BIM isn’t Geospatial

...... Or is it?

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Chair of AGI

1989-2014
CELEBRATING
25 YEARS

Plan Design Enable
Multidisciplinary engineering infrastructure design, project managing enabling works, site clearance and remediation, environmental impact assessment
Crossrail
United Kingdom

Detailed design of twin bored tunnels, and design and specification Tottenham Court Road and Custom House stations and Plumstead depot

Image courtesy of Crossrail
Concept design, civil engineering, procurement & supply chain management, systems engineering & integration, structural design & assessments, stations design & systems
Connect Plus, a consortium comprising Balfour Beatty, Skanska, Atkins and Egis Projects, has been appointed to design, build, finance and operate (DBFO) the M25 project.
Whole Lifecycle IM
.... Start with the end in mind
...... For anything which is built
Being information intelligent ...... Requires Information to be viewed in a holistic manner, Balancing an appreciation of technologies with the capabilities of people within the business to harness and use the information to improve performance

(Marchand 2000)
1.3 The industry is highly fragmented, with over 300,000 businesses (of which 99.7% are SMEs) and over 2 million workers.
What is BIM?

Monopoly ---- ”go to jail”
A crisis waiting to happen

....... It just did
Dawlish
The different stages of Buildings and Infrastructure
Data Management and Use
Multi-Discipline Project

- Data is converted to accommodate different tools
- Multiple copies across the network
  - Same data – different format
Silos of technologies
Dis-aligned staff, software, data, standards, workflows
Integrated and collaborative working

Helps to:
- Collate
- Manage
- Integrate
- Analyse
- Visualise
Technical Excellence and Innovation
Do you ever feel you are walking through treacle?

I wonder why?
The Future – No BIM
Integrated Data Management
Multi-Discipline Project

- Single source of truth used by all
- Data shared through common process and standards
Integrated technologies
Aligned staff, software, data, standards, workflows
The future collaborative BIM team

Tools like Revit can facilitate a BIM process, but by using Revit you are not necessarily working in BIM. BIM is derived from the process and rigour we put around data-centric information and the collaboration of this information within multiple disciplines.
...so does bad behaviour
I’ll do it my way .......

.....The BIM Bear BUST
A465 & A483 Models
ASSET ATTRIBUTES

All drainage assets have attributes available for viewing or editing, values for a selected asset are displayed in a form.
Project Example – M4 Elevated section

- **Services delivered**
  - 103 piers over approx 2km
  - Data extraction from static and mobile point cloud
  - Plans, elevations and 3D wireframe model of piers and surrounding areas
  - Up to +/- 0.01m xyz
Project Example — Province South Holland

Services delivered
- Approx. 180km of highways and waterways
- Helicopter LiDAR data capture
- Topographic mapping from orthophoto and point cloud
- +/- 0.05m xyz
Figure 11 – Volumes within a tunnel design for spatial co-ordination

NOTE 1 An example of volumes for spatial co-ordination in a tunnel design is shown above. Volumes are organised by discipline around the periphery of the tunnel (e.g. catenary volume, evacuation walkway and emergency accessway, etc.)

NOTE 2 Soft volumes shall also be taken into account for spatial co-ordination. Such items as the “kinetic envelope” should be provided and owned.
3D model Pink Western and Eastern Ticket Hall station boxed, green Crossrail platform and access tunnels light beige LU Northern Line and station, large building Centre Point
Bond St Station – Crossrail Western Ticket Hall and tunnel drives being constructed over the Jubilee line. Enlarged platform tunnels constructed by excavation and sprayed concrete lining (SCL)
Information is the product of the contextual understanding and interpretation of data. It is the essential medium through which knowledge, expertise, judgements, emotions, and decisions held by individuals is expressed, shared and communicated with others.

(Sherriff et al 2012)
Atkins Documentation History

- Pre1987 - No Electronic/CAD
- 1987 – Introduction of CAD
- 1997 – Some Major Projects still 2D with all hard copy contract documentation, no e-mails
- Olympics – All electronic
- 2013 – 2016 fully implement BIM
WHERE ARE THE PEOPLE?

What’s going on with THEM?

Technical – or adaptive thinking?
........ FORESIGHT REPORT 2015