

## Sub-metering

What is it?

Sub-metering is the provision of additional metering downstream of the main meters so that energy consumption within a building can be identified to end user level. The need for sub-metering has been recognized for many years and the requirement is enshrined within UK building regulations. Hence it could be expected that its application would be widespread and seamless. So why, when an energy survey takes place, are so few installations satisfactory?

Many metering strategies do not even meet the regulatory requirements, let alone provide useful information for the occupants. It is common to find meters that have never worked, or automatic monitoring and recording systems that return unreliable results.

It is time to put this right, and here are three key points to making sure that sub-metering works.

(1) No installation should ever be left incomplete as that is simply unprofessional. The checking and calibration of meters may be tedious but it is critical to proper system commissioning. The wise client will ensure that detailed witness testing occurs to confirm it.

(2) Facilities Management teams need to up their game. Cost and manpower reductions make limiting meter readings superficially attractive but energy management requires careful planning and execution if it is to be effective and worthwhile. A restricted approach hardly fits well with current CO<sub>2</sub> legislation.

(3) Both buyers and BMS maintenance technicians can sometimes regard metering as negotiable. If the budget is stretched pulse meters are used. If the BMS scope is limited the metering gets dropped. To date, many installations have got away with it, to the detriment of good energy management, but neither are competent solutions.

Tony Johnstone, February 2012

### Key Issues

- Prepare a metering strategy that complies with both regulatory and client requirements
- Determine what energy streams/parameters need to be measured
- Ensure the sub-meters are in place to achieve the strategy
- Confirm that the meters are capable of providing a reliable record (right specification and comms)
- Commission them, as a system, to start that record (detailed witness testing)
- Calibrate the points (input to reading / cable to screen - the complete path)
- Confirm the strategy is workable by producing reports (and train FM teams to continue doing so)
- Ensure O&Ms include the requirement to maintain accuracy with routine recalibration

### Web Links

- Better Metering Toolkit ([www.betterbuildingpartnership.co.uk](http://www.betterbuildingpartnership.co.uk))
- CIBSE publication TM39 - Building Energy Metering ([www.cibseknowledgeportal.co.uk](http://www.cibseknowledgeportal.co.uk))
- Carbon Trust publication CTV027 - Metering Technology Overview ([www.carbontrust.com](http://www.carbontrust.com))