LEVEL 2 BUILDING INFORMATION MODELLING

BENEFICIAL, SCARY OR BEWILDERING?

PADDY CONAGHAN
Chair CIBSE BIM Group
paddyconaghan@hoarelea.com
CIBSE BIM GROUP
Formed Spring 2011

70 members representing:
- Government’s BIM Task Group
- Consultants
- MEP contractors
- Main contractors
- Manufacturers & trade associations
- FM operators
- BIM & modelling software vendors
- Freelance BIM object builders
- Buildingsmart
- Institutions: e.g., CIBSE, BSRIA
- Etc;

Founding aim:
- to create a specification for MEP BIM content creation
- To advance BIM in UK MEP Practice
MoJ extends BIM trials and saves £800k on first project

23 October, 2012 | By Tom Fitzpatrick

The Ministry of Justice has expanded its building information modelling trial projects programme and revealed its first project will save £800,000 through collaboration with main contractor Interserve.

Ministry of Justice head of project delivery Terry Stocks said that £800,000 had been saved on the new-build project at Cookham Wood through early collaboration on BIM and work with Interserve.
BENEFICIAL BIM

20 FENCHURCH STREET – THE WALKIE TALKIE:
DEVELOPERS – Landsec & Canary Wharf
PLAYERS – Rafael Vinoly, Canary Wharf Contractors, Hilson Moran & more....

ANALYSIS (Richard Bray of CWCL)

FEATURES
• Designed in Autodesk Revit from Stage D
• MEP design translated (via FABmep) to CAD Duct for installation & manufacture
• Setting out by Trimble robotic theodolite
• BIM model used for As Built information
• BIM model links to O & M database

OUTCOMES
Zero Clashes!
Zero core drilling!

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BENEFICIAL BIM

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As Level 1 BIM (a geometric model only) but directly linked to O & M data base:

- Does it satisfy BIS BIM Strategy?
- Is Level 2 BIM really needed?
DDC holds ownership of the BIMs including all inventions, ideas, designs, and methods contained within the model. This includes, but is not limited to; the content submitted as part of the BIMs itself. Outside resources, such as consultants and/or contractors, using the BIM are granted temporary use of it for the duration of the project. After project completion they are required to return all copies of the BIM to the DDC. DDC holds ownership of all the contents within the models from project conception (pre-schematic design) all the way to completion (construction).
BEWILDERING BIM!
LEVEL 2 BIM ‘KNOW HOW’ IN BUILDING SERVICES

Consultants + Contractors
How well informed do you think that you are about BIM?

>60% OF UK CONSULTANTS & CONTRACTORS PROFESS EXPERTISE

UK HEVAC Manufacturers
Do you have BIM models of your products?

<20% OF UK MEP MANUFACTURERS INVOLVED

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BEWILDERING BIM!

MEP BIM COLLABORATION - THE ‘VISION’

Conceptual modelling

All services modelled in 3D

Virtual construction

Operational data

Space planning in 3D

Design model linked to schedules & calcs

Fabrication & off site manufacture

Asset data

6D – Asset Info

4 & 5D – Time & Cost Info

Dynamic modelling / compliance

BRIEF

paddyconaghan@hoarelea.com
Bewildering BIM!

MEP BIM Collaboration - The 'Reality'

- All services modelled in 3D
- Conceptual modelling
- Dynamic modelling / compliance
- Fabrication & off-site manufacture
- Virtual construction
- Operational data
- Space planning in 3D
- Design model linked to schedules & calcs
- Fabrication Information (usually in CADmep+)
- 'Hand-cranked' FM information
- 6D - Asset Info
- 4 & 5D - Time & Cost Info
- 'Generic' design to Stage F1 (e.g. Revit MEP)
- Asset data

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Bewildering BIM!

MEP LEVEL 2 BIM PROCESS ‘DISCONNECTS’ SUMMARISED

Absence of product BIM data

BIM Platform switch from design to installation stage

Split process does not embed data in As Fixed Model

Level 2 BIM aims confounded?

DISCONNECTS ARISE WITH DATA – NOT GEOMETRY

SO CAN DATA BE HANDLED ANOTHER WAY?

paddyconaghan@hoarelea.com
BEWILDERING BIM!
WE HAVE MEP LEVEL 2 BIM DATA FORMATS:

<table>
<thead>
<tr>
<th>Data Format</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>COBie (Construction Operations Building Information Exchange)</td>
<td>COBie IS PROJECT &amp; F.M DATA SPECIFIC - SO CAN’T BE COMPLETED WITH PRODUCT DATA</td>
</tr>
<tr>
<td>SPie (Specifiers’ Properties Information Exchange)</td>
<td>SPie IS PRODUCT DATA &amp; FITS COBie – BUT IT IS INCOMPLETE &amp; FM FOCUSED</td>
</tr>
<tr>
<td>PDTs - CIBSE’S Draft Product Data Templates</td>
<td>PDTS EXPAND SPie FOR WIDER USE BUT FULL ROLL OUT WILL BE HUGE &amp; COSTLY.</td>
</tr>
<tr>
<td>NBS – National Building Specification</td>
<td>ESTABLISHED DATABASE. BUT A SPEC - UNABLE TO DEAL WITH 200+ DATA FIELDS</td>
</tr>
<tr>
<td>Putative formats, e.g., :-</td>
<td>STILL ‘FLEDGLING’ &amp; DISLIKED BY MANY MANUFACTURERS (FOR IPR REASONS).</td>
</tr>
<tr>
<td>VDI 3805</td>
<td></td>
</tr>
<tr>
<td>ISO 16757</td>
<td></td>
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</tbody>
</table>

SO WHICH FORMAT SHOULD WE BACK? HOW’D YOU ENGAGE THE WHOLE INDUSTRY?

paddyconaghan@hoarelea.com
END
THANKS

Visit the CIBSE BIM Group’s website:
www.bimtalk.co.uk

paddyconaghan@hoarelea.com