



Introduction USGBC and LEED:

United States Green Building Council (USGBC) is a national, non-profit organization formed to promote and encourage sustainable buildings. USGBC developed and administers the Leadership in Energy and Environmental Design (LEED) rating system as a way to measure and quantify the sustainable features designed and constructed in a project. It is the most widely used and recognized third party verification of sustainable design and construction in the world.

LEED Rating systems are performance criteria tools used to plan, design, construct, operate and certify green building methods and development practices.

LEED for New Construction (LEED NC) is one of several rating systems. It was the decision of the project team to pursue LEED NC for the design and sustainability documentation of the Chowdhari Golf Center.

LEED NC is comprised of seven credit categories:

1. Sustainable Sites
2. Water Efficiency
3. Energy and Atmosphere
4. Materials and Resources
5. Indoor Environmental Quality
6. Innovation in Design
7. Regional Priority

Prerequisites/Credits:

The first five categories require the achievement of certain minimum efficiency and environmental thresholds. These prerequisites need to be met before any other credits can be achieved. Once the prerequisites are achieved, the project team then designs and constructs the building to achieve credits within each of the seven categories. View the LEED scorecard for this project to see all of the credits the project team achieved.

Certification Levels:

There are four levels of Certification available based on the number of credits achieved. The levels are as follows:

Certified: 40-49 points

Silver: 50-59 points

Gold: 60-79 points

Platinum: 80-110 points

Highlights of the LEED NC Rating system as it applies to Chowdhari Golf Center:

Sustainable Sites:

- The building's parking areas are equipped with bicycle storage and reserved spaces for low-emitting vehicles. Access to these sustainable parking lot features encourage and reward means of alternate transportation that reduce CO2 emissions.
- The location of the building is on the campus shuttle route and is also located in an area with easy access (within half mile) to basic services such as restaurants, banks, gas stations, etc.
- Parking capacity decreased from previous number of spaces for former building on the site.

Water Efficiency:

- Use of low flow plumbing fixture reduced water use in the building by more than 20%
- Landscaping design included use of native and Florida-friendly, drought tolerant plants that did not require permanent irrigation system.

Energy and Atmosphere:

- This facility's HVAC, lighting, and hot water systems have been fully commissioned by a their party commission agent in order to optimize the energy performance of the building systems and insure the installed systems function as designed.
- The refrigerants used in the HVAC system do not contain any harmful, ozone depleting chlorflourocarbons that contribute to climate change.
- The building was designed to reduce energy consumption and is 22% more efficient than code requires. This was achieved via use of efficient HVAC and lighting systems as well as a highly insulated building shell that includes low-E glass and an attic with spray foam icynene insulation on the underside of the roof.
- The energy efficient HVAC system includes a 10-ton constant volume central station air handling unit with two (2) 5-ton direct expansion, straight cool condensing units. The AHU/CU system cycles the compressors to maintain a main return air temperature of 75°F. A total of six (6) VAV boxes, with electric strip heaters, provide individual space temperature control. A bypass VAV box modulates to maintain a constant volume air flow at the air handling unit. An energy recovery unit with an outside air fan and exhaust fan pre-treats the outside air being delivered to the air handling unit. Ancillary spaces are ventilated by separate exhaust fans.

Materials and Resources:

- The building occupants have implemented a recycling plan that includes paper, cardboard, glass, plastics, and metals.
- More than 10% of the materials used in the construction of the building include a combination of post-consumer and pre-consumer recycled content. Materials with significant recycled content include 100% of the rubber tile, 95% of the drywall, and the majority of the tile, steel, ceiling tile, metal doors, toilet partitions, and concrete block.
- More than 25% of the materials used in the construction of the building were extracted and manufactured within 500 miles of the project location. Highlights include:

- 97% of the rebar
- 97% of the concrete block
- 91% of the concrete
- 95% of the drywall
- 100% of the carpet
- 100% of the landscaping

Indoor Environmental Quality:

- The construction team adhered to a strict indoor air quality plan that included protection of all ductwork and stored materials. After construction, the indoor air quality was tested by a third party to insure the building delivered to USF was free from potential contaminants.
- Volatile Organic Compounds (VOCs) are commonly found in paints, sealants, and adhesives. The paints, sealants, and adhesives used in this facility contained low or no VOCs thus reducing their potential negative health impact.
- Lighting and mechanical control systems were designed with increased controllability. This allows individual users in the building to have a greater degree of control over their indoor environments increasing user satisfaction and typically decreasing energy consumption.