

UNC Coastal Studies Institute

Green design features

The following “green” features of the CSI Research and Education building are organized following the LEED standard. LEED (Leadership in Energy and Environmental Design) is a voluntary program that provides third-party verification of green buildings. In order for a project to become certified, all LEED prerequisites must be met as well as earn a minimum 40 points. CSI earned 64 points for a LEED GOLD rating.

Sustainable Sites:

1 Alternative transportation –

1. Bicycle storage facilities and shower facilities have been provided for occupants and transient occupants
2. Provide two preferred parking spaces for car/vanpool vehicles
3. Provide preferred parking spaces for low-emitting and fuel-efficient vehicles

2 Stormwater management

1. A stormwater management plan has been implemented to protect receiving stream channels from excessive erosion through stream channel protective strategies and quantity control strategies.
2. BMPs have been sized to handle 1.5-inches of rainfall (more than 90% of the average annual rainfall)
3. BMPs have been designed to remove 85% TSS as per a regional standard.
4. 100% of stormwater is treated on-site.

3 Landscape

1. **Dedicated open space has been provided equal to 71% of the total site area**
2. Minimal exterior lighting is used to reduce light pollution
3. The roof surface, patios, walkways and parking lot have a high Solar Reflectance Index – reflects the sun and reduces heat from the sun (Heat Island Effect)
4. The site is being restored with native vegetation. Roadside swales and other disturbed areas have been hydro-seeded with a native plant seed mixture to enhance the succession process.

Water Efficiency:

4 Water Efficiency

1. 48,000 gallons cistern storage; **potable water use reduced by 75%** (LEED requires at least 20%)
2. Wastewater is treated to tertiary standards and is infiltrated or may be used on-site
3. The landscaping does not utilize permanent irrigation systems and all temporary irrigation systems used for plant establishment were removed within one year of installation

Energy and Atmosphere

5 Energy and Atmosphere

1. There are no CFC-based refrigerants in the HVAC systems; all fire suppression systems do not use ozone-depleting substances including CFCs, HCFCs, or halons.
2. CSI has achieved an **energy cost savings of 37%**. Energy efficiency measures incorporated into the building design include:
 - a. An improved thermal envelope,
 - b. High efficiency glazing,
 - c. Reduced interior lighting power density,
 - d. Air-side economizer, and
 - e. High efficiency heat pump chiller.
3. CSI has a commitment to sharing whole-building energy and water usage data with USGBC and/or GBCI for a period of at least 5 years.

Materials and Resources

6 Recycling & Materials

1. **24% of building materials content has been manufactured using recycled materials** (10% required by LEED)
2. **75% of on-site generated construction waste was recycled.**
3. CSI provides dedicated areas for the collection and storage of materials for recycling, including cardboard, paper, plastic, glass, and metals (single stream dumpster).
4. **24% of building materials were manufactured and extracted within 500 miles** of the project site

Indoor Environmental Quality

7 Healthy Building for Occupants

1. Low-Emitting materials including paints, adhesives and sealants, flooring systems, and composite wood products were used
2. Smoking on-site is prohibited which minimizes exposure to second-hand smoke).
3. The project has provided **direct line of sight views from 94%** of all regularly occupied seated spaces
4. **Day lighting has been provided for 95% of occupied spaces**
5. Lighting controls are provided to enable 99% of occupants to make adjustments to suit individual task needs and preferences.
6. The project includes mechanically and naturally ventilated spaces
7. Individual thermal comfort is provided with thermostats located throughout the building.

Innovation in Design

1. Exemplary performance in Day lighting and Views
2. Exemplary performance in **Water Use Reduction, which is 75%**
3. Exemplary performance in Wastewater treatment, treatment to tertiary standards
4. Fume hoods meet highest standards of the industry