Uptime

Measuring the effectiveness of facilities management operations is vital management information for a professional facilities manager. Simple quantitative measures are frequently used as Performance Indicators such as "% of planned maintenance activities carried out to plan." These measures assess the activity being carried out but provide no information as to its effectiveness. Measurements like Uptime capture the output from the activity rather than the activity itself.

Uptime measures the time during which a piece of equipment or a whole facility is fully functional and available for use. It is the opposite of Downtime which are the periods when the equipment or facility are unavailable either through malfunction or because they are undergoing maintenance. During Downtime, the organisation that owns or utilises the asset can gain no benefit from it - factories cannot manufacture goods, contact centres cannot take calls, offices are unproductive etc.

When a building or equipment asset is put into use, it has to perform as required for the life of the asset with maximum uptime. Enabling building services must operate in an efficient and effective manner. Not only must they deliver the necessary environmental conditions, but also, to be considered successful, they must do so reliably and economically with minimum downtime.

There are a number of Key Performance Indicators that use Uptime to measure maintenance effectiveness. A valuable measure is the Availability Percentage. This is calculated as *Actual Uptime ÷ Planned Operating Time × 100 = Availability Percentage.* For example, if a data centre should be operating 168 hours a week but experienced 4 hours of downtime, its Availability Percentage has been 97.6% (164 ÷ 168 x 100)

To measure the reliability of a particular piece of equipment a useful Uptime KPI is Mean Time Between Failure, MTBF is the average of all uptime increments during a given period. The formula is: *Sum of Uptime Periods ÷ Number of Uptime Periods = MTBF.* If a key piece of equipment, such as an escalator in a department store, is scheduled to run for 234 hours a month but it runs for 50 hours then goes down for 6, runs another 30 hours, fails again and is off line for 2 hours, then runs 70 hours before going down for the rest of the month, the MTBF would be calculated as 50 + 30 + 70 hours ÷ 3 Occurrences = 50 hours MTBF.

Uptime KPI's can be used as part of a Performance Management System linked to incentives or penalties but their most important role is in allowing the facility manager to identify trends and to compare the effectiveness of alternate maintenance regimes to plan improvements.

The bookshop of the Chartered Institute of Building Services Engineers CIBSE has many useful books on maintenance strategies and the use of Key Performance Indicators www.cibse.org