



Altus Air Force Base

A Case Study: Reducing Energy Through Lighting Upgrade



Located in southwestern Oklahoma and first opened to military aircraft and personnel in 1943, Altus Air Force Base (AAFB) has become a premier air mobility training location for the United States Air Force (USAF). With an average of over 300 days of weather favorable to flying each year, a generally flat landscape, and few obstructions, the base is a perfect location for military professionals seeking to hone their aerial skills. Dedicated to providing superior flight training for over 60 years, Altus Air Force base is also committed to being a responsible community partner and Federal Government team member. As a result, the base responded proactively when called upon to meet Executive Order 13123, which requires all federal agencies to reduce energy use by 35% by 2010. In support of the Federal Mandate, AAFB ultimately initiated and completed a lighting upgrade in 2005 that significantly reduced energy costs and consumption while improving lighting quality, facility aesthetics, and worker productivity.

Undertaken as part of a Honeywell-awarded performance contract and managed by Norman, Oklahoma-based energy service company Performance Consulting Group, the project involved the upgrade of old fluorescent T12 lamps, magnetic ballasts, and inefficient incandescent and HID lighting technology across 93 buildings on the base. Among other changes, the upgrade included the installation of over 25,000 T8 fluorescent lamps from Philips Lighting driven by some 13,000 Philips Advance Optanium® high-efficiency electronic ballasts and Mark 10® Powerline. Based on the energy savings and high lumen output they deliver, fluorescent T5 lamps and electronic ballasts were installed in the facility's training and conference areas, while T5 High Output

lighting systems were selected to replace the 250-1000W metal halide and high pressure sodium systems located in high and low bay applications such as the base's warehouse, shops, and hangars. The upgrade also involved the replacement of incandescent exterior and interior lighting in office buildings with over 7,000 compact fluorescent lamps as well as the conversion of 250 exit signs to incorporate highly-efficient light-emitting diode (LED) technology.

"Altus Air Force Base undertook an extremely comprehensive lighting upgrade that positively addressed its outmoded and less-efficient lighting technology," said Philips Lighting Electronics N.A. Sales Representative and C.L.E.P. Marc McCord. "Through conversion to significantly higher-performing and more energy-efficient lighting technologies such as fluorescent T8, fluorescent T5/HO, dimming, and compact fluorescent lighting as well as LEDs, the base reduced its energy and operational costs significantly and improved comfort for the nearly 5,000 troops and civilians it employs."

The results of the upgrade have been impressive, with the new technologies driving annual energy reduction at the base by 6,074,554 kWh. Based on the costs of the project, the base will recoup its investment in just 4 years, reflecting an attractive return on investment of 25%. And the base's crew and residents will enjoy a more standardized and modern lighting system that enhances lighting quality while minimizing maintenance concerns. Confirms Altus Air Force Base Energy Manager Warren Howard, "this lighting project has significantly reduced the amount of energy we consume while providing improved light levels in all areas of our facilities, particularly in the hangars. The energy savings will enable the base to make necessary capital

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improvements without impacting the operating budget, which is a win-win for the thousands we employ as well as the larger community.”
“Overall,” concludes Performance Contracting Group President Ron Murray, “by working closely with base personnel and the Honeywell Project Manager, we helped Altus Air Force Base implement a capital lighting improvement that resulted in a significant reduction to their electricity load during peak hours.”
Thanks to their successful lighting upgrade, Altus Air Force Base is now fully compliant with all Federal Energy Mandates and is optimally positioned to continue pursuit of its noble mission of “expertly training airlift and aerial refueling aircrews to achieve global reach and power.”

A leader in the ballast industry for over 60 years, Philips Lighting Electronics N.A., based in Rosemont, Illinois, offers a full line of Philips Advance branded ballasts and drivers for fluorescent, HID, and LED light sources to the market’s broad range of lighting fixture manufacturers and electrical distributors. For more information on Philips Lighting Electronics’ complete product line and range of Smart Solutions, visit our website at www.philips.com/advance or call us at (800) 322-2086.

Project Overview

Project Site:

Altus Air Force Base (Altus, Oklahoma), a premier air mobility training location for the United States Air Force (USAF)

Project Scope:

Upgrade of old T12 fluorescent lamps, magnetic ballasts, and inefficient incandescent and HID lighting technology across 93 buildings on the base to a system involving more efficient fluorescent T8, fluorescent T5/HO, and compact fluorescent lamps driven by electronic ballasts to improve light levels and reduce energy costs and maintenance concerns

Project Timeline:

Initiated and completed in 2005

Products Involved:

The project involved over 30,000 T8, T5/HO, and compact fluorescent lamps from Philips Lighting driven by over 15,000 high-efficiency Optanium®, Mark 10® Powerline, and T5/HO electronic ballasts

Energy Service Company:

Norman, Oklahoma-based Performance Consulting Group (PCG), an EPA Energy Star provider and Honeywell-approved contractor

Reduction in Annual Energy Consumption:

6,074,554 kWh

Project Payback Period:

4 years

Return on Investment:

25%



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