



Light is knowledge
Making the grade
in education facilities



The new age of enlightenment in a changing education environment

With the expectation to improve student performance and the evolution of teaching methods, educators and students need more flexible learning environments. Although distance learning is supplementing traditional classrooms, many campuses still need to modernize their facilities to enhance the learning process as well as provide a healthier, safer and more secure environment. Administrators manage through these dynamics and the economic reality of budget constraints.

Innovation in learning

New concept classrooms create flexible learning centers that change the way students and instructors interact. Older classrooms are being transformed with more modern functionality and adaptability. Focused on creating smaller learning 'pods', students and instructors are using far more electronic media as a means of providing instruction in the classroom.

Faculty recruitment

Competition is fierce for great talent who can engage students and meet performance metrics. Having the latest technology and supportive facilities attracts both students and educators seeking opportunities for successful futures and careers.

Safety is paramount

The world has changed. Maintaining a secure, healthy and safe environment is a primary focus of all academic personnel and administration, more now than ever before.



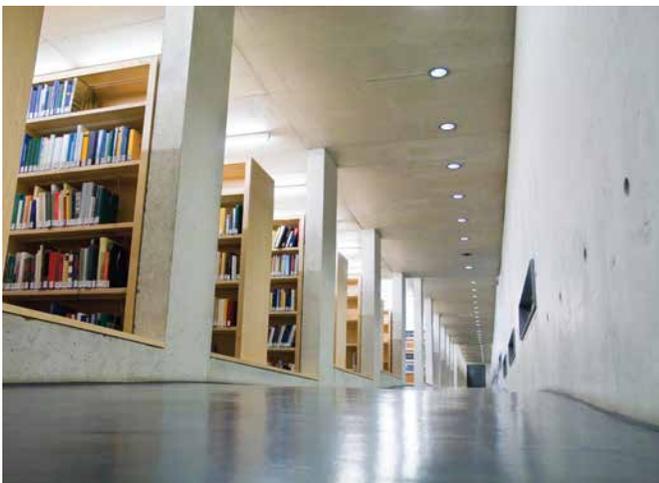


Fiscal responsibility for a bright future

Long-life, energy saving solutions not only reduce energy and maintenance costs, but enable greater investment in education delivery rather than in facility maintenance. Upgrading existing systems can be challenging and oftentimes confusing. It is important to choose experienced partners and reputable brands with proven track records to ensure that your establishment is able to start or continue building a long legacy of academic excellence.

Improve visual environment for enhanced learning

When choosing lighting for your educational facility focus on the tasks being performed in the space and provide high quality illumination deemed appropriate for the activity. The lighting should be integrated with the architecture and interior space finishes and whenever possible utilize daylighting techniques. Good quality lighting can provide visual comfort and create an atmosphere more conducive to educator and student interaction.



Sustainability for life-long learning

“Green School” programs help school boards, administrators, trustees, and facility managers weigh sustainable options and select the most cost-effective solutions to realize the highest return on investment. Sustainability initiatives not only conserve natural resources and construct healthier venues where students and faculty spend extended periods of time, but they simultaneously create valuable case studies that may be folded into course curricula across many fields of study. Positive action in these areas generates great pride for students, faculty, parents, alumni, and the community.

“Approximately 25 percent of Americans go to school or college every day as students, teachers, staff, faculty and administrators...”

When you look at our schools today, you see outdated buildings in need of repairs, burdened with unsafe toxins, dwindling budgets and outdated resources – in place of opportunity and progress.

By promoting the design and construction of green schools, and by greening the operations and maintenance of existing schools, we can make a tremendous impact on student health, school operational costs and the environment.”

– The Center for Green Schools (USGBC)

Lighting considerations

Classrooms, laboratories, and lecture halls

Classrooms, laboratories, and lecture halls require energy-efficient and high color rendering sources with generally cooler color temperatures to promote attentiveness and learning. The instructor should have the ability to control the intensity in the environment for audiovisual tasks, interactive sessions and administering tests. Sensors should be used where daylight may be sufficient to offset the need for electric lighting, and also as a means to ensure that the room lighting is off when not in use.

Administrative areas

Similar to a commercial office building with open areas and private offices, the use of efficient, long-life general lighting supplemented with low energy task lighting is the recommended approach to accommodate personal preference and vision requirements of a diverse population. Where daylighting is ample, sensors can reduce the electric lighting load, and occupancy sensors can be used in all private offices to ensure that the room lighting is off when vacant.

Libraries and media centers

Libraries and media centers can waste a lot of lighting energy because of their extended hours and dense book stack areas. Consider energy-efficient sources that provide appropriate vertical illumination in stack areas on an occupancy sensor that only activates when people are in the space. Low energy task lighting is generally deployed in study areas and should be user-controlled. Circulation areas and offices should take advantage of daylighting controls and dim or turn off if electric lighting is not needed.

Residence halls

Living spaces pose unique challenges to create the residential aesthetic desired, while addressing the energy efficiency and safety needs of the building. Warm color temperature sources in student rooms make the space feel like a home. Long-life and low-energy ambient lighting is recommended in hallways and study rooms. Laundry rooms, lounges and private study areas should use sensors to automatically turn off lighting when spaces are not occupied. Safety and security should not be compromised for energy savings. Exterior entrance lighting should be uniform and low glare.

Common spaces and dining halls

In lobbies, lounges, meeting areas and cafeterias that might use downlights and track lighting, use energy-efficient, long life LED lamps and luminaires and take advantage of daylight sensors and controls to maximize energy savings. Time-clock controls with event overrides ensure public areas aren't illuminated during non-use hours.

Athletic facilities

Long a part of campus life, sports facilities can be a maintenance headache for facility managers. Choose long-life products that ensure minimal downtime and maintenance. Replace downlight sources with LED lamps, and older fluorescent sources with energy-efficient alternatives.

Older facilities in particular will benefit greatly from the latest long-life, efficient fluorescent, LED and induction luminaires. In many instances, these facilities are 24/7 operation and cutting energy without sacrificing illumination levels or light quality is easy.

Exterior commons

Safety and security should be of utmost importance in lighting exterior areas. Any lighting system chosen should provide adequate illumination and eliminate dark areas and glare, which can make an exterior space feel unsafe. Long-life sources can reduce dependency on maintenance. Astronomical time clock and photocell controls ensure light at night when needed, and can also reduce energy consumption during unoccupied hours.

Parking facilities

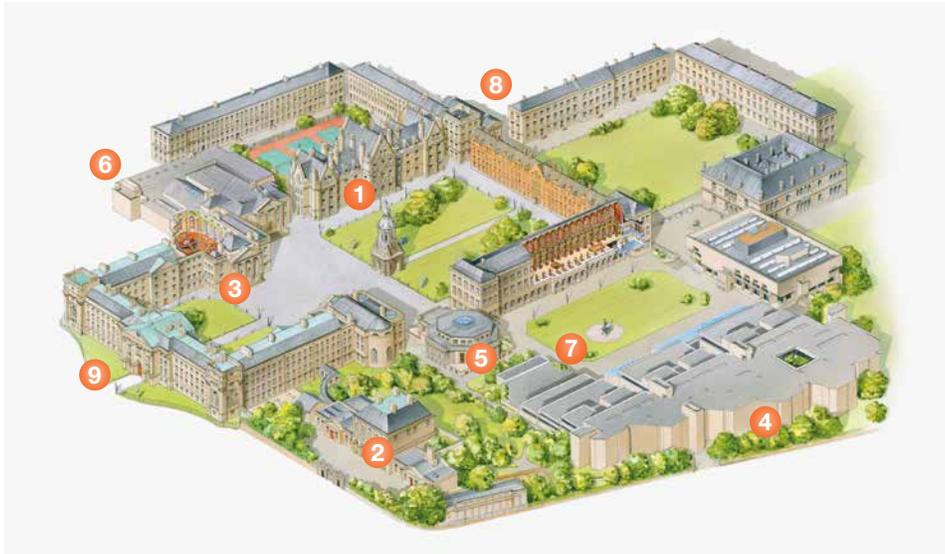
Upgrading outdoor lighting systems to integrated LED solutions with control options delivers energy savings as well as a more uniform illumination and well-lit environment than existing HID installations.

Signage and wayfinding

Illuminated signage brings an added level of safety and security to your lighting plan by providing important visual cues to students, faculty, and visitors to help them feel secure while easily navigating your campus.

SYLVANIA products and solutions

Smart lighting for the modern campus



- 1 Classrooms, Laboratories, and Lecture Halls
- 2 Administrative Areas
- 3 Libraries and Media Centers
- 4 Residence Halls
- 5 Common Spaces and Dining Halls
- 6 Athletic Facilities
- 7 Exterior Commons
- 8 Parking Facilities
- 9 Signage and Wayfinding

SYLVANIA product portfolio



LED Lamps

- ULTRA PRO™ & ULTRA PRO™ HD LED PAR
- ULTRA LED™ PAR, R/BR, MR16
- ULTRA LED A-line, B10, G25
- ULTRA LED High Lumen
- SubstiTUBE® IPS LED T8



LED Retrofit Systems & Kits

- ULTRA LED RT & ULTRA LED SE™ RT Downlight Kits
- SubstiTRONIC™ LED T8 Systems
- LEDVANCE 2X2 & 2X4 Retrofit



LED Luminaires

- LEDVANCE Edge Lit Panel
- LEDVANCE Surface
- LEDVANCE Vapor Tight
- LEDVANCE High Bay
- LEDVANCE Wall Packs
- LEDVANCE Canopy



Fluorescent Lamps & Ballasts

- OCTRON® & OCTRON XL T8
- PENTRON® T5, T5 HO, T5 HO XL
- DULUX® & DULUX XL CF
- SYLVANIA Mini Twist CFL
- OSRAM QUICKTRONIC® Ballasts



HID Lamps & Ballasts

- METALARC® MH
- METALARC® Pulse Start
- METALARC® POWERBALL® MH
- LUMALUX® & LUMALUX XL HPS
- OSRAM QUICKTRONIC® MH



Incandescent/Halogen Lamps

- CAPSYLITE® PAR
- TRU-AIM® MR16
- SYLVANIA R/BR, A-line
- SYLVANIA B10/B12, G25

Developing smart solutions for schools

Light quality

Modern SYLVANIA lighting technologies are capable of delivering excellent quality light with color rendering index (CRI) values of 80 or better. For applications where distinguishing between subtle variations in color is critical for improved task performance, select higher CRI sources that are most stable over the life of the lighting system.

High reliability

Installing long life lighting systems means less maintenance disrupting the school day. With OCTRON® XP® XL T8 fluorescent systems up to 84,000 hours average rated lamp life and LEDVANCE LED lens troffer retrofits up to 82,000 hours life, the burden on facility maintenance groups can be minimal. LED light sources and luminaires have long life ratings, typically delivering 70% of initial lumen output (L_{70}) at up to 150,000 hours. Consider end-of-life characteristics of different lighting technologies when evaluating long life options. Systems designed with high efficiency OSRAM QUICKTRONIC® electronic ballasts or high efficiency LED power supplies ensure the most reliable and efficient performance.

Illumination efficiency

The efficiency of a lighting system depends on both the ability of the source to generate light and the luminaire delivering the light to the task. Today's source technologies have efficacies in the 85-110 lumens per watt (LPW) range. Selecting the appropriate luminaire for the application should pair the photometric distribution with the layout of the space. Care must be taken to address visual comfort and avoid glare.

Sustainability

Minimizing environmental impact and lowering greenhouse gas emissions is a priority. Through the development of long life, energy-efficient SYLVANIA lighting products that minimize or eliminate the use of hazardous materials, such as mercury and lead, our portfolio strives to reduce waste going into landfills and into air via power generation emissions. Selecting luminaires that minimize light trespass and sky glow further lessens the impact on the environment.

Environmental conditions

Select lighting systems that best complement ambient conditions. Certain technologies can be more temperature sensitive than others, although proper luminaire design can often mitigate those characteristics. The output of fluorescent

systems tends to decrease at very low or very high temperatures. LED sources thrive in cold environments, but exhibit diminished performance in hot ambient conditions. High intensity discharge (HID) systems tend to show the least thermal sensitivity and therefore are excellent for unconditioned spaces where extreme ambient temperatures may occur. Use appropriately designed luminaires that protect system components in high dust or moisture conditions should they exist.

Controllability

A good lighting design should incorporate a discussion about controls strategy, especially in spaces like classrooms, auditoriums and laboratories where task requirements may vary greatly. While some lighting technologies, like fluorescent and LED, respond immediately with no warm-up time or hot restrike concerns, HID systems have limitations in these areas. In campus environments, a tremendous opportunity exists for step-dimming applications, which may be accomplished with HID, fluorescent, and LED systems. Selection of high efficiency OSRAM QUICKTRONIC® systems or high efficiency LED systems,® with sensors and switches should complement the controls strategy to optimize system life and performance.

Why install controls?

A smart controls strategy can tailor the lighting of a facility to the needs of the tasks performed in each space, and offer a tremendous opportunity to save energy and money. Light levels may be reduced or extinguished according to activity level, task requirements, operation schedules, or the presence of natural light. In some educational applications, controls can result in up to 50% energy savings. Energy management systems can be easily programmed and reconfigured as daily routines require. Many systems have easy-to-use software offering consumption monitoring and reporting to notify you of outages or malfunctions, saving on maintenance costs and downtime.

Life-cycle cost and return on investment

A modern lighting system will (1) extend the useful life of your facility, (2) reduce energy consumption and waste, and (3) improve the appearance of your space.

Facility-wide analysis

A thoughtful approach to developing a smart lighting concept marries energy saving products and the latest in lighting controls with the operation schedule, task requirements and an analysis of space utilization. As experts in lighting systems and applications, we can help your company customize a solution with the latest technologies to maintain or improve light quality, reduce energy consumption, and ultimately save you money.



To capitalize on this opportunity, schedule a lighting design audit with your SYLVANIA representative.





Product licensee of
trademark SYLVANIA
in general lighting.

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