

Building Energy Intelligence

M Resort

CASE STUDY

M Resort is a four-star boutique hotel, casino, and entertainment complex located in Henderson, Nevada. The \$1 billion resort is spread over 90 acres of land on the southern edge of Las Vegas, and contains, 90,000 square feet of gaming space, 60,000 square feet of meeting and convention space, 7 restaurants, and an 118-foot hotel tower with 390 rooms. They pride themselves on using state-of-the-art technology to manage operations.

THE CHALLENGE:

Energy costs associated with HVAC operations in a desert climate, where temperatures soar in the day and plummet at night, were significantly impacting M Resort's energy budgets. The owners were seeking a broad-based solution to reduce energy costs, including peak demand, that would be operationally seamless, and that would not interfere with the high level of resort service- their customers expect. Energy management would have to be automated, be consistent with their sophisticated building management philosophy, and be attuned with the new service offerings of their power supplier, NV Energy.

THE SOLUTION:

M Resort joined NV Energy's customer engagement program called "mPowered Optimization," which was launched in the summer of 2013. Customers enlisting in "mPowered" received access to BuildingIQ's cloud-based software, which incorporates Predictive Energy Optimization™, to bring a new level of intelligence and controllability to building management systems. BuildingIQ's software receives electronic signals

Situation Summary

M Resort, a 90-acre hotel and casino complex in Henderson, Nevada, was interested in the potential for energy savings offered by BuildingIQ's system. They joined in NV Energy's "mPowered" program, and implemented BuildingIQ's Predictive Energy Optimization™ platform. BuildingIQ's software learns a building's HVAC energy patterns to predict consumption. Based on these predictions and electronic signals sent directly from NV Energy, the system automatically optimizes energy usage and manages DR events, all while maintaining occupant comfort. HVAC controls are adjusted in real-time using the BuildingIQ algorithms. The event is transparent to the building operators.

HVAC energy savings in the first few months were promising and in line with savings achieved by others in the broader "mPowered" program in Las Vegas. Implementation was fast and seamless, meeting M Resort's requirements and expectations.

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from NV Energy, which automatically manages M Resort’s load without disruption to comfort or building operations, while providing capacity on the grid to NV Energy. Peak demand reduction among those enrolled in the “mPowered” program has been reduced as much as 24% during energy event periods.

M Resort’s HVAC controls are adjusted in real-time using BuildingIQ algorithms. The DR event is transparent to operators and customers alike; they simply go about business as usual. BuildingIQ makes all of the adjustments necessary to drop and then restore load without noticeable changes in space conditioning.

THE RESULTS:

Energy Efficiency and Optimization Results

M Resort, which recently deployed BuildingIQ in its offices, convention space, restaurants and casino areas, achieved 12% energy savings in HVAC energy in the first few months of the program, as shown in Figures 1-5 below. BuildingIQ worked in concert with their Building Management System (BMS) that was already utilizing advanced control methods, and being actively managed by M Resort operations. Energy usage was optimized without sacrificing the comfort of guests, visitors or staff.

“Besides our commitment to provide the best experience possible for our guests, we also put a heavy emphasis on meeting our sustainability goals,” said Greg Stiles, Operations Manager of M Resort. “BuildingIQ’s software was seamlessly incorporated into our facility and has already delivered valuable energy savings by improving our cash flow without affecting occupant comfort during demand-response events.”

M Resort can likely expect even larger savings in the future given the significant results at other sites. Using BuildingIQ software, NV Energy has reduced peak HVAC power consumption in commercial

buildings throughout Las Vegas by as much as 24% on DR event days. The program has significantly lowered on-going daily HVAC energy use for its customers by 12-18%.

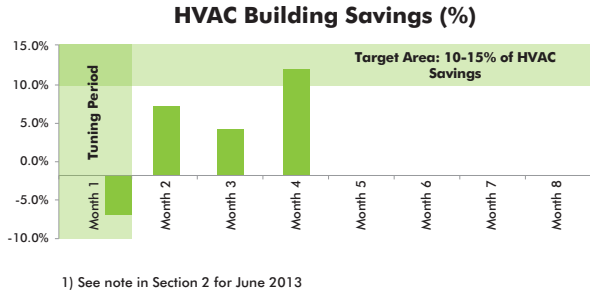


Figure 1—HVAC Building Savings (%)

Shows percent energy reduction in the first few months following startup at M Resort.

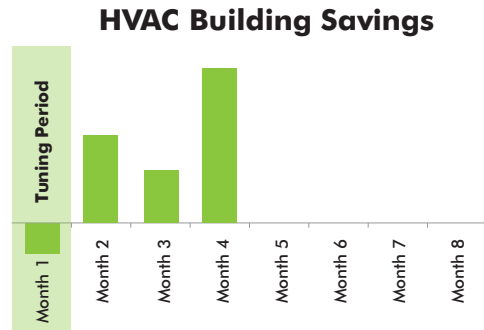


Figure 2—HVAC Building Savings

Shows financial savings in the first few months following startup and tuning.

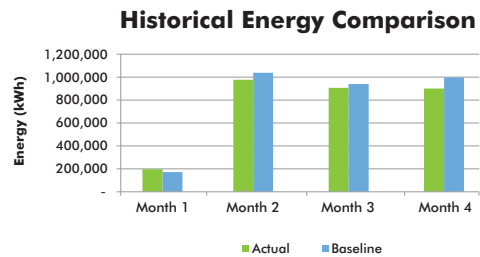


Figure 3—Historical Energy Comparison

Shows the reduction from baseline following implementation of BuildingIQ, leading to new actual.

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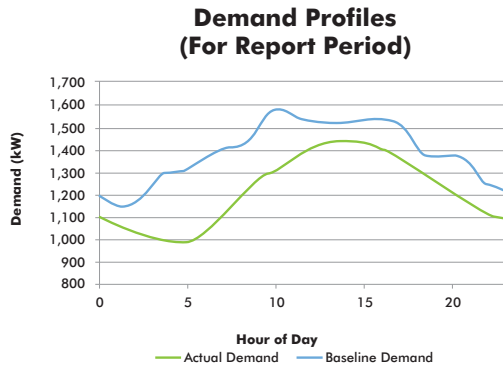


Figure 4—Demand Profiles

Contrasts actual hourly demand following implementation of BuildingIQ, with baseline before implementation.

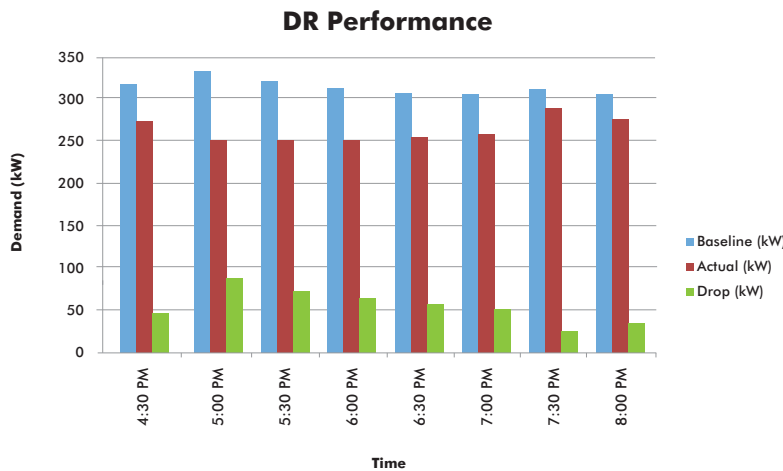


Figure 5—DR Performance

Shows energy event reduction in kilowatts (not kilowatthours) at M Resort during afternoon peak.

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Greg Stiles,
Operations Manager,
M Resort

About BuildingIQ

BuildingIQ is a leading energy management software company with a mission to redefine and enhance the way energy is managed in commercial buildings. BuildingIQ’s unique, patent-pending Predictive Energy Optimization™ technology is the foundation for reducing energy cost and consumption. It is designed to help building owners, managers and tenants get more value out of their existing energy systems. BuildingIQ has leveraged over 25 man-years of building controls, modeling and comfort research by world-leading experts at CSIRO, Australia’s national labs, and BuildingIQ to create this innovative platform in energy intelligence. The company has been honored as Winner of the AIRAH Award for Excellence in Innovation, Tech23’s Greatest Potential Award, ED+C and Sustainable Facility’s Readers’ Choice Award and Red Herring’s Asia 100 Award.

Predictive Energy Optimization

The BuildingIQ system is the only energy management system that predicts energy demand and directly adjusts the HVAC system parameters in real time to optimize energy use. BuildingIQ communicates with your BMS—factoring in weather forecasts, occupant comfort, peak demand, and demand response signals—in order to automatically reduce energy consumption, cost, and emissions while maintaining or improving tenant comfort.



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1065 East Hillsdale Blvd., Suite 310
Foster City, CA 94404 USA
www.buildingiq.com
biq-sales@buildingiq.com

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