The new LEED® Gold Department of Homeland Security facility in Omaha, Neb., balances security with energy efficiency while creating a comfortable environment for building users. Embedded security equipment in the building’s millwork permits a glass façade and more open appearance. Lightshelves and skylights further maximize the daylight introduced by the façade. The one-story building wraps around a central, secure open-air courtyard, bringing light to the inner workspaces and providing a private outdoor break area for employees.

The sustainable project will inform future efforts to reduce energy and water use in government buildings.

First impressions are powerful and nearly impossible to reverse. It takes most people mere seconds of meeting someone to start forming opinions about that person. Initial appearance, demeanor, mannerisms and body language all set the tone for future relationships and interactions.

The first impression of a building is powerful as well. One glance at a new structure reveals its appearance, demeanor and function. Even untrained eyes easily evaluate comfort, openness and purpose. Grocery stores, courthouses, office buildings and churches are all specifically designed and responsible for first impressions.

The U.S. Department of Homeland Security’s Citizenship and Immigration Service (USCIS) is mindful of the first impressions made on new U.S. citizens when they enter one of its facilities. It aims to create a first impression that reflects the country’s values, establishes a relationship of trust and openness and sets an example of freedom.

In their quest to provide dynamic, efficient service, the USCIS locates their offices in creative, innovative, sustainable and secure facilities.

Each day, USCIS employees receive 41,000 phone calls and serve nearly 12,000 customers in person at 87 offices nationwide. They process 30,000 applications for immigration benefits, issue 7,000 permanent resident cards, adjudicate 200 refugee applications, naturalize 3,000 new civilian citizens and process 27 new citizens into the U.S. Armed Forces. This challenge is not one that is taken lightly.
Durable, Healthy and Flexible
The USCIS office is the primary occupant of a one-story, 73,459 ft² facility on the Missouri River in Omaha, Neb. The Heartland Region of the U.S. General Services Administration oversaw the project, its first LEED Gold facility.

It consolidated immigration services from across the area into a welcoming and service-oriented building designed specifically to reflect the mission and values of the USCIS. The building is functional while still architecturally impressive.

The majority of the building is devoted to public, courthouse, detention or unoccupied space. The A high performance building skin combines insulated aluminum frames with low-e glazing.

Windows on both sides of the main lobby provide natural lighting.

Heck, we were green before green was cool.
For decades, Greenheck has focused on the environmental side of the building industry—developing reliable, energy-efficient products and systems to promote occupants’ health and comfort. As one of the first manufacturers of air movement and control equipment to join the U.S. Green Building Council, Greenheck is ready to provide products that support sustainable-design projects based on LEED certification guidelines. We help engineers, architects, contractors and owners succeed in their green initiatives, or any project.

Going green? Go Greenheck—visit our Web site or contact our representative nearest you.
occupied portion of the office space consumes about 75% of the gross square footage.

By incorporating sustainable features to produce a durable, healthy and flexible facility, the project team provided employees and visitors with the highest level of amenities. The project also overcame a classic design dilemma for federal facilities: the seamless integration of service and security.

Site Selection and Layout
Sustainability at the USCIS building began with site selection and site preparation. The building is located on a redeveloped brownfield site on the banks of the Missouri River, so a sediment and erosion control plan that exceeded the minimum local requirements was engineered before construction. The building was designed to supply natural light to most areas via windows, reflector skylights, lightshelves and vertical sun shading screens. Seventy-nine skylights, lightshelves and vertical surfaces. Collected water is first filtered to remove suspended solids before being treated in two 7,500-gallon tanks and stored in two 7,500-gallon tanks. The tanks supply water for landscape irrigation.

The USCIS building is another example of GSA’s commitment to improving the quality of federal facilities across the country. Viewed by many as the federal government’s landlord, GSA is one of the largest public real estate organizations in the world with an inventory of nearly 9,000 properties with more than 354 million ft² of rentable space across all 50 states, six U.S. territories and the District of Columbia. GSA has made sustainable design a priority because it helps preserve natural resources, spurs innovation and saves taxpayer dollars over the long run. Further investment in public buildings will do more of the same, while at the same time helping millions of unemployed Americans find work.

Energy efficiency and conservation are some of GSA’s top priorities. The federal government’s energy conservation program began in 1973. Since then, cost-avoidance and energy-conservation measures have delivered more than $2.25 billion in savings. Between 1985 and 2005, GSA reduced energy consumption in federal buildings by 30%, and the efforts are continuing.

The Energy Independence and Security Act of 2007 led to GSA establishing an Office of High Performance Federal Buildings to ensure all new buildings and major renovations are designed to reduce energy use. In February 2009, the American Recovery and Reinvestment Act was signed into law. It includes $4.5 billion to turn existing federal facilities into high performing green buildings.

As a leading procurement agency, GSA also provides federal agencies more than 10,000 green products and services, which help promote eco-friendly policies. These include everything from alternative-fuel vehicles to waterless urinals, which save 40,000 gallons of water per urinal per year.

The USCIS office operating costs are lower than the industry baseline for energy, water, waste, janitorial and grounds maintenance costs.

<table>
<thead>
<tr>
<th>Category</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Use</td>
<td>$2,252,228</td>
</tr>
<tr>
<td>Water Cost</td>
<td>$4,831</td>
</tr>
<tr>
<td>Energy Use*</td>
<td>$6,689 (ENERGY STAR® Score: 85)</td>
</tr>
<tr>
<td>General Maintenance Cost</td>
<td>$72,632</td>
</tr>
<tr>
<td>Sanitary Services Cost</td>
<td>$96,479 ($1.31/rentable square foot)</td>
</tr>
<tr>
<td>Grounds Maintenance Cost</td>
<td>$31,402 ($0.43/rentable square foot)</td>
</tr>
<tr>
<td>Solid Waste Generated</td>
<td>$3,200 ($0.03/rentable square foot, $6.67/occupant)</td>
</tr>
<tr>
<td>Quantity Recycled</td>
<td>24 tons (100% under baseline)</td>
</tr>
<tr>
<td>Operating Cost</td>
<td>$380,326 per yr or $5.18/rentable square foot</td>
</tr>
</tbody>
</table>

* Data are based on a 10-month period and calculated to estimate a 12-month average.
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Transportation
The architect worked with the city of Omaha to add two bus stops near the building. To encourage a physical and healthy lifestyle, the building includes bicycle racks and a fitness center with lockers and showers.

Accommodations also were made to encourage the use of green vehicles. Covered parking stalls are equipped with electric vehicle recharging stations. Parking stalls for carpooling and bus pooling are also available. Concrete, which reflects heat, is used in these areas in lieu of asphalt, which absorbs it.

Green Space
The site’s green space, which is larger than the building’s footprint, promotes a healthy lifestyle and reduces the heat island effect produced by many large developments. The building’s interior courtyard, which includes native vegetation, meets service and security goals.

Designers wrapped the building around a central courtyard, giving employees and guests a private, secure area for enjoying the outdoors during breaks. It provides wind protection as well as access to light and controlled views for large areas of the building.

The courtyard includes native vegetation, which helps reduce irrigation needs.

The courtyard provides daylighting to interior offices and gives employees a secure area for enjoying the outdoors. Seventy-nine percent of workspaces have access to views of the courtyard or exterior landscape.

Airtightness Testing - Not Just for Homes Anymore

Airtightness testing of homes has been around for more than 20 years. Various energy programs and fluctuating energy bills have provided homeowners an incentive to improve the airtightness of their homes. Energy tax credits can also be received by the homeowner but only if the house airtightness has been verified that it is less leaky after remodeling than before.

In England, airtightness testing of buildings over 10,000 square feet was the first regulation initiated to reduce energy consumption. Efforts to make commercial buildings more energy efficient in the U.S. has only recently been incorporated into various “green” initiatives. Tests of commercial buildings show that they tend to be more leaky than the average house, based on air leakage per square foot of surface area. That means that commercial buildings are less energy efficient than the average house.

To measure the actual airtightness of a large building means more air is needed to maintain a reasonable test pressure. The Energy Conservatory, a leader in airtightness testing, has kits available to directly measure more than 18,000 cubic feet per minute of air leakage. Multiple kits and fans can be used simultaneously to generate more air for accurate and reliable measurements of air leakage for testing before and after retrofitting.

For more information on multi-fan systems contact The Energy Conservatory at 612-827-1117 or visit our website at www.energyconservatory.com.
Energy Conservation

The USCIS building is 60% more energy efficient than an average office building of comparable size. A white ENERGY STAR®-rated building is having less of an impact on the environment.

Many of the materials used in the building are locally produced as well—including brick and certified paper products. Others are rapidly renewable materials, such as cork and bamboo flooring. Using materials with recycled content, such as paint, reduced building costs by 20%. All furniture is GREENGUARD® certified, and the building includes a designated area for storage and collection of recyclables.

During construction, more than 75% of construction and land-clearing waste was diverted from the landfill by recycling. Low-emitting materials were used in all interior finishes. Additionally, a two-week flush-out period was provided in the construction schedule to prevent offgassing contamination from the new materials.

The building has a no-smoking ordinance with designated outdoor smoking areas away from entrances. A ventilation system also includes a carbon dioxide monitoring system, which ensures a safe indoor environment.

The main lobby wall is made of bamboo, a sustainable material.

The electric boiler provides supplemental heat to the geothermal system during extreme winter weather.

The water furnace is heated by the geothermal wells.