

Benchmarking Case Study

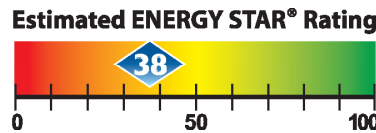
Benchmark score leads to \$91,000 per year in energy savings and prevents a tenant exodus.

The Situation:

The owner of a 51,000 sq. ft., 6 story, medical office building was struggling with an continuous stream of tenant comfort complaints and seemingly endless equipment service and repair expenses. The building was suffering with energy bills 190% above average for a building of this type.¹ The complaints and expenses multiplied to a tipping point and the tenants officially notified the owner that without immediate corrections they would not be renewing their leases.

The Investigation:

Initially, Cooper Oates was engaged by the property manager to take over the preventive maintenance of the building from a previous contractor. To establish an energy baseline for this building, an EnergyStar® Benchmark Score was generated on a 1-100 scale that compares similar building's energy usage- showing a 2. The building was severely under-performing and had a vast opportunity for energy savings. The Cooper Oates team thoroughly investigated the building and implemented stop-gap measures to keep mechanical systems operating. Our findings showed that the two rooftop 60-ton boxcar units were not worth repairing due to age and overuse and needed replacement. Multiple variable air volume (VAV) boxes throughout the building were shown to be non-operable or faulty. The building's pneumatic controls were fighting with itself by heating and cooling the same spaces while running 24/7.



The Cooper Oates Team met with the property manager and building owner to present the facts about the building's challenges and to understand their goals. The owner's first priority was improving tenant comfort and then reducing service calls and improving energy efficiency. Compounding the challenge, he had recently retrofitted his elevators to the tune of \$700,000 and needed Cooper Oates to find a solution that would work with his stretched financial position.

The Solution:

The Cooper Oates team developed an integrated plan that would immediately remedy the deficits in the mechanical systems and ease tenant discomfort. At the same time, the Cooper Oates account team was seeking avenues of creative financing. Knowing that without an effective way to finance the overhauls of the mechanical systems, the project would be delayed or more likely scrapped, dooming the owner to a tenant exodus and significant loss of value for his building.

The solution to the tenant comfort issues came by way of changing out the 2 obsolete 60 ton boxcar units on the roof, systematically testing, and a completely retrofitting the old pneumatic building controls to a Direct Digital Control system (DDC), and calibrating and repairing all of the VAV boxes.

Quick Facts

Building: 51,000 Sqft, 6 Story
Medical Office Building

Location: Downtown Sacramento, CA

Scope of Project: Replace two antiquated 60 ton boxcar HVAC units, retrofit entire pneumatic building controls system to a DDC system, repair or replace and calibrate every VAV unit throughout building. Conduct all of these measures with zero interruptions to business operations or patient care.

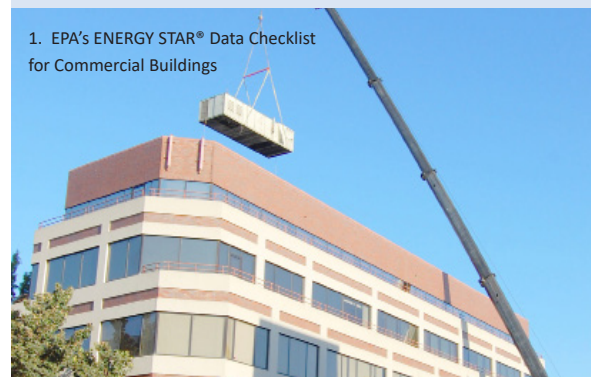
Documented Results

- Annual Energy Savings: **912,675 kWh**
- Annual Cost Savings: **\$91,400**
- All **tenants renewed** leases
- EnergyStar Benchmark Score **increased from a 2 to a 58 in the first 12 months**
- Near elimination of tenant comfort complaints and expensive service calls

Additional Benefits

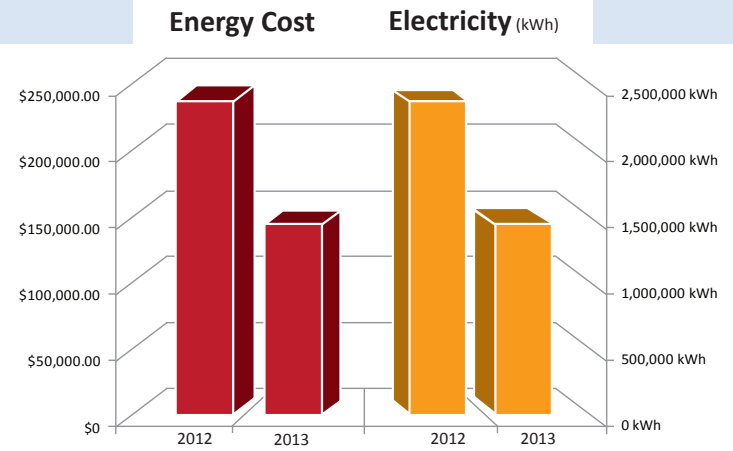
- Increased asset value and monthly profitability
- Significantly increased control and visibility in to building mechanical systems
- Ongoing monthly energy savings

1. EPA's ENERGY STAR® Data Checklist for Commercial Buildings



The linchpin to receiving the eventual go ahead and the resulting success of the project came from the Cooper Oates account management team who developed a creative lease option for the owner. Leasing the equipment (including the building controls system) directly from the manufacturer allowed the owner to pull the trigger on a project whose budget exceeded \$410,000 to complete. The leasing plan was developed such that the expected savings in energy expenses would pay for the monthly lease over 7 years.

The process of replacing enormous rooftop HVAC units took weeks of preparation and planning- and made all-the-more challenging with the requirement to do the move early on a weekend morning to eliminate any tenant interruption and minimize freeway closure. That same non-interruption requirement held for the complex, integrated controls system that was installed concurrently with the roof-top units. The coordination of men of many trades, and materials from multiple vendors, was an enormous and complex task that all came together without a hitch.



	2012	2013	RESULTS
kWh Used	2,031,133 kWh	1,118,458 kWh	912,655 kWh
Energy Expenses	\$237,600	\$146,000	\$91,600
Benchmark Score	2	58	56 points
Project Investment: \$410,000 , Estimated Payback - 7 years, Actual Payback - 4.4 years			

The Results:

After months of preparation, the installation phase was accomplished with no interruptions to the existing tenants. Following the installation, there was an immediate 50% reduction in energy expense. Some of the more disgruntled tenants reported significant improvements in individual comfort levels.

In the year following the installation, all of the tenants renewed their leases and the building's energy expenses dramatically decreased. A new EnergyStar benchmark score was generated and improved to from a score of 2 to a 58. A review of the utility records documented a 42% decrease in kWh equaling a savings of over \$91,000 per year. Because the energy savings was more than anticipated, the project's investment payback time frame was shortened from 7 years to 4.4 years.

With the tenants secured with renewed leases, increased monthly profitability, reduction of service calls and building value increased, Cooper Oates' mission was considered fulfilled - **To increase the return on our client's building investment.**



Our History

For over half a century, Cooper Oates has proudly served businesses and commercial properties throughout the Sacramento Valley and Northern California. From our beginnings as an air conditioning installer, to our current capability as a full-service mechanical provider, we have placed your facility's comfort and your business's profitability front and center.

Our team of experts has extensive experience designing, installing, monitoring, and servicing a broad range of mechanical projects including:

- Office Buildings
- Industrial / Conditioned Warehouses
- Hospitals / Clinics / Labs / Medical Offices
- Educational Facilities
- Server / Datacenter / Clean Rooms
- Restaurants / Commercial Kitchens
- Manufacturing / Distribution Centers