LEVITON®

NC State University Charges Ahead of the Pack with Cutting-Edge Campus Network

With a 130-year-old legacy and a campus spread across 2,110 acres in the city of Raleigh, North Carolina State University is a significant presence across the region and is recognized worldwide. The university is widely known for excelling in science, technology, engineering, and math, and is a linchpin in the region's high-tech Research Triangle.

NC State serves more than 34,000 students and employs nearly 10,000 academic and administrative staff members. To better support the students and staff — and to remain at the forefront of academic research — the university undertook a major initiative to upgrade its campus networks.

Recently, NC State began the ambitious project of installing high-end network infrastructure throughout the campus, in new buildings and existing classrooms and facilities. Up to that point, existing campus networks ran on either Cat 6, capable of supporting up to 1 gigabit per second (Gb/s), or older Cat 5e cabling systems.

The university's Communication Technologies (ComTech) group is responsible for designing, maintaining, and supporting the campus voice, video, and data network infrastructures. They had the foresight to upgrade to a Cat 6A network infrastructure, capable of delivering 10 Gb/s speeds and providing the best throughput available to students and university staff.

"High speed wired and wireless internet is more critical than ever on school campuses," said Ed Rogers, the ComTech Director of Engineering & Construction at NC State. "Areas like laboratories, libraries, and engineering work require higher bandwidth and capacity. Students expect fast and reliable wireless access for all types of applications, including classroom activities, online collaboration, and leisure activities like streaming Netflix or online gaming in residence halls."

The NC State Wolfpack

At a Glance

Profile:	North Carolina State University (NC State) is a leading public research university serving 34,000+ students
Industry:	Education
Location:	Raleigh, North Carolina, USA
Challenge:	Install robust network infrastructure connectivity campus-wide that supports future network upgrades and attracts prospective students.
Solution:	Leviton connectivity, including Atlas-X1™ Cat 6A Jacks, custom patch panels, and color-coded patch cords. Installations are backed by the Leviton limited lifetime warranty.

NC State wanted to ensure it could handle Power over Ethernet, strong wireless coverage, and higher network demands over the long term.

www.leviton.com | tel. 800.722.2082 +1.425.486.2222 | 2222 - 222nd St. SE, Bothell, WA 98021

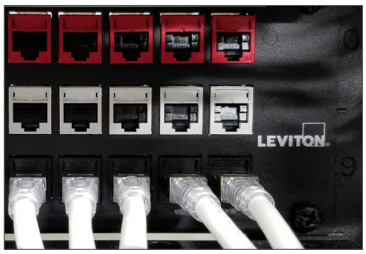
Choosing Connectivity that Will Last

NC State undertook a rigorous selection process when choosing Cat 6A system connectivity, thoroughly testing components from 10 different manufacturers. After an 18-month process of careful evaluation, the ComTech group chose Leviton for their connectivity.

The decision came down to Leviton's strong warranty and Cat 6A performance guarantees, a wide range of product options — including custom solutions — and the ability to provide additional design assistance and installation audits.

"Ed Rogers and the ComTech group wanted to ensure that the school had the infrastructure to handle Power over Ethernet, strong wireless coverage, and the ability to support higher network demands over the long term," said John Iapalucci of JPI Associates, a manufacturers' representative for Leviton. "Choosing Cat 6A and Leviton gives the school the ability to handle those demands, with the flexibility to use 1 gigabit switches today and upgrade to fast 10 gigabit speeds in the future without having to replace the cabling infrastructure."

All new installations use Leviton Atlas-X1™ Cat 6A QuickPort® Jacks. The evaluators were especially impressed with the jacks' patented Retention Force Technology, which protects against potential tine damage from 4- or 6-pin plugs, improves PoE performance, and ensures system longevity. The team also chose custom Leviton QuickPort patch panels and Cat 6A Slimline patch cords. The jacks and cords match the school's "Wolfpack" colors of red and white.



Connectors and cords in "Wolfpack" colors

Custom stainless steel wallplate with angled ports

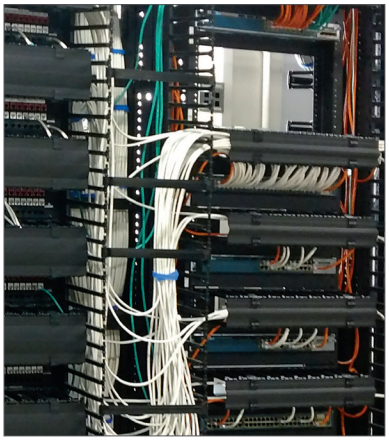
Leviton also designed a custom 4-port dual-gang stainless steel wallplate with identification windows specifically for NC State. The QuickPort wallplate, now a standard Leviton product, includes angled ports to ensure proper cabling bend radius in front and back of the connectors.

Ensuring Quality and Consistency

Over a period of six years, the Cat 6A connectivity was installed in new construction and existing infrastructure in NC State dorms, classrooms, libraries, and other facilities.

Engineering Buildings on the NC State Centennial Campus

The ongoing project includes 170 telecommunication closets, more than 14,000 Cat 6A outlets (with three jacks each), and 4,600 wireless access points.



The "white room"

Throughout that time, Iapalucci and Leviton Specifications Engineer John Wright have performed pre-installation reviews, and Wright audits telecommunication closet installations every six weeks, making sure contractors are installing the network correctly.

NC State also built a demo room known as the "white room" where new installers and contractors can acquaint themselves with the school's network design. The demo room helps train installers and ensures consistency across all network projects, since every closet on the campus looks exactly like the demo room.

It acts as a guide to everything from routing cable into racks to labeling procedures. Contractors can also better understand particular approaches to aesthetics, organization, and grounding and bonding methods.

Prepared for the Future

NC State's leading edge networks provide current students and faculty with fast and reliable internet access, and add appeal for prospective students. By choosing a Cat 6A network infrastructure, the university is prepared to handle greater bandwidth demands in the future and help students achieve their goals.