



Alameda County Office of Education – Operating Efficiently



The completed retrofit in ACOE's offices.

PROJECT FAST FACTS

Measures Installed

T-8 fluorescent lamps, occupancy sensors

Estimated Annual Cost Savings

\$29,610

Estimated Annual Kilowatt-hour Savings

197,400

Estimated Annual Reduction in CO₂ Emissions

216,800 pounds

The Challenge

The Alameda County Office of Education (ACOE) is a 97,000 square foot facility, located in Hayward, California. Originally constructed in 1983, the facility houses support staff and training facilities for eighteen school districts, 350 schools, 10,000 teachers, and 225,000 students.

ACOE's office lighting consisted of pendant-mounted metal halide fixtures and T-12 fluorescent lamps with magnetic ballasts. These technologies presented a variety of problems, including: long warm-up cycles (ranging from five to fifteen minutes), fixture to fixture inconsistencies with color rendering, short lamp life expectancy, and expensive lamp replacement costs. In addition, the facility's lighting fixtures were original, outdated and extremely inefficient.

With constrained financial resources, ACOE was challenged to find cost-effective ways of improving the quality and efficiency of its lighting systems.

The Solution

In Fall of 2004, ACOE enrolled in Resource Solutions Group's School Energy Efficiency (SEE) Program. The SEE Program offers technical services and cash incentives to assist school districts in identifying, developing, and implementing cost-effective energy efficient building improvements. The SEE Program works in partnership with Pacific Gas and Electric Company (PG&E) and is funded by utility ratepayers under the auspices of the California Public Utilities Commission.

The SEE Team analyzed ACOE's facilities and identified potential projects the organization could implement to improve its lighting and HVAC systems to reduce overall energy costs. In December 2004, the SEE Team provided an unbiased technical and financial analysis by evaluating the costs and benefits associated with implementing a comprehensive, facility-wide lighting project. With bid specification assistance and support from the SEE Team, ACOE was able to secure a qualified contractor for the project and implement the lighting upgrade in early 2007.



Before retrofit (upper floor)
After retrofit (lower floor)

The Project

ACOE successfully replaced approximately 227 inefficient 175-watt and 250-watt metal halide fixtures with high efficiency T-8 suspended indirect/direct lighting fixtures. The project also included replacing outdated T-12 fluorescent lamps and ballasts with new technology T-8 lamps and electronic ballasts, as well as installing occupancy sensors in select offices.

In addition to the initial technical and cost benefit analysis, the SEE Team provided ACOE with a bid specification outlining the requirements of the project, as well as ongoing project implementation support, and offered cash incentives upon project implementation.

“ After reviewing the energy report...we were motivated and willing to go to the next step...”

RICK MINNIS
ACOE's Chief of Human Resources and
Facilities/Operations Director

To learn more about
the SEE Program, visit:

www.schoolenergyefficiency.com

The SEE Team thanks the Alameda County Office of Education, EnLight Energy Efficiency Lighting Inc. and Finelite Inc. for their support and implementation of the project.

To learn more about
Resource Solutions Group, visit:

www.rsgroup.com



The Results

ACOE's successful completion of the extensive lighting retrofit project provides:

- \$29,610 in estimated annual energy bill savings;
- \$18,535 in SEE Program incentives;
- 197,400 in estimated annual kilowatt-hour savings.

The Benefits

In addition to the significant energy and cost savings, ACOE's lighting retrofit project resulted in the following benefits:

Increased Predictability of Energy Costs: The efficient T-8 fixtures stabilized ACOE's rising energy costs and provided consistency among the type and wattage of lamps used, rather than an assortment of fluorescent lamps and metal halide fixtures.

Reduced Maintenance Costs: The new, T-8 fixtures eliminated expensive replacement costs and standardized ACOE's inventory.

Carbon Emission Reductions: The project reduced ACOE's carbon dioxide emissions by a total of 216,800 pounds per year. This translates into the removal 15 cars off of California's highways.

Reduction in Electric Load: The project resulted in a demand reduction of approximately 47 kilowatts, providing additional capacity for both ACOE and the utility during peak periods.

The Response

“[Resource Solutions Group] provided a very comprehensive audit for our administration building in Hayward. Having received the information we were able to evaluate the immediate and long term benefits of pursuing energy efficiency upgrades from a practical and financial perspective. After reviewing the energy report...we were motivated and willing to go to the next step...”

- Rick Minnis, ACOE's Chief of Human Resources and Facilities/Operations Officer

NOTE: Electricity savings based on \$.15/kWh.
Carbon savings based on 1.09822 lbs CO₂/kWh saved. Number of cars removed based on 1 car/ 7.1875 tons CO₂ removed