Karl Chevrolet Goes Big on Energy Savings with 3E, Hubbell Lighting and Hubbell Control Solutions

Comparison between Karl Chevrolet and neighbor dealership.

Karl Chevrolet Case Study *- 3 pages*

The Challenge

At 30-acres, Karl Chevrolet is one of the largest single-line Chevrolet dealerships in the United States. The saying, “a picture is worth a thousand words,” is incredibly appropriate when discussing the scale of this massive lighting project.

The success of Karl Chevrolet is predicated on its ability to have one of the largest selections of new and pre-owned vehicles in the Midwest and lighting the 30-acres at the high light level requirements is no easy task. Providing this performance in a cost-effective manner makes it even more challenging, especially when the founder, Carl Moyer, has a sharp eye for achieving and proving an acceptable return on the investment (“ROI”). This is likely one of the reasons why he was a finalist for the TIME Dealer of the Year award in 2017.

Since its founding in the 1970’s, Karl Chevrolet has always had a progressive outlook on new technology, proven by its willingness to demo and pursue solutions that would ultimately impact the bottom line. Management knew they wanted to replace the legacy 1,000w MH fixtures but needed a proven 1:1 replacement ***AND*** a controls solution that was both affordable and compliant with the local utility’s program requirements to qualify for a custom rebate.

Balancing the need for financial and energy savings, management insisted that there be no sacrifice to light levels and uniformity. Karl Chevrolet is located close to one of the busiest stretches of interstate in the Midwest and maintaining a professional appearance has always been a priority for Carl Moyer. The slightest nuance is noticed, be it a single bulb that is out or malfunctioning controls. While performance and cost were important driving factors, the solution had to be dependable and work 100 percent as planned.

The Plan

Tesdell Electric, Karl Chevrolet's long-time electrical contractor, has been paying close attention to the advances that have been made in lighting technology over the years. Tesdell had entertained numerous LED lighting proposals, but none accomplished 100 percent of Karl Chevrolet's goals. It wasn't until fairly recently that the technology was available in a cost-effective solution.

Tesdell Electric was asked back in 2012 to propose a LED lighting solution, so they contacted John Temple, Director of Corporate Lighting Technology at 3E to develop a proposal. The problem was that in 2012 there wasn't a wireless control product available that met the project and the utility rebate requirements. It wasn't until mid-2015 that all the pieces came together. That's when Hubbell Lighting developed a lighting solution that included Spaulding Lighting's Arceos™ ARA3 and Hubbell Control Solutions' wiSCAPE platform.

The ARA3 is an ideal fixture for automotive dealerships. It was designed to create an inviting environment for customers, while keeping them safe during their shopping experience. It is also flexible enough to accommodate different patterns of traffic flow on a typical dealership lot and implement precise lighting where it is needed most.

The Arceos ARA3 was designed for mounting heights of up to 50 feet, features the latest LED technology, precision optics, thermal management and controls, while providing excellent lighting and uniformity for large area/site applications. Most importantly, the ARA3 is a 1,000w HID replacement with over 50 percent energy savings, offers three lumen options for design flexibility and backlight control to reduce light trespass.

To further increase energy savings, the lighting team elected to use wiSCAPE to create and control the lighting scenes. The wireless control system brings smarter, more flexible performance, providing even greater overall savings. With wiSCAPE, the controls installation was non-invasive and non-disruptive, allowing engineers to avoid a lengthy wiring process and avoid installing relay panels. The wiSCAPE module is supported by wiSCAPE View™, a graphical system management software platform that can configure, control, monitor and meter the facility's lighting systems. The wiSCAPE View software empowers facility managers with real-time monitoring, instant alarm notifications from faulty lighting equipment, and increased network efficiency and maintenance operations – all from a smartphone or tablet.

The Results – Tangible Payback and a Good Looking Lot

The end result – the function of the lights, controls and the ROI for Karl Chevrolet – is stunning. Not only is the dealership enjoying significant monetary returns, the facility is literally being seen in a whole new light and gone are the disappointing shadow spots that also posed as security risks.

The ROI

In the first full month of operation the team saw a $12,500 reduction in energy cost, and that was before wiSCAPE was up and running. While that's good news, the headline is the annual energy savings of $143,465. It is estimated the total reduction in energy use will be 74 percent when it is cut more than 1.5M kWh per year. Added to this figure is an annual maintenance savings of $11,988. In sum, the payback period is 3.4 years and the internal rate of return is 33 percent.

1. *Energy cost ($) = 0.0850/kWh; Annual energy cost escalation (%) = 2.50*
2. *Energy costs are averaged over 10 year analysis period*

The combination of energy savings and controls enables Karl Chevrolet to qualify for a $262,000 rebate from MidAmerican Energy.

By selecting the powerful Arceos ARA3 Type IA distribution fixture in the front row applications, the team was able to actually reduce luminaire count by 60 heads where two existing 1000w MH (1100w each with ballast load) could be replaced with one 580w fixture ***that ultimately did a better job***. For automotive dealerships the front row is one of the most critical selling areas. This new solution decreases the amount of light spilling onto the streets at night without losing the visual impact of product on the front row.

Lighting and Controls Performance

Karl Chevrolet can now dim all fixtures for closed business hours, rather than turning off roughly 50 percent of the poles, resulting in much better uniformity after hours. The front row is dimmed to 30 percent and the interior poles dimmed to 20 percent. The fixtures have been strategically staggered when turning on to help eliminate inrush.

Because of the higher light levels observed after installation, the team decided to apply a 10 percent high end trim to max light levels. This will result in even higher energy savings than originally estimated. In a nod to the quality of the light, at 90 percent light levels it still exceeded those of the old system.

A surprising byproduct of the success of the new installation included the elimination of dark spots on the lot. The uniformity of the light was instantly better due to advantages associated with LED technology. The security team at Karl Chevrolet noted that the clarity of the nighttime footage is ten times better than it was before. It is now easier to see plate numbers and follow automobiles through the lot.

Testimonial –

"If the initial results are indicative of what's to come, the return on this investment in luminaires and controls will be much better than initially predicted. We feel great about our decision to upgrade to LED technology and new lighting controls, especially when we see that waiting would have cost us almost $2M in savings over the next ten years. Finances and energy savings aside, the appearance of our entire property is simply outstanding at night."

Shaun Rydl, Facilities Manager, Karl Chevrolet