LEED, or Leadership in Energy and Environmental Design, is an internationally-recognized green building certification system. Developed by the U.S. Green Building Council (USGBC) in March 2000, LEED provides building owners and operators with a framework for identifying and implementing practical and measurable green building design, construction, operations and maintenance solutions.

L E E D
Project
Profile

DINWIDDIE HALL

tulane university
new orleans, louisiana

Project Summary

Dinwiddie Hall is located on St. Charles Ave at one of the corners of Tulane University's historic front quad. Built in 1923, it was designed in an Elizabethan style of Alabama limestone, brick and concrete. The project addressed moisture intrusion and connected the building to the campus's chilled water system. (Cooling was previously provided by over 40 window air conditioning units.) The 45,000 square foot building is now home to the Department of Anthropology and the Middle American Research Institute. In March 2011 the building received Gold certification under the LEED standard for New Construction and Major Renovation, Version 2.2.

Preserving and Reusing Materials

Meeting LEED criteria provided an extra incentive to preserve the historic building's original materials. Hardwood floors, concrete floors, plaster walls, ceilings, wood doors, and transoms were saved and refinished as much as possible, maintaining a total of 51% of the original interior surfaces. The building's cypress wood windows were salvaged, refurbished on site, and re-used. Preservation efforts extended beyond LEED guidelines. For example, metal railings were added to the original handrails on the building's main staircase, meeting code but preserving the original features. The project also received credit for reuse of the original building's structure and exterior.

Recycling

During construction, 76% of the demolition and construction waste was recycled. Measured by cost, 12% of the material purchased for the renovation was recycled. Materials with recycled content include steel, metal stairs, metal framing, building insulation, ridge tiles, copper roofing and flashing, wood doors, fire rated glass, dry wall, floor tile, wall tile, ceiling tile, cabinet wood, and toilet/bath accessories. The building has recycling rooms on three floors for collection of paper, cardboard and bottles and cans.

Energy Efficiency

Several new tools and services were used to help ensure that the building is energy-efficient and comfortable. As the renovation was designed, a computer model was constructed to predict the building's future energy use and test alternatives that would reduce the building's energy use. The model estimates that the building will use 17.9% less energy than a baseline building, saving 14% on utility bills. Energy savings were achieved by selecting efficient HVAC equipment, such as an efficient chilled water pump and air handler fans. Daylight sensors dim the lighting when rooms have adequate natural light, and occupancy sensors turn off lights in empty rooms.

The building's energy systems were reviewed by an independent engineering team, called a Commissioning Authority, during design, installation, and initial operation. The Commissioning Authority helps identify issues in the mechanical and electrical systems before they become major problems. The Commissioning Authority also organized training for Facilities Services staff and recorded the training, to facilitate proper operation into the future.

PROJECT DETAILS

- Completed: November 2010
- Project Size: 45,000 sf.
- Total Project Cost: $9 million

Efficient Water Use

Inside the building, the use of low-flow fixtures is estimated to reduce water use by 35%. Most notable are the low-flow urinals, the first on campus, which use .5 gallons per flush. Outside the building, an irrigation system was installed to provide water as the plantings are established. The components were chosen for their efficiency and use controls that allow the irrigation system to be adjusted seasonally. Moisture sensors shut off the system if there has been sufficient rainfall.

Indoor Environmental Quality

The contractor was required to take proactive measures to protect the future indoor air quality, such as protecting the HVAC system from dirt and dust and protecting materials from moisture. All paints, primers, adhesives, sealants, and coatings such as wood finishes were screened to ensure that they meet low-VOC standards. The building has CO2 monitors to ensure that there is adequate fresh air in each room. Occupant surveys will check on the comfort of faculty, staff and students working in the building.

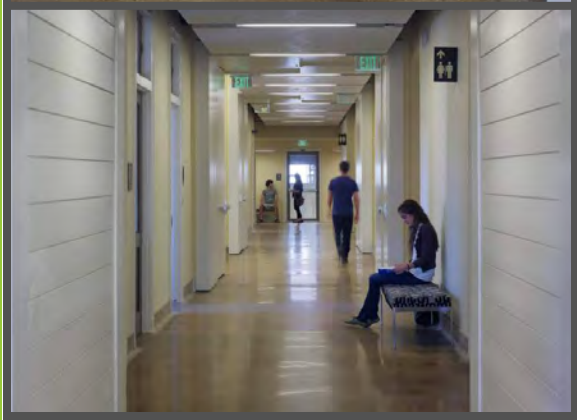
The LEED standard recognizes that adequate natural light is important to the comfort and productivity of occupants. In Dinwiddie Hall, the natural light from building's magnificent windows is enhanced by stairwells designed to allow light into the interior. Skylights original to the building were added back.

Transportation

Located on the historic St. Charles Streetcar line and in a dense university neighborhood, it is easy to walk or ride the streetcar to local restaurants and services. The building has a shower and bike racks for bike commuters. Access to hybrid cars parked in a neighboring lot is available to members of the WeCar car sharing program, offered through Tulane and Loyola Universities.

Landscaping

Tulane has a tree policy that outlines stringent measures to protect the health of campus trees during construction. Smaller trees and shrubs were relocated prior to construction. The site was replanted with a mix of native and adapted species. The paving is bright to reflect the sun and reduce the "heat island effect," the localized warming that occurs when dark surfaces absorb heat. Much of the paving also allows water to soak through, reducing the amount of runoff into storm sewers.



PROJECT TEAM

Architect: Waggoner & Ball Architects, New Orleans
Mechanical, Electrical and Plumbing: GVA Engineering
Construction: Citadel Builders
Commissioning: Thompson Building Energy Solutions, Baton Rouge
Energy Modeling: EMO Energy Solutions, Falls Church, Virginia
Office of the University Architect, Facilities Services, Office of Environmental Affairs
Photographs Courtesy of Waggoner & Ball Architects