

AFCI Receptacles Help Keep NCC Students Safe from Dormitory Electrical Fires

Northampton Community College (NCC) serves over 35,000 students a year with a wide variety of academic programs across its four campuses in Pennsylvania's Lehigh Valley. The only community college in the state to offer on-campus housing, NCC's website states "you invest a lot of time, money and energy in doing college right. Living on campus will help you focus and succeed." Students took note. Applications for on-campus housing surged, fueling an \$18+ million expansion at the college's main campus in Bethlehem.

Blending the Old with the New

Part new construction and part renovation, the expansion included the addition of two new residence halls, renovation of two existing residence halls, a new kitchen, and a new dining hall -- all annexed to give the appearance of a single, state-of-the-art student-living complex. Completed in August 2015, the complex more than doubled the campus' residential living capacity, becoming the home away from home for over 600 students, largely from out of state and overseas.

Safety and Comfort: Built-in Design Features

To enhance building safety, the new two-story residential complex features a fully-staffed security office and sliding glass doors that are enabled by student IDs. Key-lock light switches in hallways and passive infrared (PIR) occupancy sensors in bathrooms ensure all areas of the complex are well lit. The complex's life safety equipment includes smoke detectors, alarm systems, ground fault circuit interrupters (GFCIs) to prevent electrical shock, and arc fault circuit interrupters (AFCIs) to help prevent electrical fires.



According to the National Fire Protection Association (NFPA), firefighters respond to an average of over 3,800 fires on college campuses each year. Tragically, 26 people died in 89 fires on a college campus, in fraternities and sororities, and in student housing located within 3 miles of a college campus between 2000 - 2015.¹ Proven to save lives by detecting arcing conditions in electrical circuits, AFCIs became a requirement in college dormitories in the 2014 National Electrical Code (NEC®).

By de-energizing circuits when arc faults are detected, AFCIs help prevent wiring from becoming an ignition source for an electrical fire.

To meet the NEC requirement, the electrical wiring plan for the complex called for the installation of 180 AFCI circuit breakers to provide arc fault protection for each dorm room. The circuit breakers were to be installed in two service closets on the second floor of the complex on each side of the building. Serving eastern Pennsylvania for over 80 years, West Side Hammer Electric was awarded the electrical contract for the project, which called for the installation of hundreds of switches, outlets and other wiring devices, in addition to the AFCI circuit breakers.

A Timely Intervention

Plans were in the works to source the AFCI circuit breakers and other





electrical devices when Leviton C&I Sales Rep Mike Wilson and distribution partner Bob Brobst of Colonial Electrical Supply had arranged for a Lunch and Learn meeting with West Side Hammer Electric principals Luke and Lee Cunningham. Brobst, Wilson and Leviton Sales Rep John Sullivan reviewed the company's business needs and discussed several new products Leviton had recently introduced.

The timing of the meeting couldn't have been more opportune. Changes to the NEC were going into effect in early 2014, permitting the installation of OBC (Outlet Branch Circuit) AFCI receptacles as an alternative to AFCI branch circuit breakers, providing they meet the code requirements. With the code changes set to take place, the meeting turned out to be a "win-win" for all parties. "Were it not for our educational exchange, the AFCI circuit breakers that were being sourced from another manufacturer would have been installed, and the College would have missed out on the value-added benefits of the OBC AFCI receptacles," Sullivan stated. "Students use hairdryers, microwaves, refrigerators, audio equipment, computers, and other cord-connected equipment in their rooms," explained Colonial

Electric Supply's Brobst. "Since most dorm rooms are double-occupancy, students have only a few outlets to share between them. With the constant switching out of equipment, dormitory outlets take considerable abuse. This can result in nuisance tripping of AFCI circuit breakers."

A Smart, Cost-Effective Choice

With their introduction to Leviton's SmartlockPro® OBC AFCI receptacle, the West Side Hammer Electric team was quick to recognize its value over the AFCI circuit breaker solution. "The AFCI receptacle is resettable at the point of use. Students can reset the device themselves without having to rely on maintenance personnel to switch the circuit breaker back on. The receptacle's downstream feature makes dorm room protection both comprehensive and seamless," said Luke Cunningham.

"It can take considerable time before maintenance department personnel are alerted to a breaker issue, especially after hours and on weekends. The convenience and time-savings of the AFCI receptacle make it the superior solution for the NCC installation," observed Lee Cunningham.

The AFCI receptacle was also the hands-down winner from a cost perspective. West Side Hammer Electric realized an immediate cost savings of 50%. "The installation ratio was 1:1 -- receptacles to breakers. I'm all for saving my company money," added Jeff Zenz, West Side Hammer Electric's Supervisor on the job.

New Showers, New Lounges and All-New Leviton Devices to Match

When the project was completed, just in time for the Fall 2015 semester, it included 89,000 square feet of usable space, new showers and 3,000 industry-leading electrical wiring devices from Leviton. College administrators looked forward to the new complex enhancing the quality of student life and driving more on-campus student involvement on nights and weekends.

Industry-Leading Ingenuity

The industry's first commercially-available device of its kind, the SmartlockPro OBC AFCI Receptacle not only helps protect against potentially hazardous arc-faults due to damage in branch circuit wiring, but also safeguards extensions to branches, such as appliances and cord sets. Often unseen, arc-faults can occur anywhere in a building's wiring, including within walls, at loose electrical connections and in electrical cords that become damaged when run under furniture.

SmartLockPro OBC AFCI Receptacle

- Easy to use test and reset buttons; self-tests when reset button is pressed; won't reset if protection is compromised
- Line-load reversal diagnostics; stops power feed to the receptacle face and downstream devices
- LED indicator lights alert installers of line-load mis-wiring or when the device has tripped
- Innovative design reduces nuisance tripping
- Tamper-Resistant

¹ NFPA's "Structure Fires in Dormitories, Fraternities, Sororities and Barracks" report