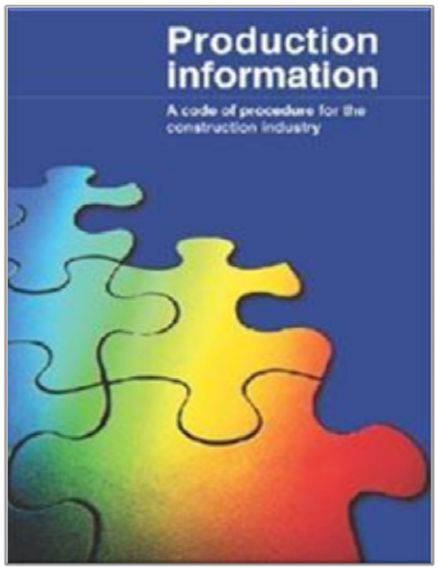
Construction Issues - the Supply of Information…

"Information is generally, incorrect, incomplete, uncoordinated and ambiguous"



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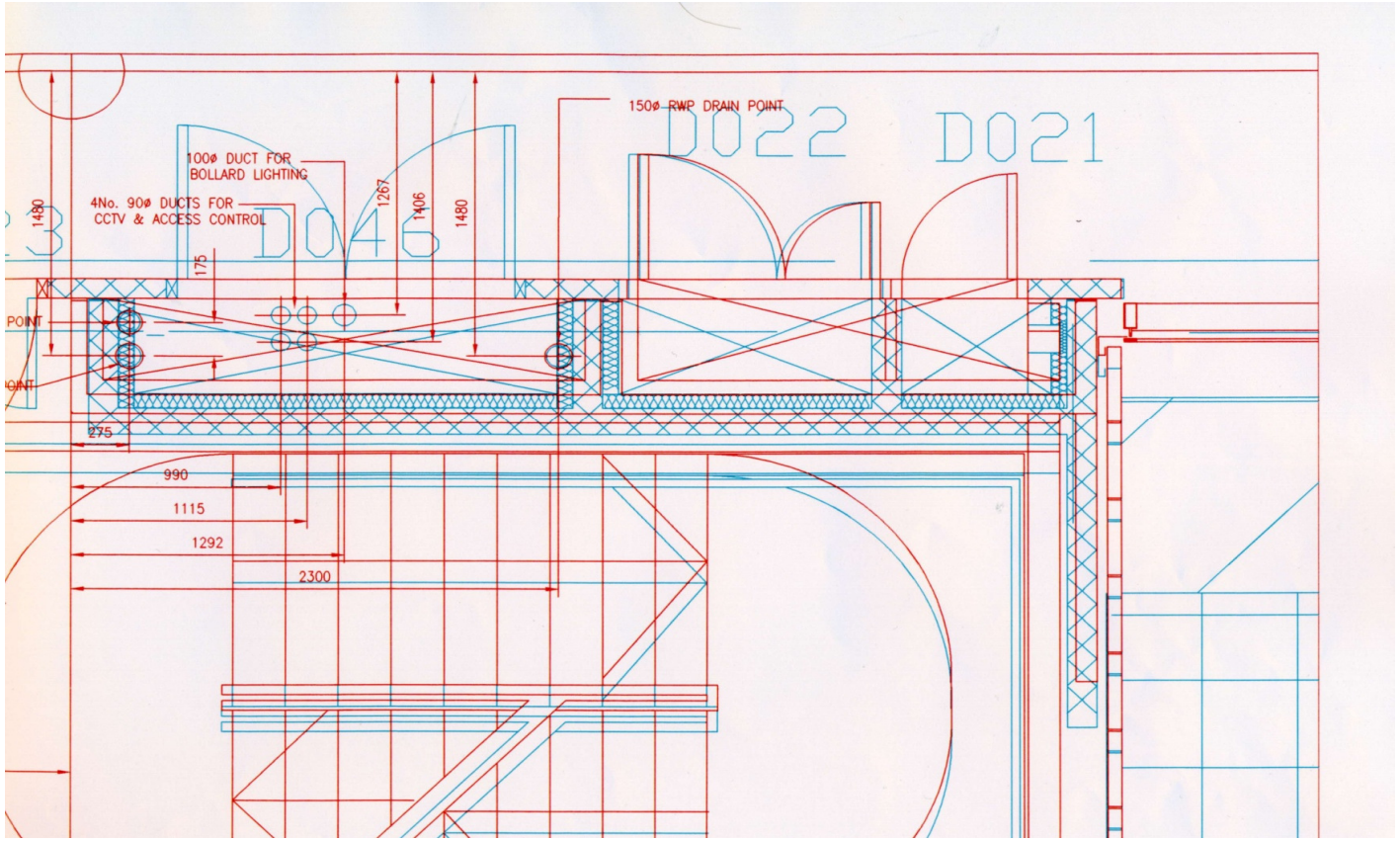
“Information is Uncoordinated…”



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“Information may be incomplete…”

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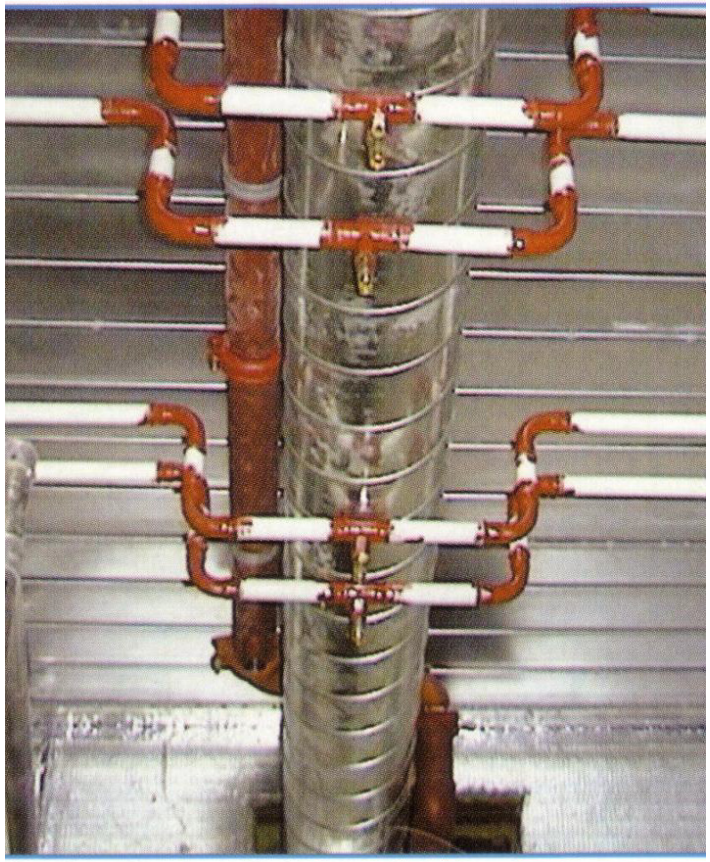
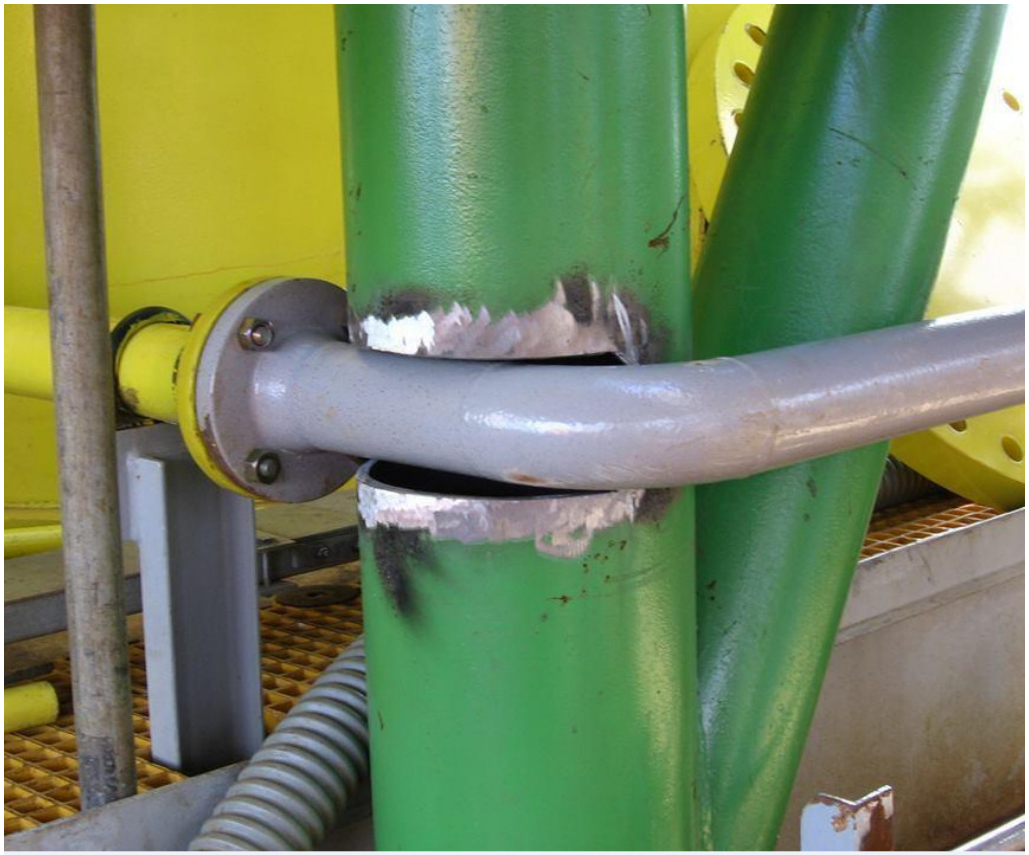
“Information is uncoordinated…”





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“Information is also geospatially incorrect…”

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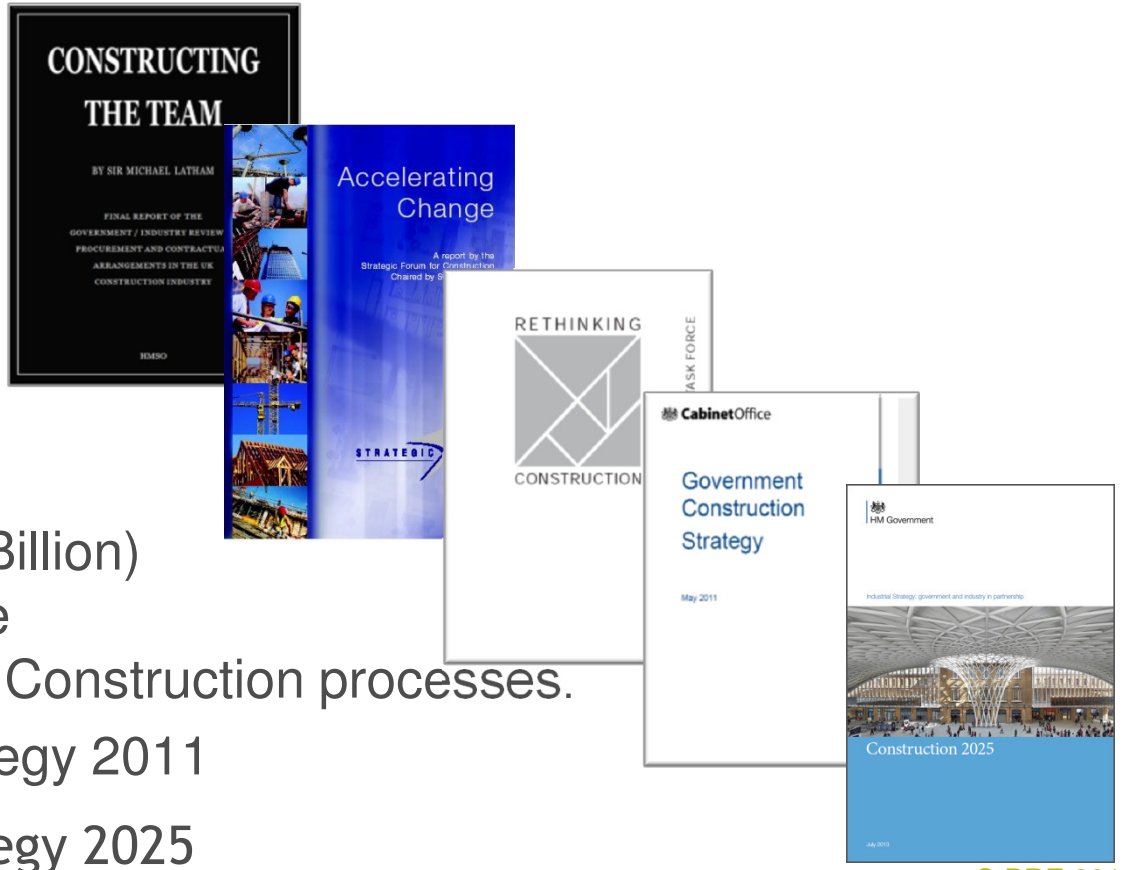
BIM Drivers – Change Identified…

- 1994 Latham Report
  - 30% Reduction
- 2002 Egan Report
  - 10% Time and Cost
  - 20% Reduction in
- 2012 Murphy
  - 10 Million tons (£1.5 Billion) Construction Waste
  - 50% of UK Carbon in Construction processes.
- HMG Construction Strategy 2011
- HMG Construction Strategy 2025



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2016 Level 2 Deadline + HMG Construction 2025…

Lower costs

33%

reduction in the initial cost of construction and the whole life cost of built assets

Faster delivery

50%

reduction in the overall time, from inception to completion, for newbuild and refurbished assets

Lower emissions

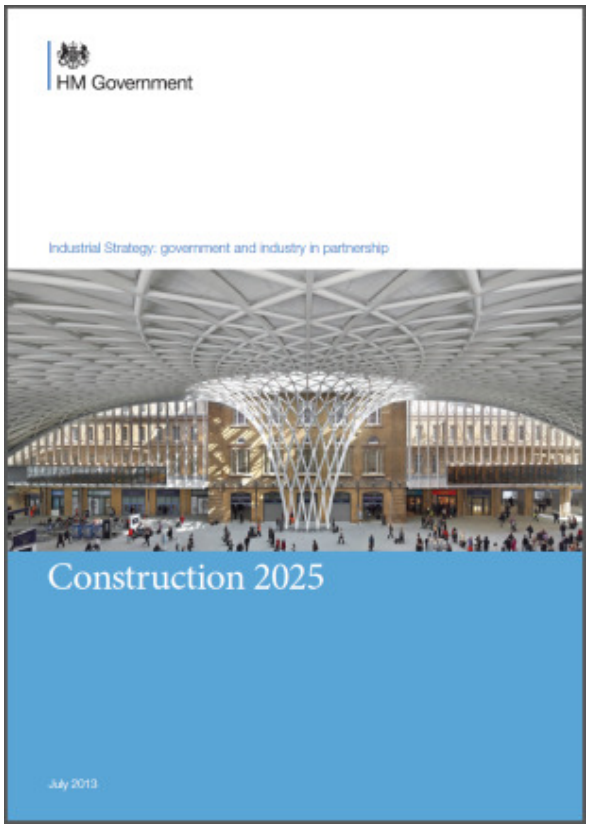
50%

reduction in greenhouse gas emissions in the built environment

Improvement in exports

50%

reduction in the trade gap between total exports and total imports for construction products and materials



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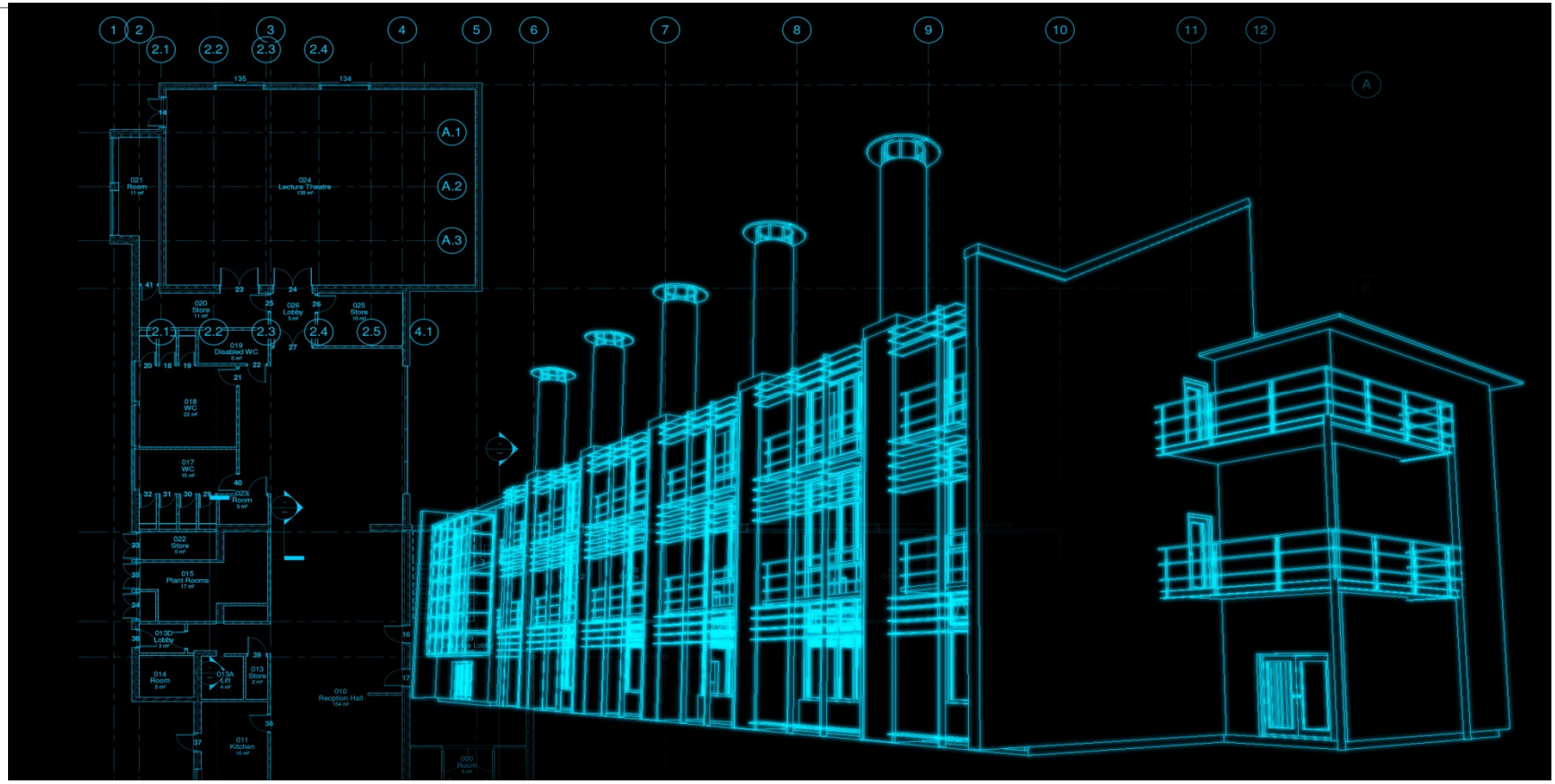
BIM – The Requirements for BIM Level 2?



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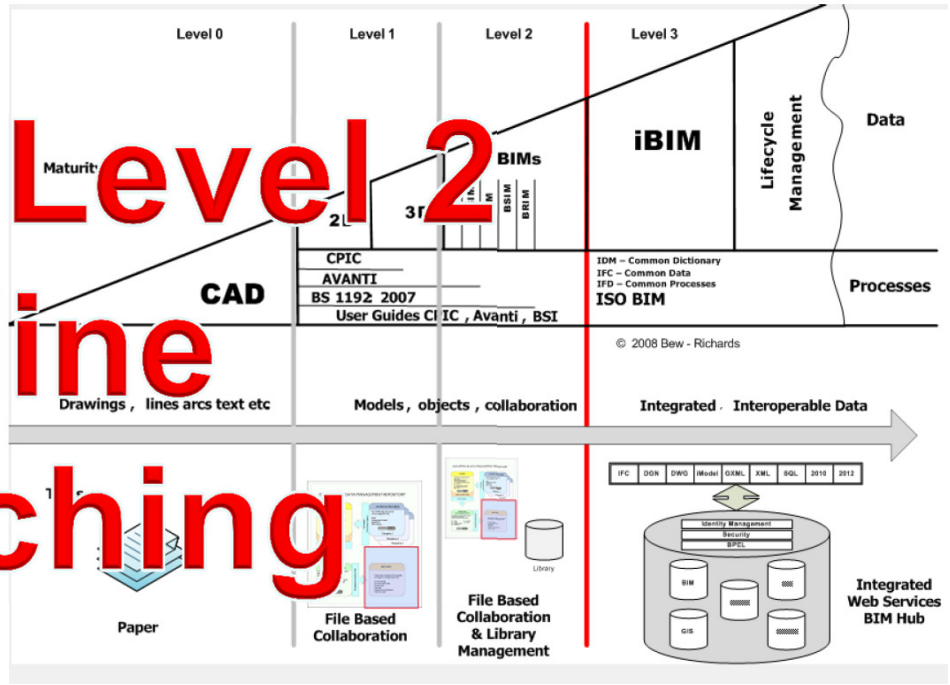
BIM Maturity Levels – Strategy Paper 2011

0 - Unmanaged CAD probably 2D, with paper (or electronic paper) as the most likely data exchange mechanism.

1 - Managed CAD in 2 or 3D format using BS 1192:2007 with a collaborative procedure for creating a common data environment, possibly supported by standard data structures and formats. Commercial data managed by standalone finance and cost management packages with no integration.

2 - Managed 3D environment held in separate discipline "BIM" tools with attached data. Commercial data managed by an ERP. Integration on the basis of proprietary interfaces or bespoke middleware could be regarded as "pBIM" (proprietary). The approach may utilise 4D Programme data and 5D cost elements.

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



2016 BIM Level 2 Deadline approaching

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CIC Co-ordinated project stages

0 Strategy

1 Brief

2 Concept

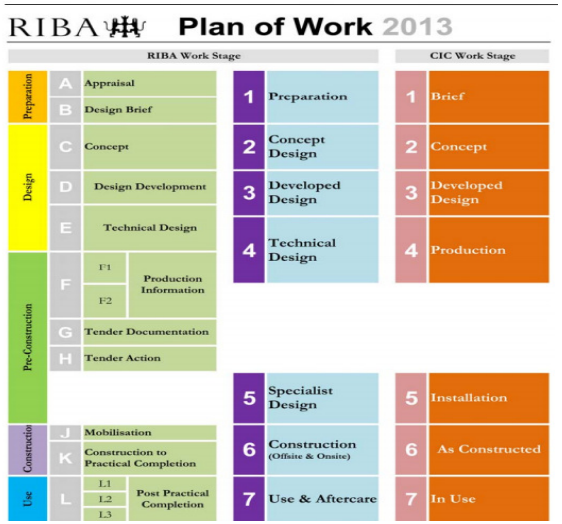
3 Definition

4 Design

5 Build & Commission

6 Handover & Closeout

7 Operation



PAS 1192-2:2013

Amendments issued since publication

Date	Text affected
28 March 2013	Corrigendum No. 1 to correct Figures 2, 7, 14, 20 and 21

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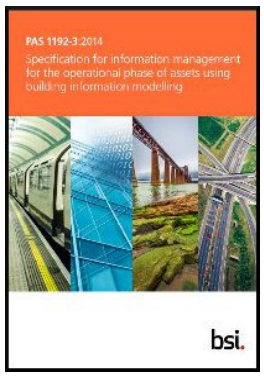
BIM Level 2 - Key Documents

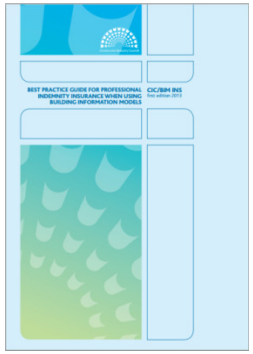
PAS1192-2:2013

PAS1192-3:2014



BS1192-4:201

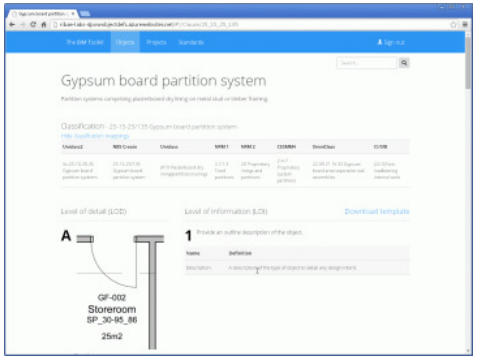
BIM Protocol (CIC)



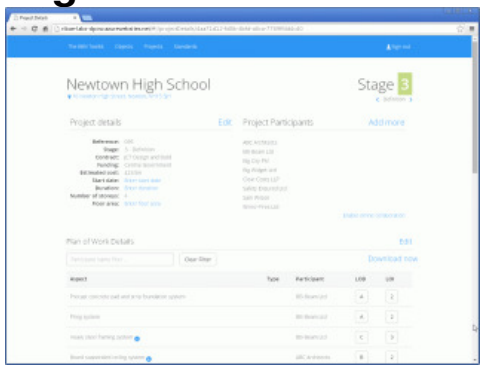
Government Soft Landings

Cabinet Office

Classification



Digital Plan of Work



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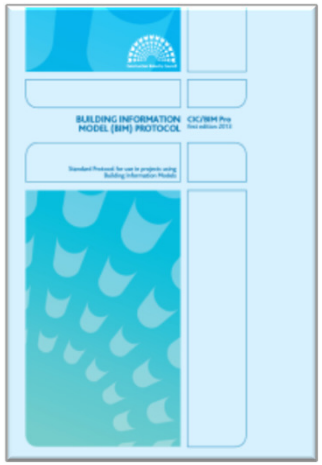
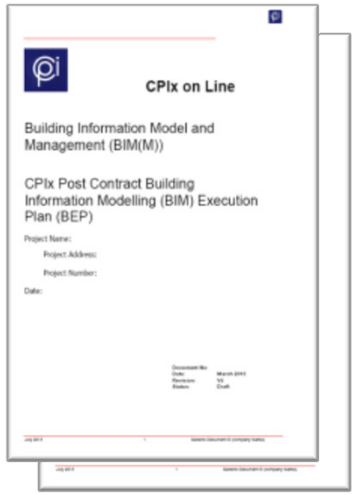
BIM Level 2 - Supporting Documentation

PI For BIM (CIC)



CPIx BIM Execution Plan


CPIx on Line

Building Information Model and Management (BIM(M))

CPIx Post Contract Building Information Modelling (BIM) Execution Plan (BEP)

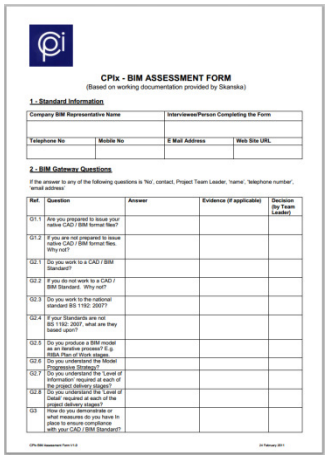
Project Name:

Project Address:

Project Number:

Date:

CPIx BIM Assessment


CPIx - BIM ASSESSMENT FORM

(Based on working documentation provided by Skanska)

1 - Standard Information

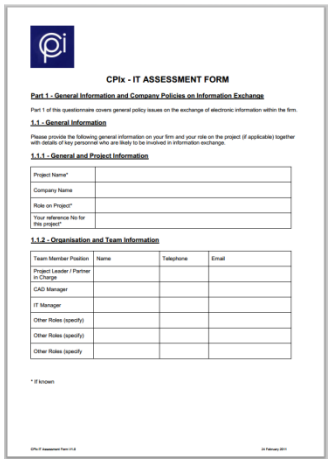
Company BIM Representative Name		Interviewee/Person Completing the Form	
Telephone No	Mobile No	E Mail Address	Web Site URL

2 - BIM Gateway Questions

If the answer to any of the following questions is 'No', contact, Project Team Leader, 'name', 'telephone number', 'email address'

Ref.	Question	Answer	Evidence (if applicable)	Decision (by Team Leader)
G1.1	Are you prepared to issue your native CAD / BIM format files?			
G1.2	If you are not prepared to issue native CAD / BIM format files. Why not?			
G2.1	Do you work to a CAD / BIM Standard?			
G2.2	If you do not work to a CAD / BIM Standard. Why not?			
G2.3	Do you work to the national standard BS 1192: 2007?			
G2.4	If your Standards are not BS 1192: 2007, what are they based upon?			
G2.5	Do you produce a BIM model as an iterative process? E.g. RIBA Plan of Work stages.			
G2.6	Do you understand the Model Progression Strategy?			
G2.7	Do you understand the 'Level of Information' required at each of the project delivery stages?			
G2.8	Do you understand the 'Level of Detail' required at each of the project delivery stages?			
G3	How do you demonstrate or what measures do you have in place to ensure compliance with your CAD / BIM Standard?			

CPIx IT Assessment


CPIx - IT ASSESSMENT FORM

Part 1 - General Information and Company Policies on Information Exchange

Part 1 of this questionnaire covers general policy issues on the exchange of electronic information within the firm.

1.1 - General Information

Please provide the following general information on your firm and your role on the project (if applicable) together with details of key personnel who are likely to be involved in information exchange.

1.1.1 - General and Project Information

Project Name*	
Company Name	
Role on Project*	
Your reference No for this project*	

1.1.2 - Organisation and Team Information

Team Member Position	Name	Telephone	Email
Project Leader / Partner in Charge			
CAD Manager			
IT Manager			
Other Roles (specify)			
Other Roles (specify)			
Other Roles (specify			

* If known

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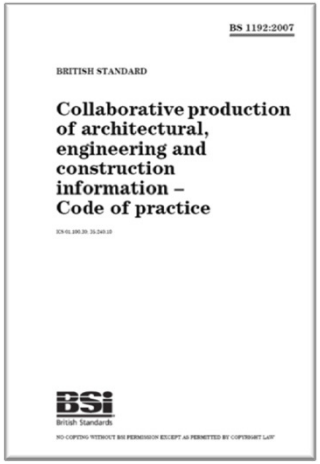
BIM Level 2 - Supporting BSI Standards

BS1192:2007



BS7004:2013

PAS 91:2013

BS 8541 Series

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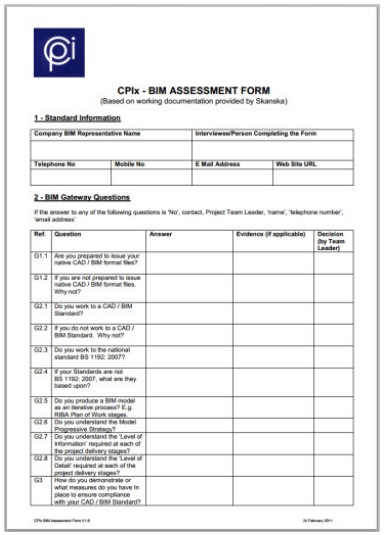
Prequalification Requirements

Are you capable of delivering a BIM Level 2 Project?

PAS 91:2013

CPIC BIM Assessment



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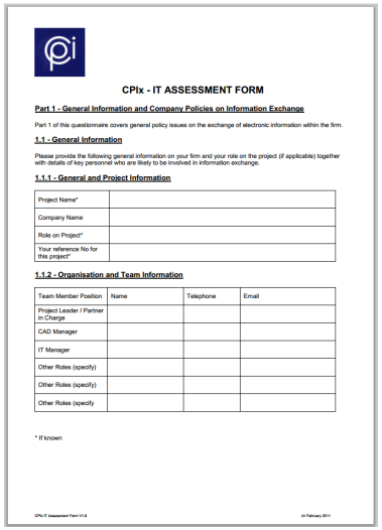
CPIC IT Assessment



CPIx - IT ASSESSMENT FORM

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Project Leader / Partner in Charge			
CAD Manager			
IT Manager			
Other Roles (specify)			
Other Roles (specify)			
Other Roles (specify			

* If known

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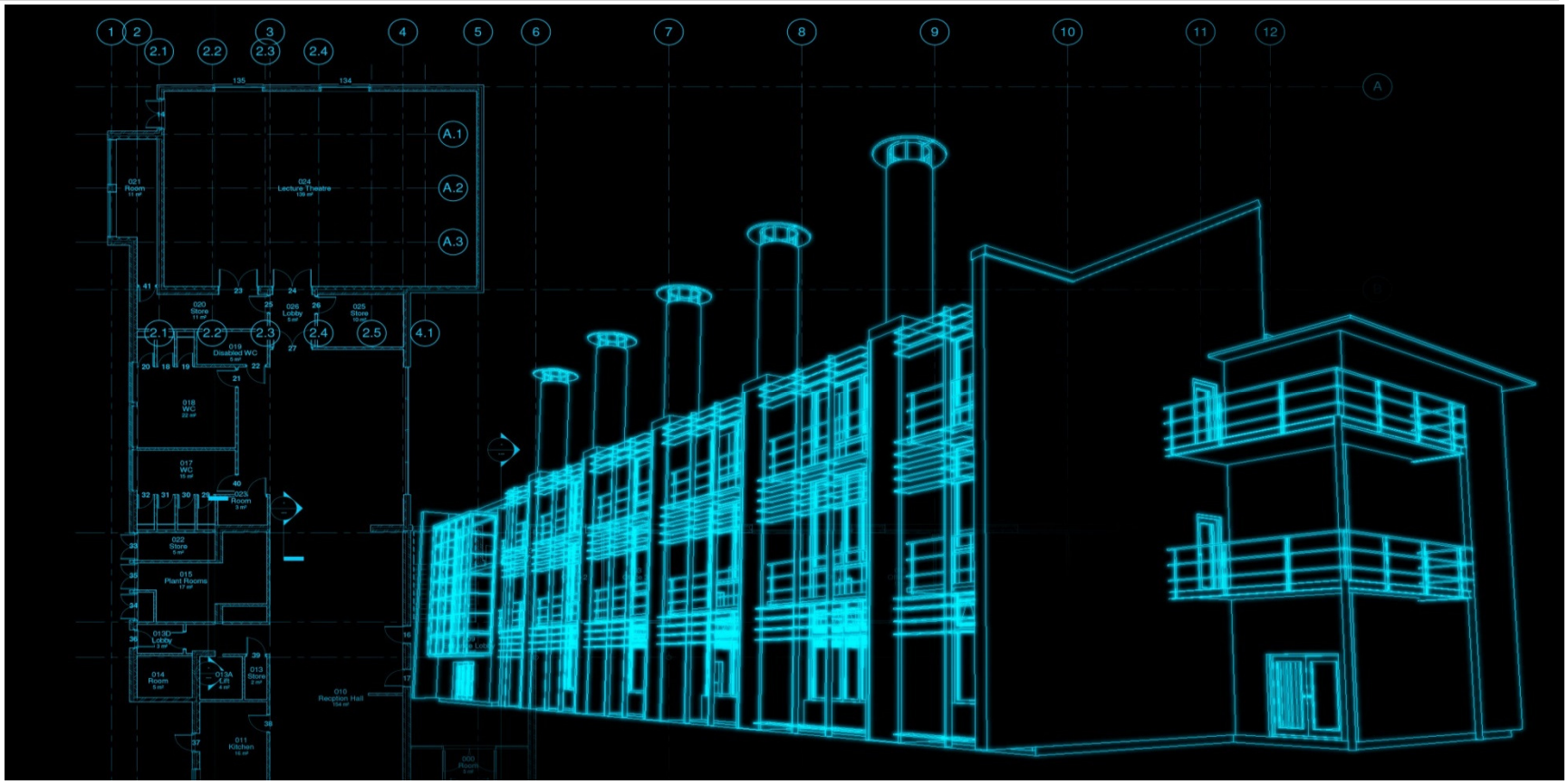
Getting ready for BIM Level 2?



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Sample PQQ Questions

Questions	Evaluation Scoring Criteria
Have you completed three project over £50 million complying with PAS 1192:2-2013 ?	3 Project = 10 2 Project = 6 1 Project = 3 None = 0

PQQ question issued March 2013 approx.
3 weeks after PAS released…

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Sample PQQ Questions

Questions	Answer	
With reference to the UK government maturity levels for BIM adoption, at which level would you say your organisation currently operate?	Level 3 BIM maturity Level 2 BIM maturity Level 1 BIM maturity Level 0 BIM maturity	

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Sample PQQ Questions

Questions	Answer	Evaluation Scoring Criteria
With reference to the UK government maturity levels for BIM adoption, at which level would you say your organisation currently operate?	Level 3 BIM maturity Level 2 BIM maturity Level 1 BIM maturity Level 0 BIM maturity	Level 3 BIM maturity = 10 Level 2 BIM maturity = 5 Level 1 BIM maturity = 2 Level 0 BIM maturity = 0

Other PQQ documents requesting “BIM Level 5…”

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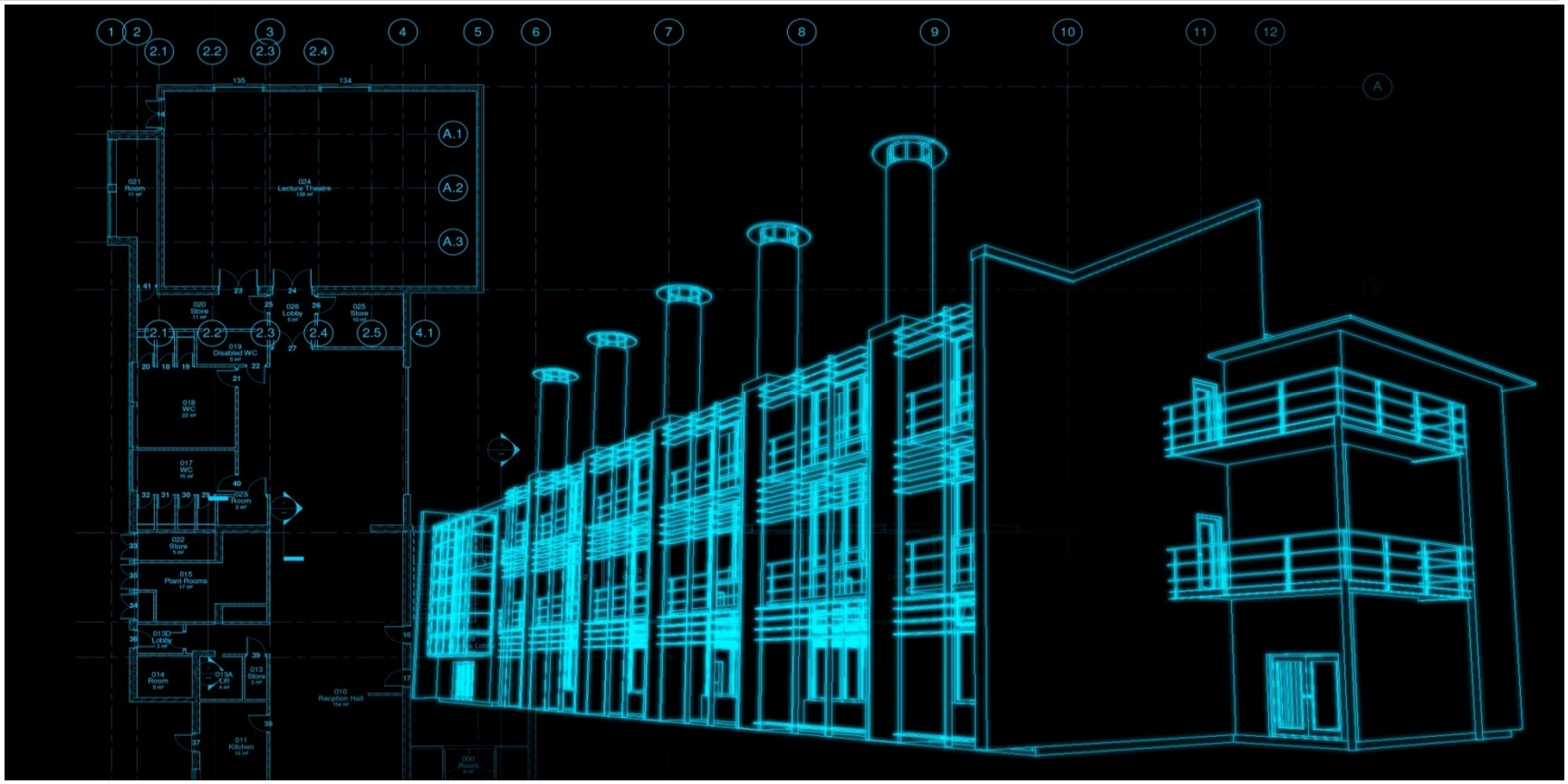
Assessing a Company's BIM Capability



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IT Infrastructure, Communications & Operations

ISO Accreditation for IT or…

- IT Policy Documentation
- IT Infrastructure
- IT Hardware
- IT Support
  - Antivirus / security
  - Backup
- Workstation Spec
- IT Implementation
  - Software Deployment
  - Software Libraries

"SURELY THERE'S MORE TO CUSTOMISING THE SOFTWARE THAN JUST DECORATING THE BOX"

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Company, People, Staff Skills & Assessment

- Company Information
- Disciplines, Services, Sectors, BIM Services
- Professional Skills
- Interview Assessments
- Staff Software Skill Assessments
- Staff Software Training
- Staff Software Mentoring
- Staff Software Support mechanism

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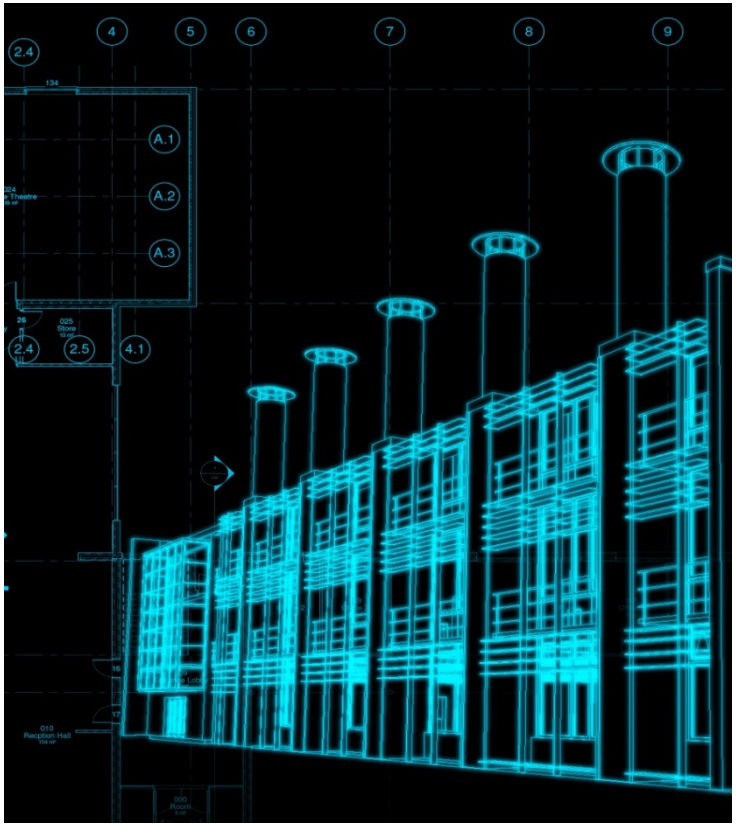
Software Information

- What software do you use?
- What software have you purchased?
- Purchase date?
- Annual Upgrades

Software Types

- Design Authoring Software
- Analysis and Clash Avoidance Software
- Visualisation and Presentation Software
- Other BIM related software
- General Office Software



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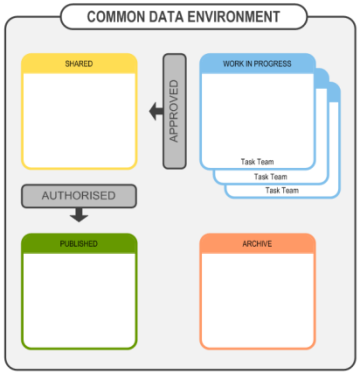
Common Data Environment

Solutions

- Controlled Exchange of information
- Extranet Systems Used
- Data Exchange Software used.
- Data Exchange Formats used



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Standards, Methods and Processes (SMPS)

Company Documentation

– CAD Standards

– BIM Standards

– Handbooks / Guidance Documentation

Software Implementation

– Centralised Libraries

– Title Blocks

– Templates / Seed Files

– Support Mechanism

– Ownership

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Case Studies

BIM Execution Plan

- Response to EIR
- Standards Methods and Protocols (Implemented)
- Deliverables
- Delivery Plans
- Roles and Responsibilities
  - Task Lead
  - Task Delivery Manager
  - Task Information Manager

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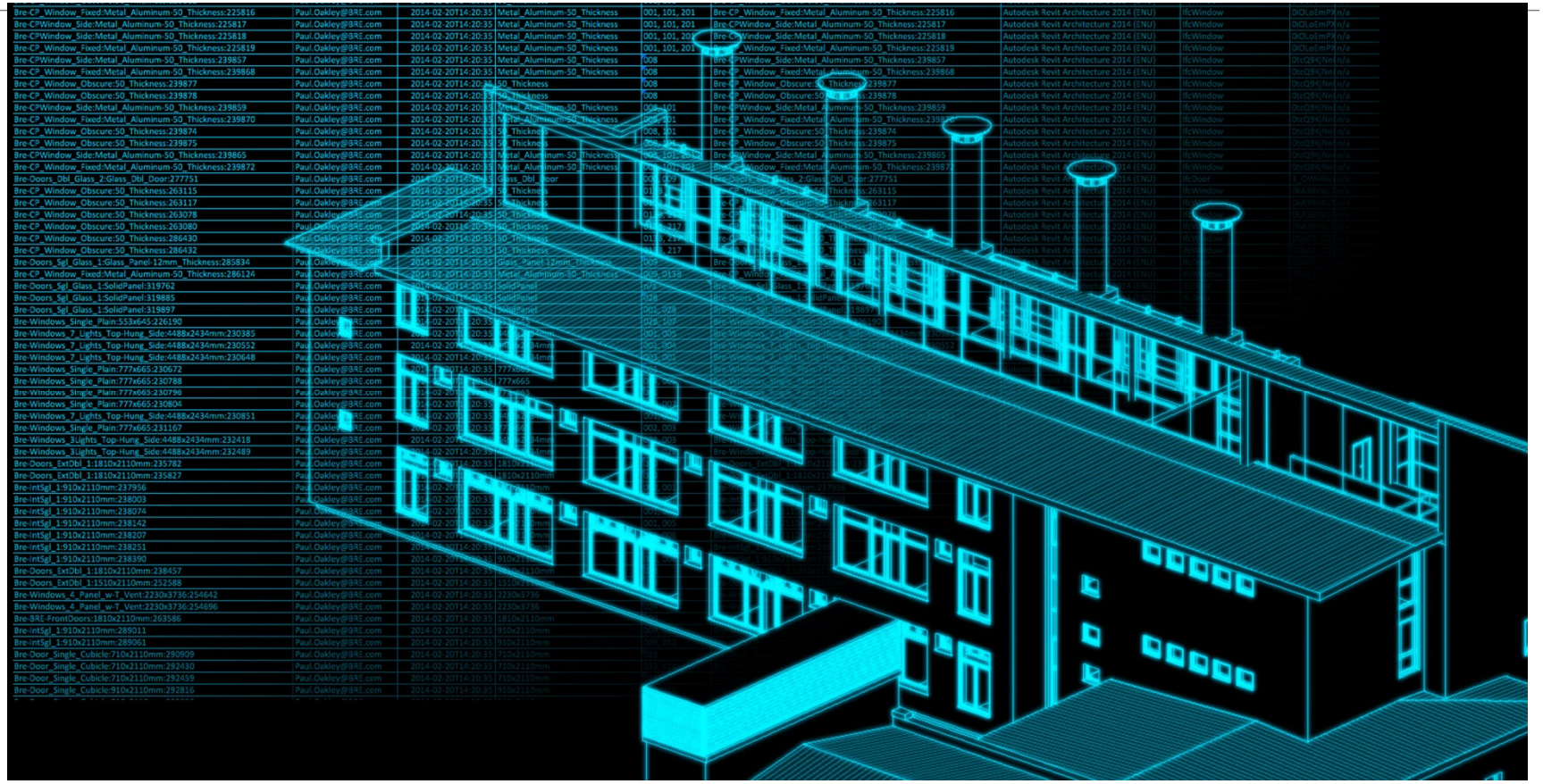
Driving PAS 1192-2:2013...



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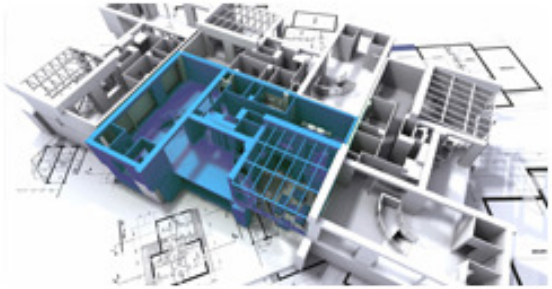
BRE BIM Services (www.bre.co.uk/bim)



About BIM

BIM Certification with BRE Global Ltd

BIM Education with BRE Academy

BIM Consultancy with BRE

BIM Projects with BRE

buildingSMART
UNITED KINGDOM & IRELAND

buildingSMART UK & Ireland

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BIM Level 2 Certification Schemes

BRE BIM Certificated Professional Schemes

- Task Information Manager
- Project Information Manager
- Project Delivery Manager

BRE BIM Business System Certification Scheme

- Audited BIM Capability Assessment

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BIM Level 2 Training Course

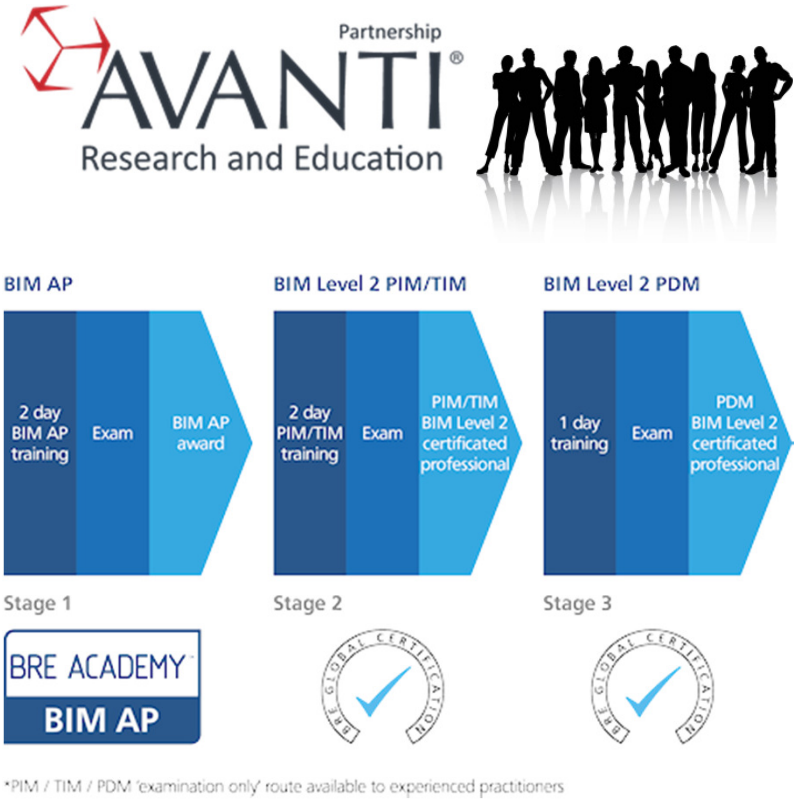
– BIM Foundation Course (AP)

  Covering BIM processes, procedures, information models, management and collaboration

– BIM Level 2 PAS1192-2

  Information Management (PIM / TIM)

  Project Delivery Manager (PDM)



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Business Certificate Scheme Benefits

- PAS 91 (Working towards UKAS accreditation)
- BRE Certificated
- Audited Business Evaluation
- Defined Industry Benchmark
- Lean Process
  - Reduced Employers Effort / Cost
  - Reduced Supply Chain Effort / Cost
- Checked by Industry Specialist and Supported by BuildingSMART UKI

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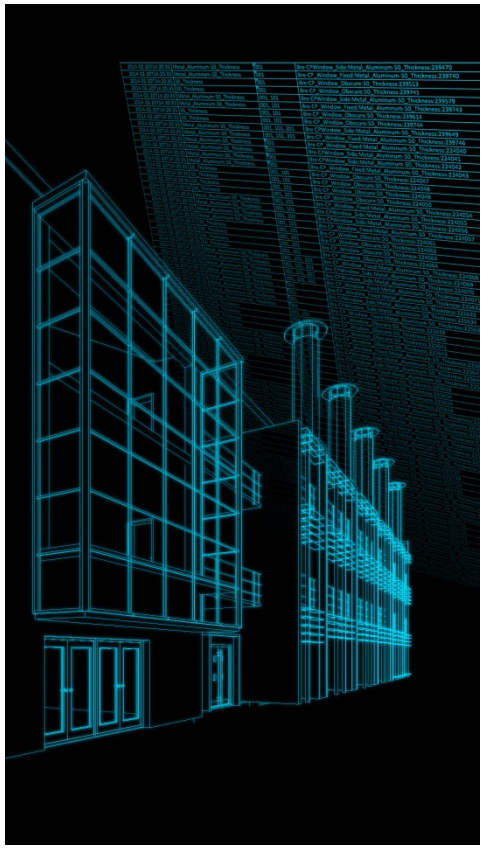
BIM – Are you BIM Level 2 Ready?

AGENDA

- Who am I / BRE BIM Team / buildingSMART?
- What's required for BIM Level 2
- Getting Ready for BIM Level 2
- Assessing a companies BIM Capability?
- How BRE can help

Questions



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Thank You

Questions?

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