

On target

City Center West Garage

Exit Only

Handicap Entry at Jefferson St. Only

Entrance Only

Retrofits help City of Oakland meet ambitious sustainability goals

By Ken Sapp

In its quest to be one of the most energy efficient cities in the nation, the City of Oakland has established a solid reputation as a sustainability innovator and leader. Over the last several years, it has won several green and sustainability awards, including being ranked fourth among large U.S. cities by the Natural Resources Defense Council and the Mother Nature Network.

City officials helped promote several successful sustainability initiatives, including two complementary energy upgrade and incentive programs called Oakland Shines and SmartLights. In partnership with Quantum Energy Services and Technologies, Pacific Gas and Electric Company and Community Energy Services Corp., the city designed Oakland Shines to work hand-in-hand with SmartLights to provide extensive support to small businesses in their green efforts, pairing them with local energy efficiency experts and helping the businesses assess and implement cost-effective, energy-efficient technology, lighting and HVAC equipment.

Oakland Shines and SmartLights are among the most innovative energy-efficiency programs in the country. Oakland works with these programs to implement its Energy and Climate Action Plan, which aims to reduce building energy use in 2020 to 36 percent below 2005 levels.



With possibly more EVs in the San Francisco Bay area than anywhere else in the country, Oakland wants to have the infrastructure and be prepared to provide EV charging stations to meet the growing needs of employees and visitors.

And, as an added twist, the city wanted to do this without increasing its operating budget.

Bringing sustainability vision to life

The city's parking garage at 1250 Martin Luther King Way was an older facility with aging lighting equipment and not enough power capacity to support the addition of EV charging stations – a prime candidate for the SmartLights program. To upgrade this outdated facility, it sought the help of an experienced energy efficiency partner that could assess, advise, and help bring their sustainability vision to life. Its search led to ABM Energy.



With the lighting and efficiency upgrades, they were able to decrease energy use at the facility by 45 percent.

With such an ambitious energy reduction target, Scott Wentworth, energy engineer for the City of Oakland, and his group worked diligently to identify the biggest users of energy in their building portfolio. Those buildings would be best suited to take advantage of the SmartLights upgrade program and give them the biggest energy reduction “bang for the buck.”

The city's energy team determined parking garages were some of the best opportunities for energy reductions throughout the city. They support commuters and visitors every day, yet most parking structures are older, and have antiquated lighting fixtures that waste energy and drive up utility bills.

Another reason they targeted parking garages is because they are ideal facilities to install electric vehicle (EV) charging stations, another sustainability effort the city was pursuing.

ABM performed a major lighting retrofit at 1250 Martin Luther King Way to drive significant energy improvements for the City of Oakland. They installed high-efficiency fluorescent and LED lighting throughout the garage with wireless controls and daylight harvesting technology to further enhance energy efficiency.

ABM implemented a state-of-the-art, Zigbee-compatible wireless lighting control system. The new lighting control system provides occupancy detection, bi-level control, day lighting, smart scheduling, and astronomical scheduling to control light levels in different areas. In addition, it provides energy use tracking, automated maintenance notifications, and load shedding. A digital dashboard provides real-time access to each light and occupancy sensor and monitors and tracks energy use.

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With the energy reduction from the lighting enhancements, ABM also was able to increase the facility's power capacity and installed several ChargePoint® EV charging stations, without the need to upgrade the facility's existing electrical system. This was an added bonus for the city.

Creative financing, zero budget impact

To meet its strict budget requirements, ABM was able to offer the City of Oakland unique, low-interest energy capital financing to help pay for the retrofit with zero impact to their existing budget.

Through this financial program, the energy and operational savings resulting from the infrastructure upgrades performed by ABM fund facility improvements. So, all costs, including financial planning, up-front engineering, financing, project implementation, are funded through the reallocated operating budget. Basically, the city was able to self-fund the project by applying its energy savings to the loan repayment.

This new trend in energy improvement financing is unique in that – unlike traditional capital lending – it does not decrease, but

actually increases the value and marketability of the property by reducing the overall expenses of the facility.

The city also was able to use the local SmartLights program and other Federal energy incentives to help fund the retrofit project.

From outdated to ultra-modern energy saver

ABM was able to transform the aging parking garage into an ultra-modern energy saver for the City of Oakland. With the lighting and effi-

ciency upgrades, they were able to decrease energy use at the facility by 45 percent. It was this dramatic reduction that led to the increase in power capacity that allowed the EV charging stations to be installed.

The improvements also provide an annual reduction of \$54,965 in energy costs for the city. And, they are greatly reducing their carbon footprint – saving 342,654 kWh per year, and thereby eliminating 246,046 pounds of carbon dioxide (CO₂). This is equivalent to planting 23.8 acres of pine forest.

The new lighting and controls also allow the city to improve lighting quality and safety, reduce maintenance and inventory costs, and increase the appeal and value of the facility. The system will pay for itself in 2.9 years.

Says Wentworth: "ABM not only provided state-of-the-art lighting technology and a financing solution that had a positive impact on our budget, but our parking garage is substantially upgraded – it's safer, there's less maintenance needed and the lighting quality is incredible." ■

For more information on the SmartLights energy efficiency incentive program, [click here.](#)

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