LEVITON

Temple University gives Leviton High Grades

Copper and Fiber Systems Earn Praise From Telecom Director

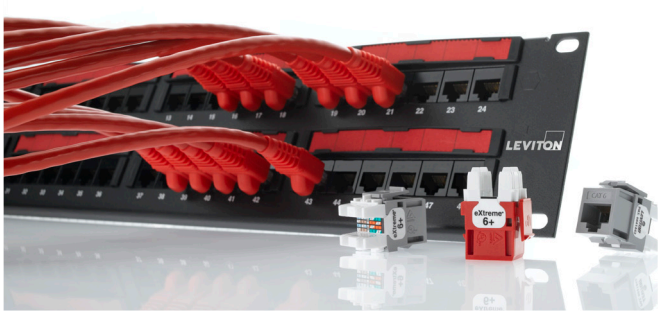
Founded as Temple College in 1884, Temple University is now one of the U.S.'s leading public research universities. More than 39,000 students choose from 320 academic programs at the university's eight campuses, located throughout the greater Philadelphia area; in Harrisburg, Pennsylvania's state capitol; and as far afield as Rome, Italy, and Tokyo, Japan. In addition, the Temple University Health System includes three hospitals that serve the health needs of the greater Philadelphia population.

With such large and diverse facilities, it's no surprise that Temple has substantial network connectivity requirements. The north Philly main campus alone has more than 50,000 voice and data ports to support the needs of students, staff, and faculty. Health System locations and satellite campuses add tens of thousands more ports to the tally.

Leviton Tackles Major Campus Projects

Temple standardized on Leviton as its structured cabling systems provider 10 years ago. As new connectivity is needed, whether in classrooms, patient rooms, residence halls, or administrative spaces, data lines are connected with the eXtreme® CAT 6 system, and voice with the GigaMax® CAT 5e system. Between major projects and regular MAC (moves, adds, and changes) work, about 30% of the campus' ports are now connected with Leviton components.

One of the many projects the university has completed with Leviton is the TECH Center, a 75,000 square foot, state-of-the art student workspace. Resources include a 700-station Mac® and PC computer center, 13 soundproof breakout rooms with wall-mounted flat panel computer displays, specialty labs for everything from video editing to software development, and 24-hour on-site help desk



All new data lines are connected with the eXtreme® 6+ CAT 6 UTP system

Temple's main campus sits on 105 acres on Philadelphia's North side

support. Connectivity for it all is terminated at 110-style 2RU 48-port patch panels in nearby telecommunications rooms.

"We switched to Leviton structured cabling when we transitioned the university's data connectivity standard from CAT 5e to enhanced CAT 6. The quality of the products, along with their support services and top-notch rep firm, made the decision easy," says Mike Taylor, Temple's executive director of telecommunications. "Working with Leviton on the TECH Center project confirmed that we'd made the right choice. Product was available when we needed it, we got great support from Leviton and Intra Tech Solutions, [the Leviton rep firm serving the area] and best of all, the structured cabling has been working perfectly ever since."

Several projects have been completed with Leviton since the TECH Center opened. In late 2006, the Health System and university built out the new joint Temple Administrative Services Building (TASB), installing more than 3,000 Leviton connections. Then, in 2008 – 2009 alone, Temple finished constructing new facilities for the medical, business, and art schools; all are networked with Leviton components.

A New Data Center Takes Shape

The University and Health System's new joint data center (JDC) is one of Temple's larger IT projects with Leviton so far. Before the new JDC was built out, the two groups had separate data center operations. When they both started planning DC upgrades several years ago, they quickly realized that a joint space would simplify management and reduce expenses for everyone, and joined forces.

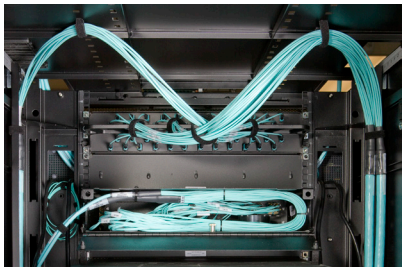
Each side of Temple's data center has space for six rows of cabinets

Serious effort to build out the new space started in early summer 2009. Temple's IT department handled the design with help from Charlie Bogolawski, RCDD, director of Leviton's Specification Team, Dave Hollie of Leviton rep firm Intra Tech Solutions (ITS), and Bala Consulting Engineers. Of the 16,400 available square feet, 12,000 was designated as data center floor space, with the balance set aside for tape storage, printing, office, and other support functions. The JDC has a central core with one row for the LAN (local area network) and one for the SAN (storage area network). Several rows of cabinets each are on either side of the core; one side houses the university's servers, and the other the Health System's.

Making the Switch to Fiber

The team also decided that the new DC should be 100% fiber. "Going to an all-fiber environment offered several advantages," says Hollie. "With Temple's all-new DC infrastructure, it was much more cost-effective. Also, the fiber architecture is modular and extremely scalable. New equipment can be added without going back to the core. Finally, the fiber trunk cables require less overhead cable tray for routing and management. Temple went from three tiers of cable tray to one, with plenty of room to spare."

Leviton OM3 10G laser optimized multimode (LOMM) pre-terminated LC-MTP® fiber trunks connect the core using Leviton 4RU RDP enclosures. High-density MTP patch panels were used in the interconnect horizontal distribution area (HDA) cabinet of each row. From there, it's distributed via shorter pre-terminated MTP-LC trunks to additional RDP enclosures in every third cabinet as an equipment distribution area (EDA), which supports the equipment in that cabinet and the two adjacent using a top of rack (ToR) architecture.



Leviton RDP enclosures are connected with OM3 pre-terminated MTP-LC fiber trunks

"Our number one design requirement was quick and easy server cabinet deployment as the data center grows," says Mike Taylor. "Additionally, we needed the lowest achievable channel loss budgets in order to migrate to 10G, 40G, and eventually 100G Ethernet speeds."

Taylor continues, "Charlie [Bogolawski] suggested we use pre-terminated trunks, which helped save us a substantial amount of time and money, as well as reduce our loss budget throughout the JDC. We employed a three-connector design allowing us to patch together two cable links, and still stayed under the 10G channel loss budget of 2.6 dB. Our staff can patch the segments using MTP connectors and quickly deploy a server cabinet knowing that optical loss will not affect our equipment's performance. We're confident that this design will allow us to meet the 40/100G channel 1.9 dB loss budget when we eventually migrate to those higher speeds."

Dave Hollie of ITS and Mike Taylor of Temple examine the new data center infrastructure

Bluestone Communications, a Leviton Premier Network Installer, was the infrastructure contractor. Taylor has nothing but praise for their work as well. "This was Bluestone's first project for us, and they did a fantastic job. The guys worked quickly and always met project timelines. When challenges came up, they came to me with solutions, not just the problem."

The main JDC infrastructure installation was completed in December 2009, and active equipment migration started soon after. Next on the IT team's busy schedule are a new residence, dining, and retail complex; and upgrading edge equipment campus-wide. Leviton will be there as well, with the product solutions, design and specifications assistance, and any other support Temple may need.

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