

Education Infrastructure Perspectives

Enabling improved student experiences



We build what's next to light, power, and connect everyday spaces.

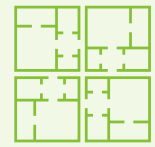
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Successful learning always relies on understanding the methods, solutions, and formats that are the best at creating a productive environment. Academic leaders are prioritizing the challenges of hybrid learning, versatile spaces, amenity enhancements, legacy infrastructure, and campus resources.



Hybrid Learning



Versatile Spaces



Amenity Enhancement



Legacy Infrastructure



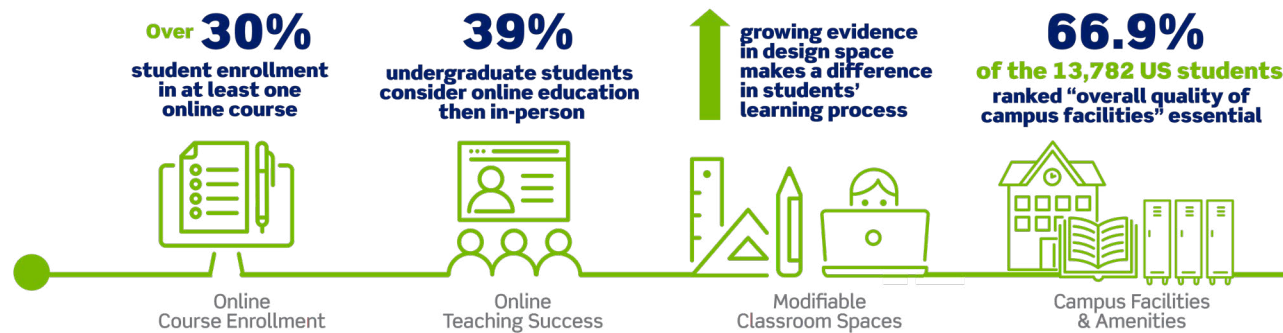
Campus Resources

Adopting the latest controls, lighting, electrical and network solutions can help alleviate the above changing demands as well as enable the goals of education facility, IT, and engineering stakeholders.



Hybrid Learning

Recent shifts within education and how students learn or how teachers instruct is the transition to online and hybrid curriculums, creating many comparison. In-person and hands on learning has proven to be advantageous to creative, collaborative, and productive thinking. Conversely, passive and unproductive learning is amplified in remote settings due to varying access to video and audio tools, which contribute to low participation. The quality, color and performance of lighting profoundly impacts numerous levels of human functioning such as vision, circadian rhythms, mood, and cognition. This is complicated further when students are simultaneously in-person and online but can be improved by providing virtually inclusive on-site learning spaces. **Modified room setups should offer appropriate lighting, enhanced network and comprehensive audio-visual systems, for the most productive collaboration and interaction.**



Versatile Spaces

Despite the shift to online learning, educational institutions have been in the process of modifying facility spaces and places to meet the rising demand of multi-functional requirements through versatile layout configurations in classrooms. Conversely, other campus spaces such as gymnasiums, food halls, student unions, dormitory common rooms, libraries, etc. have the capability to be modified for multi-purpose applications. **Facility redesign, remediation and retrofit requires appropriate planning and designing to include power availability, utility-based network architecture and versatile controlled lighting design.**



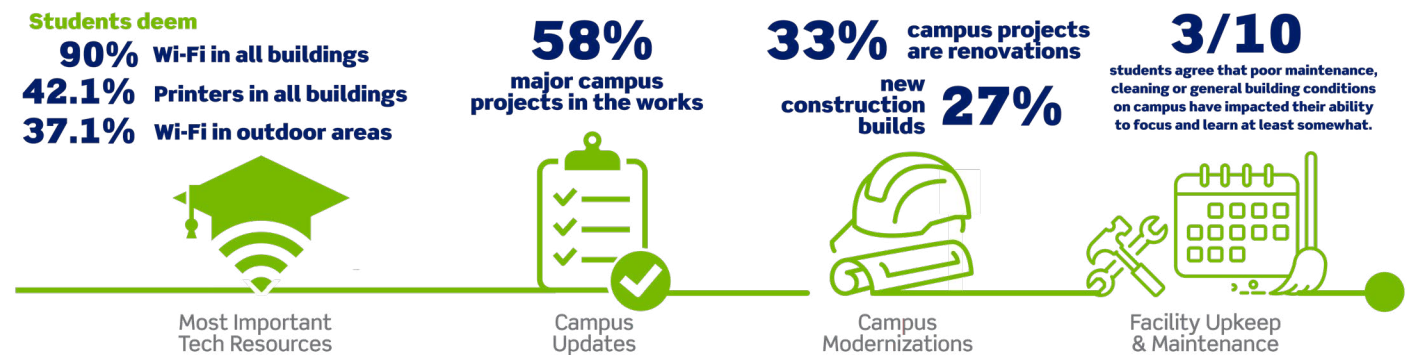
Amenity Enhancement

Although most learning on a school campus occurs in a classroom, schools also need to provide resources that expand out outside those specific rooms and are accessible across the entire facility, to allow for learning at any point. Amenities in higher education are typically that and/or facilities that promote college students' lifestyle and contribute to community, relationship-building, learning outside of the classroom, and have an opportunity present an innovation or departure from past practice. **High-quality interior design, architectural, electrical, network and mechanical planning can significantly inspire human engagement between student and campus.**



Legacy Infrastructure

A large majority of university campus buildings have high maintenance and operational costs, inefficient space utilization and outdated technology, creating barriers to advanced learning. The historical importance and associated financial impact that prohibits new construction is solved with opportunity to retrofit, remediate, or refurbish. These methods of enhancement require extensive planning and additional research to ensure the heritage of the building is kept intact, while modernizing and enhancing the buildings to meet current and future functional expectations. **Similar to new construction planning, outdated infrastructure can also benefit from the latest controls, lighting, electrical and network system advancements.**



Campus Resources

In addition to faculty members and academic leaders, there are a plethora of supporting facility management, trades, and service organizations that support the successful day-to-day operations of educational institutions. With a shortage of skilled labor and supply chain limitations, facilities are looking for more efficient and innovative methods to mitigate delays in capital projects and campus maintenance. Selecting site-ready solutions can maintain productive and timely campus upkeep. **Facility managers are looking to partner with manufacturers that offer shortened and easier installation processes, pre-tested devices, pre-terminated devices, ladder less technology, and universal technician knowledge.**

Information Sources







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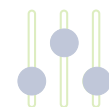
While the education industry navigates the challenges outlined previously, they must find solutions that match the issues they face. Controls, Lighting, Electrical and Network Infrastructure all have varying abilities to satisfy at least one of the education challenges related to brand standards, integration, sustainability, connectivity and compliance, as reflected in the below chart.

Enabling Education Goals with Controls, Lighting, Electrical and Network Infrastructure.

Solution	Hybrid Learning	Versatile Spaces	Amenity Enhancement	Legacy Infrastructure	Campus Resources
 Controls	●	●	●	●	●
 Lighting	●	●	●	●	●
 Electrical	●	●	●	●	●
 Network	●	●	●	●	●

● Very Relevant ● Relevant ● Less Relevant

Education Control Solutions



Leviton Control Solutions bring innovative design and features to educational facility establishments through specific products like distributed, daylighting, wireless controls, dimmers, occupancy/vacancy sensors, relay panels and timer switches. These controls products provide precise, dependable control while offering the potential for significant energy savings.

Education Electrical Solutions



Leviton Electrical Solutions offer safe and reliable management of electrical loads through various electrical wiring devices that are designed to withstand the rigors and code requirements of various environments.

Education Lighting Solutions












Leviton Lighting Solutions bring a variety of options to illuminate the variety of spaces in higher education locations. Leviton offers spec-ready and code-compliant lighting solutions for every space in a learning setting.

Education Network Solutions



Leviton Network Solutions supports educators and students around the globe with a selection of high-performance network infrastructure products and systems. End-to-end performance ensures users are connected, engaged, and empowered while learning, whether they are in the classroom or at home.

Controls, Lighting, Electrical and Network Application Benefits

Multifamily Space	Lighting & Controls	Electrical	Network
 COMMON AREAS	Maximizes student and faculty safety with motion detection, and pathway lighting to illuminate campus grounds. Lighting enhances the brand identity and character of an educational facility.	Provisioning laptop and mobile charging for collaborative zones, study areas, dining spaces, and lounge seating. Supplementary power with temporary electrical services for events.	Accommodation of bandwidth to support student and faculty network capacity requirements. Support IP connected security cameras, mass notifications, and emergency communication systems.
 CLASSROOMS	Enhances attentiveness, productivity, and motivation. Creates a comfortable learning atmosphere. Provides low-glare and task-based illumination.	Sufficient tamper-resistant electrical capacity and power sources for instructional technology, experiential learning and charging of personal learning devices.	Provides high performance connectivity to support student online access, networked AV and various learning systems to aid in student development.
 LABORATORIES	Ensures precise and consistent illumination for testing, analysis and validation of experimentation. Adequate lighting ensures clear visibility, reduces the risk of accidents and enhances accuracy in tasks.	Ensures all equipment and devices receive reliable and properly grounded power that is tamper-resistant. Antimicrobial treated surfaces assist in the reduction of mold, mildew, fungi, and odor-causing bacteria.	Provides high-performance computing infrastructure required for data-intensive workloads. Provides adequate bandwidth and speed to support vast amounts of download, analysis, and transfer. Supports safety and emergency systems.
 AUDITORIUMS	Provides flexibility for lighting for various functions including overhead, ambient lighting for audience members, stage area lighting for performances, and presentations and highlights walkways and doorways for safety.	Generates sufficient and code-compliant power to support auxiliary audio/visual or special effects equipment to support live performances.	Provide adequate conference room connectivity to support web-based and in-person learning—sufficient network capacity to cater to peak traffic demand for events.
 CAFETERIAS	Creates a functional and relaxing space for students and faculty. Tasked-based lighting for food preparation. Provision of emergency lighting, and exit signs for safe evacuation.	Provides sufficient power for vending machines, commercial-grade kitchen, audio/visual equipment, signage, and student device charging.	Provides seamless connectivity, and online access for students. Supports digital signage for campus engagement and information sharing
 LIBRARIES	Creates a pleasant atmosphere promotes concentration and is conducive to reading. The use of pendant or suspended lighting reduces glare. Occupancy sensing controls aid energy savings and cost efficiencies.	Sufficient tamper-resistant electrical capacity and power sources for instructional technology and charging of personal learning devices.	Provides high-performance connectivity to support student online access, and various learning systems to aid in student development. Preparedness with appropriate emergency communication systems.
 DORMITORIES	Creates a comfortable and stress-free environment for residents with an appropriate ambiance.	Provides appropriate power availability to illuminate and charge home appliances, electrical and personal devices.	Network availability for continuous uptime of Wi-Fi, streaming, and room-level automation.
 ATHLETIC FACILITIES	Provides energy efficiency and cost savings based on occupancy levels. Ability to customize lighting to mood and style. Provides a well-lit and optimal environment for exercising. Attracts and improves user experience.	Provides adequate and surge-protected power for exercise equipment and supporting machinery. Provides appropriate power to support personal device charging. Provides GFCI power for locker, restroom, and pool areas.	Offers seamless Wi-Fi connection so residents can track and follow fitness with personal and in-gym devices. Supports digital signage for campus engagement information sharing and emergency notifications.
 DATA CENTERS	Illuminates servers and hardware so that data center operators can easily see and manage equipment. Minimizes energy consumption when areas are unoccupied.	Robust available power sources to control infrastructure, manage heating and cooling, and support the overall efficiency of tightly packed server and IT equipment.	Employs maximum network efficiency and connectivity within confined space. Allows for robust security systems and firewall protection. Ability to identify issues and proactively manage issues for optimal network performance.

Education Infrastructure Perspectives

Enabling improved student experiences

Enhance student learning environments for a productive experience

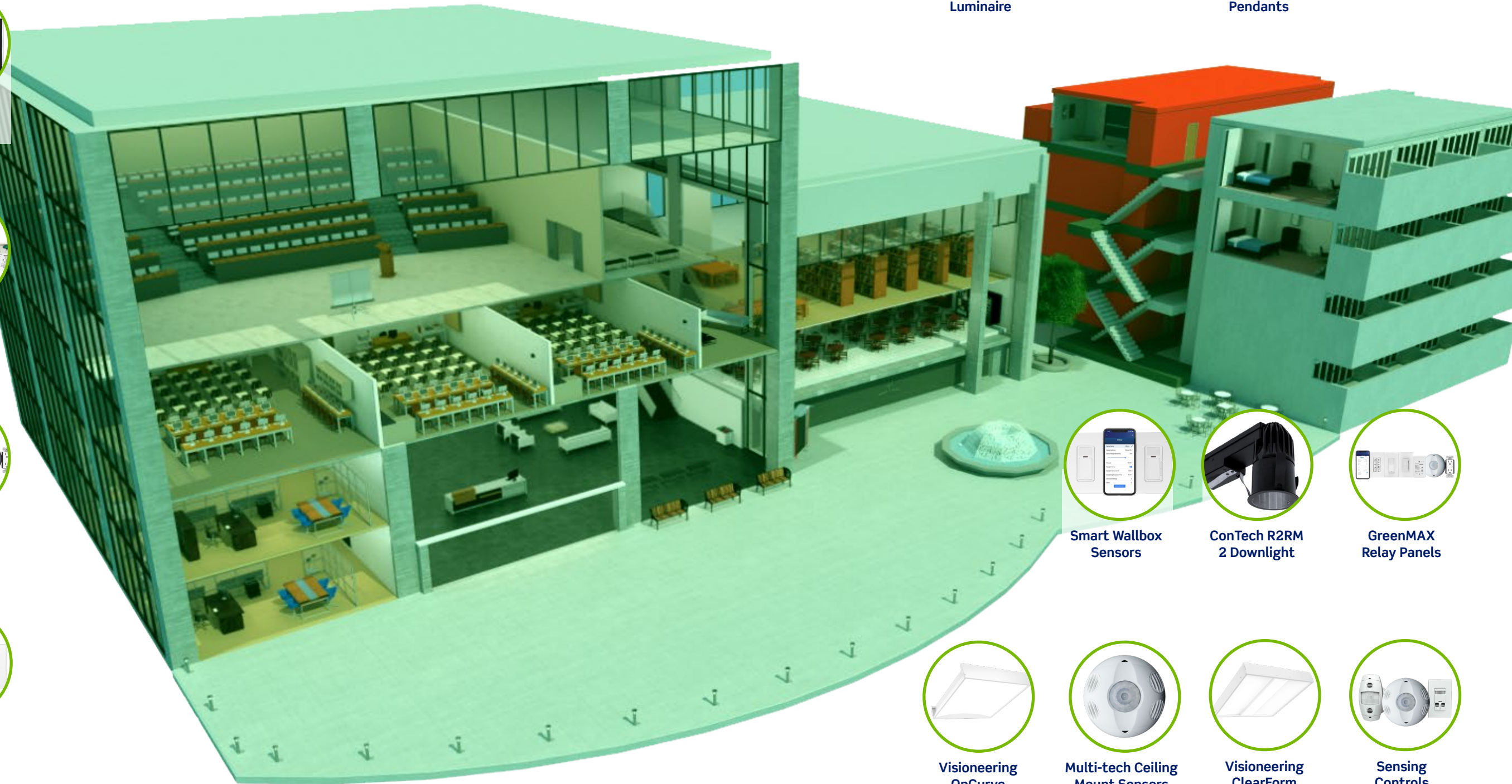
- Promotes welcoming and safe environments
- Boosts productivity and creative thinking
- Balances student experience and space functionality/efficiency
- Creates a conducive space for students to learn, collaborate and study independently

SMART EDUCATION LIGHTING & CONTROL SOLUTIONS

The following visualization suggests typical products and solutions that may be found relevant to each space.

-  Vioneering LMEZ 3
-  Sapphire
-  Vioneering LMEZY
-  GreenMAX DRC
-  Intense SD Downlights
-  Wireless Dimmer
-  Vioneering Bevel
-  Provolt Room Controller

-  Intense LD Downlights
-  ConTech Wall Lighter Track Luminaire
-  DRC Wireless
-  ConTech CPL Performance Pendants
-  Smart Fixture Mount Sensors



-  Smart Wallbox Sensors
-  ConTech R2RM 2 Downlight
-  GreenMAX Relay Panels
-  Vioneering OnCurve
-  Multi-tech Ceiling Mount Sensors
-  Vioneering ClearForm
-  Sensing Controls

Education Infrastructure Solutions

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SMART EDUCATION ELECTRICAL & NETWORK SOLUTIONS



Floorboxes



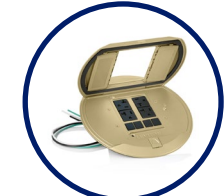
IEC 60309 Pin & Sleeve Devices



AV Connectors



IT/AV Signal Extension



Pre-Wired Floorboxes



Plugs & Connectors



QUICKPORT™ Surface Mount Boxes



IT/AV Splitters and Switches



20A GFCI/AFCI (resi)



Wetguard Wattertight Plugs & Connectors



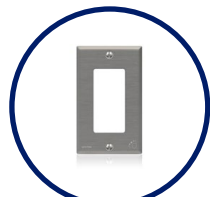
Antimicrobial QUICKPORT™ Wallplate Inserts



ATLAS-X1™ Cat 6A Jacks



Decora Plus Switches



Antimicrobial Wallplates



IT/AV Audio Amplifier



Multimedia Outlet System



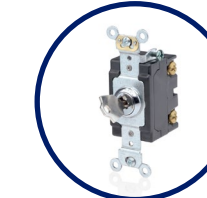
RDT I/O Cat 6A Cable



Secure RJ Locking Patch Cords



Surge Protective Devices



Key Locking Switches



Heavy Duty Tamper Resistant Receptacles



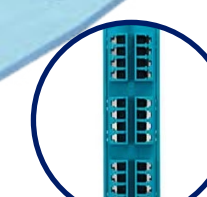
STRUCTURED MEDIA™ Centers



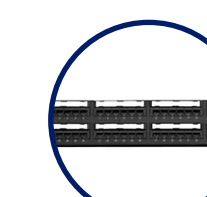
Stainless Steel QUICKPORT™ Wallplates



RDT Cat 6A Cable



OPT-X™ SDX Fiber System



QUICKPORT™ Patch Panels



VXC™ Coupler



OneReach™ PoE Extender System

The DNA of Successful Deployment and Remediation

Leverage partners to meet organizational objectives, on-time and under budget

● Hospital Stakeholders ● Leviton

CONSTRUCTION PHASES

REMEDATION PHASES

PHASE 1

Facility Needs Assessment

Discuss what is needed to best optimize and maintain the physical condition and value of facility, develop capital budgets, and prioritize resources.

● Define use cases that meet organizational objectives.

PHASE 2

Pre-Construction and Design Phase

Review, revise, and expand schematic plans and elevations to incorporate all the details and specifications required for construction.

● Operationalize requirements through programmatic and design development.

PHASE 3

Procurement Phase

Plan and acquire goods and services needed for construction, while considering timeline, quality of project, and budget.

● Establish engineering efforts that leverage maximum acquired value of equipment, material, and construction services.

PHASE 4

Construction Phase

Architect, engineers, and project manager to perform quality control inspections, respond to Requests for Information (RFIs) and review and approve technical submittals.

● Realize benefits of planning that results in effective implementation, quality assurance, approvals, tracking of deviations, and guaranteed delivery of contractor requirements.

Solve Organizational Challenges



Hybrid Learning



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Campus Resources

PHASE 5

Facility Operation

Following the conclusion of a project, continuously track and monitor efficiency of day-to-day operations to ensure needs are being met.

● Maximize facility uptime and minimize operational costs.

PHASE 6

Repairs and Maintenance

Continuously address and minimize need for repairs through preventative maintenance and strategic planning; use a thorough approach to repairs when needed, keeping a long-term building perspective in mind.

● Reduce capital expenditure related to maintenance and repair.

PHASE 7

Annual Needs Assessment

On a yearly basis, ensure teams are routinely communicating and monitoring for potential facility needs and repair priorities.

● Cyclical assessment and revision of organization goals and objectives.



Leviton Partner

Catalyst

● Understand objectives to advise possibilities and practical considerations.

● Advocate design and specifications with practical solutions to meet use case goals.

● Ensure integrity of design and construction intent are met during procurement with solutions that exceed requirements.

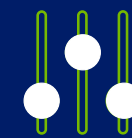
● Generate engineering submittals and solutions for vertically integrated supply chain.

● Ensure upgrade path and product life cycle outpaces emerging demands.

● Solutions that achieve predictive maintenance and operational efficiency goals, with life cycles that outlast their design intent.

● Act as a trusted advisor of compliance with new codes, standards, and emerging technologies in order to enhance infrastructure to proactively address evolving operational requirements.

Successful partnerships with solution experts meshed with relevant project life cycle roadmaps can ensure successful remediation and deployment that further translate into positive organizational growth and operations.



CONTROLS



LIGHTING



ELECTRICAL



NETWORK



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