



GSA Office of Governmentwide Policy



# 13th Annual

**GSA Achievement Award for Real Property Innovation**

Office of Real Property Management • October 2009



# Introduction

The GSA Achievement Award for Real Property Innovation publication is made possible through the collaborative efforts of the U.S. General Services Administration's (GSA), Office of Real Property Management and the Federal agencies that participated in the 2009 GSA Achievement Award for Real Property Innovation Program. The publication highlights and recognizes innovative projects in Federal asset management and sustainability.

This is an annual publication of GSA's Office of Governmentwide Policy's (OGP), Office of Real Property Management in Washington, DC. OGP is led by Associate Administrator and Chief Acquisition Officer Michael Robertson with Stan Kaczmarczyk as OGP Principal Deputy Associate Administrator, and Carolyn Austin-Diggs as Deputy Associate Administrator for the Office of Real Property Management. The publication is produced by the Performance Measurement Division, led by Director George Deryckere.

For information about the GSA Achievement Award for Real Property Innovation, please contact Patrice Walker, Program Manager, at 202-208-7639 or [patrice.walker@gsa.gov](mailto:patrice.walker@gsa.gov) or visit [www.gsa.gov/realpropertyaward](http://www.gsa.gov/realpropertyaward).

For more information about the Office of Real Property Management and its innovative real estate and workplace initiatives, visit [www.gsa.gov/realpropertypolicy](http://www.gsa.gov/realpropertypolicy).



# A Message from Carolyn Austin-Diggs

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The U.S. General Services Administration (GSA) is pleased to recognize the Thirteenth GSA Achievement Awards for Real Property Innovation entries in 2009. This year's Awards Program entries demonstrated the federal agencies' continuous commitment to improve federal real property asset management and sustainability.

The Real Property Achievement Awards program was established in 1997 to promote management and operational efficiency and sustainable solutions in the federal community. Under the new Administration's goal of improved transparency and accountability, the Office of Governmentwide Policy (OGP) encourages the submission of further examples of practices that strengthen collaboration and build awareness of processes and systems that lead to cost savings and better value for the government as a whole.

Since its inception, the program has attracted over 400 ideas from the federal real property community, to cover a wide spectrum of real property management issues, including asset management and planning, information technology, performance measures, security, sustainability, and workforce/human capital strategy.

This year, we focus again on Asset Management and Sustainability. We are pleased to present the 18 entries that represent the latest cutting edge initiatives and accomplishments.

I would like to extend my congratulations to the winners as well as to all the participants for sharing your innovations, as GSA continues to do our very best to provide the federal real property community with guidance and support in real property management.

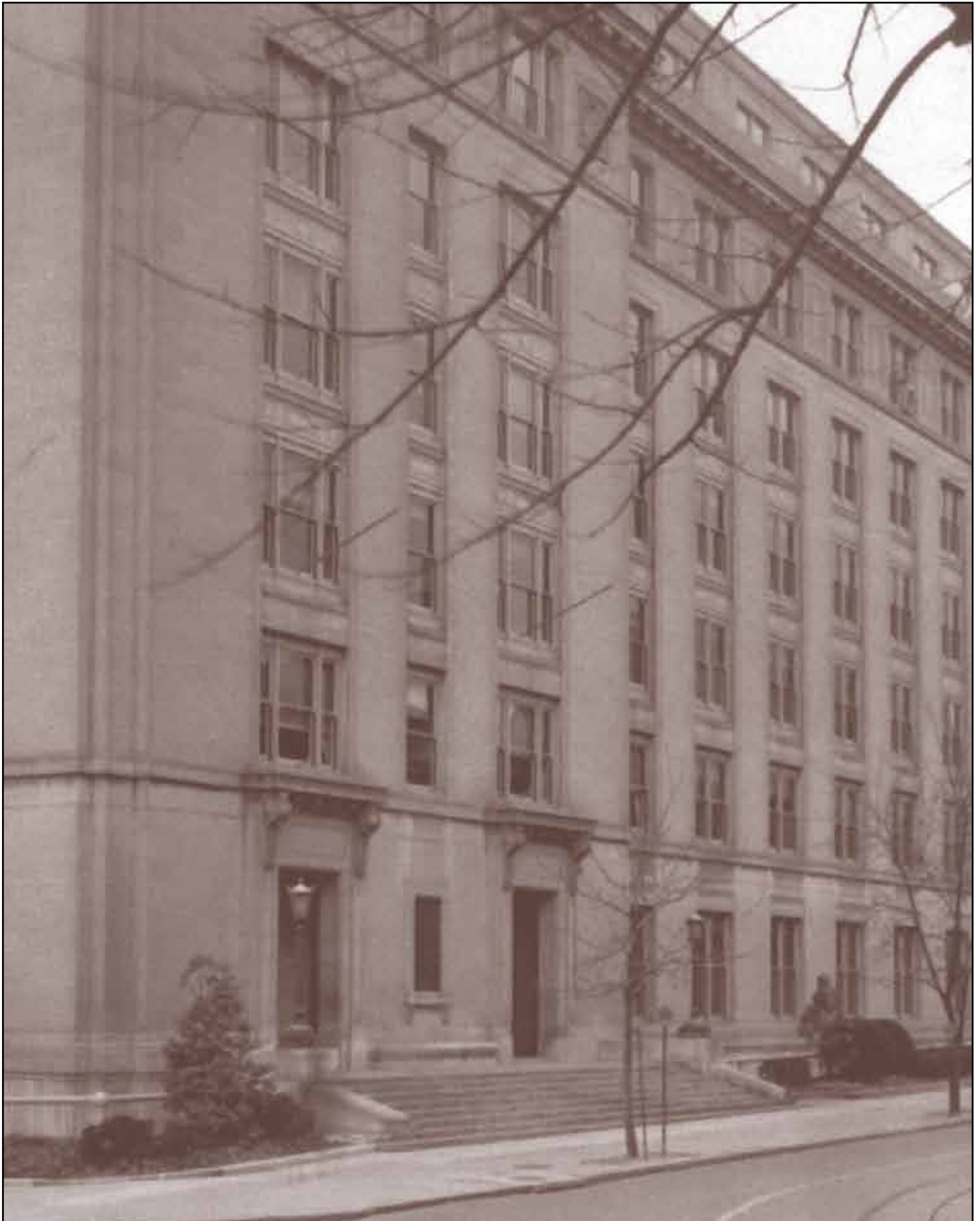


Carolyn Austin-Diggs

Deputy Associate Administrator

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# Asset Management

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This award recognizes exemplary initiatives, innovations and projects in Asset Management and communicates these cutting-edge ideas to agencies striving to improve their real property management. Achievements are related to asset management planning, inventory management, performance management, utilization and disposal of real property, transportation and infrastructure improvement and portfolio optimization.

# Public-Private Partnership for Solar Power Facilities at NASA Kennedy Space Center



NASA's Kennedy Space Center (KSC) and Florida Power & Light (FPL) – the nation's largest renewable energy producer – have partnered to construct and operate the space agency's largest solar power generation facility to date, converting underutilized land into a source of clean energy for both NASA and Florida consumers.

The initiative was enabled by a combination of NASA's enhanced use leasing (EUL) authority and FPL's plan to build 110 megawatts of solar power generation to serve Florida customers under new clean energy legislation Florida adopted in 2008.

The project resulted from KSC's effort to identify alternative uses for 1500 acres of non-productive citrus acreage,

a remnant of early agricultural usage prior to NASA's acquisition of northern Merritt Island in the 1960s. The large majority of KSC's 139,000 acres is undeveloped wetlands and scrub habitat that comprise the Merritt Island National Wildlife Refuge. The citrus acreage, allowed for years to continue in production, has become unproductive and non-viable. Much of the acreage is now being over-grown with invasive species that are deleterious to adjacent natural habitats.

When FPL approached NASA to consider providing property for development of a solar power facility, NASA agreed to set aside about 100 acres of the citrus land for the project subject to completing an environmental assessment. KSC subsequently proposed that in lieu of land value payments,

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*Above: The one megawatt solar power facility built for NASA by FPL. Opposite: Artist rendition of the solar power facility.*

# Asset Management Winner



FPL provide a separate one megawatt solar power facility to feed the space center's electrical system, thereby providing its first major on-site renewable energy production to cut KSC's energy costs and help meet Federal renewable energy mandates. The separate one megawatt facility for NASA will furnish about one percent of the KSC electric power demand, but will meet about half of its required target for use of renewable energy.

Under the agreement entered into by NASA and FPL, the company is providing \$6.36 million upfront to design and build the NASA facility in lieu of lease payments over the 30-year term of the out-grant. The utility will also operate and maintain NASA's solar power asset during that term. There are provisions to allow upgrading both facilities to new technology in the future, and for a doubling of output by expanding both the FPL and NASA facilities in a second phase.

The FPL 10-megawatt facility takes advantage of utility transmission lines already in place at KSC to distribute the energy into FPL's power grid, providing energy to power

approximately 3,000 homes. FPL estimates the plant will prevent more than 227,000 tons of greenhouse gas emissions from entering the atmosphere during the life of the project.

According to the Environmental Protection Agency, that is the equivalent of eliminating the emissions from more than 1,800 cars every year.

FPL and prime contractor SunPower Corporation began construction on both facilities in June 2009. The facilities will be commissioned by year end. FPL and NASA KSC are engaged in discussions on other projects to convert underutilized space center property for use in producing clean energy commodities.

An innovative approach to and application of Federal authorities can help advance key national energy policies – in this case, a growth of renewable energy use by Federal power consumers – with resulting environmental benefits and a more efficient use of budgeted resources for energy costs. What's good for the environment can also be good for an agency's budget, as energy costs reduced can translate into available dollars for other agency mission needs.

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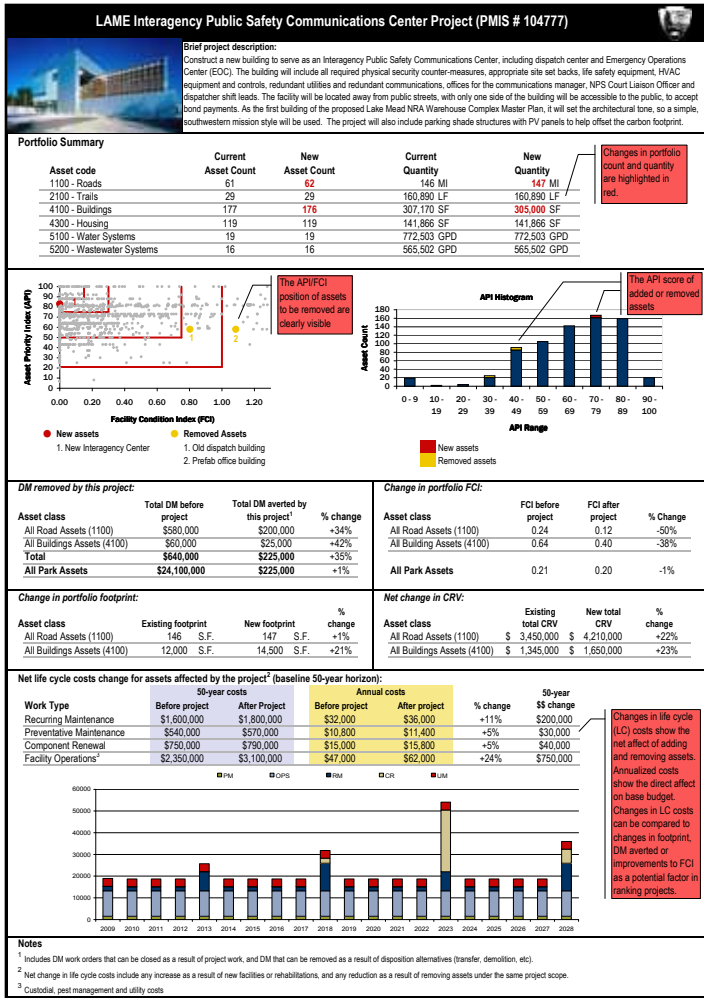
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# Using Critical Life Cycle Data to Inform NPS Project Selection and Prioritization



never be able to meet the growing DM demand given current funding levels. Therefore, the NPS must capitalize on all opportunities to remove portfolio DM, including partnering to meet DM needs, disposing of assets that no longer serve the mission of the park, and through the creative design of new capital improvement (CI) projects to maximize DM reduction.

While new construction projects do not normally have DM needs from the outset, it is inevitable that the new asset will represent a DM liability to the park if future life cycle work (recurring and preventive maintenance, facility operations, and recapitalization) is not addressed in a timely manner. The simplest DM reduction strategy is therefore to prevent the new asset from accruing DM by ensuring that life cycle needs can adequately be met now and in the future. Historically, review of projects by the NPS DAB was heavily focused on the initial project cost of the targeted assets, with little examination of the project's life cycle costs and impact on the park's portfolio. Seeing a need to shift emphasis to the long range implications of the project, the NPS PFMD developed DAB data sheet templates that incorporate data from the Facility Management Software System (FMSS), an IBM/Maximo® product, which houses data on NPS's large and diverse asset inventory. Incorporation of FMSS data draws attention to the impact of the project on the park's asset portfolio, including changes to overall DM, facility condition index (FCI), and overall asset footprint.

The National Park Service (NPS) Park Facility Management Division (PFMD) develops tools to assist in evaluating life cycle costs and avert deferred maintenance (DM) for proposed facility projects that are reviewed and approved by the NPS Development Advisory Board (DAB). The NPS faces an increasing DM backlog, estimated in excess of \$9 billion. While some of this DM backlog will be addressed over time using project funding for repair and rehabilitation, parks will

In addition, the opportunity exists to provide a better illustration of the life cycle costs for assets affected by the project. This process improvement included highlighting out-year operations and maintenance (O&M) costs associated with the new construction projects that the NPS was reviewing, thereby equipping the project review committee with a complete picture of today's needs and, more importantly, needs over the life of the asset. Collectively, these

Above: The NPS PFMD sample DAB datasheet template.

# Asset Management Finalist

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data help the DAB review board to make informed decisions about the project in the wider park asset management context.

To date, data sheet templates have been created for 18 facility projects that were reviewed by the DAB. These projects totaled \$172 million in construction costs and an estimated \$67 million in total O&M costs. (Life cycle costs are based on a 50-year design life and include recurring maintenance, preventive maintenance, operations, and component renewal). DAB-reviewed projects span a range of asset types, including buildings, trails, roads, and parking areas as well as additional unique asset types.

The NPS aims to address the DM crisis preemptively by instilling a new approach to project planning focused on financially sustainable decision making. The NPS is moving towards its goal by making life cycle cost consideration a priority in the DAB review process.

All federal agencies are required to report on Federal Real Property (FRP) performance metrics, including mission dependency, condition index, value, operating costs, and utilization, for all portfolio assets. Industry-based benchmark data can be used to develop life cycle costs and create models for more specific asset types.

More importantly, agencies can use federally reported inventory data to help make investment decisions. The data sheet template defined for the NPS DAB can be replicated in other agencies to educate those not familiar with targeted facilities to make sensible investment decisions that take into account the impact of a particular project on an agency-wide portfolio. Examination of these data in relation to project submission will inform out-year project planning for facilities.

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# Collaboration of Fire Protection and Historic Preservation



Many times, the goals and objectives of fire protection engineers and historic preservation officers and architects clash during the renovation of historic properties. Frequently, the retrofitting of new fire protection systems to protect the building and occupants is designed in ways that are antithetical to the nature of historic preservation. Likewise, protecting historic fabric from the intrusion of fire protection systems is often in conflict with the protection of life and the building itself.

In August 2006, an extremely significant renovation project was closed out in Cleveland, Ohio. While there, the aspects of protecting the historic fabric and life safety came together to reach a common goal: protect lives while also protecting the

historic nature of the Howard M. Metzenbaum U.S. Courthouse. GSA's Regional Fire Protection Engineer and Regional Historical Prevention Officer worked in concert to review the fire protection and life safety requirements necessary for this vast renovation project. By doing so, fire protection and life safety systems and equipment were recommended and approved in a performance based application instead of using prescriptive requirements. The results were extremely successful and the project won multiple awards for design and historic preservation and restoration.

That effort of jointly reviewing fire protection projects has continued in the GSA Great Lakes Region and included the

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*Above: Howard M. Metzenbaum U.S. Courthouse.*

# Asset Management Finalist

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complete replacement of the fire alarm system and a complete retrofit of sprinklers for the historic Robert A. Grant Federal Building and U.S. Courthouse in South Bend, Indiana. A similar replacement of the fire alarm system was recently completed in the E. Ross Adair Federal Building and U.S. Courthouse in Ft. Wayne, Indiana.

However, this collaboration's greatest impact has been on the design for the complete replacement of the fire alarm system and complete retrofit of sprinklers in the historic Birch Bayh Federal Building and U.S. Courthouse in Indianapolis, Indiana. This project creates several challenging situations in which the Historic Preservation Architect and the Fire Protection Engineer must work closely in order to achieve excellence. But the established, proven foundation enables GSA to approach the challenge with confidence and success.

The disciplines of fire protection engineering and historic preservation have had a rather stormy relationship over the years. Typically, historic properties lack the life safety elements required for modern code compliance. There is a very real need to retrofit these properties with technology to ensure a safe facility exists. From the perspective of a fire protection engineer, these facilities must be heavily protected in order to overcome their life safety deficiencies. After all, modern codes were developed because of disastrous fires in similar buildings that resulted in thousands of deaths.

At the same time, Historic Preservation Officers view these older properties as treasures meant to be protected and restored. Many times the architecture is unique or indicative of a specific period in this country's history. Priceless art, architecture, or design elements often make up the historical fabric of these facilities as well. Installing modern fire protection equipment in these spaces can quickly generate dissent within the preservation community and create the potential for deep and divisive conflict within a renovation project.

Within the Public Buildings Service, Great Lakes Region, these two professions have taken a different approach to renovation projects. The Historic Preservation Officer has taken the approach that life safety is a critical priority in renovation projects involving historic properties. Meanwhile, the Lead Fire Protection Engineer has taken the position that historic properties are nationally important and has made historic preservation a high priority in the design and installation of fire protection and life safety systems. Through empathetic design, both parties strive for a common goal by helping each other reach their own.

This works primarily through communication which creates a culture within each group that broadens its view to include the other. It is a foundational awareness that in the end, everyone has the same goal – the preservation and protection of high value properties and those that enjoy them. Rather than fostering parochial, antithetical perspectives, we have built our efforts upon the common ground we share.

Every region can enjoy as much success as the Great Lakes Region. However, for that success to take place, concentrated effort must be focused on relationship building, cooperation, and communication. Empathetic design should become second nature. Furthermore, where such successes take place, it is equally important that both groups, and regional management, take note and reinforce the culture of collaboration.

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# Department of Defense Automated Housing Referral Network (AHRN)



In 2005, the Department of Defense (DoD) Directorate of Housing and Competitive Sourcing (H&CS) commissioned and funded a three-year initiative to develop and deploy the Automated Housing Referral Network (AHRN). This online DoD-wide housing referral solution (AHRN.com) was designed to connect the military members with a repository of available and affordable rental housing in the communities near military installations in advance of their move to a new duty station. Provided to members at no cost and on a 24/7 basis, AHRN displayed available rental housing priced within the members' Basic Allowance for Housing (BAH) rates and based on military housing criteria for quality and safety.

The main objective of AHRN was to improve the housing referral service provided to the two-thirds of the military members who lived "on the economy" in rental housing. Members were subjected to outdated rental housing listings and costly house-hunting trips and storage of household goods when making a military move. Some military housing offices (MHOs) maintained outdated listings of rental housing re-

ceived from the property managers. Additionally, DoD had no consistent method for providing rental housing data to support these members and future housing requirements.

The implementation of AHRN has helped resolve DoD's housing referral problems and has benefited the military members, the MHOs, and the local property managers. More quality rental listings and available housing choices were provided to the members prior to a military move; thereby, reducing the out-of-pocket expenses for house-hunting trips and storage of household goods. As the MHOs were freed from data entry and management of the rental properties listings, they were able to provide more efficient customer service in other areas (e.g. spousal employment, school search, house inspection, financial management, etc.) to the military families. As an added benefit, MHO could then develop accurate BAH rates and determine base housing requirements based on rental prices and availability statistics loaded into AHRN. Local property managers were now responsible for uploading and maintaining their property listings on AHRN. This effort

Above and opposite page: Assorted screenshots from the AHRN website showing property AHRN mapping, listings and property details.



# Asset Management



allowed the property managers to use AHRN as a tool to market their suitable and available rental properties to military members worldwide.

AHRN has been deployed at 183 military installations in the continental United States and at three overseas locations. It is a prime example of E-government and technology improving our ability to serve our customers. More overseas installations will be added in the near future.

AHRN accomplished the requirement to provide a consistent method for DoD to provide relevant, accurate, and timely housing referral information to military members. Regardless of the military service or location of the military installation, members accessing AHRN before a military move found available housing information in a consistent format. Live chat lines and AHRN Help are available 24 hours, 7 days a week. As a result of its success, AHRN grew from supporting 15,556

registered users in the first year of operation in 2005, to supporting 435,888 registered users as of May 31, 2009. Whether the need is for family houses, apartments, or rooms for rent, AHRN assisted DoD in meeting the housing requirement of its military members.

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# GSA/HEB Real Property Exchange



The Greater Southwest Region of GSA is undertaking a project in which it will acquire real property improvements in San Antonio, Texas, via an exchange. The other party in the exchange is the H.E. Butt Grocery Company (H.E.B.). GSA will receive a multi-level parking garage, to be constructed by H.E.B. on United States owned property, adjacent to the Hipolito F. Garcia Courthouse/Post Office (Courthouse). In exchange for this garage H.E.B. will receive the Federal Center (Arsenal site).

Parking at the Courthouse originally consisted of only 28 spaces. This lack of adequate parking has helped to create less than content tenants and a vacancy rate of over 41 percent. In an effort to address the greater parking need, GSA acquired three adjacent parking lots, creating 54 additional spaces. While this additional parking helped some to satisfy the current tenants, it has not been enough to draw the interest of new tenants, especially considering the dated condition of the building. The Courthouse is a stagnating, underutilized asset, with high reinvestment needs and a

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*Above: Rendering of the parking garage for the San Antonio project.*

# Asset Management

Return on Equity (ROE) of 0%, based on year-end FY 2008 financial data. An upcoming \$63 million Repair & Alteration (R&A) Stimulus project will contribute much needed upgrades to the Courthouse. A determination was made that the additional parking area acquired would be better utilized to host a multi-level parking garage. This garage will be designed to meet both the current and future customer's needs. The contributory value of this garage coupled with improvements to the building from the R&A will boost the value of the whole site. Vacant space will be recaptured and new jobs will be created. Funds from Operation (FFO) will increase by almost 1.1 million dollars per year. Soon after completion of the renovation project, agencies currently housed in interim leased space will be relocated to the Courthouse.

Estimated costs of garage construction were provided by both GSA and H.E.B., based on a design provided by GSA. The value of the parking garage for purposes of the exchange will be determined by H.E.B., utilizing competitive bids, analyzed by a joint GSA/H.E.B. team. This team will also select the contractor to build the garage on a "best value" basis. In order for GSA to receive equal or greater value, H.E.B.'s consideration must be equal or greater than the Arsenal site value of \$6,280,000 and will be made up of several components to equalize the values received by GSA.

This undertaking, if successful, will considerably augment the Hipolito F. Garcia Courthouse/Post Office, while simultaneously providing an opportunity for H.E.B. to be a component of greater economic and development activity in the area.

Through this project, the Greater Southwest Region of GSA will practice managing its assets in a more comprehensive manner. Rather than merely asking the typical Retention-Disposal question, we delve deeper into the asset mix within a community to ask the question, "How can we leverage an under performing and/or under utilized asset for the acquisition and benefit of other assets?" This innovation at

its core will initially be applied to two GSA owned assets, the Courthouse and the Arsenal site. It has the potential to positively impact the entire portfolio.

Some benefits to be realized:

- GSA will obtain a much needed parking garage to support the soon to be renovated Courthouse. The addition of this garage will dramatically increase the draw of new customers to occupy the facility.
- H.E.B. will benefit by receiving fee title to the GSA Arsenal site, which is adjacent to their headquarters. With this site, the H.E.B. can offer a generous increase in available parking for its employees and customers, ushering in greater economic activity and development to the area.
- The City of San Antonio's King Williams Historic District will benefit by no longer having their streets encumbered by H.E.B. employee's cars, but by citizens and patrons of the historic district.
- Jobs will be created to design and build the parking facility.

While the project is not yet complete, essentially its implementation will mean the successful leveraging of an under utilized asset for the benefit of another. The definitive success will be a healthier, more profitable portfolio and the birth of a new GSA practice.

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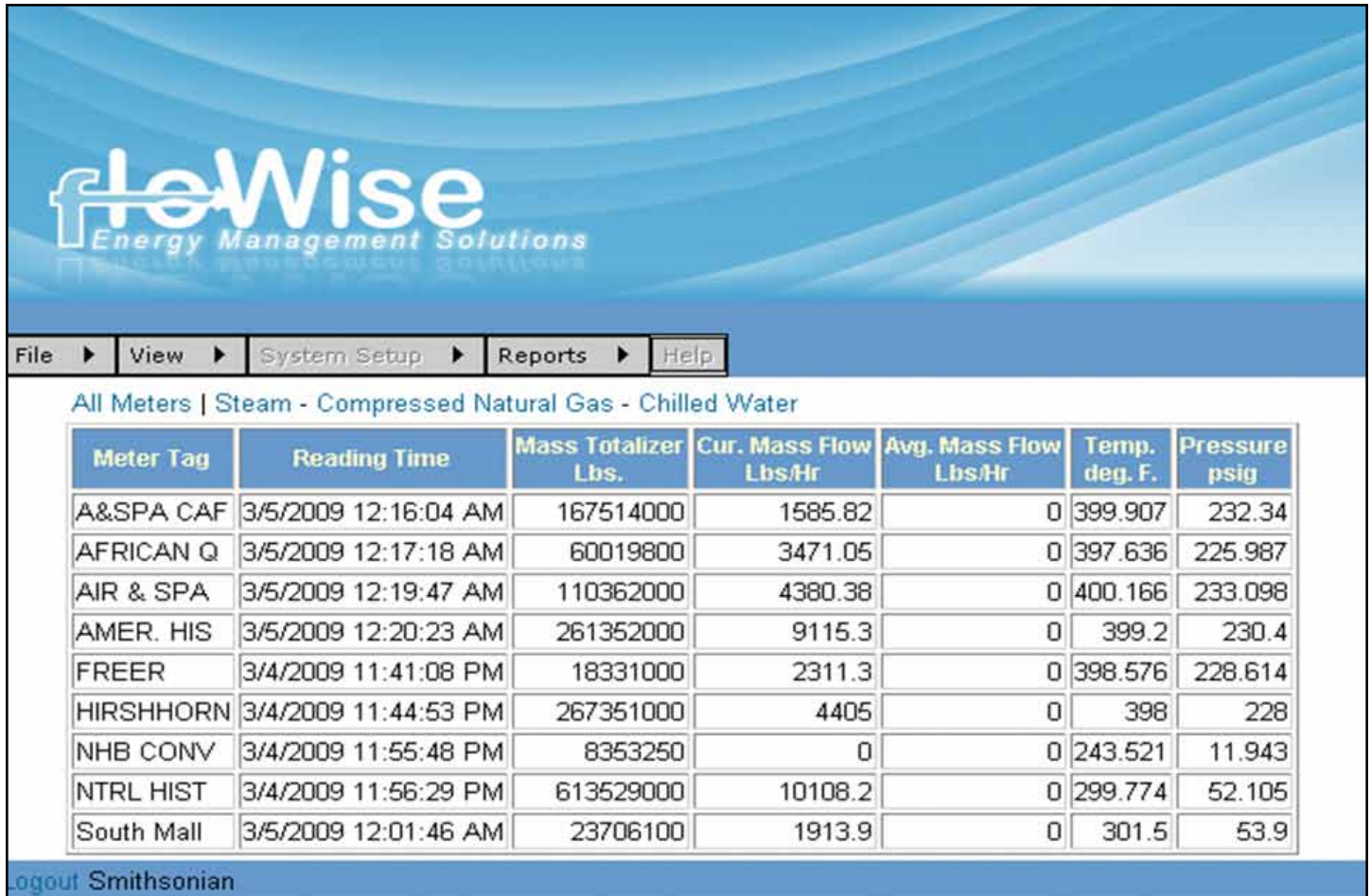
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# HOTD Empowers Customers with Web-Based Energy Management



People practice better energy conservation when they have access to their current energy use data. With this goal in mind, the Heating Operations and Transmission Division (HOTD) launched the Flowise Energy Management Solutions Web Client System in January 2009, a move that made HOTD a technology leader in complying with the Energy Independence and Security Act (EISA) 2007 energy mandate.

The Flowise web-based application allows HOTD customers to efficiently monitor their energy use. Tied directly to the

existing meter data collection system at HOTD, it provides customers with near real-time energy flows, trend graphics, and energy consumption reports. All of these features supply timely transmission of energy use information that is useful in optimizing energy conservation at the building manager level.

HOTD provides steam and chilled water utility service to over 100 buildings for 68 customers in the central Washington, DC area, providing these customers with unique and immediate access to their utility usage encourages smart energy

Above: Energy Manager Web Client- Steam Main Display.

# Asset Management

management. As data is collected from the metering points, the website interface allows HOTD customers to see the latest utility meter data for steam (1 hour readings) and chilled water (15 minute readings). A graphics window allows the user to see steam and chilled water trend graphs with views for eight hours, three days, 30 days, and 180 days.

Also, the Flowise reports package includes daily and monthly consumption meter totals for steam and chilled water, and the system has a four-year average report function that compares the current monthly consumption to the previous four years' consumption.

Assuming HOTD customers achieve a 10 percent reduction in energy use as projected by the Federal Energy Management Program (FEMP) for having access to the near real-time utility information, initial immediate savings would amount to approximately \$6,000,000 per year. Total HOTD expenditures for the actual Flowise System were less than \$100,000.

In the past, HOTD conveyed meter data, trend graphics, and reports for steam and chilled water consumption directly to its customers via email or fax (as Adobe files or Excel spreadsheets), and only upon request. The immediacy of the Flowise system saves valuable time for both customers and HOTD staff.

To the best of our knowledge, the new HOTD Web-Based Energy Manager System is the only system of its kind and the only system that complies with the Energy Independence and Security Policy of 2007 for delivering steam and chilled water metering data to the customer at the building manager level. It offers a secure web portal for each individual account so that no private data can be compromised.

HOTD received encouraging feedback from customers who were included in the final beta testing of the software and the first release of the system. HOTD has held several training sessions on the use of the Web Client system, and program monitoring indicates that customers are pleased with the interface. The data, graphics, and reports to which HOTD allows each customer access include raw energy data organized in a user-friendly format. The data will be reviewed by HOTD for adjustments, if needed, in the rare case of meter errors or faults that may occur during a billing cycle.

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# Linking Strategy to Execution Prioritizes Region-Wide Efforts

## The Four Phases of LSE

Strategic Planning

“Setting the course”  
Occurs every three years

Annual Planning

“Selecting the NSPs”  
Occurs every year

Reporting  
& Adjustments

“How are we doing?”  
On-going throughout the year

NSP Intake

“Adding a new NSP”  
On-going throughout the year

The GSA Heartland Region Public Buildings Service created the strategic planning program Linking Strategy to Execution (LSE) to evaluate and prioritize non-space projects. Because these non-space projects use our limited human capital resources, it is important to prioritize projects to determine which is of highest value.

LSE helps address the strategic issues facing PBS. LSE includes the PBS mission, vision, and top strategies when assigning out projects. PBS has identified its top four strategies as culture; knowledge, skills, abilities; business process improvement; and information technology. Within

these strategies, the LSE program is designed to help answer the following questions, or issues.

- How do we develop a culture to foster and optimize engagement at all levels of the organization?
- How do we recruit and grow for the future?
- How do we optimize the technology and processes to enhance business productivity?

The LSE efforts support strategic planning by assigning specific projects to help accomplish these strategic goals. It ensures the region has enough capacity to complete core

# Asset Management

and strategic projects; it also monitors and reports progress against goals. There is also an included adjustment process if scope, timeline or resources change.

This program closed a critical gap. Organizational assessment and interviews showed holes in our planning process. Four themes were identified as needing improvement including clearly defined strategic planning, structured capacity planning, consistent non-space project management, and organizational understanding of roles and terminology.

LSE is the solution to bridge these gaps; it helps move us from a reactive, ad-hoc mode to a proactive, repeatable process. It defines a strategic planning process and facilitates our focus to the most important priorities. It also helps manage our non-space workload and identifies roles and responsibilities for each participant.

A valuable benefit of this process is increased engagement. Associates know why specific projects are important, and they have the opportunity to participate in teams to achieve these project goals and overall strategies. Management now knows where to focus its measurements and is better able to clearly communicate the region's strategies and goals to associates.

The program also brings greater operational consistency to the region and increased involvement – from the grass roots to the Board of Directors – every associate has the opportunity to participate in the strategic and annual planning.

Through collaboration, associates at all levels have determined the best plan for moving forward. It is this involvement of associates in our unique planning process that allows us to be confident that our region is actively collaborating to build trust and define our strategic direction – a collaboration that leads to success.

Success is measured both monthly and quarterly through upward reporting. Each project leader developed an initial project management and communication plan at the start of their project. This plan outlines the goals and expected outcomes of the project. Each month, these project leaders report upward to the program manager and to the Board of Directors to ensure they are staying within the scope of their plan.

In addition, the LSE program manager and all project leaders track the hours spent on various initiatives. Based on the total number of hours available and set aside for projects like these, the LSE program manager ensures all teams stay within the allocated hours. This resource allocation is reviewed each quarter. Should the scope, timeline, or allocated resources of a project need to change, the Board of Directors along with the program manager will discuss after a monthly or quarterly report. This frequent communication helps save project team time, taxpayer money, and helps engage both management and associates in the efforts of the program.

Finally, each strategy has annual and three-year goals to ensure the teams are making adequate progress toward the region's ultimate goals. These are tracked monthly and discussed at the executive leadership level.

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# St. Louis CAB Team Backfills Vacant Space



The Customer Asset Business (CAB) strategic planning program was created by the GSA Heartland Region Public Buildings Service (PBS) to prioritize territorial projects. The program also improves communications, encourages collaboration, promotes inter-regional consistency, and improves business processes.

CAB has five service delivery teams in the Heartland Region, which bring together subject matter experts from all PBS business lines to address current customer issues and

anticipate future needs. This collaborative environment helps PBS deliver customer-focused solutions.

In 2009, the St. Louis CAB team developed a CAB priority to backfill federal vacant space in St. Louis by developing a St. Louis Metro comprehensive portfolio strategy. A number of customer dynamics were affecting the St. Louis metro area market. In addition to impending vacancies at the Federal Records Center due to the base realignment and closure (BRAC) determination and National Archives and Records Administration (NARA) records storage requirements, the following customer trends provided major impact: U.S. Department of Agriculture (USDA) consolidation at Goodfellow, Veterans Administration expansion needs, NARA change in standards, and and Department of Homeland Security/Citizenship and Immigration Services (DHS/CIS) consolidation.

These challenges facing the Heartland Region could have an even larger impact down the road. The St. Louis Metro area ended FY07 with approximately 800,000 vacant rentable square feet (RSF) of vacant space in St. Louis federally owned buildings. If everything remains the same, in four years the BRAC and NARA standards will increase that vacant space number by almost 2 million square feet to 2.7 million RSF. This computes to a loss of approximately \$7.1 million in positive Funds from Operation (FFO) based on FY06 FFO numbers. It will have a huge impact on our Regional Office and GSA as a whole.

To offset this loss, the St. Louis CAB team assembled a team of experts with diverse backgrounds to develop a strategy to address this problem. The team created a strategic plan for Region 6 associates incorporating a draft Local Portfolio Plan (LPP) including overall customer growth trends for St. Louis from national and local market perspectives, possible backfill candidates (expansions/leases/outleases) and a marketing plan. Through this innovative approach, the team has been able to proactively approach backfilling vacant space, which saves the region, the government, and the taxpayers' money.



# Asset Management

With the help of the LPP, the CAB team has been able to analyze the market comprehensively. The St. Louis CAB continues to be proactive instead of reactive and pursues all opportunities to retain current tenants and backfill vacant space. This priority focused on working closely with St. Louis customers to address their strategic space needs and marketing the benefits of our existing federal space inventory throughout the St. Louis market. The priority has significantly changed our St. Louis inventory. To date in St. Louis, there are 544,479 RSF which includes 62,230 RSF of committed space and 33,388 RSF of disposal space. A few of the significant examples of the team's work include:

- Goodfellow, Building 104, now has new U.S. Department of Agriculture (USDA) and Veteran's Affairs (VA) tenants backfilling over 136,742 RSF.
- Goodfellow, Building 105, now has new USDA tenants backfilling over 213,887 RSF.
- Goodfellow, Building 107, now has U.S. Probation backfilling over 17,061 RSF.
- Goodfellow, Building 103E, now has U.S. TRANSCOM backfilling over 13,495 RSF.
- Veterans Affairs, Occupational Safety and Health Administration (OSHA) and DHS backfilling over 40,000 RSF.
- Thomas F. Eagleton Courthouse now has U.S. Courts backfilling over 11,000 RSF.

This innovation has especially helped the region's performance measures deal proactively with vacant space. This plan helps analyze where the assets in St. Louis currently are and where they will be in the future, which can be reported on to the regional office through the performance measures. GSA has become more proactive in meeting our customer needs due to this innovation, and the region has found a way to look ahead at vacant space, rather than just reacting.

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# St. Louis CAB Team Project Surveys Success

BA54 / BA80 Project Survey - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address [http://www.surveymonkey.com/s.aspx?sm=HCJB6QYprv4\\_2bUH\\_2bbuzVnrw\\_3d\\_3d](http://www.surveymonkey.com/s.aspx?sm=HCJB6QYprv4_2bUH_2bbuzVnrw_3d_3d)

**GSA**  
Heartland Region

BA54 / BA80 Project Survey

1. Name: (optional)

2. Project Number:

3. Project Title

4. What type of project are you rating?

BA54

BA80

Both

Neither

Other (please specify)

Next >>

The best team requires every person's commitment and participation. That's why the Customer Asset Business (CAB) team in St. Louis, Mo. developed a survey for team members to assess each other during project delivery.

Members of the St. Louis CAB team developed a priority to implement an internal process for better delivery of customer driven BA54 and BA80 projects to include a scorecard and tracking of action plans. The survey tracks the quality and

accountability of the team. Some of the questions in the survey address the communication of project status and financial changes. By having each team member fill out the survey, future project costs and fees will be eliminated and delivery will be timelier.

The GSA Heartland Public Buildings Service created the CAB Program to improve communications, encourage

*Above: Screenshot of CAB Team Project Survey.*

# Asset Management

collaboration, promote inter-regional consistency, foster strategic thinking and institutionalize business process improvement.

CAB has five market-based service delivery teams in the Heartland Region. The teams bring together subject matter experts from all PBS business lines to address current customer issues and anticipate future needs and changing conditions. This collaborative environment helps PBS deliver customer-focused solutions.

A summary of the survey is listed below:

- Did you receive a full project schedule at the beginning of the design?
- Did you receive schedule updates throughout the entire project?
- Please check one choice for each statement based on the ratings below.
- Weekly coordination meetings met my expectations
- Customer interface communication were acceptable
- I was properly included throughout the project
- I received timely responses to resolve issues
- Financial transaction was performed timely
- A sincere effort was made to solve problems/concerns
- Field office actively participated in project development and execution
- AETask order was prepared timely and accurately reflected the required scope of work
- AE provided timely service, accurate drawings and specifications and sound advice on problem resolution
- Contracting was timely in soliciting project and actively participated in problem resolution

- PMD had sufficient personnel assigned to this project to insure adequate construction oversight and timely problem resolution
- Meeting minutes were comprehensive, timely and accurate
- Outstanding issues were resolved, subsequent to substantial completion, in a timely manner

To accompany the survey, a PowerPoint was also created by the team detailing BA54 and BA80 project roles and responsibilities and how to use the Heartland Region's Realty Process Improvement matrix for tracking and documentation.

By asking the right questions and holding team members accountable, this new process created an innovative solution to gathering feedback and improving project schedules.

Although a simple project, this survey embodies the idea of accountability and teamwork. For a team to truly succeed, each member must work toward the team's mission and achieve what is expected. The survey is an up-front way of looking at the business and improving a team's performance each and every time. Because of the simplicity, this could be replicated across division lines and in other agencies.

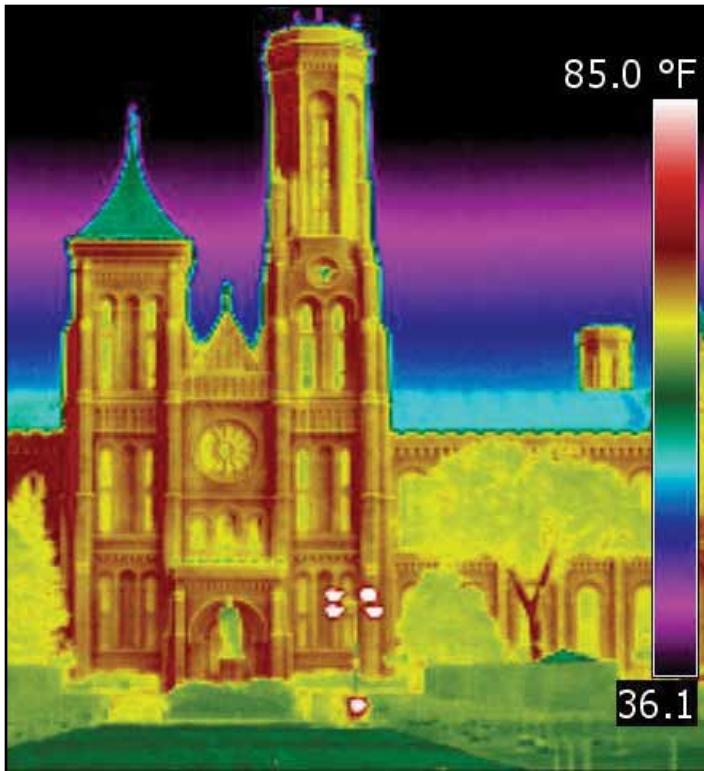
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# The Smithsonian Institution's Reliability Centered Maintenance Approach



The Smithsonian Institution (SI) contains 12 million square feet located within 769 maintained facilities and structures of varying size, age and architectural variety in eight states, Washington, D.C., and Panama. Our facilities include 19 museums, nine active research centers with laboratories and dormitories, state-of-the-art storage and restoration facilities, and venues for public and private gatherings.

A majority of SI equipment assets are operating past or fast approaching the end of their life cycle, with an average age of 30 years. The SI has had a depleted work force and has not received maintenance budget increases great enough to meet maintenance needs. To head off the catastrophic consequences of multiple equipment failures, the SI defined a four point maintenance program that first and foremost is reliability centered maintenance (RCM) based, included preventive maintenance, periodic testing and inspection (PT&I), and programmed maintenance. RCM focuses on

identifying and establishing the operational, maintenance, and capital improvement policies that will manage the risks of equipment failure most effectively.

RCM was developed by the airline industry in the 1960s to reduce the cost of their strategy of periodic overhaul coupled with costly repairs and improve reliability and safety. Airlines found that performing maintenance just because the calendar says you should did not improve safety records or reliability, and in some cases introduced more failure. Instead they developed what is now called RCM. Determine the functions of the asset; study how an asset fails, what causes those failures and the consequences of each failure. A maintenance strategy including tasks and intervals, and possible workarounds if there are no preventive tasks to be found is developed from those studies. RCM is kept live throughout the life of the equipment, where the effectiveness of the maintenance is kept under constant review and adjusted as conditions change. Other industries adopted RCM after noting its success with the airlines.

Though SI does not have a tangible product or production bottom line as other industries have, SI does produce a tightly controlled environment that is critical to protecting our one-of-a-kind treasures of artistic, historical and scientific significance and adds to the enjoyment of its 25 million annual visitors. SI uses RCM technologies and analysis to maintain what we have as well as to commission new equipment and systems installed during repair, installed in new construction and installed as part of major renovation. SI's efforts ensure new equipment is installed properly including precision alignment of critical assets and is running at optimum efficiency.

SI also uses RCM to re-commission environmental systems to help keep them operating as close to original design parameters as possible. SI's work includes an extensive point-to-point survey and recommendations to return the system to design operation. This work directly results in significant

# Asset Management

improvements in SI's ability to keep environmental conditions in its facilities within prescribed tight operating bands to protect its artifacts.

If performed properly, RCM will maximize safety and environmental health. It can reduce overall maintenance cost and/or improve realized reliability/availability, provide a documentation trail for maintenance program changes, provide a vehicle for continuous improvement of the maintenance program and equipment performance. Most industries using RCM chose to do so to reduce costs. They focus their maintenance only on those assets that have the greatest benefit or detriment to their finances. Because this practice dominates the RCM world, few industries have chosen to apply RCM to overall facilities maintenance. Using RCM facility-wide, along with our development and implementation method is the originality in SI's adoption of RCM.

The principal benefits SI has realized since implementing RCM at SI are:

- Having a centralized database of assets in SI's CMMS; SI now knows what it has, the condition, and asset maintenance history
- Developing a more knowledgeable, better trained, and efficient maintenance staff
- Reduced overtime spent on repairs of failed equipment
- Increased systems and asset reliability
- PM optimization; using data collected from PT&I tasks SI now performs PMs when test condition indicate SI's should instead of when the manufacturer thinks SI should
- Reduced maintenance backlog
- Increased understanding of why failures occur
- One standard operating procedure for maintenance across SI

- Ability to provide accurate data
- Improved decision making processes
- Improved energy efficiency
- Measurable financial savings
- Improved communication and flow of information

SI has demonstrated to oversight agencies that it is committed to RCM and that it is a holistic approach to facilities management. SI's approach enables it to determine all facility requirements and effectively plan and direct where resources go. As an example, the facilities maintenance program requirements developed from our RCM analyses are rated against a priority matrix (endorsed by the GAO). This prioritization allows SI to develop five-year capital and maintenance spending plans and direct available resources to correct our most urgent facilities problems. The increases in annual appropriations that SI has seen have been focused on top priorities with immediate results.

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# FAA Program for Infrastructure Savings by Reducing Real Property Asset Costs for Land and Building Space



On February 1, 2005, the FAA awarded a contract to Lockheed Martin Corporation for the performance of operational air traffic advisory services provided by 58 Automated Flight Service Stations (AFSSs) throughout the continental United States. In October 2007, the contractor developed plans for consolidating AFSS services into fewer facilities. As a result, the FAA developed plans for discontinuing operations at 42 AFSS locations, the majority of which were housed in leased buildings at airports.

The size of the buildings ranged from 8,000 to 17,000 square feet of space containing a combination of administrative and operational space. These AFSS facilities are very complex with technical operations involving communications and weather broadcast information to pilots, remote monitoring of navigational facilities, enhanced telecommunications, and battery systems and engine generators for providing backup power. Many of these buildings also housed equipment and personnel unrelated to the AFSS mission.

The FAA established a specific goal to reduce AFSS space from approximately 510,000 square feet to 150,000 square feet by September 30, 2009. This was an ambitious goal considering the technical nature of both decommissioning and disposal of AFSS equipment while continuing to operate and maintain other equipment also located in the AFSS space. In addition,

there were a number of technicians at each location that had a continued need for space.

To meet the space reduction goal, the FAA established a network of teams across the disciplines of flight services operations, engineering, technical systems, logistics, real estate, finance and budget in FAA Headquarters, Service Areas, field offices, and facilities. Activities of these teams included:

- Conducting surveys of AFSS facilities
- Performing analyses and determining viable options including vacating entirely or retaining reduced amounts of space for remaining non-AFSS equipment
- Developing costs for viable options to include relocation of electronic equipment to other locations and moving technicians to alternative space
- Making sound recommendations that were both cost-effective and operationally sufficient
- Developing reliable funding estimates
- Execution of the recommended alternatives in a timely manner. The FAA conducted a cost and operational analysis to determine whether it would be more cost effective and technically feasible to retain personnel and non-AFSS equipment in reduced space at each AFSS

# Asset Management

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building or relocate to alternative space. This resulted in decisions at each of the 42 AFSSs for vacating buildings entirely or renegotiating leases to retain smaller amounts of space required for continued operations of critical equipment unrelated to the AFSS mission.

As a result of this downsizing, the FAA will realize a \$3,433,083 annual savings in lease costs. The implementation of this goal required coordination at all levels within FAA Headquarters, Service Centers, field offices and facilities regarding management, engineering, logistics, financial, and real estate disciplines.

By September 30, 2009, the FAA expects to have reduced AFSS leased space from 515,766 square feet to approximately 115,000 square feet with a resulting estimated annual savings of \$3,489,935 per annum.

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# Sustainability

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This award recognizes exemplary initiatives, innovations and projects in Sustainability and communicates these cutting-edge ideas to agencies striving to improve their real property management. Achievements are related to sustainable business practices in the area of green buildings and workplaces, such as developing healthy, high-performance work environments and using environmentally responsible materials, methods and principles. Practices include alternative work strategies such as telework.

# Smithsonian Institution Fast-Track ESPC



NORESCO, LLC and the Smithsonian Institution met a challenging goal by providing a new, energy efficient chiller plant for the National Museum of American History, in service only nine months after contract award. Construction was performed simultaneously with the major architectural renovation of the museum, and addressed multiple challenges.

The project was the first Energy Savings Performance Contract (ESPC) executed at a Smithsonian Institution museum. It incorporated other energy efficiency

improvements including a domestic hot water system upgrade, upgrade of approximately 15,000 lighting fixtures, and energy-saving alterations to the chiller plant and major air-handling systems in the National Museum of Natural History.

Addressing a known and important infrastructure need helped secure internal support and fast approvals for the project, which contributes significantly to meeting energy and environmental goals.

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*Above: National Museum of American History Cooling Tower (June 2009).*

# Sustainability Winner

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Multiple elements of the project and SI facilities management practices address quality control and help ensure that new systems will perform as expected.

The National Museum of American History closed to the public on September 5, 2006 for major architectural renovations.

To make a project that would be entirely self-funded through guaranteed savings, and help offset the high initial cost of the new chiller plant, more rapid-payback projects were needed. The team investigated and identified additional projects including energy efficiency upgrades of approximately 15,000 lighting fixtures, and energy-saving alterations to the chiller plant and major air-handling systems in the National Museum of Natural History.

In April 2008, new cooling towers, pumps and the first of four new chillers were in service. By June 2008, all four new chillers were in service and the plant was capable of meeting current and anticipated cooling loads.

The new chiller plant is designed with redundancy and other features to provide higher reliability than the old chiller plant. It allowed the removal and disposal of more than 8,000 lbs. of

obsolete, ozone-depleting refrigerants, which were used in the old chillers. It provides 3,000 tons of cooling capacity to accommodate existing and anticipated cooling loads in the museum. High-efficiency features include a chiller with a variable speed motor controller, variable-flow primary chilled water pumping, and free-cooling capability using cooling towers and a heat exchanger.

Lighting upgrades in the project included special lamps selected to reduce exposure of sensitive collection materials to damaging ultraviolet radiation.

By June 2009, implementation was complete on the full scope of the project at both the National Museum of American History and the National Museum of Natural History.

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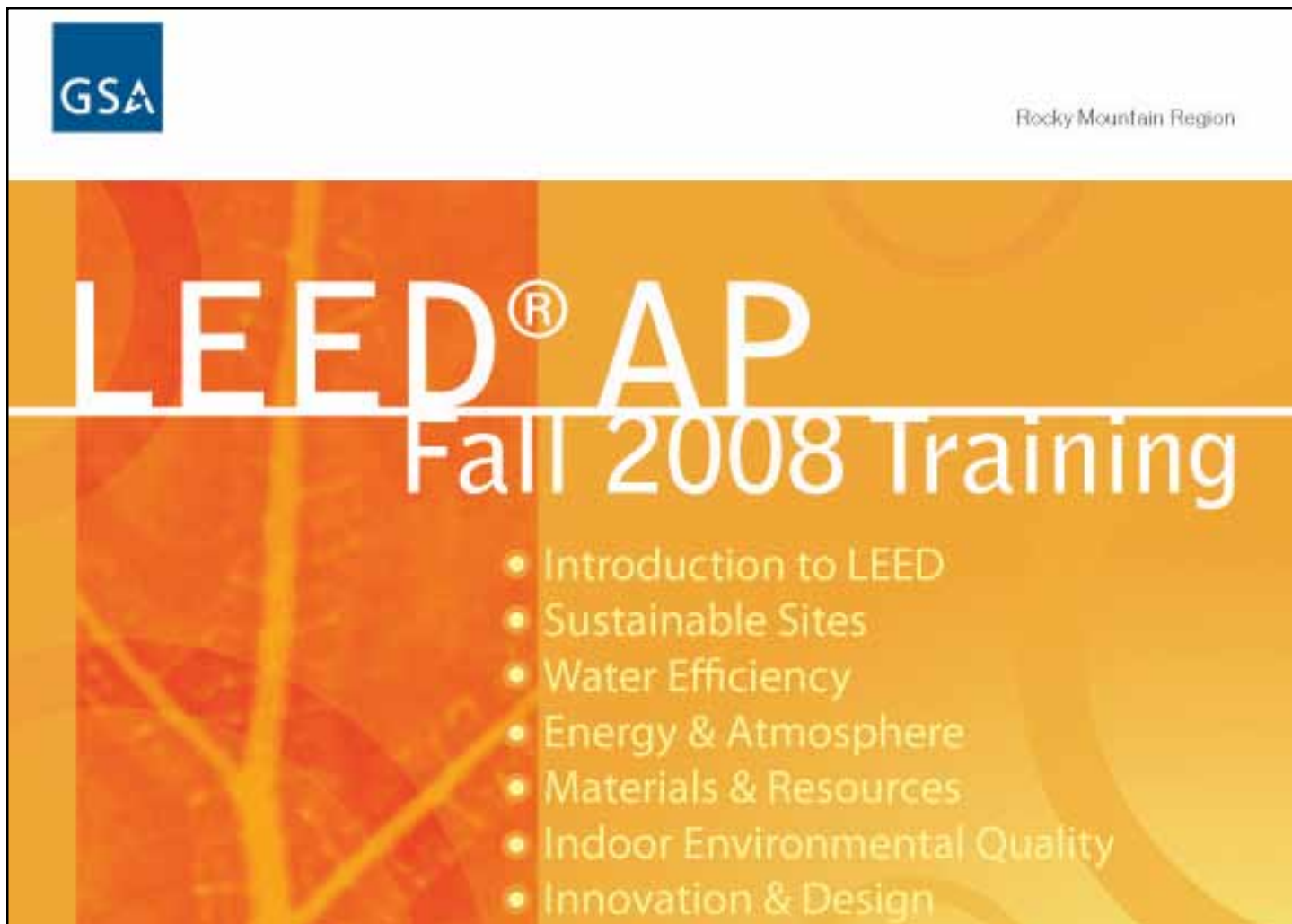
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# LEEDing the Way in Sustainability – R8's LEED Accredited Professional Training Program



In 2008, GSA's Region 8 implemented an in-house Leadership in Energy and Environmental Design (LEED) training program. The program has had two successful courses and now has 25 LEED Accredited Professions (APs). Along with meeting federal laws and goals, the program is empowering associates to improve the economic and environmental performance of building inventory. Since the development of the program, Region 8 has had the most LEED APs nationally than other GSA regions.

Integrating sustainability into all aspects of business is one of GSA's and Region 8's top goals. The two drivers for sustainability factoring into projects at GSA are

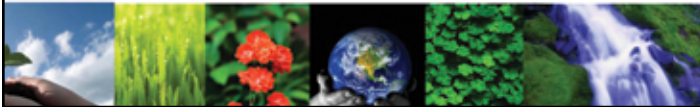
- Federal laws and regulations set forth by the administration
- The impact buildings have on the environment

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*Above: LEED® Training outline. Opposite: Excerpts from LEED® Study Guide.*

# Sustainability Special Achievement

## LEED Accreditation Exam Training –Indoor Environmental Quality



Buildings have a significant impact on the environment and federal agencies must meet the environmental and sustainability requirements outlined in Executive Order 13423: Strengthening Federal Environmental, Energy and Transportation Management, the Energy Independence and Security Act (EISA) of 2007 and the Energy Policy Act of 2005 as well as the High Performance and Sustainable Buildings Guiding Principles. This creates an opportunity for the federal government to increase both the economic and environmental performance of its buildings.

To accomplish the integration of sustainability into all aspects of business, GSA adopted the Leadership in Energy and Environmental Design certification system to measure the sustainability of its buildings. All federally owned and leased new construction and major renovation projects must achieve (at a minimum) a LEED Silver Certified Rating.

In an effort to meet GSA's goal to integrate sustainability into all aspects of its business including design, construction and operations while meeting GSA's LEED requirements and

### EQp2: Environmental Tobacco Smoke (ETS) Control

- Minimize exposure to ETS.
- Prohibit smoking indoors or control the ventilation air in smoking rooms.
- Smoking areas should be isolated from non-smoking areas and have separate ventilation systems to avoid the introduction of ETS contaminants to non-smoking areas.
- RP= Owner



#### Requirements (options):

- - **Prohibit smoking** in the building.
  - - **Locate exterior smoking areas 25 feet** away from building entries.
- OR
- - **Designate smoking** areas in the building.
  - - **Locate exterior smoking areas 25 feet** away from building entries.
  - - **Directly exhaust** to the outdoors, **deck-to-deck** partitions, operate at **negative pressure**.
  - - Perform a **pressure test**.

providing sustainability expertise to our customers, Region 8 developed a LEED Accreditation Professional (LEED AP) training program.

LEED APs are building industry professionals who have demonstrated a thorough understanding of sustainable building and the LEED Green Building Rating System. The goal of the training program is to prepare candidates from multi-disciplinary backgrounds to successfully pass the LEED AP exam. This innovation is the only program of its kind in GSA and the federal community.

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# Heartland Realty Helps SSA Stay Green Within Budget



In 2007, the GSA Heartland Public Buildings Service Realty Services Division began delivery of a 23,522 usable square-foot build-to-suit lease building for the Social Security Administration in Wichita, Kansas

The project team embraced the goals of creating energy-efficient, environmentally-friendly buildings. The leasing team and building designers also had the objective of obtaining LEED® (Leadership in Energy and Environmental Design) certification with silver designation.

Due to the economy, all government agencies were operating under tight budgetary constraints, so the sustainability aspect of the project had to be financially feasible.

The project strengthened the commitment GSA made to the new mandate for federal agencies to design and construct LEED certified buildings. This direction raised the bar on the quality and efficiency of GSA buildings. All build-to-suit projects, whether small single-agency buildings or complex,

prospectus-level, multi-tenant, multi-floor projects, are encouraged to pursue LEED certification.

To meet the LEED objectives, materials were selected based on durability, regional source, and sustainable features such as recycled content and low emissions.

Between recycled material, energy savings and using local materials, the SSA project team found innovative solutions to reach the requirements to apply for LEED certification while saving the tenant money.

Cost was the main challenge facing the SSA project team. The team overcame this challenge by finding product substitutes that were environmentally friendly.

To achieve the points needed to attain LEED Silver, the team focused on using regional materials with some percentage of recycled content. Materials were used including carpet tiles that contain a special fiber technology that passes GSA

# Sustainability Honorable Mention



requirements for permanent stain resistance. The carpet and backing contain a total of 37 percent sustainable content, 35 percent pre-consumer recycled content plus 2 percent renewable content.

One particularly innovative feature of the project is the metallic wall tile used in the restrooms.

On the exterior of the building, there are signs and designated parking spaces for low-emitting and fuel efficient vehicles.

With a large or small budget, sustainable design can be attained. The Heartland Region has obtained LEED certification for several buildings in its region providing sustainability, quality, and efficiency.

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# Solar Electric Panel Installation U.S. Clarkson S. Fisher Courthouse Annex Trenton, New Jersey



The General Services Administration (GSA) Mid-Atlantic Region completed its first installation of solar electric panels at the Clarkson S. Fisher U.S. Courthouse Annex in Trenton, New Jersey. Trenton is the first solar array installation for GSA within the region.

The 196 solar panels were placed on the Courthouse Annex's seventh floor roof, and have an optimal capacity of 40 kilowatts. Between November 2007 and June 2009, the

solar panels produced 58,825 kWh of energy. This reduced the building's carbon dioxide emissions by 98,767 pounds. GSA anticipates cutting carbon dioxide emissions by 292 tons over the panels' lifetime. In addition, the solar panels reduced annual sulfur dioxide emissions by 71,183 pounds.

Installation of the solar panels demonstrates GSA's commitment to integrating energy saving tactics into effective business practices, while also providing important savings to

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*Above: Solar electric panel installation at the US Clarkson S. Fisher Courthouse Annex in Trenton, NJ.*



# Sustainability

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taxpayers. A website was developed in conjunction with the project in order to track the system as it produces energy. It tracks day-to-day and historical energy generation, as well as the amount of carbon dioxide avoided by utilizing solar energy.

As part of the American Recovery and Reinvestment Act (ARRA) of 2009, GSA has been tasked with developing public building projects that encourage long-term growth in energy efficient technologies, alternative energy, and green solutions. Several of the Mid-Atlantic Region ARRA projects are researching solar panels as an alternative energy use. The success of the Trenton project serves as an example of this important technology, providing lessons learned for future solar array installation projects.

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## Cool Roof Project Team Keeps Waste from Landfill



The entire roof replacement project for the Prevedel Building in Overland, Mo. epitomizes the principles of sustainability. The project team adopted sustainable principles, reduced costs and dramatically minimized the impact of the roof on the environment and the landfills. The design incorporated three key factors of sustainable design: the impact that the roof will have on the environment, energy efficiency, and reduced

maintenance over the life of the building. Every stage of the project was environmentally friendly; the project saved waste from landfills during the construction and also prevented future waste by choosing products to extend the roof's life. The team carefully considered the impact of old and new roofing products on the environment, and specifically the impact on landfills. The 56,000 square foot total roof system

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*Above: Removal of existing roof membrane.*

# Sustainability

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replacement project included the roof replacement of the entire main roof area and two penthouse roofs. The priority was to recycle as much of the existing material as possible to completely eliminate the waste that would have normally gone to the landfill.

It was the non-wasteful construction process that made this project especially sustainable and innovative. The team worked to recycle all existing materials and used roofing materials containing recycled material for the new roof. These choices led to an innovative energy efficient roof with a long life, thus furthering the waste prevention.

The new roofing achieved an Energy Star rating. In an effort to support waste and pollution prevention, the new roofing system is a “cool roof system” due to the solar reflectivity and emissivity. The materials used on the Prevedel Building have a reflectivity of 85 percent and an emissivity of 94 percent, which is 14 percent over the minimum. The “cool roof system” actually extends the roof’s expected life past that of traditional roofing. It will ultimately require less maintenance and materials over the life of the roof than most and will also contribute less waste into local landfills.

To further help replicate sustainable roof replacements, the Heartland Region is now making it a standard and goal to recycle all existing roofing materials when completing roof projects.

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# HOTD Cools Down Summer Costs to Save Over \$1.6M



In April 2008, the Heating Operation and Transmission Division (HOTD) began cost-benefit analyses toward capturing waste energy for producing additional power. Using both theoretical and actual performance data, HOTD introduced new operational guidelines that maximized the return on investment for cogeneration fuel and other associated costs.

HOTD provides steam service to over 100 buildings for 68 customers in the central Washington, DC area, and recently

celebrated the 75th anniversary of the HOTD Central Heating Plant. Serving government agencies and other organizations such as the Smithsonian Institution and the National Gallery of Art, HOTD's Central Heating Plant uses clean-burning natural gas and has the capacity to supply well over one million pounds of steam per hour to its customers in the monumental buildings they occupy.

Energy performance evaluation over the summer of 2008 produced an average savings of over \$560,000 per month.

*Above: Gas turbine generator.*

# Sustainability

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The highest monthly savings was \$657,015 in July 2008, and the total net savings for the three-month summer period was \$1,690,637.

HOTD operations scheduled maintenance activities and other shutdown events of the turbine generators to reduce the amount of electricity purchased on days assigned by the power company for calculations of the Installed Capacity Obligation Charge (ICAP) rate. By running the generators on these days, HOTD reduced the demand capacity charges for 2009 year by \$563,600.

While analyzing performance and cost data for the cogeneration Boiler No. 5, HOTD minimized downtime and maximized the advantages of the heat recovery boiler system.

The installation of a new induced draft fan and high temperature exhaust ducting will greatly increase generator output.

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# Public-Private Partnership for Solar Power Facilities at NASA Kennedy Space Center



NASA's Kennedy Space Center (KSC) and Florida Power & Light (FPL) – the nation's largest renewable energy producer – have partnered to construct and operate the space agency's largest solar power generation facility to date, converting underutilized land into a source of clean energy for both NASA and Florida consumers.

The initiative was enabled by a combination of NASA's enhanced use leasing (EUL) authority and FPL's plan to build 110 megawatts of solar power generation to serve Florida customers under new clean energy legislation Florida adopted in 2008.

The project resulted from KSC's effort to identify alternative uses for 1500 acres of non-productive citrus acreage,

a remnant of early agricultural usage prior to NASA's acquisition of northern Merritt Island in the 1960s. The large majority of KSC's 139,000 acres is undeveloped wetlands and scrub habitat that comprise the Merritt Island National Wildlife Refuge. The citrus acreage, allowed for years to continue in production, has become unproductive and non-viable. Much of the acreage is now being over-grown with invasive species that are deleterious to adjacent natural habitats.

When FPL approached NASA to consider providing property for development of a solar power facility, NASA agreed to set aside about 100 acres of the citrus land for the project subject to completing an environmental assessment. KSC subsequently proposed that in lieu of land value payments,

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*Above: The one megawatt solar power facility built for NASA by FPL. Opposite: Artist rendition of the solar power facility.*

# Sustainability



FPL provide a separate one megawatt solar power facility to feed the space center's electrical system, thereby providing its first major on-site renewable energy production to cut KSC's energy costs and help meet Federal renewable energy mandates. The separate one megawatt facility for NASA will furnish about one percent of the KSC electric power demand, but will meet about half of its required target for use of renewable energy.

Under the agreement entered into by NASA and FPL, the company is providing \$6.36 million upfront to design and build the NASA facility in lieu of lease payments over the 30-year term of the out-grant. The utility will also operate and maintain NASA's solar power asset during that term. There are provisions to allow upgrading both facilities to new technology in the future, and for a doubling of output by expanding both the FPL and NASA facilities in a second phase.

The FPL 10-megawatt facility takes advantage of utility transmission lines already in place at KSC to distribute the energy into FPL's power grid, providing energy to power

approximately 3,000 homes. FPL estimates the plant will prevent more than 227,000 tons of greenhouse gas emissions from entering the atmosphere during the life of the project. According to the Environmental Protection Agency, that is the equivalent of eliminating the emissions from more than 1,800 cars every year.

FPL and prime contractor SunPower Corporation began construction on both facilities in June 2009. The facilities will be commissioned by year end. FPL and NASA KSC are engaged in discussions on other projects to convert underutilized space center property for use in producing clean energy commodities.

An innovative approach to and application of Federal authorities can help advance key national energy policies – in this case, a growth of renewable energy use by Federal power consumers – with resulting environmental benefits and a more efficient use of budgeted resources for energy costs. What's good for the environment can also be good for an agency's budget, as energy costs reduced can translate into available dollars for other agency mission needs.

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## contact

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# Jury Panel 2009

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## International

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