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Money-Saving Lessons In

## ENERGY MANAGEMENT

An energy management solution (EMS) is on pace to reduce DSW's utility bills this year and pay for itself in less than 24 months.

Dave Crawford, VP of store planning, DSW

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# Feature Story

## Money-Saving Lessons In Energy Management

An energy management solution (EMS) is on pace to reduce DSW's utility bills this year and pay for itself in less than 24 months.

by Erin Harris

**W**hether you manage a small specialty store, multilocation retail operations, or a big box chain, the Environmental Protection Agency (EPA) reports that your energy expenses can account for more than 25% of your total operating costs. Energy and operating costs are increasing, and so is your competition. You need to provide an inviting retail experience with consistent comfort conditions, good ventilation, and bright lighting. So, how can you keep customers comfortable and happy, while reducing energy costs? The answer is an EMS. DSW, a specialty footwear retailer, recently implemented a chainwide EMS and learned a few valuable lessons along the way — lessons that can help you make informed decisions about reducing your energy costs and redirecting those dollars back into your business.

### Control HVAC/Lighting With EMS

You probably have something in common with Dave Crawford, VP of store planning at DSW. Crawford is always looking for ways to reduce costs and control expenses for DSW's 311-store chain. One of the ways Crawford reduces DSW's costs is with EMS. As of 2009, DSW operated EMS in a hundred of its locations. By the end of that year, DSW's interdepartmental stakeholders decided to implement EMS to the remainder of the fleet to control HVAC (heating, ventilating, and cooling) and lighting costs. "We needed to reduce our energy spend, and we would accomplish that by gaining control of store-level thermostats and lighting," laments Crawford. "At the time, you probably could have driven by any given store after hours, and the lights may still have been on." Indeed, consider how much money is wasted when both indoor and outdoor lighting are on at unnecessary times. If you're not a 24/7 operation, your nighttime energy use should be only 10% of your total daytime use. And, if your lighting system is not on a scheduled timer, things such as human error can lead to increased energy bills (e.g. store-level employee forgets to turn off back room lights on the way out). The ideal lighting strategy reduces reliance on store staff to manually adjust lighting. By creating logical lighting zones that automatically change by preestablished time set points, DSW's store staff can focus on shopper comfort, and DSW's store operations team can rest easily knowing that the store is using only the energy it needs.

Regarding HVAC, what would it mean to your business if you could save countless hours every month reacting to unforeseen outages and

routine maintenance? Indeed, DSW needed to partner with a company that provides constant surveillance of the units in order to attain savings by either remotely resetting them and/or disabling them when problems occur. For example, DSW has between two and six rooftop HVAC units per store. But, the DSW customer base is at floor level, which is 20 feet below those units. When one or two of those units are not functioning properly (it's broken, it's stuck in the on position, the compressor is out, the fan belt is loose), store-level associates cannot detect malfunctions because they can't see/don't have access to those units. By partnering with a company that would detect those inefficiencies across the enterprise, Crawford and/or the HVAC contractor can choose to turn off the inefficient HVAC unit. Or, Crawford can choose to turn off the unit and wait for the manufacturer to do a maintenance call.

Once DSW decided to install EMS into the remaining 200 stores, Crawford discussed the opportunity with the EMS provider. "I wasn't concerned about the actual HVAC units and lighting hardware, because we work with other vendors that address routine maintenance," says Crawford. "We needed a company that would manage the entire EMS installation, because my department is too small to handle a project of that magnitude," explains Crawford. "In addition, we needed a company that would remotely monitor all HVAC units and lighting for KPIs [key performance indicators], such as overall energy budget trends, cost per store, usage per sales dollar, kilowatt hours per square foot, etc." However, the vendor didn't follow through on the opportunity to take on the additional 200 stores. Therefore, in 2010, Crawford turned to Siemens, which acquired Site Controls in late 2010, for energy management, facilities intelligence, and the demand response platform for each of the remaining stores. "We budget a significant amount of money for utilities," says Crawford. "Therefore, it's very important that we manage that expense as quickly as possible, and an enterprisewide EMS allows us to do that." Not until DSW partnered with Siemens did the retailer realize quantifiable benefits associated with energy management (DSW projects a payback of less than two years on their investment in the EMS platform). In addition to a projected reduction in energy costs, Crawford learned valuable lessons as to why there's more to energy management than installing hardware equipment in the back room.

### Lesson # 1: Lowering Energy Use Is Based On The Principle That You Can Only Manage What You Measure

There's been a misconception among retailers that installing on-

site energy management hardware alone will render big benefits in energy management. While the on-site equipment is necessary, it certainly is not sufficient by itself. The equipment must be integrated into a software platform that automatically captures, processes, and displays the reams of data generated and presents the data to the right stakeholders in an actionable format. Otherwise, users quickly drown in data and are unable to effectively manage energy use across their enterprise to lower energy costs. “Fundamentally, energy management is about information and about measuring that information in a way that retailers can act upon it,” says Crawford. “Once we started to monitor all of our sites, we had access to a great deal of extremely valuable KPIs. We use those KPIs every day to make informed decisions about our energy-related concerns.” The Site Controls platform monitors and delivers data to various members of the DSW organization (e.g. the energy manager, the facilities team, CFO, external contractor, various external stakeholders) via online enterprise dashboards — a tool that displays energy data customized to each executive’s needs. For example, the CFO can log on to his enterprise dashboard to look up DSW’s energy budget so he can determine the energy spend in real time instead of waiting 30 days for the bill to arrive in the mail. Or, the HVAC contractor can use the enterprise dashboard to determine the worst performing equipment

in his region. It’s because this data is *monitored and measured* that Crawford can proactively prevent costly maintenance issues.

## Lesson # 2: Garbage In, Garbage Out With Energy Control

Energy management software is only as good as the data that’s entered into it. Prior to working with Siemens, DSW didn’t reap substantial energy savings, because the retailer’s former EMS vendor didn’t monitor energy data on a consistent basis. And, the data it did monitor never made its way to Crawford’s team in a routine manner. Now, DSW’s energy data is stored in the Site Controls data center for years. The Site Controls system automatically maps DSW’s data, and the vendor notes all energy-related deficiencies. Exception reporting helps identify any stores that are unusually warm or cool inside. This can indicate problem areas, including malfunctioning or broken equipment. By being able to proactively service and repair equipment, facilities managers are able to reduce maintenance costs while ensuring a minimum of down time. Site Controls sends out automatic customized email reports that allow designated DSW executives and regional managers to know the energy usage and condition of the equipment at their stores. Also, Crawford can make global changes to stores by state or region. Or, he can make changes



Photos by Ken Frick

Dave Crawford, VP of store planning at DSW, states the KPIs (key performance indicators) rendered from the energy management solution allow him to make informed decisions about DSW's energy-related concerns.

to individual stores, allowing for optimal store temperatures and lighting, resulting in energy savings and comfort for customers and employees.

### Lesson # 3: Remote Management/Program Management Reduces Time And Labor Woes

Crawford explains that remote management of DSW's on-site EMS equipment is necessary to reduce employees' time and labor issues. "Remote management of the EMS alleviates a time and labor-centric burden for our internal team," says Crawford. "Our team relies on the enterprise dashboards to see exactly what's going on in any of the stores, which is just a huge benefit. We simply can't manage the EMS on our own." In addition, Siemens was able to provide the program management portion of the installation. "The project management portion of our agreement was critical to the success of the overall program, because my staff is small and needs to concentrate on other projects."

The EMS integration has helped DSW reduce its energy costs. "From the date of installation, DSW started to see util-



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Dave Crawford, VP of store planning, DSW

ity savings at each location," says Crawford. "We had projected an ROI on the program of less than two years. It appears that we are going to be well within that goal."

To reap the benefits of an EMS implementation, the first step is conducting a realistic assessment of the current situation — how are you using your energy resources today? The next step is benchmarking — how does your current profile compare to relevant standards (your competition, previous performance, industry averages)? After establishing your baseline, you can then develop objectives — short- and long-term goals with realistic but meaningful targets for efficiency improvement. As DSW discovered, the result of this process is both cost savings and valuable lessons in energy management. ■



Erin Harris is associate editor of *Integrated Solutions For Retailers* magazine. She can be reached at: [erin.harris@jamesonpublishing.com](mailto:erin.harris@jamesonpublishing.com).

## Cloud Computing Meets Energy Management

Effective energy management is fundamentally an information processing challenge. The software tools available to collect, process, manage, and display this data are becoming extremely sophisticated, which is great news for retailers. However, with increased sophistication comes increased complexity, which means the configuration, testing, and hosting of the software solution can consume a significant amount of internal IT and development bandwidth — and a substantial portion of the EMS project budget. DSW, a specialty footwear retailer, turned to Site Controls, a Siemens company, for a cloud-based EMS because the retailer's infrastructure was incapable of hosting an on-site solution. Since having implemented the Site Controls EMS, DSW has been able to adjust set points to realize a utility savings and standardize the fleet.

Indeed, cloud-based energy management solutions are readily available. In this business model, Siemens is responsible for the delivery of the hardware and software infrastructure required for enterprise management, essentially providing software as a service delivered via the Internet "cloud." This allows chain operators to access sophisticated capabilities and innovation without incurring the substantial costs typically associated with on-premise software solutions. These costs can add up quickly and

include items such as purchasing, installing, and maintaining servers and routers required to host the software, as well as managing site connectivity, load balancing, user administration, system backups and archiving, performance monitoring and software migration, and testing. "Over time, more and more retailers are recognizing the benefits of cloud computing, as evidenced by the success of applications such as Oracle On Demand and Salesforce.com," explains Dan Kubala, director of marketing at Siemens. "We see cloud services as the next logical step in the evolution of EMS."

Another benefit of a cloud-based EMS platform is the access provided to best practices and innovation. With the continuous deployment of new capabilities and functionality, retailers avoid getting stuck in an outdated system that is costly and difficult to upgrade. For example, in the past eighteen months, new capabilities have been added to the Site Controls Data Center, including the Exceptions Dashboard, LiveView, Energy Dashboard, Enhanced Strategies Editor, and the KPI Dashboard. The dashboards compare a retailer's energy performance against a peer group or industry average, providing a continuous benchmarking capability.



Site Controls' cloud-based energy management system alleviates on-premise costs.

**For More Information On SIEMENS  
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