

Putting the I in BIM

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Intelligent asset data can be used by surveyors in facilities management to enable efficient maintenance, but barriers to BIM adoption are still to be overcome

Building surveyors, particularly those with long experience of building maintenance, have become used to changes in working routines and managerial approaches, with the continuing introduction of new workplace technology and practices.

Consider changes in terminology: 'estate management' became 'asset management' and subsequently 'facilities management' (FM). Coupled with this, building maintenance, record-keeping and asset condition recording are moving from clipboard and pencil to mobile device to point clouds and beyond. As for building information modelling (BIM), what can this technology do for building surveyors in property maintenance?

Buildings are notoriously expensive investments for any business, typically 2nd only to staff wages in terms of cost. As building maintenance is often regarded as highly inefficient given inherent deficiencies in asset data, the overreliance on human knowledge and time-consuming procedures, the value of the information in BIM is worth considering.

Building surveyors in FM unquestionably have a critical role in maintaining assets efficiently, and it is in the occupancy and operational stages that the 'I' in BIM could offer the most value. Yet many in FM are still to be convinced by the business case for BIM. The true significance of BIM in FM perhaps lies in the asset data itself: as part of a building information model, this may not only inform those managing the buildings, but can enhance maintenance efficiency and the credibility of future economic decisions.

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Maintenance inefficiency is typically blamed on factors ranging from poor strategies and operational procedures to the hasty commissioning of new assets to ensure timely handover. Surveyors will recognise how often designers are accused of ignoring FM and in particular building maintenance, with claims of inadequate specifications leading to a subsequent rise in maintenance cost.

This is because efforts have traditionally, and perhaps understandably, focused on the contract and client budgets rather than researching the long-term performance of products and materials, with the commissioning process subsequently being rushed and less than rigorous.

That in turn means those managing the buildings typically have to invest considerable resources in reconfiguring plant and equipment to meet occupiers' requirements, duplicating effort and hence increasing cost.

Surveyors often enter the debate at this stage to advise on the most appropriate maintenance strategies. These can include the following:

- **Condition:** predictions based on the data collected from surveys are used to inform proactive, preventative maintenance.
- **Time:** maintenance activities are scheduled to correlate with warranties, life expectancy or legislative requirements.
- **Corrective methods:** maintenance is undertaken when an asset fails or is about to fail.

A 1997 [study](#) offers a useful rationale for selecting appropriate strategies, but concludes that the best approaches rely on aspects of all 3 of these methods. Another [study](#) from 2012 suggests time-based strategies can lead to overmaintenance and increase cost because they are heavily influenced by manufacturers' recommendations and do not focus on savings.

What then does the I of BIM have to offer? Perhaps unsurprisingly, there are numerous views on integrating asset data into maintenance strategies. [Some studies](#) present a compelling argument for enhancing collaboration between design, construction and FM in order to take into account the impact that design decisions have on maintenance efficiency. Perhaps here is where the key role for surveyors in FM is likely to develop: analysing the BIM data and enabling the client to make informed, assured decisions.

Imagine accessible, unlimited intelligent data in building information models, with benchmarks for the performance of all boilers, roof coverings, curtain-wall systems and more. This data could be very valuable for clients, provided that surveyors are on hand to orchestrate and manipulate maintenance strategies, and are also monitoring and comparing actual with modelled performance. This function could mean that the presence of surveyors in FM becomes obligatory.

Risks still exist, though: the required financial investment and time frames of 3 to 6 years undoubtedly present barriers to BIM adoption, particularly during the present uncertain economic climate. Other considerations and challenges include:

- the need to update models with maintenance activities and physical changes ? such as repositioned doorways, partitions or electrical sockets ? to maintain a continuous record;
- the initial cost of creating 3D models retrospectively; this also relies on the accuracy of as-built drawings, which can have significant discrepancies that then require further survey work;
- lack of software compatibility between BIM-capable platforms; and
- the inherent risk that asset owners are unable to define their information requirement before generating the model, leading to overmodelling.

Worryingly, the value of BIM data may never be fully harnessed. Facilities managers and designers are traditionally disconnected from each other and often reluctant to share this information. So in future, construction organisations may be best positioned to do so because they can harness the asset data earlier than traditional FM organisations.

They are responsible for creating the asset information model and are thus strategically better placed to make the most of information than facilities managers, who are historically

engaged towards the end of a development. This could create a significant opportunity for construction companies to exploit the value of asset data intelligence and tender competitively for FM services at an earlier stage ? arguably with greater accuracy than traditional FM approaches.

The complex skill set of a building surveyor will remain of immense value provided that the surveyors in the FM sector are proactive and responsive to technological changes and challenges.

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Further information

- Related competencies include: [Building information modelling \(BIM\) management](#) , [Maintenance management](#)
- This feature has come from the [RICS Built environment journal](#) (June/July 2019)
- Related categories: [Building information modelling](#) , [BIM for facilities management](#)