

TekDek™ Luminaires & TekLink™ TL1000 Controls

Helping Virginia Commonwealth University Provide Uniform Lighting and Reduce Energy Costs



Project: Virginia Commonwealth University (VCU)
Location: Richmond, VA
Project Manager: Keith Van Inwegen, VCU Design & Construction
Agent: Lighting Virginia-Central
Architect: Baskervill, Richmond, VA

“VCU required more energy efficiency, increased reliability, better illumination – meaning a more even pattern – and advanced controllability. Kenall TekDek with TekLink met all these demands.”

– Jay L. Woodburn, Architect and Principal
 at Baskervill



PROJECT SUMMARY

Challenge: Reduce power consumption, provide uniform lighting while safeguarding patrons and property in a six-story parking deck on the Virginia Commonwealth University campus.

Solution: Replace outdated metal halide and induction lamps with TekDek™ TD17 LED luminaires and TekLink™ TL1000 cloud-based lighting controls.

Benefit: Increased uniformity throughout the space providing safety and security for parking garage patrons; LED luminaires' 150,000 hour LED lifetime (L70) significantly reduced maintenance; lighting and controls designed and manufactured by one company simplified purchasing and ensured that the whole system—luminaires and controls—work seamlessly together.

TekDek™ with TekLink™ Controls Provides Safety, Security and Savings in University Parking Garage



Virginia Commonwealth University (VCU), located in downtown Richmond, Virginia, has a student body of more than 31,000 students and, despite its growth, has committed to be carbon-neutral (net zero) by 2050. Reducing electricity usage is a major goal, as purchased electricity accounts for half of the university's greenhouse gas (GHG) emissions.

In 2008, VCU built the Jefferson Street parking deck. Although the structure is relatively new, the facilities management staff is constantly improving existing structures to reduce VCU's carbon footprint. When considering how to best update the deck's lighting, VCU staff and architects at Baskervill, an architecture, interior design and engineering firm in Richmond, Virginia, wanted a high level of uniformity to ensure the safety of garage patrons. They also needed to reduce energy consumption in the 689-space garage. "Baskervill was the original architect when the parking garage was built and, at the time, the emphasis was on high intensity, high footcandle lighting, but it wasn't the most energy efficient. Our challenge was to upgrade the whole facility to a modern LED system," said Jay L. Woodburn, Architect and Principal at Baskervill.

VCU staff first installed and carefully evaluated LED luminaire samples from several manufacturers. They then toured existing installations near Richmond, and all vendors submitted to a competitive bid process before the university selected TekDek™ TD17 luminaires.

With additional assistance from Richmond-based agency Lighting Virginia, VCU reduced the number of installed luminaires from 446 to 273. This enables the university to not only save energy but it also reduces the number of parking luminaires they will need to service or replace in the future. The old 175W metal halide and induction lamps, 10% of which

had already been re-lamped with LED bulbs, were replaced with 49W LED luminaires. TekDek is designed specifically for parking structures and delivers excellent uniformity and vertical illuminance. Those involved with the project especially liked TekDek's optics, which expressly reduce disabling glare for both drivers and pedestrians. "They really liked the fact that there were no hot spots and that you could stare right at the lights and not see the LEDs because of the lens," said Woodburn.

Better Control of Energy Consumption

VCU staff identified lighting controls as another way to conserve energy. "Diligence is very important to Baskervill, so our engineer, Richard Nelson, dug more deeply into the control systems available from each manufacturer to ensure that the controls fit all the needs of the project," said Woodburn. VCU selected TekLink™ TL1000 lighting controls, a cloud-based lighting control system designed and manufactured by Kenall. The new controls further reduce power consumption by utilizing occupancy sensors, which allow VCU to trim the lighting during periods when there are no patrons in the garage. TekLink controls monitor energy usage and allow the facility manager to adjust system settings by way of a simple user interface, accessible via tablet, cell phone or PC.

Finally, VCU uses TekLink's robust reporting capabilities to track system performance. The ability to monitor the lighting remotely saves time compared to manually inspecting the lights, and TekLink can e-mail reports directly from the tablet. That means the days of hiring someone to drive around each parking garage to check for lights that were malfunctioning are over. "Perceived security is a very big deal to VCU and they are very on top of their maintenance, so unlike some other parking facilities that might let a third of the lights burn out before making repairs, they were fixing each individual light whenever there was an issue," said Woodburn.

VCU's energy cost savings was significant right from the beginning. In the first six months, savings increased steadily from 44.4% in August 2015 (the first month the luminaires were in use), to 55% in January 2016 after the TekLink control system had been fully operational for two months.



Above: Cloud-based TekLink™ TL1000 controls helps VCU boost energy savings and track usage.

Kenall TekDek Features:

- Outstanding uniformity
- Highest efficacy rating—over 150 LPW—in the USDOE's Lighting Facts program
- DLC Qualified Products List; assists in qualifying for rebates and incentives
- Reduced maintenance costs due to long life LEDs (L70 150,000 hours)
- Ingress Protection (IP65) rated and Wet Location listed
- Vandal-resistant design
- Lifetime Peace of Mind Guarantee® (direct mount with polycarbonate lens)

Benefits for VCU:

- Safety and security of parking garage patrons
- Over 50% reduction in energy costs
- Custom, cloud-based reporting enhances energy savings
- Rugged fixtures resist adverse weather conditions, dirt, dust and attempts at vandalism—making them ideal for use in public areas
- Specialized optics reduce disabling glare and optimize driver and pedestrian safety

For more information, please visit us on the web at www.kenall.com



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