

"Make Energy a Consideration in All We Do"

ENERGY

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Air Force bundles building assessments

Amy Ausley
AFCEC Public Affairs

Data makes the world of Air Force real property inventory go round. To effectively manage assets across that inventory, the data needs to be accurate, consistent and appropriate. But gathering it can mean multiple assessments and inventories of the same building. To facilitate the process, the Air Force Civil Engineer Center Energy Directorate, Tyndall Air Force Base, Fla., combined the efforts into what is called "Sustainable Infrastructure Assessments" or SIAs.

"The SIA process consolidates assessments and decreases redundant efforts and contradictions on overlapping results," says Clayton Deel, contracting officer representative. "By evaluating an entire building in a single walk-through, we minimize the disruption at each base."

SIAs consist of six product lines which combine real property inventories and facility assessments for energy and asset management. The data is used to support decision making, financial management, and future reporting requirements for capital investments and audits.

Recently, the contract was awarded to perform SIAs, including all six product lines, at 63 installations for FY12. The final

push will come in FY13 and will include the remaining major installations.

The bases are divided into seven regions; five regions in the United States and two regions for the bases in Europe. Separate companies were selected to perform the SIAs in each region. The U.S. Army Corps of Engineers, Fort Worth District, will work closely with AFCEC/CND to centrally coordinate management of the program including overall program funding, schedule, and scope.

With so many different companies and agencies involved in the process, AFCEC stood up a Program Management Office which will serve as a central clearinghouse for all the information collected during the SIAs. The PMO will validate and organize the data then create management processes and controls to enable consistent SIA program roll-out across the Civil Engineer community. They will also develop tools and methods to track program costs, schedules, risks, and other performance indicators. Finally, the PMO will apply lessons learned to establish best practices and standard methodologies in all SIA project management areas.

There is a 14-day site visit window for all bases, with larger bases possibly requiring an extended visit. The team meets on Sunday evening to review contract requirements and submitted

STORY CONTINUED ON PAGE 2

Repairing a 30-gallon-per-minute leak at this water tower at Fairchild AFB, Wash., helped save an estimated 15 million gallons of water per year. Read the entire story beginning on page 4. (Photo by Mr. Eddie Green)



building assessments

CONTINUED FROM PAGE 1

materials and the site survey begins on Monday morning.

"The teams for each product line work together to prevent delays, duplication of effort and omissions in the surveys. Everyone regroups each evening to review the day's work and the next day's schedule," says Mike Giniger, AFCEC/CND. "This makes the whole process run smoothly and assures the best results."

Each base receives briefings for the SIA which outline the expectations and accomplishments for one or more of the following product lines:

Real Property Inventory

Verification of the physical existence of facilities indicated on either the HAF 7115 Report, Real Property Inventory Detail Report or the base map. Any facility which cannot be physically located is reported as disposed. The 7115, completed disposed inventory forms, base map, and DD forms 1354 are all updated with any new information.

Real Property Installed Equipment

Inventory of key mechanical components, including HVAC and electrical systems. The data is stored for use in the new NexGen software so the shops know what needs to be maintained. Bar-code labels are placed on each piece of equipment so maintenance workers can use a scanner and immediately pull up service records.

Space Utilization

Collection of space data at each facility and estimated square-footage. AutoCAD floor plans and geo-references are created for each facility surveyed.

A space utilization assessment determines who is sitting where and how much time they are occupying the space. This helps determine if spaces can be consolidated enough to possibly dispose of another building.

Energy Audit

Energy and water conservation level one and two audits. Utility data is collected and baseline numbers developed

from no less than one year's worth of utility data (electric, gas, steam, and water). Energy use is broken down and evaluated.

Bases receive recommendations for energy and water conservation opportunities including estimates of implementation costs, savings, and savings-to-investment ratio.

High Performance Sustainable Building Checklist/Assessment

Completion of a checklist and development of a baseline energy model for facilities. The baseline is compared to actual energy and water usage. This assessment measures how sustainable a building is and whether it is, or can be made, LEED compliant.

Real Property Condition Assessment

Condition assessments on six components of a facility in accordance with Sustainment Management Software "Direct Rating" method. Components include exterior enclosure, roofing, interior construction, plumbing, HVAC, and electrical components. A basic scope and estimates for repair or replacement are developed for work in excess of \$20,000. Deficient items are noted. The data is then placed into an SMS program created by the U.S. Army Engineer Research and Development Center, Construction Engineering Research Laboratory called "Builder."

SIAs will begin with two test bases, MacDill AFB, Fla., and Joint Base San Antonio, Texas to work out any glitches. Then AFCEC and USACE will apply lessons learned to the program. All other bases can expect to begin the process in January 2013. The SIAs are expected to continue for a period of two years until all major installations have been surveyed.

Links You Can Use

AF only service to meet EAct goal

<http://www.defensecommunities.org/air-force-surpasses-statutory-goal-for-renewable-energy-use/#>

Sheppard saving energy with new paint

<http://www.sheppard.af.mil/news/story.asp?id=123317152>

Thermal imaging tool saves money - and more - at Selfridge

<http://www.127wg.ang.af.mil/news/story.asp?id=123320424>

Air Force in talks to build solar project at Travis

<http://www.dailyrepublic.com/news/military/air-force-in-talks-to-build-solar-project-at-travis-base/>

RAF Lakenheath sets own reduction goals

<http://www.lakenheath.af.mil/news/story.asp?id=123320571>

Vance embraces EAM with awards, efficiency programs

http://www.vance.af.mil/news/story_print.asp?id=123320719

Patrick AFB leader sends out energy message

<http://www.patrick.af.mil/news/story.asp?id=123320847>

Fostering a culture of innovation during Energy Action Month

<http://www.amc.af.mil/news/story.asp?id=123320611>

Air Force invests in high-efficiency lighting

Jennifer Elmore
AFCEC Public Affairs

Solid-state lighting technology has the potential to reduce U.S. lighting energy usage by nearly one half and contribute significantly to our nation's climate change solutions, according to the Department of Energy. That's why the Air Force has a plan to replace all outdoor lighting with SSL, which includes light emitting diodes or LEDs, where economically feasible over the next decade.

Major commands and bases have implemented a variety of lighting and technology upgrades over the years. In fiscal year 2012, the Air Force invested \$9 million to purchase and install LEDs and other high-efficient light (HEL) fixtures. HEL includes LEDs and induction lighting.

New lighting policy

"The Air Force is committed to reducing its energy use and total energy expenditures," Assistant Secretary for Installations, Environment and Logistics, Honorable Terry Yonkers, wrote in a July 2012 memorandum. "Air Force installations will strive to achieve 100 percent HEL in parking areas and along roadways within 10 years." The initial goal is to install ten percent by July 2013.

Yonkers says installations should implement this guidance for all major renovations and new construction of parking lots, roadways and facilities requiring exterior lighting. Solar powered fixtures may be used for exterior applications where economically viable. The memo also encourages the use of energy savings performance contracts and other third-party financing to achieve energy efficiency and sustainability.

Success stories

Air Force Space Command began researching LEDs in 2007 with preliminary testing of several exterior fixture types and sizes at Vandenberg Air Force Base, Calif. and Peterson AFB, Colo. The pilot study, approved by the Air Force Civil Engineer Center (AFCEC), Tyndall AFB, Fla., revealed a greater than 50 percent reduction in energy usage as compared to high intensity discharge lamps. In August 2012, AFSPC awarded a \$6.4 million contract for 6,367 fixtures at 15 installations project will save an estimated \$18.8 million reduction over the 25-year lifetime of the fixtures.

There are HEL initiatives across the Air Force. For example, Air Education and Training Command recently replaced 3,171 taxiway lights with LEDs at

Lackland, Vance, Sheppard, Laughlin, Tyndall and Altus AFBs which will save an estimated \$80,151 annually. AETC also plans to replace 4,000 street, parking and general purpose lights at Sheppard AFB, Texas, and lights inside nine high-bay buildings at Randolph AFB, Texas. The Randolph project replaces HID lights with T-5 high output lights.

Air Combat Command is refining inventory analysis and life cycle cost savings for command wide replacement of exterior street and parking lot fixtures with HEL fixtures. Early analysis shows induction lighting fixtures could equal or exceed the savings of LED lighting fixtures at some installations.

Way Ahead

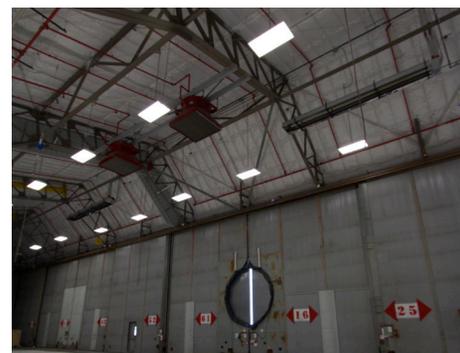
The AFCEC will issue implementation guidance and develop an exterior HEL program early in 2013 to comply with Yonker's memorandum. AFCEC oversees appropriated energy funds, the third-party finance program, and is home to subject matter experts who ensure technical compliance and maintainability. The AFCEC Energy Directorate plans to investigate the use of organic light-emitting diodes and addressable lighting in the future.



Top right: LED lights along a sidewalk at Charlotte ANGB, Charlotte, N.C.

Bottom left: Outdoor solar lights around a walking track at Charlotte ANGB, Charlotte, N.C.

Bottom right: T-8 lights and digital controls in a hangar at Pease ANGB, N.H. (U.S. Air Force photos/Eddie Green)



Bases "REAP" energy and water savings

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The Air Force Civil Engineer Center Energy Directorate, Tyndall Air Force Base, Fla., is recognizing three installations with Reduce Energy Appreciation Program, "REAP", awards for renewable energy use and energy and water reduction. This year's winners are Charlotte Air National Guard Base, N.C.; Fairchild AFB, Wash.; and Joint Base Elmendorf-Richardson, Alaska.

JB Elmendorf leads the way, reducing energy 45 percent. Much of the savings is attributed to a high-tech energy management control system. "We have one of the most expansive and sophisticated EMCSs in the Air Force," says Elmendorf's Resource Efficiency Manager Francis Sheridan. Elmendorf hired an analyst who focuses strictly on using the EMCS to find energy savings. Currently the system is saving \$500,000 a year in energy costs and new buildings are being added on a regular basis.

With nearly 20 hours of daylight in the summer and the opposite in winter, occupancy sensors make sure lights are off in unoccupied rooms and buildings, and parking lot patrols look for outdoor lights burning during daytime hours.

JB Elmendorf engineers are also looking ahead to future renewable opportunities. Michael Forcht, Elmendorf energy manager says, "We have the opportunity here, with different renewable sources, to possibly become net zero in the next 10 years."

With an energy intensity reduction of 23.5 percent and water usage reduction of 43 percent, Charlotte ANGB's leaders say everyone is on board with conservation efforts because they can see the benefit firsthand. The base invests energy refunds and savings into quality of life projects such as an upgraded gym and fitness track and a memorial park where they can hold ceremonies.

Fairchild engineers, like JB Elmendorf, use an EMCS and believe the system, along with the decommissioning of two steam plants, have made all the difference. With new boilers in many buildings and the EMCS controlling temperature set points and tracking maintenance issues, the base steadily decreased energy intensity. The base also repaired a 30-gallon-per-minute leak in a water tower, which will save an estimated 15 million gallons a year. Irrigation demands have been reduced as many buildings are now landscaped with rock gardens. Fairchild reduced energy 14 percent and water 13 percent.

All three winning bases have big plans for the future. Charlotte hopes a new photovoltaic solar array at the fire station will make the building net zero for energy. Fairchild is installing a "smart-irrigation" system, which monitors the soil to determine irrigation amounts, and Elmendorf just fired up a landfill gas project expected to generate at least 26 percent of the base's power needs.

To view this year's REAP award videos follow the links below:

Charlotte ANG: <http://bit.ly/Tsky2R>
Fairchild AFB: <http://bit.ly/UMqmp>
Joint Base Elmendorf-Richardson: <http://bit.ly/RbQeHQ>



At Charlotte Air National Guard Base, Charlotte, N.C., the commander reinvested energy refunds and savings into quality of life projects such as upgrades to the gym and fitness track on base. (U.S. Air Force photo/Eddie Green)



JBER, Alaska, uses a sophisticated energy management control system to monitor buildings and find energy savings. Currently the system saves the base over \$500,000. (U.S. Air Force photos/Eddie Green)

Lakenheath residents become energy savvy

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AFCEC Public Affairs

Energy Action Month kicked off in a big way at RAF Lakenheath. Residents in Military Family Housing are taking part in a three-month energy awareness trial program called the Resident Energy Efficiency Program which is designed to reduce utility costs by ten percent. Five-hundred households have volunteered for the program, which is being run by the housing office at Lakenheath, and focuses on reducing electricity, water and gas usage. One of the goals of the initiative is to show residents how they can achieve big results with minimal impacts to their daily lives.

"We're not trying to change people's lifestyle," says Major Gregory Morissette, 48th Civil Engineer Squadron Commander. "We're just asking them to make small incremental changes and we hope those changes will make a difference in our energy bill."

The cost of housing utilities for the tri-base area of RAFs Lakenheath, Feltwell and Mildenhall is currently \$6.2 million per year. Major Morissette says the REEP program aims to reduce that number. "If we were to save just ten percent which is our goal, we would save \$620,000 per year and that's a significant amount."

Each participating family received a package with tools they can use during the trial. The package includes a wireless energy monitor, so families can get immediate feedback on the changes to their electricity usage; a re-branded thermostat sticker for central air units converting temperatures from Celsius to Fahrenheit; a window sticker announcing their participation in the program; and an information pack with hints, tips and general information.

Participants must provide a beginning and ending meter reading. The house

in each category which uses the least energy will receive a letter of commendation from command.

One of the interesting features of the program is the wireless meter provided to each household. The meter gives each resident a way to instantly see the impact of turning on or off just one appliance. For example, kids can see the effect on energy usage each time they turn on a video game system or turn off lights as they leave a room and parents can see the benefit of turning off and unplugging simple appliances like toasters and coffee makers.



Wireless energy monitors like the one pictured above will be given to residents participating in the Resident Energy Efficiency Program at RAF Lakenheath so they can keep an eye on their energy usage during the three month energy trial.

Within the group of 500 volunteer homes, the base will collect further baseline information from a mix of 20 houses. Five of those homes have solar panels and ten others are providing the base with a cross section of size and type. Another five houses are being used as a 'control group' so daily, weekly and monthly usage can be compared with similar homes which are not participating in the program and therefore didn't receive the tool kit.



Residents at RAF Lakenheath will receive window stickers in their REEP energy tool kit which show they are participating in the program and are ready to save energy dollars.

The housing office coordinated with the energy office to make sure the REEP kick-off coincided with the beginning of Energy Action Month in October. Events are scheduled throughout the month to help raise energy awareness including presentations from local utility companies about how people can reduce energy consumption and carbon footprint.

If positive results are yielded from the three-month trial, the program will be rolled out across all MFH at Lakenheath, as well as RAF Mildenhall and RAF Feltwell. The results will also be passed along to United States Air Force Europe for consideration on a command-wide implementation.

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Air Force selects Travis solar project developer

The Air Force has selected enXco, a subsidiary of EDF-Energies Nouvelles, to develop a solar energy project at Travis AFB, Calif. The 60th Air Mobility Wing at Travis AFB and AFCEC-West are working to lease three parcels of non-excess property for commercial development under the Enhanced Use Lease Program. An EUL project gives the Air Force the ability to lease property in exchange for cash or in-kind consideration from developers. Details of the lease will be worked out in negotiations. AFCEC-West acquires, manages and disposes of Air Force-controlled real property worldwide. The EUL program helps

installations leverage real property assets to achieve value for the Air Force through partnership with private industry.

Laundry building cleaning up on energy savings

Since January 1, 2012, the UNICOR laundry building at Maxwell AFB, Ala., completely shuts down all electrical equipment daily. In the past, exhaust fans and HVAC units would run 24/7. The steam boiler is now shut down at the end of each day along with all blowers and air compressors. Repairs have been made to leaky water valves. With these new no-cost measures in place, the building is on track to save \$38,000 per year.

FY12 Energy Conservation Investment Program

AFCEC awarded an ECIP-funded renewable energy contract for approximately \$8 million to Environmental Chemical Corporation. ECC will install two 1.6MW Wind Turbines at Cape Cod Air Force Station, which will save the Air Force approximately \$1.01M in annual energy costs. (Ms. Doornik-Surber/AFCEC-East, DSN 523-6546)

Energy Action Month materials

AFCEC, in coordination with SAF/IEN and SAF/PA, distributed Energy Action Month materials to the MAJCOMs on September 7. This year's materials include an EAM plan, logo, fact sheet, talking points, speech, slide, newspaper article, background bullet paper and videos. All materials will be posted on the Facility Energy CoP <https://afkm.wpafb.af.mil/community/views/home.aspx?Filter=OO-EN-CE-A4> and the CE Portal <https://cs.eis.af.mil/a7cportal/Pages/EAM.aspx>. (Ms. Elmore, AFCEC-East, DSN: 523-6572)

Advanced Meter Reading System project management office

On October 1, 2012, AFCEC stood up a PMO to execute the AMRS contract. The AMRS contractor is scheduled to install systems at 40 bases in FY13. The PMO will be led by Lt Col S. Anason and Mr. F. Paul Carnley. The contractor kicked off with site visits to Holloman AFB, N.M. and Beale AFB, Calif. (Lt Col Anason, AFCEC/CN, DSN 523-6012)



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