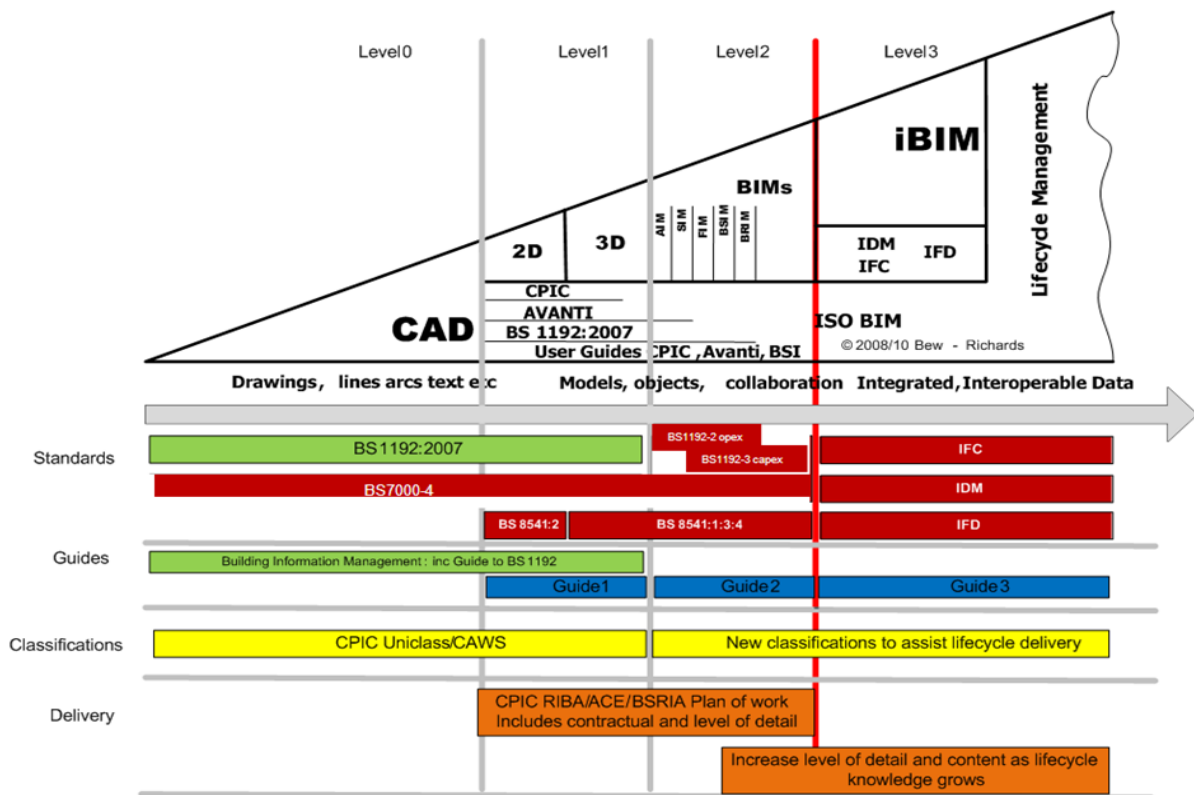**BIM - the guidance you have been waiting for is (almost) here.**

Some time ago I did an article for *Architectural Technology – What BIM really is .... and isn't.* It was generally well received, though my dismissive remarks about buying BIM software and using it only for flashy 'Tardis spinning' graphical stuff and not for holistic data management upset one or two who have become expert at that. I certainly don't deny it can be fun and can impress and used constructively to be helpful with client, planning and other uses where it can help with visualisation. I have nothing at all against imaginative graphics. In a previous life long ago when even CAD was deemed exotic I remember writing (elsewhere) about the beneficial use of 3D and perspective freehand sketches and citing examples from a well known series of car maintenance manuals. In the previous article I promised a follow up and much longer has passed since I suggested this might have occurred. The problem is the speed/sequence of developments not in technology but in the government driven agenda to get BIM adopted in a solid and demonstratively better way.

Figure 1 has been around since just before Paul Morrell's (the chief construction advisor) announcement about the requirement for BIM made in September 2010 – that government will require BIM to level 2 by 2016 in significant projects involving public expenditure. The figure is actually based on the roadmap for essential documentation to support the introduction of the various levels of BIM from an ongoing BSI committee (B/555 to give it a label). All kinds of people have taken it and used it, sometimes inappropriately in the intervening period - including me, but at least I was there as a member of B/555 when it was conceived. I make no apology for reproducing it again here (for those of you who have seen it before) as in some ways what was conceived as a plan is now just becoming a reality in a meaningful way and whilst nothing was 'secret', to some extent it has been awkward up to now with so much of it in the "coming soon" category.
Fig 1

Bearing in mind the BIM strategy is a part of the Construction /strategy for government and driven primarily by the needs of operation (ie post occupation) of their constructed estate it reinforces my

comments about the most important factor being the passage of essential data. The 'levels of BIM maturity are as follows:

0. CAD probably 2D, with paper (or electronic paper) as the most likely data exchange mechanism and little or no management of the data between disciplines.
1. Managed CAD in 2 or 3D format using BS1192:2007 with a collaboration tool providing a common data environment, possibly some 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.

Items indicated in green are existing documents available in the market today.
BS1192:2007 *Collaborative production of architectural, engineering and construction information. Code of practice* is a combined data and process standard and is equally applicable at levels 0 and 1. It provides a reference document for level 2 and offers advice for the management of traditional CAD managed data delivery and works with both paper and electronic formats. CPIC and Avanti have produced guidance to support implementation of BS1192:2007. Further guidance documents (in blue) are planned with the first – on PAS1192-2 due soon.
An update of the BS7000:4 about design management will cover up to level 2 BIM but is dependent on the publication of PAS1192-2 and will be put to public comment shortly after the publication of that key document.

Documents about symbols are at various levels of completion:
BS 8542:1   2D Symbols – Schematic denoting content and/or process. Example: Schematic floor layouts or Process and Instrumentation Diagrams (P&ID).
BS 8542:2   3D Symbols – To represent the analysed and designed output as the first level representation in a real world. Also contains design and specification information as Meta data.
BS 8542:3   Object oriented representation of actual objects and the real world representation of the product with all attendant Meta Data.

PAS1192–2 and 3 will eventually become BS1192 parts 2 and 3 but due process requires their publication as a 'Publicly Available Standard' first. They will still relate back to BS1192 2007 that will be revisited and reissued as BS 1192–1. Clearly this documentation must be specific to intended audiences as the needs of clients, suppliers and users differ significantly. For this reason the documentation will be provided in two documents focusing on the "Capital Delivery" phase and the second on "Operational Delivery" issues. Both will document both data and process management issues.

BIM is about data and the Uniclass system, whilst already the most comprehensive worldwide, is undergoing significant updates to cope with the rigors of data exchange in BIM (yellow). This is still in public comment – though NBS have already implemented some of the new classification in the BIM ready NBS Create. Please visit the consultation on the CPIc website http://www.cpic.org.uk/en/

I am sure you will have read about the developments in what I prefer to call 'process planning' (brown). Since the figure was prepared this aspect has been embraced by the CIC and you may well have contributed to a recent consultation. There is even tacit agreement for all the institutions to

come together and produce one harmonised plan of work in readiness for BIM level 3 – what a boost that would be BIM or no BIM.

The real key document in all this is the PAS 1192-2 which is a bit late but due out any time now – this will release BS 7000-4 the first new guide and a number of other documents including some not this diagram. One further development is the new government website which is increasingly becoming populated with interesting information http://www.bimtaskgroup.org/

Quite a lot to say and there are more helpful developments in the pipeline – like the answer to the question "what happens after the government stops driving this initiative in 2016?" so another article soon.

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