



MAPPING THE ROAD TO SUCCESS

Manufacturers of building services products have been engaged with Building Information Modelling (BIM) for several years now. **Jonathan Jones** of **Pentair Thermal Building Solutions** discusses the importance of collaboration in the BIM journey.

It has been an exciting but challenging activity so far trying to get a grip on what the world needs, and we have learned that BIM is not a destination, but a road along which our industry must travel to improve how we design, construct, and manage buildings in the future. It is also a road on which we must travel with many companions.

Optimisation/ Optimising space

Collaboration in our industry across disciplines such as concept, design, engineering, construction and maintenance has never been more important if we are to succeed in developing BIM to drive efficiencies in these areas. None of us get to be onlookers; we all need to contribute.

Over many years, we have been able to drive material and energy efficiencies in large hot water distribution systems by removing the need for the recirculation loop, or return pipework, thus reducing heat losses, material cost, and optimising the available space in ceilings and risers for other critical building services. Our clients now enjoy an efficient supply of hot water. However, adding BIM to the equation, there are other key stakeholders and efficiencies to be won.

Accuracy

Building services product manufacturers need to be looking at how we deliver efficiencies, not just in building performance, but also in system design, quantity surveying, installation, and maintenance after handover. We should also have an interest in ensuring that the 'as built' building design package is accurate, particularly in areas pertaining to our own products and systems. Certainly,

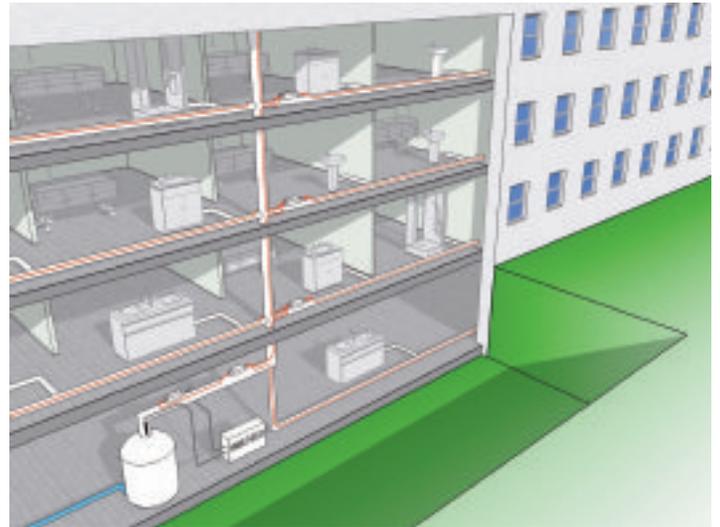
Promoting efficiencies

Add-ins allow systems to be designed using data already existing with the BIM model. To exemplify, the Raychem 'trace-it' add-in allows a heat tracing design to be applied to hot water, and draws upon existing data within the model such as pipe diameter, pipe length, and material type, to calculate power requirements, heater circuit lengths, and thus product requirements. The complete data package can then be saved to the model as an accurate schedule, which can be used later by the quantity surveyor and the contractor for efficient sourcing and installation. Furthermore, the precision of the data package means that the old 'well, let's add 3-5 per cent to the bill of materials just to be on the safe side' need not apply. Finally, at handover, what is designed and installed can be easily visualised by facilities management ensuring that systems are efficiently managed, and any maintenance support can be directed at the correct manufacturers without delay. Add-ins, whilst comparatively expensive against a BIM article, provide a significant benefit to multiple stakeholders. A quick search of the Autodesk Exchange will yield some excellent manufacturer developed add-ins for ducting, cable trays, and conduits, as well as trace heating, all aimed at improving efficiencies.

Practice makes perfect

So, we're able to see some step changes in available knowledge tools and support for BIM. But while availability is one thing, usage is another. Together, the industry needs to start practising with these tools and applying their benefit to real projects. 'Practice makes perfect' really does apply to BIM, as user feedback on available BIM tools will be instrumental in the continuous improvement cycle. Put simply, manufacturers are providing the tools but it is the engineering, contracting, and the facilities management community that need to provide feedback on what works, and what can be improved. It's a big boulder to set in motion and again manufacturers need to support this uptake.

Getting access to BIM content and tools is relatively simple via the web, at sites such as Autodesk Seek and App Exchange. In fact, BIM users access content directly from their BIM software in many cases, so this is a big hurdle cleared. The next hurdle is 'how to use content' and manufacturers need to be smart about how this is done. Visiting every worldwide user of BIM to demonstrate content and tools would be great but is, in most cases, impractical. Therefore online media is an excellent way



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the BIM strategy should try to deliver benefit in all of these critical areas. It is fair to say the typical BIM families for a whole range of products do provide valuable support for quantity surveying, installation, and maintenance, provided the data in the BIM family is detailed and accurate. However, system design can often be a grey area. To counter this, the more BIM-savvy manufacturers are developing BIM add-ins or 'Apps' to make this task easier and more efficient from both a time and material usage perspective. Whilst talking with engineers and contractors it is clear that such tools, which allow system design within software such as Revit, will speed up the process and also make it more accurate than a materials take-off from a printed plan. Feedback like this has led many manufacturers to develop add-ins.

to enhance learning. YouTube, for example, is a great way to provide instructional videos on how to apply content into real building projects; if a picture is worth a thousand words, a video is easily worth a thousand pictures. The big advantage with such media is that it is always at the touch of a button, 24/7, whenever and wherever the user needs it. No-one needs to understand every principle after a single introductory training, it can be reviewed over and over to make the process. After all, BIM is about efficiency, so we need to be smart and efficient in training and guidance. To date, my experience with our own training and instructional videos for BIM content has been integral to communicating with our customers.

The BIM Schedule

The message I have tried to convey in this article is encompassed by a single word; collaboration. As we travel along this information modelling journey, we manufacturers need to be side by side with our designer, engineer, contractor and facilities management companions. If not, delivering BIM level 2 by 2016 will be challenging. As manufacturers, we know our applications and system solutions well, and therefore need to be well placed to support BIM from a product and system perspective. With this in mind, we can continue to develop the tools to allow us to reach our 2016 BIM objectives with important feedback and discussion with our companions on this journey. 

Becoming the experts

So how do architects, engineers and contractors become BIM ready? Traditionally, the answer may have been to go on a Revit training course but this is only part of the equation. It will be equally important to engage with manufacturers in order to be able to design and build the types of buildings we want to build in the future. In short, the industry needs building professionals to drive manufacturers, as well as the manufacturers driving BIM towards the building professionals. Utopia would be where this collaboration resulted in a general increase in understanding of BIM and how it can practically be applied. I hope we'll all become experts together.

Jonathan Jones, European product manager at Pentair Thermal Building Solutions, has been working within the building services industry for 15 years supporting engineering community in the design and specification of Raychem branded building services heat tracing systems. Jonathan now leads the global BIM development team at Pentair engaging with all stakeholders to ensure the transition to BIM is well supported.

