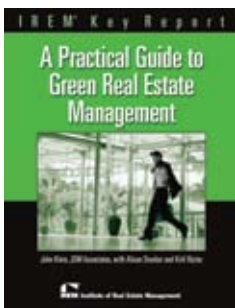


## TYING IT TOGETHER WITH AN EMS Proper use of energy management systems maximizes efficiency



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IN THE LAST FIVE ISSUES OF *JPM*, WE'VE REVIEWED WAYS TO REDUCE ENERGY USE AND COSTS, INCLUDING THERMOSTATS, LIGHTING AND PLUG LOADS. An energy management system (EMS) is the one piece of equipment in your building that has the potential to bring all the energy-consuming systems together, and operate them synergistically for maximum efficiency and comfort.

An EMS is not a substitute for competent building operators; it's a powerful enhancement. Often, building operators use their systems as glorified time clocks, simply scheduling on/off times for HVAC equipment and lighting. But a good EMS is much more useful than that.

Delve deeper into the functions of your EMS by sitting down with the controls company to find out all the great things it can do. Make sure to document or record the session with the controls company so you aren't placing the success of your energy management program in the hands of one person. Often, the EMS has built-in or easily available functionality of which building operators might not be aware. If necessary, consider budgeting for incremental upgrades while looking into potential utility incentives or rebates.

A fully-utilized EMS can perform many functions, including determining optimal start and stop times of equipment automatically, based on readings of indoor/outdoor temperatures and humidity; directing the movement of conditioned air; discontinuing conditioned air at a certain threshold; adjusting ventilation based on CO or CO<sub>2</sub> levels; and monitoring utility meters to allow operators to trend and

track performance—just to name a few. An EMS can also tie into equipment outside of HVAC, including indoor and outdoor lighting, water heaters and irrigation systems.

An EMS can act as a fail-safe to prevent or correct mistakes. It can automatically reset manual overrides on time clocks and thermostats, so a special adjustment doesn't become permanent, and it can limit set points to within a specified range to prevent excessive equipment operations. It can also help you anticipate maintenance issues, pointing out faulty fans and motors before they fail or lose optimal functionality. This saves both money and time.

A properly functioning EMS can help building operators do their jobs better. It can be programmed to send maintenance reminders or operational alerts to a building operator's cell phone or e-mail. It can also perform tasks such as shutting down non-essential plug loads. Some EMS systems have online access, giving building operators the ability to monitor buildings without having to be there, and to provide greater responsiveness to emergencies.

If your building does not have a sophisticated EMS, look into getting one. Properly used, an EMS can typically reduce energy consumption in a building by 10 to 30 percent annually. But remember, you cannot rely entirely on the system. Avoid the trap of "setting and forgetting." It is important to get out in the building and take the time to calibrate sensors and gauges based on independent field readings. Talk with tenants to ensure building operations align with their needs and schedules. Revisit settings and operating parameters weekly. An EMS is only as good as the people operating it, and the level of awareness and implementation they facilitate. ■