



Benefits of Modern Energy Management Platforms

By Brian MacLeod

Modern Energy Management Platforms leverage automation technology to provide centralized control for a building's heating, ventilation and air conditioning (HVAC) system. The primary goals of this infrastructure are to improve system efficiency, reduce utility costs, guide preventive maintenance and increase resident comfort. In this article, I'll outline these benefits for managers and suggest questions to ask when evaluating these solutions.



Before looking at the benefits, here's a quick summary of how these platforms work. At a high level, a modern energy platform leverages automation technology by deploying key sensors (data) and controllers to optimize how the HVAC system operates in a building. The operation of the platform is visualized through an interface which is typically

web-based. In terms of data, modern systems measure data and process it, in real time, to the cloud to send commands to controls (boiler sequencers, variable frequency drives, relays and other devices) that run the HVAC equipment. In other words, these systems turn analog buildings into connected digital buildings that use data to eliminate energy waste.

The benefits of these systems fall into four primary categories including improved system efficiency, reduced utility costs, streamlined preventive maintenance and increased resident comfort.

Benefit 1: Improved System Efficiency

By responding to resident demand (i.e., in-suite heating) and by adjusting to weather more accurately, the system can perform more efficiently to meet the needs of the building, and its residents, while improving equipment lifespan. Overall, equipment is not run as hard as

it would be without the system helping to preserve its longevity. For managers working to ensure that their building is well maintained and properly equipped, this is an added benefit.

Benefit 2: Reduced Utility Costs

Typical condominium corporations spend 35–50% of their annual operating budget on utilities. And with the cost of energy projected to increase, utility costs are under even greater scrutiny. A modern energy management platform can lower utility spend by 20–25%. These savings are confirmed through clear ongoing reports which outline savings by HVAC process compared to historical benchmarks. And because a modern platform can work with existing equipment, low upfront capital costs mean that managers can evaluate these platforms within their existing operating budgets. On the whole, the financial benefit may be

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the strongest reason to adopt a modern energy management platform.

Benefit 3: Providing Preventive Maintenance

A modern energy management platform improves the way technicians look at long-term equipment performance through rich data logs and trend analysis on equipment performance and activity. As a result, technicians are better informed on exactly when and how to maintain equipment. This translates into a higher value service relationship between the existing mechanical partner for the building, the equipment they are servicing and the property manager.

Benefit 4: Increased Resident Comfort

Custom sensor networks allow modern platforms to accurately respond to resident demand and building conditions. Residents experience improved conditions in air quality and temperatures. Real-time alerting systems highlight mechanical faults that are resolved faster and minimize equipment downtime. For property managers this translates into reduced nuisance calls and resident issues. For example, a system can quickly recognize an issue with domestic hot water temperatures and notify managers in advance of resident complaints (i.e., no hot water for showers in three hours) and often avoids outages altogether. Armed with data, managers can quickly take action and better ensure issues are resolved immediately.

A final benefit of these platforms is the reduced environmental footprint that results from lowered energy use. We know that, according to the UN, buildings are responsible for 39% of energy-related carbon emissions globally¹ – so any steps we can take to reduce their energy use is a step towards a more balanced and sustainably built environment. My experience is that many residents and building stakeholders feel good to know that their building (and management) is taking steps to reduce its environmental impact.

Now transitioning to how to evaluate these platforms; to do so, consider the eight questions below to help guide your search:

Does the platform provider offer an initial free building assessment?

Can the system be operated without a facility manager?

Does the system provide real-time trend data?

Is the system available through a web-based interface?

Is the system based on open, non-proprietary hardware (preventing lock-in)?

Is the expected payback period (ROI) for the system well understood (and short)?

Is the system able to track ongoing savings by process and utility (gas, electric) relative to baselines?

Is the performance of the system guaranteed and accompanied by ongoing support?

If you answer “no” to any of these questions when evaluating a new system, I’d recommend caution. It is critical that the system you select positions you for a great user experience. Also, ensure that you are not locked-in by proprietary equipment and that you have complete online visibility into your buildings’ performance. By starting with a building assessment, you can understand exactly how your building can benefit from such a platform.

Stepping back, it is clear that modern energy management platforms hold real promise for property managers and their communities. Internet-connected buildings, and real-time sensor data, allow modern platforms to leverage automation technology to improve system efficiency, reduce utility costs, improve preventive maintenance and increase resident comfort. Armed with a list of key considerations, professional managers can begin to evaluate energy management platforms for their building and work towards a more sustainable and balanced built environment. ■

¹ https://www.worldgbc.org/sites/default/files/UNEP%20188_GABC_en%20%28web%29.pdf

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