



GREEN LEAF TEMPE STATION CASE STUDY

It's Easy Being Green at Green Leaf Tempe Station

"The biggest impact and best benefit we could afford our residents and investors is in energy savings. The easiest and least expensive way to save energy is through the use of high efficiency LED lighting provided by Energy Efficiency Pros."

- David Burrill
Corporate Construction Manager for
Green Leaf Partners

Lighting the Way for Residents and Tenants

The situation: Green Leaf Tempe Station was looking for a cost-efficient lighting solution that would still deliver the level of light needed to maintain safety and security at night for the entire community, including lighting for interior, exterior and common areas.

The solution: Green Leaf Partners asked Energy Efficiency Pros, a specialty LED lighting provider in Tempe, to conduct an energy audit of the entire complex, including lighting for interior, exterior and common areas. As part of the energy audit, Energy Efficiency Pros focused on identifying products and solutions for high wattage volume applications. The company worked with Ferrin Electric in Mesa, Arizona, who provides inspection services by licensed electricians, infrared thermology, surge suppression, voltage and current diagnosis, power quality and light pole repair.

The Audit

The audit revealed that the property was using 250- and 400-watt high-intensity discharge (HID) lamps; T8 and T12HO fluorescent; 12-, 18-, 40- and 42-watt compact fluorescent lamps (CFLs); 25-watt halogen; 26-watt 4 pin fluorescent; and 40-watt incandescent lamps. In addition, most of the plastic lenses on the wall mounted downlights over the building identification signs exhibited discoloration from overheating/burning due to the use of 100-watt incandescent bulbs.

The findings of the audit prompted management to convert the lighting sources to LED technology. Energy Efficiency Pros and Ferrin Electric decided to work with the property's existing fixtures to generate the fastest payback and make the most applicable use of current LED technology. In addition, Energy Efficiency Pros helped Green Leaf maximize the available incentives to reduce their costs for the LED retrofit.



The Original Lighting

Don Bartelt, Vice President of Sales and Operations for Energy Efficiency Pros, said, "The apartment complex was utilizing compact fluorescent lamps (CFLs) in its common areas and rooms, which were Energy Star rated but not really efficient. The CFLs had a six-month performance life at Green Leaf Tempe Station. Although CFLs are more efficient than incandescent bulbs, they do not come close to offering the benefits of LED lamps."

Green Inside and Out

For interior spaces, Energy Efficiency Pros specified G25, A15, A19, A21, BR20 and B11 LED EarthBulbs from EarthTronics, Muskegon, Michigan. EarthTronics high quality LEDs are known for being energy-efficient over a long-life span.

Bartelt additionally recommended replacing 18-, 40- and 42-watt CFLs with 6-, 9- and 11-watt A15, A19 and A21 omni-directional EarthBulb LEDs which provide 450, 810 and 1100 lumens for more than a 50 percent energy savings. The 2700K color temperature LEDs come with a multi-chipset LED and an advanced cooling system that provides a 15,000-hour performance life.

"Just as important as the energy savings, the LEDs maintained the light levels and a warm, comfortable residential environment," stated Bartelt. "We recommended the EarthTronics LED products because of their proven, long lasting quality and efficiency."

For exterior spaces, Energy Efficiency Pros specified the 150-watt Matrix iGLO LED Matrix Shoebox pole lamp to replace the 458-watt high pressure sodium (HPS) lamps, reducing energy by 67 percent while maintaining lumen levels. The easy-to-install and operate IP65-rated lamp provides a soft yellow lighting with instant start without flickering or humming. Energy Efficiency Pros also replaced the existing 189-watt HPS pole lights with the 60-watt iGLO LED Matrix Floodlight to reduce energy by 68 percent. Both the 150- and 60-watt pole lamps have a five-year warranty.

How the Product Helped

Burrell added, "During the audit, we reviewed every aspect of lighting. We look at color temperature to ensure the right kind of light for specific areas. For example, we put warm white 2700K light in bedrooms to create a more conducive restful environment. For exterior halls and parking lots, we used a 4000K light to increase visibility and safety. We looked at where a person puts on their make-up to the light coming from the bottom of your microwave, which illuminates where food is prepared."

The energy lighting project began in January and was completed by April to provide immediate and substantial savings for the property. Burrill said, "We are excited about all of the improvements we make at all of our properties, but lighting is one of the most apparent that benefits everyone in many ways. Energy Efficiency Pros gave us great advice and were flexible when our needs changed."

Results, Return on Investment and Future Plans

Bartelt stated, "After LEDs were installed, Green Leaf Partners was very pleased with the energy reduction and the quality of light, which provides comfort to its residents and meets the property's environmentally friendly mission. Overall, Green Leaf Tempe Station will reduce its lighting energy consumption by more than 400,000 kWh each year. Green Leaf Tempe Station truly sets the bar for green living."

Project Details

Annual Energy kWh/Savings

- Current: 571,000 kWh/year
- New: 171,000 kWh/year
- Savings per year: 400,000 kWh/year

Rebates

- Rebate: \$14,621.75