Timothy Angerame - Trust but verify: MBCx enhances sustainability

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The application of LEED certification in property development has taken off dramatically in recent years, driven by the desire to create a differential advantage in a competitive real estate market and the need to keep operating expenses in check. LEED certified buildings often are said to have the ability to save water and use less electricity while improving occupant comfort and well-being through improved indoor air quality.

This may well be true, though it has been difficult to verify and there are no stipulations in place to ensure that a LEED certified building operates in an energy-efficient manner once it is occupied.

It is common knowledge that buildings rarely perform as intended. Even LEED Gold buildings will experience equipment variables that result in diminished energy efficiency. The reasons why buildings typically do not perform as planned might include poor control of chilled water distribution to air handlers, unnecessary chiller operation, or poor VAV zone control. That's why monitoring-based commissioning (MBCx) is beginning to emerge as an important new approach to keep buildings operating at maximum energy-efficiency.

MBCx incorporates three components: permanent energy information systems and diagnostic tools at the whole-building and sub-system level; retro-commissioning based on the data this generates; and on going commissioning that ensures efficient building operations and measurement-based savings accounting.

Requiring minimal capital investment, a comprehensive MBCx program can bring about substantial and consistent energy savings. For example, utiliVisor provides a web-based, networked solution, built on open standards, that works in real time and defined timeframe increments to collect and format data, monitor operations and equipment errors, and deliver oversight via web-based alerts and alarms. Based on the data it provides, engineers are able to track performance and remedy any malfunctions that would otherwise create operational inefficiencies. The ability to optimize the complete energy system results in lower energy costs.

A recent study prepared for the California Energy Commission by Lawrence Berkeley National Laboratory stated: "On a portfolio basis we find MBCx to be a highly cost-effective means of obtaining significant portfolio/program-level energy savings across a variety of building types." For building owners and managers who have made a significant investment in sustainable practices and LEED certification, MBCx offers a viable way to protect that investment over the life cycle of a building. It is an important risk-management strategy leading to verifiable and durable energy demand reductions for any property.

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