

News Release

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World Renowned Duke Lemur Center Gets Updated, Expanded Facilities

Lord, Aeck & Sargent designs two new buildings that focus on efficiency and flexibility, improving life for lemurs, keepers and researchers

DURHAM, NC, Dec. 1, 2010 – Life has improved dramatically for 140 diurnal lemurs and the husbandry staff and researchers who care for and study them as a result of two new state-of-the-art facilities at the [Duke Lemur Center](#) (DLC), a refuge owned by Duke University that houses the world's largest collection of lemurs outside of their native Madagascar.

Prior to the completion of its two new structures, the DLC, a world renowned sanctuary tasked with non-invasive research and conservation of lemurs and other prosimians, had outdated and undersized, though operational, facilities. As part of a \$10.4 million project, architecture firm [Lord, Aeck & Sargent](#) developed a long-term master plan for the DLC and designed both new lemur facilities, which are targeting [LEED](#) certification from the [U.S. Green Building Council](#).

The single-story, heated facilities comprise: the Releasable Building, which houses 60 lemurs allowed to free-range – when weather permits – in the DLC's fenced 69-acre [Forest Stewardship Council](#) (FSC) certified Duke Forest; and a Semi-Releasable Building, which

– more –

houses 80 lemurs, a mix of geriatric and other lemurs who for physical, behavioral or social reasons have limited free-ranging capacity. This building is also designed with research facilitation in mind.

“To update and expand our facilities, we wanted an attractive, sustainable design that would be flexible, functional and efficient both for cleaning and for shifting animals from one part of the buildings to another when they’re sick or being used for observational research,” said Anne Yoder, DLC director. “The Lord, Aeck & Sargent team designed two professional-looking facilities that have balanced all of our aspirations. The buildings have made a great difference to our functionality and have improved life for the lemurs and the staff.”

Efficient designs

“When we began working with the DLC staff, we learned how inefficient and time-intensive it was for the keepers to feed, care and clean up after the lemurs,” said Lauren Rockart, a Lord, Aeck & Sargent senior associate who served as project manager for the DLC buildings. “The new buildings needed to streamline these activities, so we designed both with animal housing wings radiating from a central core area that houses common resources such as a food prep kitchen for the keepers to prepare and portion food, a veterinary exam room, a laboratory, a bathroom with shower, and storage spaces for animal enrichment items and researchers’ equipment. Each wing houses 20 lemurs along with dedicated storage for cleaning and keeper supplies. Sanitation in each wing is self-contained to promote the best practices of hygiene.”

Rockart noted that the laboratory in the Releasable Building is a dry lab used by DLC researchers to record their observations of the free-ranging lemurs. The Semi-Releasable Building has a wet lab with a fume hood, chemical storage and ventilation to support biological and chemical analysis. The Semi-Releasable Building’s core also houses two hibernation rooms currently being used to study hibernation in the DLC’s dwarf lemur population.

Wings' flexible layout creates stimulating environment

“To create a stimulating environment and mimic as much as possible the lemurs’ natural habitat, our design team created a flexible housing layout that allows for different paths for the animals to explore,” Rockart said. “Each lemur is provided a housing module with 50 square feet of interior space attached to 100 square feet of fenced exterior space via a sliding door that opens whenever the temperature is 50 degrees or higher. There are multiple ways to house groups of lemurs and interesting ways for them to open and close doors to create different pathways from one housing module to another.”

The housing modules are grouped into various sized suites serviced by a double-loaded corridor. This arrangement allows DLC staff to isolate an area from other building spaces to control the spread of disease to or from a suite. Housing unit exterior ceilings and most walls are constructed of vinyl-coated welded wire mesh capable of withstanding repeated cleaning and sanitizing procedures. Some of the walls, however, are solid because some lemur groups don’t always co-exist together well.

The housing layout facilitates easy feeding, cleaning and maintenance. Housing modules include human-sized interior module mesh doors with human-only latch operation. There are also keeper runs in each exterior area with similar entries for humans.

Construction materials also emphasize easy maintenance

“The buildings have to be washable outside as well as inside, so we chose concrete insulated sandwich panels as the wall construction system. Coated with epoxy paint on the interior and a concrete sealer on the exterior, they are easily cleaned,” Rockart noted. “The panels are 44 feet long by 10 feet high, and glass blocks have been randomly inserted to bring into the buildings lots of dappled-like natural light that mimics light filtering through trees in a forest.”

Buildings are sustainably designed

The U.S. Green Building Council's LEED rating system acted as a guide for the sustainable design of the buildings. Some of their water- and energy-saving features include:

- Use of regional construction materials
- FSC certified wood laboratory casework
- Bamboo accent wall panels in the corridors
- Low VOC paint sealants
- An energy-efficient HVAC system
- Occupancy light sensors in spaces occupied by humans
- Bicycle racks and preferred parking for low-emission vehicles
- Low-flow plumbing fixtures
- Drought-resistant plantings

Looking to the DLC's future

The completion of the Releasable and Semi-Releasable buildings marks the close of the first phase of DLC's master plan. Over the long term, Yoder said, the DLC will implement capital campaigns to fund another building for free-ranging lemurs; improved nocturnal housing for the Center's aye-aye lemurs; better veterinary and research space for cryopreservation; and a visitor's center with an auditorium, displays and that offers the ability for visitors to take self-guided tours.

The Project Team

The Duke Lemur Center project team included:

- Lord, Aeck & Sargent (Chapel Hill, NC office), architect
- Stewart Engineering (Raleigh, NC) – structural engineer, civil engineer and landscape architect
- Affiliated Engineers Inc. (Chapel Hill, NC) – MEP engineer
- Barnhill Contracting Company, Building Division (Raleigh, NC) – construction manager
- System WorCx (Chapel Hill, NC office) – commissioning agent and LEED administration

About Lord, Aeck & Sargent

Lord, Aeck & Sargent is an award-winning architectural firm serving clients in scientific, academic, historic preservation, arts and cultural, and multi-family housing and mixed-use markets. The firm's core values are responsive design, technological expertise and exceptional service. In 2003, The Construction Specifications Institute awarded Lord, Aeck & Sargent its Environmental Sensitivity Award for showing exceptional devotion to the use of sustainable and environmentally friendly materials, and for striving to create functional, sensitive and healthy buildings for clients. 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; and Chapel Hill, North Carolina. For more information, visit the firm at www.lordaecksargent.com.

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