

News Release

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NCCU Residence Hall Earns LEED Gold Certification
*Energy-efficient building features
ICF wall assembly, sunshades and energy recovery system*

DURHAM, NC., Aug 14, 2012 – A new residence hall built to state standards for long-term durability and performance has earned LEED gold certification at [North Carolina Central University](#) (NCCU). The \$24 million, 517-bed facility, known as Chidley North Residence Hall, was designed by architecture firm [Lord, Aeck & Sargent](#) (LAS). Opened in August 2011, it's one of only two LEED certified buildings on the NCCU campus and the first to be certified gold by the U.S. Green Building Council.

Among its many green design strategies and products, the 134,000-square foot, four-story Chidley North features an ICF (insulated concrete form) bearing wall assembly, an energy recovery system, and an aluminum sunshade assembly at the curtain walled sections of the building's brick, glass and precast concrete building envelope.

Design team faces challenges

Chidley North is located on a street corner at the edge of campus. "I think the design team's biggest challenge was to figure out how to orient the building in the space available while

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meeting all of our programming needs and simultaneously ensuring that the structure wasn't too imposing and that it was aesthetically pleasing to the surrounding neighborhood," said Dr. Jennifer Wilder, an NCCU interim senior associate vice chancellor who, among other responsibilities, oversees campus residential life. "LAS worked hard to meet the challenge, and the result is a beautiful building; we get lots of compliments from the community."

The residence hall is a C-shaped structure whose inner exterior façade faces NCCU's Chidley Main Residence Hall, forming a courtyard used by students for relaxation, group activities and studying. The LAS design team was careful to retain two massive oak trees for shading a courtyard patio and part of the lobby area.

Energy-saving approaches

Wilder noted that she particularly likes Chidley North's sustainability aspects and the fact that it achieved LEED gold certification even though it initially targeted LEED silver.

Three approaches that the LAS design team pursued to help achieve energy efficiency included the ICF wall, sunshade assemblies and an energy recovery system.

"We looked at both ICF and more traditional concrete masonry exterior wall assemblies, and we went with the ICF approach for its insulating capacity, its expeditious construction assembly and its performance in a geographic area of the country where we see great variances in temperature," said Derek West, an LAS associate who served as the firm's project manager on Chidley North. "ICF is the most energy-efficient solution for the cost, and while it's a more expensive approach on the front end, it provides almost double the thermal insulation of concrete masonry with conventional insulation, and it will save money over the life of the building."

The sunshade assembly at the curtain walled sections of the building is a custom assemblage of extruded aluminum shapes, perforated panels and pre-fabricated, sloped, horizontal blade extrusions. Punched windows are shaded by a pre-fabricated, sloped, horizontal blade extrusion and outrigger system. The punched window and curtain wall assemblies are thermally broken aluminum with high-performance insulated glazing.

The building's energy recovery system pre-treats outside ventilation air by recovering the embodied energy in the exhaust air. It reduces the difference between the outside and inside air temperatures and humidity levels by 50 percent. In addition, a high-efficiency chilled water plant in the basement provides cooling at a lower cost.

A zinc roof was chosen for its longevity. It is a vented, pre-weathered standing and flat seam roofing system designed to last 75 years or longer.

"I think we have a building that will be perfectly fine for the next 100 years," said Walter Lennon, NCCU Department of Design and Construction Services project manager. "The ICF walls, roofing system and overall structure and integrity of the building have resulted in a strong, sturdy facility built for the long term. Chidley North is designed to save energy, and it will pay off over time."

Water conservation, low maintenance, recycling and green education

Energy conservation is just one aspect of the building's design. Chidley North's design also incorporates a 28,000-gallon underground cistern to collect rainwater from the site, the building roof and all area drains. The cistern also collects and reclaims condensate returned from the building's HVAC system. Collected water is used for site irrigation.

Many building materials were selected for their low cost of maintenance. For instance, the building core and corridor walls are exposed polished architectural concrete masonry. "The

walls look like terrazzo but should prove to be a low-maintenance finish in these high-traffic areas, which take a lot of abuse,” West said.

The building floors are poured-in-place stained concrete, chosen again because they are a low-maintenance finish.

Recycling during and after construction was also a major consideration, with a very high 97 percent of construction waste – including a building torn down to make way for Chidley North – having been recycled.

Now that the building is complete, students are encouraged to use the recycling stations located on every floor. In addition, the building’s housekeeping staff adheres to green housekeeping methods, and the building itself is used to educate students and members of the community in green building practices.

In awarding Chidley North its LEED gold certification, the US Green Building Council gave the building special “Innovation & Design Process” credits for exemplary performance in construction waste management, LEED green housekeeping, and green building demonstration.

The building program

Chidley North’s main street-facing and courtyard-facing entrances – located in the center of the building’s center wing – open to an expansive lobby with a two-story atrium. A second-floor mezzanine overlooking the lobby houses both a computer lab and a smart classroom. All floors include a full kitchen, study lounge and laundry room as well as the recycling station.

The student living spaces include 241 double-occupancy units, each with its own bathroom, 11 single units for resident advisors, and six ADA-accessible suites, each with two double-occupancy rooms and a single bath.

Project Team

The Chidley North Residence Hall project team included:

- Lord, Aeck & Sargent (Chapel Hill, NC office) – architect, interior design and FFE
- HadenStanziale (Durham, NC office) – landscape architect
- Stanford White (Raleigh, NC) – MEP/FP engineer
- Stewart Engineering (Raleigh, NC office) – civil and structural engineer and special inspections
- Waveguide Consulting (Raleigh, NC office) – IT/Telecom and AV Consulting
- Rodgers/Russell/Dayeco (Raleigh, NC) – a joint venture of H.J. Russell & Company (Atlanta) and Rodgers Builders, Inc. (Charlotte, NC) – construction manager at risk

About Lord, Aeck & Sargent

LAS is an award-winning architectural firm serving clients in academic, historic preservation, scientific, arts and cultural, and multi-family housing and mixed-use markets. The firm's core values are responsive design, technological expertise and exceptional service. Recently, the firm has appeared twice on *Architect* magazine's "Architect 50" ranking of U.S. architecture firms based on profitability, sustainability and design quality. In 2007, Lord, Aeck & Sargent was one of the first architecture firms to adopt [The 2030 Challenge](#), an initiative whose ultimate goal is the design of carbon-neutral buildings, or buildings that use no fossil-fuel greenhouse gas-emitting energy to operate, by the year 2030. Lord, Aeck & Sargent has offices in Ann Arbor, Michigan; Atlanta, Georgia; Austin, Texas; and Chapel Hill, North Carolina. For more information, visit the firm at www.lordaecksargent.com.

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