



Usually, the decision to adopt advanced metering is instructed by the asset manager and the process of installing and managing advanced meters is coordinated by the property manager with input from the facilities manager.

Advanced metering follows four general steps.



## STEP 1: ACQUISITION OF A PROPERTY OR PORTFOLIO

The Better Building Partnership have produced an [Acquisition Sustainability Toolkit](#) which provides a useful reference covering areas to consider on acquisition.

If followed, the principles in the toolkit would ensure all relevant data and information is available to the asset manager and property manager, providing an indication of current performance, and the status of any improvements either completed, underway, or planned/identified.

Provision should, if possible, be made during a handover period to query any received information and seek clarification where necessary to ensure as seamless a transition as possible.

Due Diligence processes that are undertaken as part of development should be requested to enable a review of actions raised that relate to the operational phase of the property lifecycle.

Further, engagement with clients early in the development or refurbishment of assets should be encouraged. This will help to ensure that input into their specification enables effective commissioning and handover.

Property Managers should endeavour to maintain records during their tenure that enable a smooth transition on disposal of the asset to another property manager or buyer.



## STEP 2: DESIGN AND PLANNING DURING DEVELOPMENT AND CONSTRUCTION

A key consideration in building design, or during refurbishment, must now be on maximising energy efficiency in order to support wider objectives aimed at achieving net zero carbon.

As around two thirds of the energy consumed by an average property is associated with its operational phase, there is an imperative for asset managers and property managers to consider energy during design.

It is important that during design, consideration is also given to building user experience, for example, through prioritising health and wellbeing. This consideration has increased in prominence during the pandemic, both as a means of encouraging people back to the workplace, and also as a response to rising awareness about the built environment's potential impact on public health.

## STEP 3: OPERATION AND MANAGEMENT

While decisions made during the acquisition planning and development phases have a considerable influence on a property’s future sustainability performance, the operational phase remains critical. For example, as the majority of property that will be standing in 2050 already exists, building design alone will not deliver on zero carbon.

The principal concern to a Property Manager relates to the operational phase. Appropriate steps must be taken to consider issues including, for example:

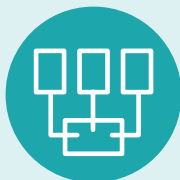
- 1) Compliance against all applicable legal requirements.
- 2) Collation of relevant data sets enabling reporting on performance against an agreed range of metrics.
- 3) Employee engagement activity that ensures building operators understand what is required of them to run a building with a view to improving sustainability performance.
- 4) Occupier engagement to ensure performance within demised space is understood.
- 5) Supplier engagement to ensure activities carried out on behalf of the property owner are conducted to improve sustainability performance.
- 6) Recommendations are made to property owners to drive performance improvement beyond those that might be delivered within agreed budgets.

### Steps to consider during the operational phase



#### COMPLIANCE

Against all applicable legal requirements



#### COLLATE RELEVANT DATA

Enable reporting on performance



#### EMPLOYEE ENGAGEMENT ACTIVITY

How can the building operator improve sustainability performance?



#### OCCUPIER ENGAGEMENT

Is performance within demised space understood?



#### SUPPLIER ENGAGEMENT ACTIVITY

Ensure activities carried out are conducted to improve sustainability performance.



#### RECOMMEND

Drive performance improvement beyond those that might be delivered within agreed budgets.

## STEP 4: MONITORING AND MAINTENANCE STRATEGIES

The differences between the three key monitoring and maintenance strategies are outlined below:

### Preventive maintenance

- **Definition:** Completion of maintenance, measurements, tests, parts and replacement to prevent faults from occurring.
- **Purpose:** Performed while the equipment is still working so that it does not break down unexpectedly.
- **Limitation:** Closer to reactive based maintenance and focused around keeping the equipment operational.
- **Cost impact:** Low

### Predictive maintenance

- **Definition:** Adoption of techniques that are designed to help determine the condition of installed equipment.
- **Purpose:** Monitors the performance and condition of equipment during normal operation to reduce the likelihood of failures.
- **Limitation:** Predictive monitoring and alone does not provide continuous based monitoring.
- **Cost impact:** Medium

### Condition based maintenance

- **Definition:** Continuous maintenance strategy that monitors the actual condition of an asset to decide what maintenance needs to be done.
- **Purpose:** A maintenance strategy that dictates that maintenance should only be performed when certain indicators show signs of decreasing performance or upcoming failure.
- **Limitation:** Requires focus at initialisation and the continued engagement of a wider team of appointed onsite and offsite specialists, meaning that robust and well-thought-out strategies are needed to ensure the objectives are met. However, upfront costs are likely to reduce over the time of the operation of the equipment.
- **Cost impact:** high

Moving towards condition based monitoring should involve consideration of the following elements:

- Define and establish the definitions and purpose for conditional based monitoring.
- Educate and inform all stakeholders to obtain buy in.
- Evaluate the anticipated resources and assigning personnel roles and responsibilities.

- Complete an equipment inventory.
- Evaluate the existing maintenance strategy.
- Analyse the history and current condition of the installed equipment to identify any equipment defects, losses, potential regulation fines and workplace safety.
- Analyse the operational patterns of the equipment, its downtime, set points etc.
- Review documentation to understand the level of knowledge for installed equipment.
- Select the equipment for the initial implementation.
- Develop the systems and conditions for the monitoring of these systems and/or components.
- Define the critical factors, establish the maintenance frequency and schedule.
- Organise the program and integrate it into the scheduling system.
- Conduct training for all necessary stakeholders.
- Create a computerised maintenance management system (CMMS) to track the condition based maintenance strategy.