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# 7 Ways Data Can Drive Better Facilities Management Decisions

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Whether it's using a smart meter to track energy usage at home or scrutinising reviews to decide on a restaurant – decisions in day-to-day life are becoming increasingly more data-driven. In parallel, the use of data for decision making in facilities management is also growing.

Within the built environment, myriad data sources can inform facilities management (FM) teams about the operation of a space. Many of these datasets, like water sampling for bacteria levels or the energy efficiency of a building's plant, are routinely used to support decision making. Still, others are more complex and require technology, AI (Artificial Intelligence) or enhancements to make them applicable. Data enables FM teams to make more informed decisions and drive proactivity because, as per Peter Drucker's famous maxim, "[only] what gets measured gets managed".

## The evolving role of facilities management and analysis paralysis

FM's role in an organisation has evolved dramatically in the past decade. Morphing from a traditional subcontractor-client relationship, facilities managers are now expected to take on the role of trusted adviser, culture guardian, experience manager, ESG (Environment, Social and Governance) custodian and now, data analyst.

With countless datasets available to building managers, the only route to success is establishing an organisation's overall objectives. Whether it's achieving a long-term decarbonisation strategy, supporting

a newly-evolved hybrid working model or defining future capital investment plans, data underpins the achievement of all these goals. Defining the objectives is a minimum requirement for FM teams to gain clarity in the space of overwhelming amounts of data, allowing them to move from avoiding "analysis paralysis" to true data-led decision making that supports the needs of different stakeholders.

In this article, we examine seven data points and tools available to FM teams which can improve decision making.

## 1) Current condition data

All asset data strategies rely on a foundation of accurate information about the building's assets, like the type, age, maintenance history and the criticality[i] of a building's plant[ii] and other equipment. Collecting data on the condition of assets across an estate is the first, most basic and fundamental building block of any data strategy.

The transformative effect that this can have on future planning and decision making should not be underestimated. For those who have this base data, there are opportunities to augment it by integrating spend data, CAFM[iii] history data and benchmarking against similar assets. Using this data to establish Facility Condition Indexes (FCIs)[iv], for example, enhances current condition data to provide a more strategic outlook.

## 2) Asset lifecycle data

Property assets, such as boilers, lighting, air handling units and chillers, are often viewed in isolation against immediate business requirements. For example, looking only at recent building occupancy data to support decision making on the optimisation of a portfolio. However, a broader spread of data is much more useful to ensure that whole-life costs are optimised to suit occupancy and usage needs. This enables property managers to make better decisions based on all operational and cost drivers and provides a data collection platform that can be enhanced or adapted when objectives change. When leveraged effectively, asset lifecycle data should support future CapEx[v] planning or support the decarbonisation of assets to match up against an organisation's long-term net zero goals.

## 3) Utilities – energy, water, and electricity

ESG is arguably the top priority of businesses in every industry. Couple this with ongoing energy cost uncertainty, accurate and detailed consumption data is essential to support FM decision making, and larger long-term business decisions.

Utilities and energy data can be established by consolidating existing half-hourly[vi] energy readings, implementing an improved sub-metering strategy (increasing the number of meters in the building to understand consumption by area/floor), or the utilisation of building analytics tools. There are a wide range of solutions to enhance this dataset, including live analysis with consumption alerts, but the implementation of these will vary based on goals and objectives.

A good data strategy enables a comprehensive understanding of how and where energy is used within a building or group of buildings. FM teams are then able to assess whether there is a good correlation

between energy use and building usage/occupancy/asset operational efficiency and can ultimately drive a more efficient usage of energy in line with decarbonisation targets.

It's a certainty that the requirement for businesses to report their emissions in more detail will increase over the coming years. A robust building data strategy should therefore consider current ESG reporting requirements and be designed to anticipate future data needs in this space.

## 4) Optimising workplaces through smart buildings

Building occupancy is driven by an increasingly complex dynamic of factors, including new hybrid-working models, workspace changes (from desk-led to agile), business project needs, seasonal fluctuations, and inclement weather. Smart buildings consolidate smart systems into one platform, bringing all FM data sources together, monitoring these factors into one system (including data from monitoring of equipment, environmental conditions, occupancy, and even pest control devices) and are invaluable in supporting property teams to understand what challenges there are in a building and how to solve them. The real power of these systems is that they provide insight that underpins and measures the success of an organisation's workplace strategy.

## 5) Cost certainty and dynamic forecasting

One of the largest financial expenditures for a building will often occur when the building's plant, or other large equipment, needs to be replaced or refurbished. Funding for this should be allocated many years ahead. A Forward Maintenance Register (FMR)[vii] is a valuable tool in cataloguing asset risk to help prioritise and predict future expenditure and requirements.

For many organisations, this is where an enhanced data strategy will provide valuable insight and support decisions for future expenditure. It is also invaluable for identifying risk and prioritising expenditure.

To compliment a robust FMR, there is also an opportunity to forecast spend profiles dynamically. It's possible to gather data that tracks changes in plant operation and usage and accurately predict the lifespan of assets based on changes being made to the buildings that are occupied. The key to this dataset is not establishing the data collection methodology, but the tools that can consolidate and manipulate the data to forecast the new outcomes. Powerful tools that help consolidate and automate this process are at the leading edge of data-led decision making in FM.

## 6) Smart system monitoring tools

To establish a more focused review of day-to-day plant operations, existing datasets can be enhanced by a range of telemetry monitoring sensors[viii] and building analytics tools. These tools can aid the processing of raw data derived from existing building systems (BMS[ix], CAFM, metering etc.) and apply algorithms to generate trends and insights that might otherwise have taken analysts, technical managers, and energy managers several weeks to identify. Notably, these focus on condition-based, utilisation and statutory compliance monitoring.

These tools can be highly sophisticated and it's important to assess the benefits they will bring to informing strategy before investing. A well-established BMS can often deliver some of these benefits,

however the advantage of the processing power and the immediacy of the insights, can be a real benefit to the asset manager and building operator.

## 7) Understanding asset TCO (Total Cost of Ownership)

The total cost of operating equipment, or the Total Cost of Ownership (TCO), is the marker by which the true value of a building's data strategy can be measured. For example, it's not effective to save costs on maintenance in the short term if this expediates a much more expensive replacement cost.

TCO offers a rounded view of an asset's lifespan and enables a good understanding of long-term return on investment compared to its OpEx[x] and expected maintenance costs. This is particularly useful data for making decisions on energy purchase agreements and when looking at the cost of carbon relative to very long-term decarbonisation plans.

Therefore, if a data strategy is implemented based on long-term optimisation and best value of assets, it can turn commercial real estate management into a commercial advantage.

# So, what does this mean for FM and engineering teams?

It's clear that FM teams must establish new levels of data analysis as part of their regular review activities and be aware of its power to drive big organisational decisions. Though most FMs are already familiar with using data in day-to-day operations, the difference associated with the broader concept of data-led decision making, is an awareness of how others will use the data that is collected, recorded and monitored.

Designing a building data strategy that selects the most appropriate data profiles to inform, rather than consume resources, is a difficult skill to master. A strategy that turns these datasets into meaningful insight that supports successful long-term decision making, is even more difficult to implement. The aim should be to build and develop capabilities within an organisation to ensure that both data integrity as well as data insight can be maintained. When done well, this data can be the driving force for an organisation's success.

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| i Criticality – refers to the criticality of an asset where its failure would be a risk to the business. Understanding an asset's criticality can influence decision making and prioritisation of investment. |
| ii Plant – the equipment and machinery required to supply building services such as ventilation, electrical distribution, water. |
| iii CAFM (Computer Aided Facilities Management) – technology/software used by facilities teams to manage all activities involved in running a workplace or space. |
| iv FCI (Facility Condition Indexes) – a standard benchmark used by facilities managers to compare and the prioritisation of the condition and criticality of an asset or group of facilities. |

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| v CapEx – Capital expenditures (CapEx) are funds used by a company or organisation to buy, upgrade, and maintain physical assets, such as buildings, plants, technology, or equipment. |
| vi Half-hourly (or HH) metering – a type of electricity meter that measures electricity being used in every 30 minutes, automatically sending a reading to a central system. |
| vii FMR (Forward Maintenance Register) – a schedule report that highlights aged assets and equipment that present a risk within a building portfolio, aiding the CapEx planning cycles and OpEx costs. |
| viii Telemetry monitoring sensors – sensors which gather data on parameters like temperature or humidity within a building, so the data can be analysed or controlled manually or automatically. |
| ix BMS (Building Management System) – a computer-based control system in buildings to monitor and control equipment including ventilation, lighting, power systems, fire systems, and security systems. |
| x OpEX – Operating expenses (OpEx) refers to the costs a company incurs for running day-to-day operations and equipment. |