



Tait says there are many benefits of utilising BIM for the developer, but de-risking the deliverables is the major one.

"As owners we value that highly because if we have a builder who is late and a tenant who has pre-committed coming to the space and we can't get them in on time, that is a significant financial penalty for us...we could either lose a tenant or end up having to pick up their re-negotiated lease," he says.

Although it is too early to measure the impact of BIM on 567 Collins St, Tait says the tool is already making a difference on how the facility operates, particularly in the way information is accessed.

"[There's more rapid] access to data and knowing it is the latest data. We're able to find issues within the model when we are trying to educate staff and our facilities team. It's the smarter way to do business and the access to information isn't lost when the builder walks away," he says.

### Here to stay

While the application of BIM across the asset lifecycle may vary, there is little doubt its use will continue to grow.

The McGraw Hill study found that in 2013, 51% of BIM users engaged with the process

in more than three projects, and this was predicted to grow to 74% this year.

The study also found that higher levels of BIM integration led to a much greater return on investment.

Among low BIM users, only 10% found a very positive ROI compared with 46% for very high BIM users.

Hardcastle says that when you start applying the BIM across functions – beyond engineering, procurement, digital engineering – that's when real benefits can be achieved.

"It's not one function, but how our systems and information flows throughout the project. It's not about a person in the back room creating 3D models and keeping it to themselves," he says.

"It's about what is the information we need to get from that model, whether it is quantifications, or sequencing and the flow of information between the planner and estimator."

### Spreading the message

To achieve further BIM penetration throughout the asset lifecycle, several things must happen.

Firstly, there needs to be standards and guidance in place, such as a common asset and location classification system, new workflows and updated contractual requirements, Vaux points out.

The way data is recorded should also be standardised to ensure data entry formats are consistent and not ad hoc.

Case studies that provide quantitative as well as qualitative benefits could help promote the use of BIM across the board.

So could regulator levers, such as the government mandate that is being implemented in the UK next year.

"When you look at mandates in place, the British one is interesting, you hear positive stories and negative ones," Hemming says. "Ultimately it is a mandate to drive change and I think that is a good thing."

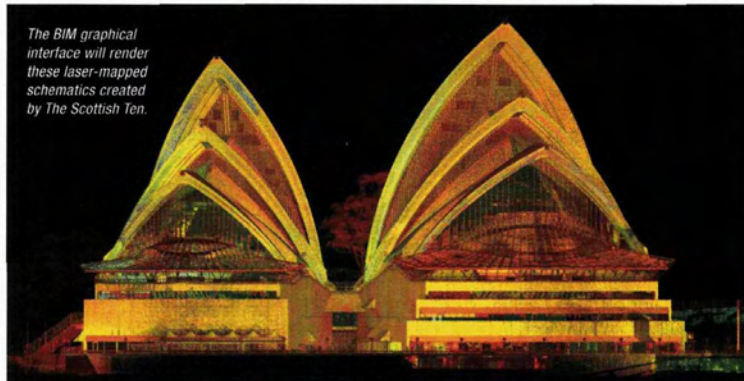
BIM champions by and large would like to see more political leadership on the issue, as well as better education of the benefits to asset owners.

"A lot of clients want BIM to not be left behind, but don't have an in-depth understanding of what BIM is," Hemming explains.

"That then goes down to the consultants to guide them on that...it definitely is [suffering an image problem], there's a lot of BIM-wash out there."

That may well be the case, but there is little doubt digital engineering presents an exciting opportunity for the construction industry.

As Vaux points out: "Digital disruption has been the catalyst that's transformed numerous industries globally. Given the right leadership, we anticipate digital engineering will enable a paradigm shift in productivity throughout the supply chain and return significant long-term benefits to client organisations and their end customers." G



The BIM graphical interface will render these laser-mapped schematics created by The Scottish Ten.

### Sydney Opera House to create world-class BIM interface

THE Sydney Opera House is on a journey to combine all of its business management information and systems into a single user interface – a cutting edge solution in BIM for facilities management.

The new technology will provide an innovative, web-based 3D graphical interface that maps both the physical and functional characteristics of Australia's most famous building.

"We've recognised for many years that a lot of knowledge is in people's heads, people who work in the building for a long time. There is mounting information available on the Opera House that typically sits in disparate files on hard drives or on bookshelves," facilities manager Bob Moffat says.

"Nothing really brings it together in a facilities management [FM] purpose to use something simple to drill in and found the information they want."

An example of how the tool could be used is in maintenance. Moffat explains that you will be able to walk into any room, swipe the barcode at the door and it will bring you to the right space in the model where you can access all the history, the operations and maintenance manuals, the current temperature in the room, and so on.

"A technician who has gone into a room

with his iPad can look into the room and see what work he has got outstanding," Moffat says.

"He will have every piece of information at his fingertips and the last time the work was done. They will no longer need to go back and get the information off site."

The software will also be able to timeline the history of the building and how it evolves throughout its life.

To create the interface, the Opera House approached the global BIM community to find a software company that could create a tailored solution interface that is ideal for facilities managers.

This led to Sydney Opera House appointing a consortium AECOM, BIM Academy and EcoDomus to create an interface between Building Management Control Systems, Building Information databases and Building Information Modelling.

"The difference with this is its usability," Moffat says. "We've bridged the gap between construction and facilities management by making the FM solution literally just look at the model and get the graphical view and build a database behind that. Facilities managers can't drive CAD or 3D modelling, this will allow them to do it quickly and easily."

The system is expected to launch next February with historical data entry expected to run into 2017.