

# CASE STUDY

## FEDERAL BUREAU OF PRISONS – San Diego

### FBOP CORRECTIONAL FACILITY AVOIDS EXPENSIVE DUCT REPLACEMENT WHILE SAVING ENERGY

#### Ameresco Partners With AeroSeal To Repair And Seal Damaged HVAC System With Duct Sealing From The Inside

Located in the heart of downtown San Diego, the Federal Bureau of Prison (FBOP) detention center is unusual in its design. Instead of a complex of buildings behind a perimeter fence, the concrete tower rises 12 stories above the skyline, blending in with nearby condos and office buildings. Built in 1973, the facility was in dire need of updates. Years of deferred maintenance and delayed electrical and mechanical updates had resulted in skyrocketing energy costs and poor living conditions.

To bring the building up to current standards, federal officials turned to Ameresco, Inc., an ESCO design and construction firm that provides energy efficiency solutions for commercial and government facilities. Ameresco prepared a proposal for a complete energy efficiency renovation for the building. A critical part of the plan included repairing and updating the heating and cooling system, including the ductwork, which had become severely clogged

and corroded from the salty ocean air. This made conditions inside the facility nearly unlivable from the stale, musty air quality.

At first it was thought the ductwork needed to be entirely replaced. However, at a cost of roughly several million dollars, this was not a viable option. Ameresco project managers knew repairing the ductwork was the only option that made fiscal sense, but had no idea how to estimate the cost for such repairs. That's when AeroSeal was called in. A team of duct auditors inspected the property. Although the damage was extensive, the AeroSeal team was confident it could salvage the ductwork with a combination of targeted sheet metal repair and aerosol sealing from the inside.

There were many unique challenges to working in an active prison. Heightened security and escorts for workers slowed the process. Inmates also had to be relocated one floor at a time, so work could be completed on that floor. In the end, the project took around 12 months to complete, but it still finished well ahead of schedule and under budget.

More importantly, the correctional center is now a much more energy efficient, and comfortable, building. Duct leakage was reduced by an average of 89%. In addition, the annual energy savings resulting from repairing and sealing the ductwork alone is calculated to exceed \$140,000.



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### PROJECT OVERVIEW

#### BUILDING

Federal Bureau of Prisons Facility

#### LOCATION

San Diego, CA

#### ESCO

Ameresco Inc.

#### GOAL

Repair and seal existing ductwork

#### BEFORE AEROSEAL

49,147 CFM of total leakage

#### AFTER AEROSEAL

5,731 CFM of total leakage

#### RESULTS

A 89% reduction of leakage.  
\$140,000 energy savings.



AeroSeal's portion of the job was a crucial piece. If they didn't get the sealing done, we wouldn't be able to finish each floor on time. The communication was excellent! The AeroSeal team was very good at listening and giving us feedback, which helped us coordinate the job with the rest of the subcontractors. We actually beat our schedule by six months. Everything went very smoothly.

#### Rob Lester

Senior Project Manager  
Ameresco

Those energy savings from the duct sealing combined with the savings from the plumbing and electrical upgrades, mean that the project will pay for itself within 10 years. Our client was very happy with the project. AeroSeal did a great job. We're very pleased with the results.

#### Joe Vitella

Manager of Project Development  
Ameresco

