

BIM Outreach

03 *Engineers – What does BIM
mean to my business?*

03

BIM IN PRACTICE



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O3 *Engineers – What does BIM mean to my business?*

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O3 Engineers – What does BIM mean to my business? [Version 1 – August 2012]

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INTRODUCTION

We hear touted that the future of BIM lies in the development and application of virtual building processes, in which the design, construction, performance and operational simulation may be visualised and tested. Many pioneers of BIM are forecasting a steep change in the way that we will work in the future. You can learn from this experience by starting your BIM learning and implementation with three interrelated topics in mind – technology, process and people.

TECHNOLOGY

A very important consideration is a simple balance between scope, fee and program. BIM software gives the author ample opportunity to use, capture or host almost limitless amounts of information (or data) attributable to design, construction or operation of the building. Just because you can, doesn't mean that you are best placed to author and apply the information. Question two things – is anyone likely to gain value from you doing so? And if so, will the information or data you author ever be maintained?

At a project level, there are reported advantages to be gained by interacting with a broad-brush model at early stages of design. Trading of these models frequently with others is encouraged. The coordination of these activities is often undertaken by the lead consultant, at times and in manners described in a BIM Management Plan. See the document **P2 – What should be addressed within a BIM Management Plan?** for details.

PROCESS

If a database-driven program (such as Autodesk Revit) is being used to produce 2D documentation, then good quality sketch output such as plans, sections, isometrics and schedules can be output as work-in-progress snapshots at any time. Developing the design in this way, and demonstrating how it can be applied in an interactive free-to-view software package, will present the opportunity to hold off from producing formal documentation until such a time as the design is nearing a coordinated product.

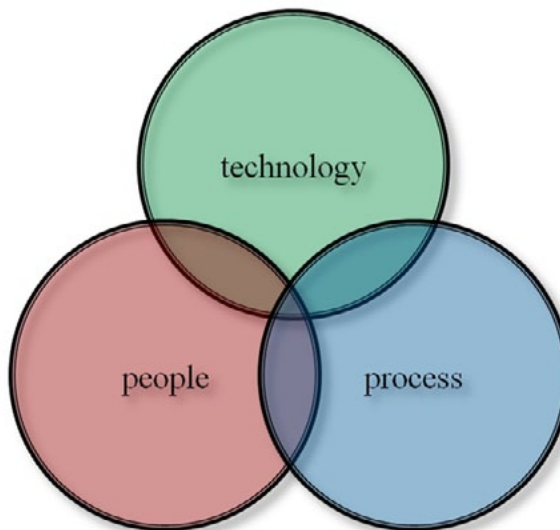
Passing a model for an automated quantity take off attracts no risk; the cost consultant remains responsible for the project to be costed correctly, whether they are modelled, measured or neither. See the document **L2 – Professional Indemnity Insurance** for greater detail.

BIM-enabled software is seeing cost consultants rethink their approach to routine measurement, allowing them to focus on the build-up of the estimate, and for the engineer to be proactive in between the times of traditional estimates.

Some well-established analysis and design software will link to other BIM files or documentation packages. Bi-directional functionality is offered in most software, but in practice it is difficult to maintain when the analysis and documentation models are developed in parallel; simply plan when to break the link.

You will be faced with a challenge to choose the most appropriate BIM enabled technology on offer now, with the likely promise of a more streamlined, right-first-time approach to your documentation activities, and the subsequent construction that you will oversee.

As with most revolutionary change, in practice the people who you employ, work with or report to, will respond better if they are coached and trained in what exactly it is that you are trying to achieve.



Offset against the advantage of the new technology will come disruption to the current processes.

New tools applied in the same way, to produce the same deliverables, will only ever yield similar results, or short-term gain.

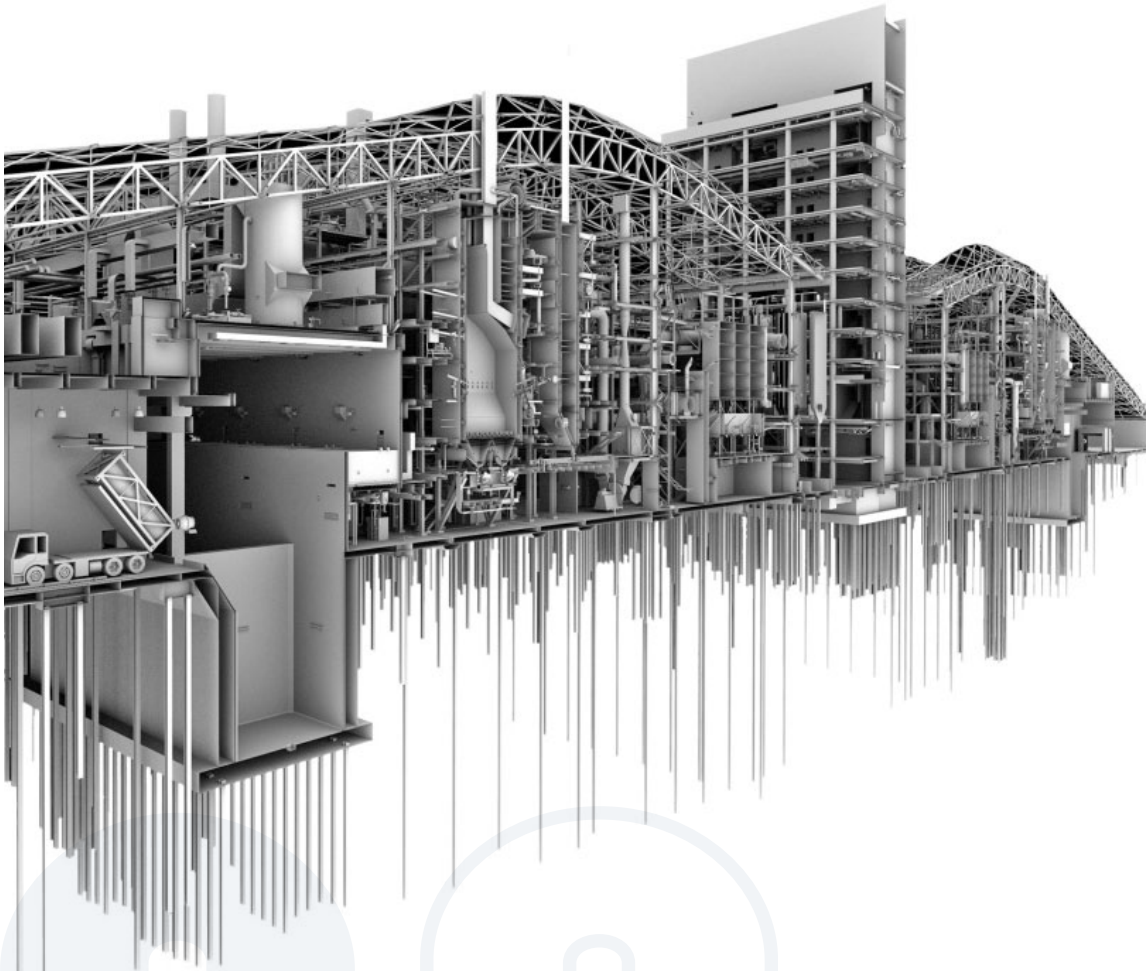


Image: Section of a Federated BIM in interactive free-to-view software (Source: Arup)

PEOPLE

The use of BIM processes can be very fulfilling. There is great satisfaction in creating a virtual prototype of a project, but there is also no substitute for engineering experience.

The output from BIM software driven by inexperienced engineers or technicians is not nearly as good as that coming from retraining experienced practitioners in a BIM process. The use of BIM does not automatically result in the production of better drawings in less time, but rather it contributes to a right-first-time approach to a higher quality, coordinated design and deliverables.

CONCLUSION

The use of BIM software to produce synchronised documentation sets is fast becoming the norm. Training experienced staff to apply processes earlier in a project, to sketch ideas or portions of design, to interact with other designers, to report material estimates, or to rehearse the work ahead in a 'right first time' fashion are potential quick wins that will have a huge impact later.

Summary

- Information is stored in a database and may be viewed in many ways
- A BIM project plan will describe how your work integrates with others
- Focus on the design – build the model first, interact with model next, then produce formal documentation
- Invest in training and coaching experienced staff in BIM concepts and processes