Welcome to #BIMCoCo.

There’s a lot going on today so please make yourself at home.
ARCHITECT

Worked across the North East

EVANGELIST
DISRUPTER
PRAGMATIST

BIM

...Software Product

Manager...

BIM CHANGED MY LIFE

Do
what I --- TO --- an
make
can
impact

Agile process enthusiast

Business Leader

embrace reject
change status-quo
BACK IN MY DAY...
EDIBLE RED ORB

FACE WINDOWS

THOUGHT CONVERTER

INEDIBLE BLUE ORB

FLAMMABLE KNOWLEDGE
I LOVE IT WHEN

A BIM EVENT COMES TOGETHER

B A (BIM Advocate)
Baracus
BIM IS... BIM ISN'T
BIM ≠ BIM Level 2 ≠ Digital Construction

The UK BIM Journey
Level 2 Principles

BIM & BIG DATA
BUT....WHAT ABOUT LEVEL 1?

Where to go next...

BIM Standards

MYTH BUSTING

BIM Tech...vs...BIM Process

Do Clients Care?
'The means by which everyone can understand a building through the use of a digital model'

The NBS (www.nbs.co.uk)
Productivity comparisons by sector (UK) (% change since 1994)

Source: ONS. Index adjusted to 1994 = 100
Construction productivity comparisons across Europe (% change since 1994)
Lower costs

33%
reduction in the initial cost of construction and the whole life cost of built assets

Faster delivery

50%
reduction in overall time, from inception to completion, for newbuild and refurbished assets

Lower emissions

50%
reduction in greenhouse gas emissions in the built environment

Improvements in exports

50%
reduction in the trade gap between total exports and total imports for construction products and materials
129% of people exaggerate.

Missed

2011
level 2
innovators

2016
level 3
innovators

level 2
early adopters

level 3
early majority

level 3
late majority

level 3
early adopters

level 3
last chance...

do not be here

level 3
...to cross

Laggards

smart buildings

smart cities

BIM+

Future

we are here

YOU ARE HERE

it's quicker with a pen!
Scary BIM Question in the tender?

...Don’t Panic...Organise

Expectations

Reality
LEVEL TWO

“NOW I’M INTO IT, I WANT MORE.”
Is BIM Level 1 really, just doing your job?

BS7000 not widely known.
BS1192 naming & process not adopted.
75% of project doc’s shared outside of CDE.

‘We always ask for/use Revit’
‘We’ve been doing this for years, and we’ve moved to Level 2...’

Level 0 BIM
In its simplest form, level 0 effectively means no collaboration. 2D CAD drafting only is utilised, mainly for Production Information (RIBA Plan of Work 2013 stage 4). Output and distribution is via paper or electronic prints, or a mixture of both. The majority of the industry is already well ahead of this now (source: NBS National BIM Report 2014).

Level 1 BIM
This is the level at which many organisations are currently operating. This typically comprises a mixture of 3D CAD for concept work, and 2D for drafting of statutory approval documentation and Production Information. CAD standards are managed to BS 1192:2007, and electronic sharing of data is carried out from a common data environment (CDE), often managed by the contractor. Models are not shared between project team members.
DO THIS FIRST

Mix of 2D & 3D information produced in a traditional way

Managed production & distribution to BS1192:2007

Shared drawing conventions to BS 8541–2011

Level 1 Fundamentals

Common Data Environment used to electronically share information.

Managed Design to BS 7000 4: 2013
Level 1
Shared benefit

Level 2
Client wins
Fundamental principles for Level 2 information modelling

The fundamental principles of Level 2 information modelling are:

a) Origins of data. In models which they control, sourcing information from other models where required by way of reference, federation or direct information exchange;

b) Provision of a clear definition of the employer's information requirements (ERI) and key decision points (to form part of the contract possibly through adoption of the CIC BIM Protocol) – see Clause 5;

c) Evaluation of the proposed approach, capability and capacity of each supplier, and their supply chain, to deliver the required information, prior to contract award – see Clause 6;

d) A BIM execution plan (BEP) shall be developed by the supplier containing:

1) assigned roles, responsibilities and authorities;

2) standards, methods and procedures;

3) a resource matrix information delivery index, aligned with the project programme; – see Clauses 6, 7 and 8;

e) Provision of a single environment to store shared asset data and information, accessible to all individuals who are required to produce, use and maintain it – see Clause 9;

NOTE The single environment can look very different on small and large projects, which can use free web-based file sharing applications or sophisticated enterprise bridge software.

f) Application of the processes and procedures outlined in the documents and standards indicated in Table 1; and

g) Information models to be developed using one of the following combinations of enabling tools:

1) discipline-based software, with individual proprietary databases, that have limited interoperability between them or with associated design analysis software;

2) discipline-based software, with individual proprietary databases, that are fully interoperable, but with limited interoperability with associated design analysis software;

3) discipline-based software, with individual proprietary databases, and associated design analysis software that are fully interoperable; or

4) single source platform software, with a single external relational database, and associated design analysis software that are fully interoperable.

This list of combinations of enabling tools is not exhaustive.

NOTE 1 The above principles involve the delivery of a co-ordinated project information model to the employer containing geographical and non-graphical information through a single point of responsibility, likely to be the lead designer or the contractor.

NOTE 2 One of the key Level 2 requirements is the exchange standard of COBie and PDF, as well as copies of the native files.

NOTE 3 The definition of BIM maturity Level 2 was originally developed as part of the UK Government BIM strategy in 2011. The terminology has been adapted widely. Level 2 is defined in this PAS with reference to best practice and the adoption of tools and standards. Given the early stage of adoption of managed methods of working in BIM at the time when this PAS was drafted, it can be expected that Level 2 practice will continue to evolve and that the scope of information sharing and exchange will vary from project to project. For this reason, it can be anticipated that the definition of Level 2 BIM will continue to evolve around the core principle of the shared use of individually authored models in a common data environment.
Alf wants you to remember....

ISO 19650-1 and 2 are founded on the UK’s standards for Information management using building information modelling as per BS 1192:2007 + A2:2016 and PAS 1192-2:2013. The principles remain as per these standards with terminology changes being preserved via the UK Annex. - CDBB
This diagram illustrates the BIM (Building Information Modeling) process flow focusing on the Project Information Model (PIM) and Asset Information Model (AIM) across different phases of a project. The phases include:

- **Brief**
- **Concept**
- **Definition**
- **Design**
- **Build & Commission**
- **Handover & Closeout**
- **Operation**
- **In Use**

The diagram highlights the following key stages:

1. **Mobilization**
2. **Deliverables**
   - Master Information Delivery Plan (MIDP)
   - BIM Execution Plan (BEP)
   - Employer's Information Requirements (EIR)
3. **Assessment**
   - Maintain, Refurbish, End of Life or Build

The diagram also mentions:

- **Common Data Environment (CDE)**
- **Handover**
- **Maintenance and Use (PAS 1192-3)**

The process starts with the need phase and moves through contract award, execution, procurement, and delivery phases. The decision points for the employer are marked with red circles and are labeled as:

- **Supplier's Information Exchange**
- **Employer's Decision Point**

For details on supplier's information exchanges and employer's decision points, see CIC Scope of Services.
Figure 4 – Relationship between documents used for information management

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THAT'S AS RARE AS ROCKING HORSE POO!

generates

Hen's Teeth and Horse's Toes
FURTHER REFLECTIONS IN NATURAL HISTORY
STEPHEN JAY GOULD

specifies

contributes to

A WELL THOUGHT OUT AND NEARLY SUCCESSFUL EXPERIMENT BY EARLY RAILWAY PIONEER

specifies

generates

Queer
I WANT IT ALL

informes

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**Wrong**

**Right!**
Better Informed Decision During The Project...

... And Improved Information At Handover
getting started with a BIM project

consider
- client benefits
- project benefits
- selfish benefits

explore
- BIM uses
- don’t be greedy
- Build a team

Implement
- use standards
- agree standards
- contract standards
BIM FOR BEGINNERS
The process of construction, instead of being an orderly and consecutive advance down the line, is all too apt to become a scramble and a muddle.

— Alfred Bossom, Reaching for the Skies 1934