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.

LEED® Project Profile

WEATHERHEAD HALL

tulane university
new orleans, louisiana

Project Summary

Weatherhead Hall is located on Tulane's historic main uptown Campus in New Orleans, Louisiana at the intersection of Willow Street and Newcomb Place on the Warren Quad. It is the second residential college to be built for undergraduate students, home to 260+ undergraduates, as well as a Faculty in Residence. The initial design of Weatherhead Hall was completed in August 2005; its construction was to begin the day Hurricane Katrina hit the Gulf Region. After Katrina, the team updated the design to align with new building codes, new expectations for flood mitigation, and to pursue LEED certification. The building is 80,747 square feet, divided between two wings, one four stories tall, the other five.

Energy Efficiency

As the building 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 building's most prominent energy saving feature is its use of occupancy sensors. Occupancy sensors are used to shut off lights in hallways, stairwells and rooms that are not in use. After careful consideration of their possible savings and impact on student life, the use of occupancy sensors was extended to set back temperatures in empty rooms and to control selected electrical outlets. Residents can use these outlets to reduce "vampire" electricity use--the draw of electricity by appliances that are not in use, such as chargers and game consoles. The model estimates that the building will use 14% less energy than a baseline building, and save 27.5% on utility bills. Utility metering installed in the building will be used to verify the energy performance and motivate future energy conservation.

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 and Housing staff and recorded the training, to facilitate proper operation into the future.

Efficient Water Use

Weatherhead Hall is home to the university's first dual flush toilets, which help conserve water by giving the user a choice between small flush (.8 gallon) and a large flush (1.6 gallons). The use of low-flow fixtures—also including showers, lavatories, and urinals-- in the building is estimated to reduce water use by 32%. 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.

PROJECT DETAILS

- Completed: August 2011
- Project Size: 80,700 sf.
- Total Project Cost: $26 million

Recycling & Sustainable Materials

Measured by cost, 19% of the material purchased for the renovation was recycled. Recycled material can be found in the building's gypsum board, rebar, cast-in-place concrete, structural steel, insulation, steel doors and frames, wood doors, concrete countertops, copper flashing, ceilings, linoleum floor, carpet and foot grilles. During construction, 48% of the demolition and construction waste was recycled. Recycling service for paper, cardboard and bottles and cans is provided for residents with a recycling room on each floor of each wing.

In selecting building materials, the contractor also made extensive use of materials with other sustainable attributes. Measured by cost, 35% of the building's materials came from within 500 miles of New Orleans. Much of the new wood purchased for the project was grown and harvested as certified by the Forest Stewardship Council (FSC), most notably the white maple doors.

Indoor Environmental Quality

The contractor was required to take proactive measures to protect the future indoor air quality inside the building, 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. (Volatile organic compounds or VOCs vaporize at room temperature and can be harmful to both installers and occupants.) Ample fresh air from outside the building provided to residents also improves air quality inside the building. Occupant surveys regularly check on the comfort of the building residents and address problems.

Transportation

A number of features help residents of the building go without a car or reduce their emissions from driving. The project tries to provide as much covered bike storage as possible, with covered racks providing 64 bicycle parking spots. An electric vehicle charging station has been installed in the nearby parking garage used by on-campus resident students. Building residents have exemplary access to public transportation, with 2 or more stops for 4 different bus and university shuttle lines located within 1/4 mile—a total of 374 transit rides a day pick up at these stops!

Landscaping

Tulane has a tree policy that outlines stringent measures to protect the health of campus trees during construction. Measures were taken throughout the design and construction of the building to protect the magnificent live oak tree outside the building's main entrance. The site was replanted with a mix of native and adapted species, rather than turf grass. The sidewalks are bright to reflect the sun and reduce the "heat island effect," the localized warming that occurs when dark surfaces absorb heat.

Courtesy Woodward Design Build

Courtesy Woodward Design Build

Prerequisites

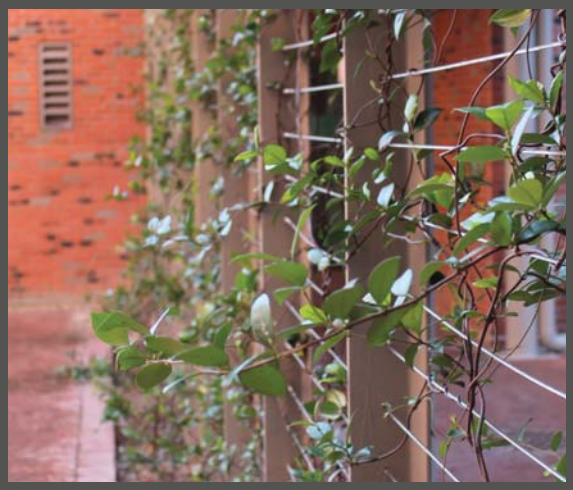
C	R	SSp1	Construction Activity Pollution Prevention
C	R	EAp1	Fundamental Commissioning of the Building Energy Systems
D	R	EAp2	Minimum Energy Performance
D	R	EAp3	Fundamental Refrigerant Management
D	R	MRp1	Storage and Collection of Recyclables
D	R	EQp1	Minimum Indoor Air Quality Performance
D	R	EQp2	Environmental Tobacco Smoke Control

Earned Points - 42

D	1	SSc1	Site Selection
D	1	SSc2	Development Density & Community Connectivity
D	1	SSc4.1	Alternative Transportation - Public Transportation Access
D	1	SSc4.2	Alternative Transportation - Bicycle Storage and Changing Rooms
D	1	SSc4.3	Alternative Transportation - Low-Emitting & Fuel Efficient Vehicles
D	1	SSc4.4	Alternative Transportation - Parking Capacity
C	1	SSc5.1	Site Development - Protect or Restore Habitat
D	1	SSc5.2	Site Development - Maximize Open Space
C	1	SSc7.1	Heat Island Effect - Non-Roof
C	1	SSc7.2	Heat Island Effect - Roof
D	1	WEc1.1	Water Efficient Landscaping
D	2	WEc3.1-2	Water Use Reduction (32% Reduction)
D	6	EAc1	Optimize Energy Performance (33.9% energy cost savings)
C	1	EAc3	Enhanced Commissioning
C	1	EAc5	Measurement & Verification
C	1	MRc4	Recycled Content, 10% (18.9% achieved)
C	2	MRc5	Regional Materials (35.4% of materials by cost produced within 500 mi)
D	1	EQc1	Outdoor Air Delivery Monitoring
D	1	EQc2	Increased Ventilation
C	1	EQc3.1	Construction IAQ Management Plan - During Construction
C	1	EQc4.1	Low-Emitting Materials - Adhesives & Sealants
C	1	EQc4.2	Low-Emitting Materials - Paints & Coatings
C	1	EQc4.3	Low-Emitting Materials - Carpet Systems
C	1	EQc4.4	Low-Emitting Materials - Composite Wood and Agrifiber
D	1	EQc6.1	Controllability of Systems - Lighting
D	1	EQc6.2	Controllability of Systems - Thermal Comfort
D	1	EQc7.1	Thermal Comfort - Design
D	1	EQc7.2	Thermal Comfort - Verification
D	1	EQc8.1	Daylighting & Views - Daylight 75% of spaces (76% achieved)
D	1	EQc8.2	Daylighting & Views - Views for 90% of spaces (98% achieved)
C	1	IDc1.1	innovation in Design - Building Envelope Commissioning Strategy
C	1	IDc1.2	Innovation in Design - Green Cleaning
D	1	IDc1.3	Innovation in Design - Exemplary Performance: SSc4.1 Alt. Transportation
C	1	IDc1.4	Innovation in Design - Public Education
C	1	IDc2	LEED® Accredited Professional

LEED Certification Thresholds

CERTIFIED - 26+ pts. SILVER - 33+pts. GOLD - 39+pts. PLATINUM - 52+pts.



PROJECT TEAM

Architect: Hanbury Evans Wright Vlattas + Company, Norfolk, VA
Local Architect: John C. Williams Architects, New Orleans, LA
Mechanical, Electrical and Plumbing: GVA Engineering, Metairie, LA
Construction: Woodward Design+Build, New Orleans, LA
Commissioning: Thompson Building Energy Solutions, Baton Rouge, LA
Energy Modeling: Hanbury Evans Wright Vlattas + Company, Norfolk, VA
Capital Projects, Facilities Services, Office of Environmental Affairs, Office of the University Architect