ABA Surveying

Mobile scanning

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ABA Surveying is a leading UK based Survey Company providing high precision dimensional surveying services throughout the UK and Europe. Formed in 1990, ABA has a reputation for developing unique surveying solutions in challenging situations based on innovative use of new technology. We have succeeded where others have failed. Typically, we provided the first accurate 3D survey of The Mary Rose despite wearing cumbersome protective clothing and operating in slippery, wet conditions during short intervals when the preservation sprays could be turned off.

ABA, at the front of technology, was the first UK survey company to pioneer 3D scanning (2000), to apply 3D kinematic (moving) surveying to the rail sector (2003), to develop a bespoke 3D mobile scanning system for the highways sector (2009) and has been chosen to develop and test the latest Leica railway track measuring systems for Network Rail approval.

We live in a world comprised of assets, whether they be natural assets like the environment, the air we breathe, the oceans and the flora and fauna that inhabit our world, or manmade infrastructure assets like our roads, railways, hospitals, towns and buildings that impact on our environment. It is incumbent upon us all to manage these assets for the benefit of future generations and realign our culture towards preservation, sustainability and being pollution free.

Our manmade assets each have a life cycle ranging through concept, design, construction, operation, refurbishment and finally demolition.

FACTS ABOUT ABA SURVEYING

- Single source for all dimensional surveying needs
- 27 years of being first in the UK
  - First to develop 3d scanning for survey purposes
  - First to develop track mounted scanners for railway survey
  - First to develop mobile scanning for highway surveys
- Our experience covers all sectors including Land surveying for development
  - Architectural & Building surveying
  - Transportation including highways, rail, ports and airports
  - Structures and infrastructure
  - Tunnels and mining
- Repeat business has ensured a 6% year on year growth
- www.abasurveying.co.uk

R&D investment for the future

Hindhead tunnels surveying for BIM

> “Eliminate clashes at the design stage and save an estimated 10%”

The government, in one form or another, manages more than 50% of our infrastructure and construction spend and, in the transition to a digital economy, has mandated the use of a Building Information Management system (BIM) on all government construction projects.

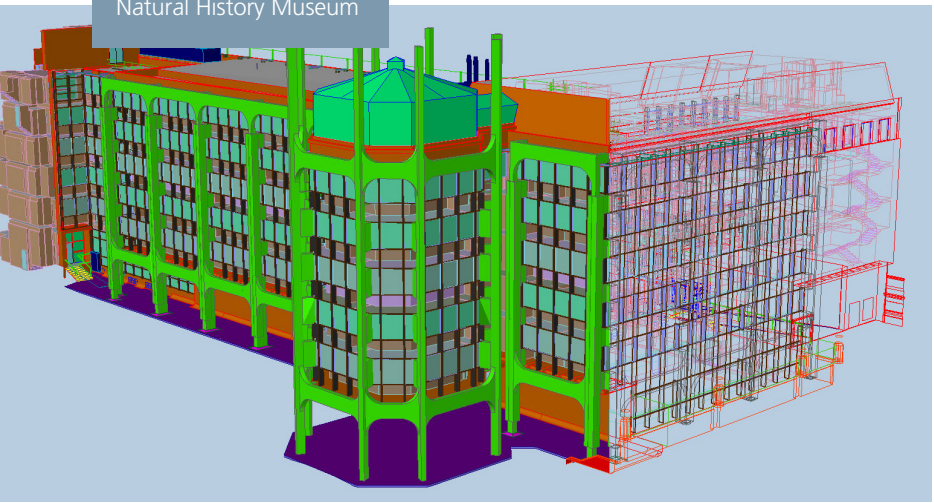
So, what is BIM? Put simply, it is a way of working collaboratively using just one repository to hold all the information relating to the project or asset – rather like a filing cabinet, only digital – and called a common data environment.

The benefits: correspondence stored in electronic formats (e.g. Word or Adobe), digital 3D models (e.g. AutoCAD or Microstation) instead of paper plans, digital datasets (e.g. Excel) – everything is electronic, accurate, up to date and accessible to everyone.

Only when everyone – owners, designers and contractors – use the same source of information will we be able to eliminate clashes at the design stage and save an estimated 10% in cost by not having to re-work, or make good, work that has gone wrong.

Specialising in surveys that meet the requirements of Building Information Management – ABA’s surveys cover many sectors including highways (the M1), structures (the Olympic Stadium), heritage (The Mary Rose), architecture (The Natural History Museum), asset management (Hindhead road tunnels) and remodelling (Oxford railway station and town centre).

Natural History Museum



Surveying is the very foundation of BIM and is the **only** professional discipline consistently running throughout the asset’s life cycle whereas other disciplines are generally transient or fleeting.

The Cabinet Office’s Chief Construction Advisor (2012-2015), Peter Hansford, recognised the importance of surveying and in July 2013 the Government published Construction 2025, identifying four key targets for the construction sector to achieve by 2025.

1) 33% saving in initial construction and whole life costs for built assets
2) 50% saving in delivery time for newbuild and refurbished assets
3) 50% saving in greenhouse gas emissions in the built environment
4) 50% saving in the trade gap (imports v exports) for construction products and materials

Laudable targets indeed, with 3) and 4) being relatively easily achievable by careful selection at the design phase of components and construction methods to be used.

Targets 1) and 2), however, will only be achieved when people fully embrace the BIM culture.

BIM works well in the major projects like Crossrail and Thameslink because one dedicated team, including owners, designers, contractors and operators are brought together from the start for one specific purpose – to collaborate – thus providing opportunities for best practice and new ideas, particularly when the buy-in comes from the top (the owner of the asset) and is instilled throughout the team.

BIM is failing at the single task level, where the bigger picture becomes lost through a *cost-focussed* procurement process. Procurement at the single task

level must be informed of the bigger picture and potential for longer term savings. The procurement process needs adapting to account for this.

Typically, a task is identified – say the renewal of an underground electric cable – and a project manager is appointed with a budget. The work is tendered by a purchasing department that evaluates only cost and the successful sub-contractor starts on site.

While digging the trench the sub-contractor finds obstructions on the proposed route and adopts a shorter route avoiding these obstacles. The work is completed but the contractor does not make a proper survey record, thereby ignoring the guidance notes PAS128/256 (the specifications for recording services buried underground) because it wasn't within their scope.

The BIM is now inaccurate, incomplete, out of date and useless.

Another sub-contractor, working from a design based on the out of date BIM dataset, subsequently drives a pile through the cable – cutting off supply, with a possible fatality as well. The resulting cost of delayed works through the enquiry, redesign, remedial work and health and safety consequences could run into tens of thousands of pounds, not to mention the human cost of a death or serious injury.

So why do companies tolerate these project risks, especially as all management has the responsibility to identify and reduce risk to an acceptable level, and when the risk can be managed or eliminated entirely by the simple expedient of making accurate as-built records?

The answer is the perception of additional cost which is anathema to the sub-contractors who have won the work on a competitive price tender.

That's why the procurement process and the culture need to change.

More than 90% of our work comes from large organisations like Network Rail, Transport for London, the Environment Agency and Highways England – typical of the long-term asset owners who will benefit massively from the BIM philosophy over their asset life cycles. ABA have played a major role in developing surveying working practices that have enabled them to make substantial progress towards achieving Targets 1) and 2).

From the very beginning, by involving everyone it will foster a collaboration that achieves significant savings in cost and time by eliminating conflict, clashes and re-working (e.g. making good a problem like a door being in the wrong place).

Every project will carry some risk but the BIM environment enables us to work in a truly collaborative manner, using the same shared data and best practices to manage or eliminate risks altogether.

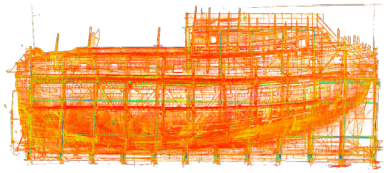
The cost for managing risk should be identified and borne by the owner.

Remove the project risk by adopting a BIM philosophy. Keep the data current and accurate by using a qualified surveyor who is competent to audit the information that goes into it.

Investment in good surveying is not a surveying cost – it is an insurance policy for the future.

ABA continues shaping the future with its participation in Survey4BIM and BIM4Rail (the working committees set up for BIM development).

We believe we offer innovative, better, safer and more cost-effective ways to meet the survey requirements of an increasing number of clients.



The Mary Rose point cloud and what the best dressed surveyor was wearing

> "Investment in good surveying is not a surveying cost – it is an insurance policy for the future"