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

YULMAN STADIUM

Tulane University
New Orleans, Louisiana

Project Summary

Yulman Stadium is located in the athletics precinct of Tulane University's uptown campus. It connects to the existing Hertz and Wilson Centers to provide a signature backdrop for a new athletics quadrangle. Sensitivity to the surrounding neighborhood and contextual conditions was paramount and influenced design decisions relative to architectural massing and material expression. The stadium has a capacity of approximately 30,000. The design and construction of the stadium followed the university's "Green Building Design and Construction Standards and Guidelines," with the goal of achieving certification under the U.S. Green Building Council's LEED Green Building Standard for New Construction.

Efficient Water Use

To reduce water usage in the stadium, a few different tactics were used. Low-flow water closets, urinals, and aerated faucets in all the bathrooms save an estimated 222,450 gallons of water each year. The stadium's water use is 38% less than a comparable stadium with average fixtures. An efficient irrigation system is equipped with an ESP-Me Controller, which has rain sensors and seasonal features and can be manually manipulated to also promote water efficiency.

Additionally, the main field and practice fields, which are artificial turf, have drainage systems that slow the rate of storm water run-off. Most of the stadium's storm water is directed to an underground rain water storage system located underneath the practice field. This system has earned Tulane's first LEED credit for the management of stormwater quantity.

Energy Efficiency

Energy efficiency was a big factor in the design process. The architect created a BIM model and using clash detection software was able to create an ongoing energy model in order to ensure the lowest levels of energy use. This energy model predicts that the stadium's energy cost will be 19% lower than a comparable stadium built with average equipment. The stadium uses a variety of light levels to cut back on energy use, as well as relying heavily on natural light when possible. These light levels are determined by the time of day, activities taking place, and various other factors. Occupancy sensors are also used in the project to limit energy waste. The stadium field lighting is specifically designed to limit light spillage onto the surrounding neighborhood.

A Commissioning Authority was hired to review the design and installation of the stadium's energy-using systems. He also ensured that facilities services staff received training on how to properly use and maintain these systems. Additionally, a two year renewable energy contract was engaged to provide at least 35% of the building's electricity from renewable sources.

PROJECT DETAILS

- Completed: August 2014
- Project Size: 30,000 capacity, 5,000 sf multi-purpose center and 15,000 sf suite level
- Total Project Cost: $73 million

Recycling & Sustainable Materials

The new stadium uses materials with recycled content and regional materials. Measured by cost, 39% of the material used has recycled content and 48% of the material was extracted and manufactured within 500 miles. A Game Day Recycling Operations plan was developed with the Office of Sustainability and Facilities Services staff to divert as much game day waste as possible from landfills. Nearly every trash can is paired with an attractive, matching recycling container for bottles & cans. Recycling is readily available near all concourse entries, major entrances and exits, as well public gathering spaces.

Indoor Environmental Quality

The contractors used low-emitting materials in the construction, such as low-VOC paints, primers, adhesives, sealants, composite wood, flooring systems, and formaldehyde-free composite wood and agrifiber products. The contractor developed and followed a Construction Indoor Air Quality Management plan to help ensure excellent levels of indoor air quality. The plan included measures such as HVAC protection, cleaning, and protecting materials from moisture from delivery to installation. The ground level open air concourse and upper level open air concourse are both cooled utilizing large industrial ceiling fans placed continuously to keep air circulating and improve occupant comfort in these non-conditioned areas. In addition, operable windows are located in the press box and the club level in order to allow fresh air and game ambiance to circulate into these interior spaces when exterior conditions are conducive.

Transportation

The stadium is easily accessible to students and fans from the surrounding neighborhoods. No additional parking was created by the project; instead, Tulane has set up multiple contracts with high schools, parks, and other existing parking locations off campus to be utilized on game day. Shuttle services pick them up and transport them to and from the stadium, and run periodically throughout game days.

Prerequisites

C	R	SSp1	Construction Activity Pollution Prevention
D	R	WEp1	Water Use Reduction, 20% Reduction
C	R	EAp1	Fundamental Commissioning of the Building Energy Systems
D	R	EAp2	Minimum Energy Performance
C	R	EAp3	Fundamental Refrigerant Management
D	R	MRp1	Storage and Collection of Recyclables
D	R	IEQp1	Minimum Indoor Air Quality Performance
D	R	IEQp2	Environmental Tobacco Smoke (ETS) Control

Earned Points - 51

D	1	SSc1	Site Selection
D	5	SSc2	Development Density & Community Connectivity
D	6	SSc4.1	Alternative Transportation - Public Transportation Access
D	2	SSc4.4	Alternative Transportation - Parking Capacity
D	2	SSc6.1	Stormwater Design-Quantity Control
C	1	SSc7.1	Heat Island Effect, Non-Roof
C	2	WEc1	Water Efficient Landscaping (51% reduction)
D	3	WEc3	Water Use Reduction (39% reduction)
D	3	EAc1	Optimize Energy Performance (19% energy cost savings)
C	2	EAc3	Enhanced Commissioning
C	3	EAc5	Measurement and Verification
C	2	EAc6	Green Power
C	2	MRc4	Recycled Content (39% achieved)
C	2	MRc5	Regional Materials (48% of materials by cost produced within 500 mi)
C	1	IEQc3.1	Construction IAQ Management Plan - During Construction
C	1	IEQc4.1	Low-Emitting Materials - Adhesives and Sealants
C	1	IEQc4.2	Low-Emitting Materials - Paints and Coatings
C	1	IEQc4.3	Low-Emitting Materials - Flooring Systems
C	1	IEQc4.4	Low-Emitting Materials - Composite Wood and Agrifiber Products
D	1	IEQc5	Indoor Chemical and Pollutant Source Control
D	1	IEQc6.1	Controllability of Systems - Lighting
D	1	IEQc6.2	Controllability of Systems - Thermal Comfort
D	1	IEQc7.1	Thermal Comfort - Design
D	1	IEQc7.2	Thermal Comfort - Verification
D	1	IEQc8.2	Daylight and Views - Views for 90% of spaces (96% achieved)
C	1	IDc1.1	Innovation in Design - Exemplary Recycled Content
C	1	IDc1.2	Innovation in Design - Exemplary Regional Materials
C	1	IDc1.3	Innovation in Design - Education
C	1	IDc2	LEED® Accredited Professional

LEED Certification Thresholds

CERTIFIED - 40+ pts. SILVER - 50+pts. GOLD - 60+pts. PLATINUM - 80+pts.

PROJECT TEAM

Architect: Gould Evans, Kansas City, MO
Local Architect: Lee Ledbetter & Associates, New Orleans, LA
Mechanical, Electrical and Plumbing: Associated Design Group, New Orleans, LA
Construction: Woodward Design+Build, New Orleans, LA
Commissioning: Thompson Building Energy Solutions, Baton Rouge, LA
Energy Modeling: Associated Design Group, New Orleans, LA
Capital Projects, Office of Sustainability, University Planning Office, Facilities Services
Photographs courtesy of: Woodward Design Build - Jeff Johnston Photography and Gulf Coast Air Photo and Tulane University Photographer- Paula Burch