2012 Lower Cape Fear Stewardship Development Award Winners

Outstanding Recognition

Bald Head Island Conservancy, Barrier Island Study Center – Bald Head Island, NC

The Barrier Island Study Center is a recently completed project that is the final phase of the Bald Head Island Conservancy campus. The 5,600 sq. ft. facility will host research specific to Bald Head Island and relevant to other barrier islands, as well as provide scientists, students and visitors the opportunity to study these unique and critical ecosystems. Great care and planning was devoted to the project to ensure the use of sustainable design principles and minimize impacts to the sensitive environment. Currently the project is seeking a Gold or Platinum LEED certification and incorporates many concepts that represent green design. Some of these elements include:

- Diversion of 60% of construction waste from landfill
- Managing stormwater within the confines of the site
- Use of active and passive solar
- Ultra-High efficiency HVAC system
- Solar thermal hot water heaters
- Water consumption rates over 75% more efficient than conventional construction
- Native landscaping with no required irrigation
- Over 35% savings in energy costs
- 15% recycled materials and 30% regional materials used in the project
- Outdoor day lighting used for 95% of regularly occupied areas
- Occupancy sensors to control lighting
- Use of low VOC paints, stains and sealants
- Educational signage and exhibits throughout facility

Piedmont Biofuels – Wilmington, NC

Piedmont Biofuels Industrial, LLC (PBI), a NC-based alternative fuel cooperative and B-Corporation, received a grant from the Department of Energy's Clean Cities Initiative to construct a utility building for a 1000-gallon tank of 100% recycled waste vegetable oil-derived biodiesel. Materials for the construction consist primarily of re-purposed and second-hand resources to construct the building that provides customers with a 100% vegetable-based biodiesel to fuel their diesel powered vehicles.

The designer incorporated the following in the building's construction:

- Recycled materials from the county landfill and around Wilmington:
  - empty cable reels were used for all exterior cladding
  - leftover storefront glass
  - crushed concrete and brick (used for flooring around the tank)
  - Foundation rebar from a metal scrap yard
  - old metal roofing panels bent into new waterproofing flashing
  - leftover exterior doors
  - three-inch thick rigid foam used for roof insulation
- Only about 2% of all framing lumber used was purchased new from local lumberyards.
- Zero-VOC paints and stains
- A "green/vegetative roof garden" to minimally impact stormwater runoff.
- Passive solar orientation to ensure sufficient heat for proper biodiesel viscosity
- Highly efficient R-30 cellulose insulation system.
- Educational signage and displays about the project

Significant Achievement

Bradley Creek Elementary School Stormwater Reduction Project – Wilmington, NC

Bradley Creek Elementary School is located on a 19-acre site situated in the headwaters of Hewletts Creek. Currently, the majority of the creek is closed to shell fishing with impaired water quality due to stormwater runoff. Hewletts Creek and Bradley Creek are priorities for restoration as outlined in the City of Wilmington's Bradley and Hewletts Creek Watershed Restoration Plan.

The N.C. Coastal Federation partnered with New Hanover County Schools, New Hanover Soil and Water Conservation District, Wilmington's Stormwater Services, N.C. Division of Soil and Water Conservation, and the project contractor, Larry Sneeden with Coastal Stormwater Services, to design Low Impact Development stormwater reduction retrofit projects. The goal of the projects was to capture and infiltrate as much stormwater runoff as possible from the site. The stormwater reduction measures include bioretention areas, rain gardens, and wetlands which are planted with native vegetation. These measures are capturing and treating almost 120,000 gallons of stormwater when it rains, enabling the stormwater to soak into the ground and keeping it out of Hewletts Creek. Teachers, students and community members helped in the planting and continue to maintain the projects. In addition, the wetlands and rain gardens also serve as "living classrooms", providing ongoing educational opportunities for students and teachers to learn lessons on plants, soils, stormwater runoff and hydrology.

Lower Cape Fear Hospice, Hospice House of Brunswick – Bolivia, NC

The SECU Hospice House of Brunswick is a seven bed facility that provides inpatient hospice care to patients in Brunswick County and surrounding areas. In addition to the vast garden areas and courtyards, each patient suite is provided its own private patio which offers access to the serene and skillfully landscaped grounds. Similar to their recently constructed Wilmington Hospice facility,

Lower Cape Fear Hospice, Inc felt strongly about minimizing impacts on the surrounding environment at the Brunswick site by implementing sustainable building practices. The project, which is presently seeking a LEED Silver certification, contains numerous green building techniques and practices which include:

- A construction waste management plan
- High efficiency HVAC system which is 30% more efficient than conventional systems
- Native and water efficient landscaping
- Low flow water fixtures
- Use of recycled and regionally produced building materials
- Low VOC paints and flooring
- Pervious parking areas
- High efficiency motion sensor lighting

Union Station – Wilmington, NC

Facing unprecedented growth and a need to serve an ever-changing student population, Cape Fear Community College began a $164 million bond-funded building program in 2008 that included multiple academic buildings on its campuses. As part of this initiative, a new administrative and academic building, now known as the Union Station Building, and an associated parking deck were designed to meet the College's increasing needs.

The new buildings are located on the former site of the Atlantic Coast Line Railroad Union Station, of which the stone and brick retaining walls remain. These walls have been maintained, repaired and highlighted as part of this project to showcase the significant rail history of Wilmington. The two building sites were originally separated by the former ACL rail bed which the College and design team transformed into an amenity providing a safe pedestrian route from the parking areas to the academic buildings. The former rail bed will soon be a vegetated park with pervious pavers providing areas for student gathering, performances, and campus events.

In addition to meeting the strict energy standards required of public institutions, CFCC is pursuing LEED Certification. A few of the sustainable design elements included in the project are:

- An underground cistern that collects stormwater that is used for irrigation;
- Building systems and envelope design resulting in a 22% improvement over energy standards;
- Unique and effective methods of controlling heat gain on the southern and western facades;
- Structured parking for nearly 1200 cars which otherwise would have required two city blocks of surface parking; and
- "Green screens" on the parking deck for the growth of vegetation up the exterior walls.