

# CASE STUDY

## CITY OF LOUISVILLE KENTUCKY LIGHTING RETROFIT and UPGRADE

Founded in 1778, the City of Louisville is located beside the Falls of the Ohio River and was first used a portage site. Today, its main airport is the site of UPS's worldwide air hub. The city is also the home to the Kentucky Derby, Kentucky Fried Chicken and the University of Louisville, founded in 1780.

Louisville's many unique features include the nation's largest urban municipal forest, the Belle of Louisville (oldest operating sternwheeler steamboat) and the home of the Louisville Slugger baseball bat.

### THE CLIENT CHALLENGE

A downturn in Arizona's economy in the 2000s led to less money being allocated by the state legislature to Arizona's universities. UA was hard-hit, and the university was forced to consider extensive changes, beginning in 2001. As a result, they needed to reduce their energy footprint.

RTS performed an audit of over 100 buildings on campus. RTS evaluated vast numbers of variables such as how the space will be used, amount of day-light, load potential, dimming, lamp color, initial cost, and cost to maintain moving forward.

### THE LIGHTING SOLUTION

Retro-Tech performed lighting upgrades in the City's Zoo, Parks, Police and Library Departments.

The project included the replacement, conversion, or retrofit of over 10,000 fixtures. The majority of existing fixture types are used in office applications. Fixtures were upgraded with new T8 lamps and current technology electronic ballasts. Older fluorescent fixtures using eight foot lamps were retrofitted to use current four foot lamps, reducing inventory types.

Over 2300 fixtures, both interior and exterior, were upgraded with LED products.

Most incandescent fixtures were retrofitted screw-in LED lamps. All exit signs were replaced with new LED signs.

Exterior building lighting, pathways and parking lots were upgraded to LED. Indoor recreation facilities with existing 400w metal halide fixtures and 400w high pressure sodium fixtures were replaced with new T5HO fixtures. The Meagher Aquatic Center's main pool has new LED lighting system.

## **THE RESULTS**

The energy savings for a project of this magnitude were significant. The kW and kWh were reduced 22% and 25% respectively. The four departments expect to realize over \$180,000 in annual savings. The maintenance savings were also significant. The upgraded lighting systems will see an increase in lamp life ranging from 20,000 to 30,000 hours for linear fluorescents; 20,000 to 50,000 hours for HID to LED; and 2,000 to 25,000 hours for incandescents to LED.