

## Why property managers can't deliver better buildings

Most commercial buildings could be more comfortable, productive and healthier for people. They could cost less money and take less time to operate. All of these business objectives could be achieved at the same time. Where this is done successfully it is exceptional. The problem is that property and facilities management is struggling to deliver on these outcomes in the majority of cases. It is no single company or individuals fault. Property managers now have limited ability to increase the operational value of a building because of a combination of market factors geared to managing a property as an asset rather than a service for the property users.

To improve a property, capital projects can be undertaken to improve the facilities and finish of a property. In the majority of cases this upgrade is surface deep and the underlying building systems struggle to improve the operations. This is seen in new buildings, which are less efficient when they first become operational than expected. In a recent study of 50 new commercial properties, they were on average 4 times less efficient than the requirements of Building Regulations - the best was 2 times and the worst was 10 times less efficient. Once these properties are operational the leverage available to the property manager is very limited as significant capital has already been spent and expectations are high. Despite the best intentions and aspirations for a property there are a number of inherent market challenges which need concerted and collective effort to address.

We've reached this conclusion at Demand Logic by monitoring over 100 properties, and observing the performance of many more. The business failings of Interserve, Mitie, Carillion and Capita have grabbed the headlines, but the reality is that their FM operations are under exactly the same pressures as the surviving companies. None of them are thriving. FM contracts are under incredible pressure - being asked to deliver more to achieve business objectives, unable to deliver an effective Planned Preventative Maintenance (PPM) approach (defined by SFG20), and in a market with cut-throat prices. There is no room for innovation and the adoption of new technology, like building systems data analytics.

The property industry can get back on track if a concerted effort is made to correct the market factors which create barriers to improving performance. We've set out these factors here for discussion.

### FM Contracts

In the majority of cases when a Property Manager puts a FM contract out to tender they use the only maintenance standard in the UK, SFG20, as the reference specification. SFG20 has existed for about 30 years and recommends the number of visits and maintenance steps required for each piece of building services equipment in a building. The result is a simple to follow schedule and there are many engineering maintenance teams who have trained staff and developed Computer-Aided Facilities Management (CAFM) tools to deliver this scheduled maintenance. The

actual result is that all the FM companies end up responding with a similar number of visits to the property and hours on site, but they are still asked to be competitive on price and “to demonstrate innovation”. What the Property Manager ends up with, through a ‘race to the bottom’ is a contractor who cannot deliver a good service as the budget doesn’t exist, without enough time or the requisite skills to successfully deliver the contract.

In maintaining a complex commercial building there are a small number of large pieces of critical equipment (i.e. between 3 and 30 boilers, chillers, air-handling units) and then there is a more numerous amount of smaller equipment which is less efficient to maintain as it is difficult to reach, small and often in occupied areas of the building (i.e. hundreds of fans, pumps, etc). This is where most maintenance falls down, on the tenanted floors, and this can then throw the operation of the building out of control. It is these small pieces of equipment which determines the demands on the central landlord plant. To give one example, in one property in central London the engineering maintenance team has in their contract 4 minutes to maintain a Fan Coil Unit (FCU) - that is four minutes to locate the right FCU in the ceiling void, erect the ladder, gain access to the FCU, perform the maintenance (including changing the filter, checking the damper, etc.) and complete the necessary paperwork to confirm that the schedule visit has been completed. This has to be done 2-4 times a year, out of operational hours.

The reality is that these visits don’t get completed. If they do, there is a good chance they will miss actual faults. Each of these visits is in sequence and not based on the condition of the plant, so faulty units may not get addressed until the end of the maintenance programme and sometimes never.

In addition to this scheduled maintenance the existing FM contracts have a budget or a cost for responding to ‘reactives’ - i.e. complaints to the FM helpdesk - and a Service Level Agreement to ensure they are responded to, even if they are not remedied. In some contracts the FM company will be paid a day rate to respond to a complaint. In other cases there is a number of reactives bundled into the contract so any call-out below a particular threshold, say £500, have to be covered by the FM contractors. The result in the first instance is that the contractors is not incentivised to improve performance and reduce complaints. In the second case, the contractor does not want to know about small works below the £500 threshold unless it is unavoidable.

### **Imagine an alternative scenario for property and facilities management**

Now, let’s flip this traditional approach on its head. Imagine that data analytics of the building systems could tell you precisely which pieces of equipment were operating well and which were faulty causing comfort problems, increased wear and tear and energy wastage. Imagine that this information demonstrated that not all of the equipment in the building needed maintaining twice or four times a year, in fact once might be enough. Imagine in that scenario how the FM time could be put to better use to deliver a better service to tenants and employees at a lower cost of building operation. Imagine how much easier it would be for the Property Manager to manage the contractor if there was live data analytics to show where a maintenance visit had fixed the faulty equipment or not. Imagine if you could measure the success of a FM contract and the property operations based on business outcomes - like occupant comfort, energy efficiency and maintenance effectiveness - rather than the number of visits and the speed of response, regardless of the effectiveness of the engineering fix. This would mean that occupant’s well-being and energy management would be a core part of FM delivery.

## Data-Driven Property Management

In this alternative scenario where data insight provides intelligence for the property and facilities management team, what would stop better building performance. Wouldn't it be simple to deliver high performing buildings?

The *first challenge* is that new buildings don't work the way they were designed to. It is rare that the commissioning process prior to Practical Completion (PC) of a new building or major refurbishment is able to address all of the snags. This has forced the need for "soft landings" to try and pick up these snags during the warranty defects-liability period in the first 12-24 months. The Property Manager and their FM contractor has to adopt this building when it is not operating the way it should. Nor do they have the ability to quickly validate the commissioning of the building as the hand-over point is at PC when it is too late. When a new contractor inherits a problematic building, even a brand new one, they usually start day one on the back foot.

Building systems data analytics, which can be installed in one hour and be monitoring data within 24-48 hours can automatically identify snags within days of observing performance. This can be used to validate commissioning, to support Soft Landings, to provide insight for dilapidation reporting and for due diligence on property acquisition. The only way this can happen is if building systems data analytics are written into the construction contract, the FM specification and the due diligence requirements from day one. If it is not, then it is too late.

The *second challenge* is that often in the UK the management of the landlord areas and equipment is separate from the management of the tenant demise. This often means that the team who looks after the equipment which controls the comfort and well-being of the people in the building, the smaller equipment, is managed independently of all the main plant which needs to supply the right heating, cooling and air quality. When a building system is managed in this segmented way it is very unlikely that a holistic view of the whole system can be taken and managed successfully between distinct parties with different contracts and objectives.

The *third challenge* is connected to this separation and it is the fragmentation of operational data. A Building Management System (BMS) can provide data from all of the HVAC equipment in the building, sensors, meters and lighting where it is integrated. In most cases these various sources of data are running through parallel non-integrated systems. To make matters worse and to prevent a system view, the tenants on each floor of a building can have their own BMS to control the equipment on their floor even when that equipment is reliant on the supply from the central landlord plant on a separate BMS.

Building systems data analysis can integrate this data into a single view, providing a connection between the central supply equipment and the smaller, distributed equipment on each floor. This visibility is important because it can bridge the divide between landlords and tenants' operations in a way which is not possible without this granular live data. For instance, sub-metered energy data may tell you that a floor has high consumption, but it will not tell you why so this limits the ability to have an informed conversation between landlord and tenant about remedying the fault. For time poor FMs, this lack of insight can get lost in the noise of completing scheduled PPM visits and responding to complaints.

The *fourth challenge* is that the tools used to manage operations are developed for the present way of working. This could be just an Excel spreadsheet. In some management teams they use

CAFM or Integrated Workplace Management Software (IWMS), which are more commonly known in the UK as *FSI Concept*, *eLogbooks* and *Maximo*. These tools can take in data from a 52-week schedule of maintenance and send out regular work orders to complete these planned visits. They can also log helpdesk calls and turn them into work orders. However, these software tools have not been designed to dynamically respond to live data insight about the condition of a piece of equipment. Whilst it is possible to automatically log this new data from building systems data analytics as a helpdesk call, this cannot be reconciled with the PPM visit by the software, so the full efficiencies from prioritising planned maintenance and reducing unnecessary maintenance visits cannot yet be supported by the FM tools. An important barrier to the cultural change required to deliver better buildings.

The *fifth challenge* is engineering skills and culture. There is a shortage of engineers in the UK. The property sector is struggling to recruit engineers, and to recruit the best ones. If they do join the industry they are inducted into the traditional model of running buildings with little inspiration or opportunity for free-thinking to change this status quo. If the quality of engineering continues to decrease as it is expected to do, the need for building systems data analytics to identify, diagnose and prescribe fixes to building performance will become a necessity. The ultimate outcome, over the longer term, is that this data analytics will be used to automate the operations of the building. Engineers will then only be called to site to fix a physical fault, which has already been identified by the data analytics. Some data analytics companies believe this will happen soon, and it may well do in a small number of new showcase buildings. The reality for the vast majority of existing buildings is that to retrofit a fully automated building it will be a decade away. In the interim, building systems data analytics are critical to ensure that a property manager gets the most from engineering teams depleted of people, experience and skills.

The *sixth challenge* is the difficulty for different professionals involved in managing a property to collaborate. In a dispersed team it is very hard to collaborate on common issues. Existing tools like email and speaking on the phone can present barriers to finding the best solution, particularly when different groups use their own professional language. Being able to visualise an issue with an image, provide a forum for collaboration and track progress should enable more productive working for property management teams.

### **Making property management simpler**

Having set out these challenges to making Property Management simpler to deliver better building performance, Demand Logic would like to see this need for market transformation discussed amongst the various bodies who have the best interests of the property industry's operations at their heart. A new model is required which starts with building systems data analytics at the centre. This new technology has the potential to transform property performance for the better. To many new entrants to the UK market, this data-driven approach will make a lot of sense and it will be seen as the normal model. For incumbents it is more difficult to make a change when most property management contracts are set up for many years to come on the old, traditional model. A transition plan would enable property management to change in an informed way without businesses losing out. This is the conversation Demand Logic would like to have and contribute to in the coming year.