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Houston – we don't have a problem

Boeing's Houston site proves to be a triple performer when it comes to the environment

By Adam Morgan



Boeing's Bay Area Boulevard building now holds its LEED Gold and ISO 14001 certifications along with an ENERGY STAR rating, making it the first Boeing site to achieve all three environmental standards.

In a quiet, natural setting deep in the heart of Texas, a small group of Boeing employees spend the lunch break outside strolling alongside man-made ponds surrounded by tall Texas pines that provide shelter to several native wildlife including birds, squirrels, deer, frogs, and ducks.

This unique setting is the Bay Area Boulevard (BAB) building - the cornerstone of Boeing's Houston site. The 339,000 square foot building sits on a 21-acre lot tucked away amongst a natural, wildlife environment at the

border of metropolitan Houston and the wetlands of the Texas Gulf Coast.

Recognized in 2008 by the local ABC news affiliate as one of "Houston's Best Places to Work," the Houston site is viewed by many employees as a great setting to keep morale high in the midst of the fast-paced, bustling city life.

"The natural scenery of our Bay Area Building provides a unique work setting and is just one of the benefits of working for Boeing in Houston," said recent college graduate LaDonna Handugan, Systems engineer for Boeing's International Space Station program and

Community Involvement co-chair for REACH Houston. “This is a place where employees can see how important our environment truly is and the positive impact it can have on our daily lives.”

The employee action to preserve this environment received recognition recently when the Houston site achieved its LEED® and ISO 14001 certifications and its ENERGY STAR labeling for the Bay Area Boulevard building – making it the first Boeing building to achieve LEED Gold status for existing construction and the first site to carry all three of these major environmental standards.

“Achieving these certifications is a major accomplishment for our site and it could not have been done without the dedicated work force we have in Houston,” said Brewster Shaw, vice president and general manager for Boeing’s Space Exploration division and Houston site leader. “These certifications lay the foundation for continually improving our environmental performance for reducing pollution and waste, increasing recycling rates and improving energy efficiency. Most importantly, they ensure our communities and our customers know that we’re doing our part to protect our environment.”

Reaching this level of environmental achievement did not happen overnight.

“The BAB building was extremely well-kept and structurally sound, but we wanted to find ways to make the building operations more efficient without changing employee comfort,” said Bill Richard, Houston Site Services manager. “After we bought the six-story granite and glass building in 2004, we organized a planning team to begin looking into ways to provide a more comfortable work environment and minimize the building’s energy consumption.”

The team performed a total systems control retrofit from pneumatic

Employees from Boeing’s International Space Station program spend their lunch break walking along trails as part of the 21-acre property on which the site’s Bay Area Boulevard building sits.



(compressed air) controls to a web-based, direct digital building automation system for control of the building’s heating, ventilation and air conditioning (HVAC) and lighting systems.

By retrofitting the air conditioning and heating systems, along with installing more efficient lighting and automated controls, energy consumption at this facility was reduced by more than two million kilowatt hours annually, or enough electricity to power about 170 homes.

“Like much of the work we perform in Houston, the upgrades we’ve made to our building operations are on the cutting-edge of technology,” said Paul Diggins, Houston site director. “The systems we’ve installed, processes we’ve created, and efforts we’ve made can be easily implemented at sites across the company, as well as shared with other companies looking to realize the same benefits we’ve realized in



Rick Rivas, Boeing Site Services manager and Bill Richard, Boeing Site Services director, check a control panel for the Houston site's state of the art heating, ventilation, and air conditioning system. The system has helped the site save \$250,000 since its installation.

Houston. We've learned a lot about what is available and how to make it work and look forward to sharing that with others."

The benefits include upgrading light fixtures with high-efficiency bulbs and ballasts, and automating interior lights based on occupancy schedule. The controls are set so the lights power on during peak work hours and automatically shut off during non-peak hours. There is a telephone override system so employees can control the lights when working off-hours. The building lighting is divided into zones, each of which has an assigned code. If employees work outside peak hours, they can call a phone number, enter their area's code and expected duration for which they'll need light, and the lights will automatically come on during the set time.

"Many of our employees have really embraced this concept," added Richard. "If arriving during off hours, employees can call from the parking lot and the lights will be on when they get to their desk."

The exterior lights are controlled based on sunrise-sunset calculations with boundary schedules to minimize their use.

The building air conditioning control system is pretty smart too.

"The HVAC system actually learns over time and tunes itself to maximize efficiency by monitoring many variables such as heat loads from people and lights, outside humidity and air temperature, fresh air makeup, and supply air pressures," added Richard. "It is set to minimize any build up of carbon dioxide or 'dead air' throughout the building. The whole point is to provide a fresh, comfortable atmosphere in which to work while minimizing environmental impact and cost."

The system also incorporates a continuous Environmental Index (EI) grading of how well the space temperatures are being maintained as compared to their set points along with the carbon dioxide levels and air quality within the facility. The BAB building was

one of the first facilities in the world to incorporate the EI grading system.

During the environmental certification processes, the site received high marks for this cutting-edge system. The system has saved the site \$250,000 per year since it was installed in 2007.

The site also scored high for its recycling efforts, which includes recycling landscape debris at the 21-acre site.

Boeing's Houston site has more than 2,500 employees and serves as the official headquarters for Boeing's Space Exploration division, which includes Boeing's Constellation, International Space Station, and Space Shuttle programs. Combat Systems, Global

Services & Support, and Boeing Research & Technology are also represented at the site.

"Environmental stewardship is everyone's responsibility," added Handugan. "I'm glad to see our Houston employees, and company as a whole, taking action to preserve the resources and beauty we are able to experience today."

For more information on Boeing's environmental efforts, view the company's 2009 Environment Report at www.boeing.com/environment or visit the [Environment Information Center](#) on the Boeing intranet at <http://ehs.web.boeing.com/enviro/>.

Side bar

These three organization's certifications set the standard for the Houston site's future environmental efforts.

The U.S. Green Building Council's LEED green building certification system is the foremost program for the design, construction and operation of green buildings. The certification process reviews energy use, lighting, water, material use, and a variety of other sustainable strategies.

The International Organization for Standardization (ISO) 14001 environmental management system standard is a global standard – a common approach – to continually improve an organization's environmental goals for reducing pollution and waste, increasing recycling rates and improving energy efficiency.

ENERGY STAR – jointly sponsored by the U.S. Environmental Protection Agency and the U.S. Department of Energy – is dedicated to helping businesses and homeowners save money and protect the environment through energy-efficient products and practices. ENERGY STAR offers a proven energy-management strategy for companies by helping measuring current energy performance, setting goals, tracking savings and rewarding improvements.

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