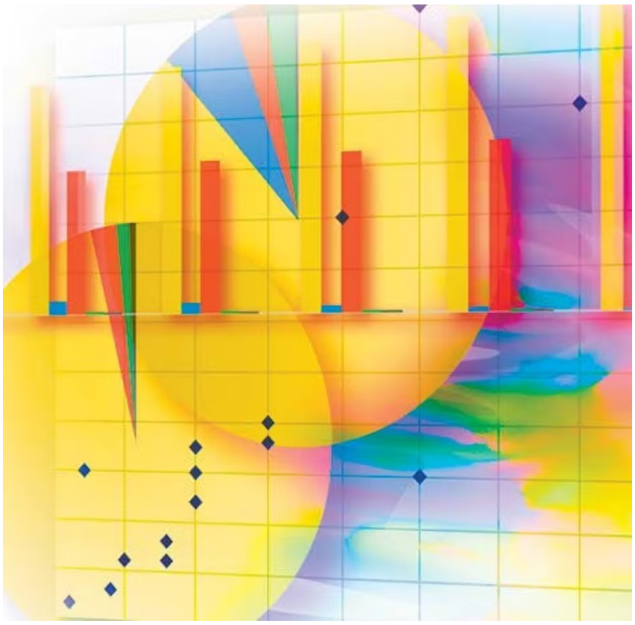
LIGHTING

# Chinese packaged LED manufacturer MLS buys stake in Kaistar Lighting

The China Electronics Company portfolio of affiliates with LED-centric technology continues to expand with the parent of Forest Lighting buying an interest in Kaistar.

Maury Wright • Sept. 22, 2015 • 4 min read



Chinese packaged LED manufacturer MLS buys stake in Kaistar Lighting

*The China Electronics Company portfolio of affiliates with LED-centric technology continues to expand with the parent of Forest Lighting buying an interest in Kaistar.*

Forest Lighting has issued an announcement stating that its China-based parent company MLS has acquired an 11% stake in Kaistar Lighting. Presumably, the investment will help MLS continue to expand its presence in the packaged LED space through an intricate set of partnerships that are tied to China Electronics Company (CEC) — a holding company with businesses across the high-tech space and with relationships to a number of LED and solid-state lighting (SSL) companies.

**Interested in more packaged LED articles & announcements?**

It's getting increasingly more difficult to track the intertwined business and technology affiliations of LEDs and SSL in China, and the investment by MLS in Kaistar further complicates the situation. Generally, CEC has been the active investor in companies, but in this case MLS has essentially become partners with some of CEC's affiliates.

Indeed, MLS is a sizeable company with $2 billion in annual revenue and would be an unlikely takeover target given its success in the packaged LED sector. At Strategies in Light this past February, Strategies Unlimited analyst Stephanie Pruitt ranked the top ten packaged LED manufacturers by revenue and MLS (identified as Mulinsen) came in at number nine. Back in 2012, we published a feature article that speculated as to whether a China-based LED manufacturer would crack the top ten. At the time, MLS was not considered one of the two likely candidates.

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The stake in Kaistar links MLS to LED-centric companies such as Epistar and Bridgelux. Epistar jointly founded Kaistar with Shenzhen Kaifa Technology Co Ltd — one of CEC's core companies. There were other partners in the joint venture including Evertop and Country Lighting, but Epistar and CEC hold the largest stakes.

Epistar is an LED chip maker but does not make packaged LEDs. Kaistar has been engaged up and down the LED supply chain offering packaged LEDs, wafers, chips, and even end lighting products. According to MLS, Kaistar has annual revenue of $84 million.

More recently, CEC partnered with ChongQing Linkong Development Investment Company to acquire Bridgelux, a US packaged LED vendor. Bridgelux had once manufactured its own LED chips but has since turned to merchant chip suppliers including Epistar. That supply-chain transition coincided with Bridgelux focusing on chip-on-board (COB) LEDs.

Now MLS will presumably get access to some of Bridgelux's intellectual property (IP). The Forest Lighting release said that Bridgelux has a portfolio of 750 patents focused on LED chips and packaged LED technology.

Of course, the web gets even more complicated. Bridgelux also has a tight relationship with Toshiba and will presumably be the primary distribution channel for Toshiba's gallium-nitride-on-silicon (GaN-on-Si) LEDs, assuming those products become commercially viable.

Epistar also signed a recent patent cross-licensing agreement with US LED manufacturer Cree. That deal did not include direct technology transfer and Epistar is paying Cree an undisclosed amount of money under the terms of the deal. Still, an LED chip made by Epistar based on technology originally developed by Cree could end up in an MLS or Bridgelux packaged LED.

Back to the Kaistar-investment announcement made by Forest Lighting, that US-based company is focused on selling LED-based lighting products in North America. And Forest most likely sees the MLS deal as a precursor that will yield lower-cost and more-powerful LEDs for use in its SSL products.

"Our rapid growth in the American market will be enhanced by this investment in Kaistar," said Jian Ni, chief operating officer of Forest Lighting in Atlanta. "With these new partners, which include Epistar and Bridgelux, we will now have access to cutting-edge LED packaging technology and high-power LED chips; this will accelerate new product development and market acceptance."

**About the Author**



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Maury Wright is an electronics engineer turned technology journalist, who has focused specifically on the LED & Lighting...

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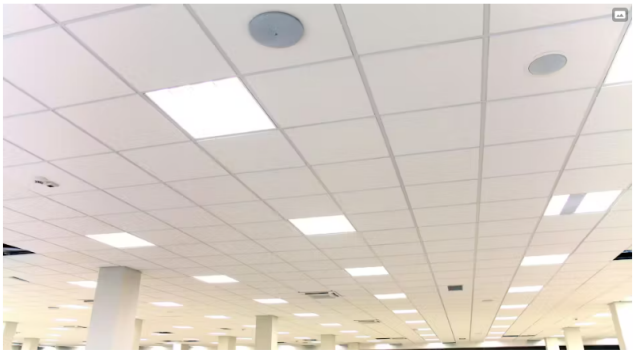
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LIGHTING

# More Than Illumination: The Strategic Value of Smart Commercial Lighting

Lighting makes work possible—and connected lighting systems are delivering improvements in efficiency, longevity, and strategy. Here's what you need to know about the value of good lighting.

Mikko Savolainen • July 11, 2025 • 4 min read



Often taken for granted, lighting shapes our entire world by making modern work and production possible across commercial and industrial domains, enhancing both the function and form of these spaces. Lighting technology has progressed dramatically, from oil, gas, and incandescent sources to modern LEDs. This progression has steadily improved illumination while delivering substantial energy efficiency and longevity gains.

Today, the Internet of Things (IoT) is transforming lighting further, creating smarter, networked environments. As building owners and managers increasingly seek data-driven ways to optimize space utilization and enhance operational intelligence, connected lighting is far more than just illumination. For commercial buildings, this transformation means connected lighting is now a strategic asset and is the perfect opportunity to see how far smart lighting technology has advanced and the significant value it now delivers.

### Efficiency Through Connectivity

Lighting can consume as much as 25% of a commercial building's energy, so optimizing it is essential. Modern solutions like LEDs, which use semiconductor technology to convert electricity directly into light with high efficiency, provide a fundamental improvement over traditional sources, offering significantly extended operational lifetimes (10-20 times longer) and inherent energy savings.

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Likewise, incorporating wireless connectivity into luminaires, sensors, and controls unlocks capabilities beyond traditional wired systems. By eliminating the need for dedicated control wiring runs to each device, wireless significantly simplifies installation and reduces associated labor and material costs. This newfound flexibility in placement also makes it easier to deploy advanced sensors for sophisticated automation and control strategies. Powering these capabilities are established low-power wireless standards like Bluetooth mesh and Zigbee. These protocols reliably connect vast networks of devices (lights, sensors, switches) and form the system's communication backbone, often linking via gateways to cloud platforms for advanced control and data analysis. This increasingly includes data from sensors monitoring environmental conditions like temperature, humidity, and indoor air quality for use by other building services.

Smart lighting systems leverage this networked communication. For instance, sensors can detect occupancy and harvest daylight (using natural light levels to adjust artificial lights), which enables the system to automatically dim or switch off lights, thereby minimizing waste and reducing operating expenses.

Furthermore, integrating these smart systems also helps facility managers meet evolving regulatory requirements. California's Title 24, for example, mandates automated lighting controls based on occupancy and ambient light in new non-residential constructions, making intelligent lighting not just beneficial but increasingly necessary for compliance.

## More Than Illumination: Value-Added Services

The benefits of connected lighting infrastructure extend far beyond energy efficiency. This network effectively becomes a building-wide platform capable of supporting various value-added services and enhancing overall building intelligence by enabling customizable experiences tailored to the owner's preferences and operational needs. For example, the occupancy sensors deployed for lighting control generate data that can be analyzed to understand space utilization trends, much like how analyzing traffic patterns reveals road usage. This helps to optimize facility layouts and resource management based on the movement of people within the building.

The wireless network itself, often leveraging Bluetooth technology embedded in luminaires, can be used for precise asset tracking by monitoring signals from tagged equipment, allowing these tagged items to appear as moving icons on a digital building map. This same infrastructure can also enable indoor navigation systems; the fixed lighting points serve as beacons for wayfinding applications on smartphones, displaying the user's real-time position on an indoor map and providing turn-by-turn directions to guide occupants through complex spaces.

## Advancing Lighting Through Silicon Innovation

Driving this transformation are solution providers who design the System-on-Chip (SoC) platforms central to smart luminaires and controls. These advanced SoCs play a key role by integrating multi-protocol wireless connectivity (such as Bluetooth, Zigbee, and Thread for Matter compatibility), powerful processing cores, ample memory, and robust security features.

Continuous innovation in silicon design—including the move to smaller manufacturing processes—enables higher performance and greater integration. For instance, these modern platforms provide the necessary compute power for complex tasks, significantly larger memory to support future upgrades, concurrent multi-protocol support, enhanced security features, and even integrate specific components like LED control circuits and pre-drivers directly on-chip. These advancements make the next generation of sophisticated, future-proof, and valuable smart lighting applications possible.

## The Integrated Future of Commercial Lighting

Progress in SoCs, sensors, and analytics empowers lighting networks to become core parts of larger building management and IoT ecosystems, enabling complex data sharing and coordinated actions. This deeper integration directly translates into significant energy and cost savings, adds valuable operational insights, and fosters more intelligent, responsive commercial environments. As this technological foundation strengthens, expect even greater levels of automation and building intelligence.

**About the Author**

Mikko Savolainen

Mikko Savolainen is Senior Product Line Director Silicon Labs' Industrial and Commercial business unit, responsible for commercial applications. Silicon...

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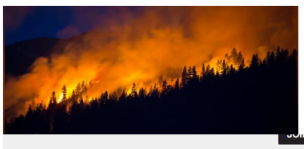
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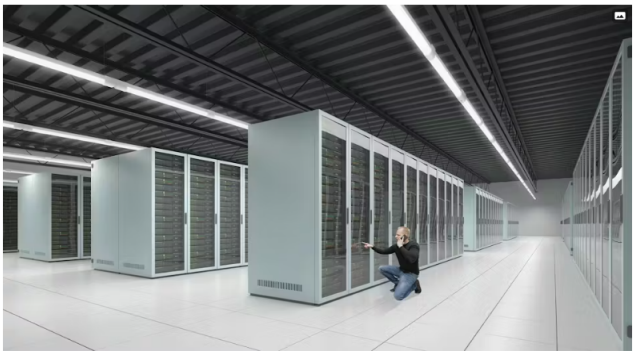
LIGHTING

# Lighting the Future: Optimizing Mission-Critical Data Centers for Efficiency, Safety, and Sustainability

Advanced lighting strategies should be more than an afterthought in today's data centers—they're part of a larger optimization strategy that helps save money and ensure more efficient operation.

Jason King • May 5, 2025 • 5 min read

1



High-efficiency LED lighting and intelligent lighting controls can yield measurable cost savings and sustainability benefits in data centers.

In an era where digital infrastructure powers nearly every aspect of modern life, data centers are the backbone of our increasingly connected world. From cloud computing and artificial intelligence to financial transactions and online communication, these mission-critical facilities operate around the clock, demanding high levels of reliability, efficiency, and security. Yet, one critical element often remains an afterthought in the design and operational strategy of data centers—lighting.

Although lighting accounts for a small fraction of a data center's total energy consumption, its impact on efficiency, safety, and sustainability is substantial. Thoughtfully designed lighting systems not only enhance visibility and security, but they also contribute to operational efficiency and long-term cost reductions. As data centers evolve to meet growing demands, integrating advanced lighting strategies can play a pivotal role in optimizing these high-performance environments.

### The Role of Lighting in Energy Efficiency and Cost Reduction

Data centers are among the most energy-intensive building types, with cooling, servers, and networking equipment consuming vast amounts of power. Inefficient or poorly designed lighting systems can lead to unnecessary energy waste and operational inefficiencies. Transitioning to high-efficiency LED lighting, coupled with intelligent lighting controls, can yield measurable cost savings and sustainability benefits.

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Advanced lighting control systems, such as networked lighting solutions, enable dynamic adjustments based on occupancy and daylight availability. Motion sensors, dimming controls, and time-based scheduling can further optimize energy usage by ensuring that lights operate only when needed. In colocation and hyperscale data centers, where energy efficiency directly impacts operating expenses, these strategies can contribute to lower power usage effectiveness (PUE) ratings and overall cost reductions.

## Enhancing Safety and Visibility in Mission-Critical Environments

Unlike traditional commercial buildings, data centers house complex and high-power-density environments where even minor errors can lead to significant disruptions. Proper illumination is essential for technician safety, reducing the risk of misidentification, avoiding accidental disconnections, and preventing equipment damage. Uniform, well-distributed lighting enhances visibility in server rooms, mechanical areas, and maintenance zones, supporting precision work and minimizing operational risks.

Moreover, emergency lighting solutions are a key component of data center safety protocols. Backup lighting systems must be reliable in the event of a power outage, providing clear egress pathways and ensuring compliance with industry safety standards. As data centers prioritize resilience, integrating fail-safe lighting solutions helps maintain continuous operations even in unforeseen circumstances.

## Meeting Sustainability and ESG Goals Through Smarter Lighting

Sustainability has become a core priority for data center operators, driven by environmental regulations, corporate ESG (Environmental, Social, and Governance) commitments, and market demand for greener solutions. Many data centers are setting ambitious carbon reduction targets, and lighting upgrades present a straightforward opportunity to lower energy consumption and environmental impact.

Modern LED lighting solutions contribute to sustainability in multiple ways, including lower energy use, reduced maintenance needs, and longer operational lifespans compared to traditional lighting technologies. Additionally, lighting materials and fixtures designed with recyclability in mind can support broader circular economy initiatives within the built environment. As data centers seek LEED (Leadership in Energy and Environmental Design) or other green building certifications, integrating energy-efficient lighting strategies aligns with sustainability objectives and regulatory compliance.

## The Future of Data Center Lighting: Smart and Adaptive Technologies

As data centers continue to evolve, the role of smart lighting technologies will become increasingly important. Integrating lighting systems with building management platforms enables real-time monitoring, automated adjustments, and predictive maintenance. These advancements not only enhance energy efficiency but also improve operational agility by allowing data center managers to respond proactively to environmental and usage changes.

Connected lighting solutions can also contribute to broader digital infrastructure strategies, such as incorporating IoT (Internet of Things) sensors for environmental monitoring. By leveraging lighting as a data collection and analytics tool, operators can gain deeper insights into space utilization, airflow patterns, and energy optimization opportunities.

## Best Practices for Data Center Lighting

To maximize efficiency, safety, and sustainability, data center operators should consider the following lighting best practices:

- **Use high-efficiency LED lighting:** Reduce energy consumption and extend the lifespan of lighting fixtures while maintaining optimal visibility.
- **Implement intelligent lighting controls:** Utilize motion sensors and automated dimming to minimize unnecessary energy use.
- **Ensure uniform illumination:** Avoid dark spots and glare by designing lighting layouts that provide consistent brightness across all critical areas.
- **Prioritize emergency and backup lighting:** Maintain compliance with safety regulations by ensuring reliable lighting in power outage scenarios.
- **Align with sustainability goals:** Choose recyclable materials and energy-efficient fixtures to support ESG commitments and green building certifications.
- **Integrate smart lighting with building management systems:** Leverage IoT and connected lighting to enhance real-time monitoring and operational efficiency.
- **Regularly assess and upgrade lighting systems:** Stay ahead of industry advancements by periodically reviewing and updating lighting technologies to optimize


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performance.

By implementing these best practices, data center operators can create a more efficient, safe, and future-ready environment while achieving long-term cost savings and sustainability objectives.

## A Strategic Approach to Lighting in Data Centers

Lighting is a critical element of data center design and operation. A well-planned lighting strategy enhances efficiency, supports sustainability initiatives, and ensures the safety of personnel working in these mission-critical environments. As the data center industry continues to expand and modernize, embracing advanced lighting solutions will be key to achieving long-term operational success. By prioritizing lighting as a strategic component, data center operators can unlock tangible benefits in energy performance, cost savings, and overall resilience.


**About the Author**

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Jason King is a National Account Manager and Data Center Specialist at Cooper Lighting Solutions, bringing extensive experience in optimizing...

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JP Janelle Penny M • MAY 14, 2025 PINNED

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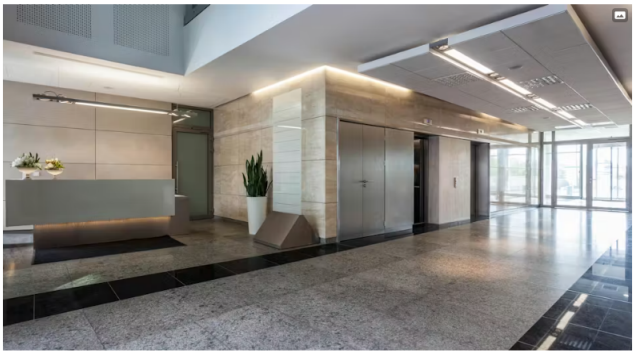
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RENOVATION/ADAPTIVE REUSE

# The Office Refresh: Why Updating Lighting, Ceiling Tiles, and Flooring Can Make a Big Difference

Is your office ready for a renovation? These few changes can make a major impact.

Dan Gomillion • March 31, 2025 • 4 min read



Is your office ready for a refresh?

We spend a lot of time in our offices, so why not enjoy our surroundings?

From the lights overhead to the floors we walk on, every part of the office impacts how we feel and work. Look around. How does it impact your mindset? Does the lighting feel too harsh? Ceiling tiles are starting to look a little... sad? How about the floor?

Upgrading your office lighting, ceiling tiles, and flooring isn't just about making the space look nicer (though that's a big plus). These changes can actually improve your team's comfort, boost productivity, and even save some money in the long run.

## Lighting

Remember those flickering fluorescent lights that make you feel like you're in a bad office movie scene?

(We're looking at you, *Joe Versus The Volcano*!)

It's time to let them go. LED lighting is the way to go now, not just because it looks better.

First off, LEDs are energy-efficient. They use way less energy than those old fluorescent bulbs and last a lot longer, which means fewer replacements and reduced electricity bills.


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Plus, they don't flicker or give off that weird, headache-inducing vibe. (You're picturing it now.) Instead, they provide cleaner, more natural light that's easier on the eyes, making long workdays feel less exhausting.

LEDs are also flexible—you can dim them or brighten them depending on what the day calls for. Want a bright, energized atmosphere for a team meeting? Done. Need to tone it down for a brainstorming session? Easy.

So, while switching to LEDs might seem like a bit of an investment upfront, the benefits are totally worth it. We promise. Your team will feel more comfortable, and your energy bills will thank you.

## Ceiling Tiles

Take a glance upward. Ceiling tiles might not be something you think about often, but they have a big impact on your office.

Old, sagging, or stained tiles can make the space look dated and even a little depressing. Swapping them out can instantly give your office a fresh, more modern feel.





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But it's not just about looks—new ceiling tiles can also help control noise. In open office spaces or multi-story buildings, soundproof tiles can help cut down on distractions, making it easier for everyone to focus. Imagine fewer overheard conversations and less echo from meetings.

Some ceiling tiles are designed to reflect more light, making your office brighter without needing extra lamps or fixtures.

And, if you've been dealing with any moisture issues, upgrading to moisture-resistant tiles can improve air quality, reducing the chance of mold or allergens hanging around.

## Flooring

Now, look down. Flooring might not be the first thing you think of when it comes to office upgrades, but it's a major part of the overall feel of your space.

Worn-out, scuffed-up floors make the whole office look tired, while new flooring can make everything feel cleaner and more professional.

There are tons of durable options out there, like carpet tiles, luxury vinyl tile (LVT), or even rubber flooring. These materials are tough enough to handle rolling chairs, heavy furniture, and lots of foot traffic. Plus, they're super easy to clean, which is a lifesaver in areas where spills happen.

(We're looking at you, break room.)

Modern flooring, especially carpet tiles and rubber options, also helps reduce noise. This can make a huge difference in keeping the office environment calm and focused, even when people are moving around. Plus, you've got a wide assortment of style options, so you can pick something that matches your company's vibe, whether that's sleek and modern or warm and welcoming.

## Think of Your Team

A well-lit, quiet, and comfortable office can boost productivity, improve mood, and make everyone feel more at ease.

So, if your office could use a facelift, why not look into making it happen? Your team will thank you.


**About the Author**

Dan Gomillion

Dan Gomillion, co-owner of **Burning River Builders**, is a seasoned custom home builder, remodel expert, and commercial construction specialist with...

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LIGHTING

# The Future is LED. Are You Prepared?

The sale of fluorescent bulbs is banned in 16 U.S. states, with more to come. Are you ready for the move to LEDs?

Sean Grasby • March 17, 2025 • 5 min read

1



On January 1, 2025, when the California Assembly Bill 2208 went into effect, the Golden State joined Colorado, Hawaii, Minnesota, Oregon, and Rhode Island with bans on the sale of fluorescent bulbs timed with the start of the new year. In total, 16 U.S. states now have banned the sale of fluorescent bulbs, and many other states have plans in place for bans to take effect as well.

The impetus for the ban was largely driven by the risks associated with the potential hazards of a broken fluorescent bulb and was designed to reduce the risk of mercury exposure, lower utility costs, and increase energy efficiencies. While the benefits are clear, a transition to LED across facilities requires a significant amount of thoughtful planning to be successful. No one knows this better than a facility manager responsible for lighting large and diverse properties—from parking lots to warehouses, conference rooms to plant floors. The upgrade process is daunting.

Not only are facility professionals tasked with identifying the right products for their property, from LED tubes (like the T8 bulb, the most popular in the industrial commercial sector) to retrofits and LED kits, but they must also navigate rebates, design considerations, controls, warranties, and more to ensure energy efficiency and maximize cost savings. And while some organizations may have stockpiled products to buy some time, the future is LED, and it won't be long before fluorescent bulbs and lamps are extinct.


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Given the massive scope of upgrades required for compliance, there is a steep learning curve to navigating this evolution efficiently and helping reduce toxic mercury pollution globally. Let's walk through what you can do to comply with new industry regulations or get ahead of it before your state initiates the ban.


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## The Good, Better, Best Approach

We encourage customers to start simple, with the good, better, best approach.

In this case, the "good," or basic step is to buy a light and plug and play. This is essentially just a simple replacement of bulbs that can't be purchased anymore within the existing system. The approach is a good baseline but will come with some higher upfront costs to purchase the same quantity of LED lights. Additionally, there are potential drawbacks with this approach as it can lead to compatibility issues with dimmers, directional light emission which may not suit all fixtures, and the potential for blue light emission (which contributes to light pollution and eye strain).

The "better" approach takes a broader look at lighting beyond the bulbs themselves to identify what other changes you might want to make while you are already replacing the bulbs. Are you putting the light on a ballast that's not designed? Do you want a more aesthetically pleasing lighting system or one with features like dimming, task tuning, or color changes? Are you looking for more cost savings or efficiency gains? This approach goes beyond a band-aid fix and not only ensures compliance but delivers indirect wins as well. For example, maybe the new fixture doesn't create glare and improves workplace conditions as a result, or maybe the janitor can rely on lighting controls when everyone goes home for the day to avoid wasted electricity. This thoughtful approach takes it one step further and can help improve employee productivity, contribute to a healthy workplace environment, as well as boost the bottom line.

The "best" option is the most strategic in the long run and will reap benefits far beyond bulb upgrades. By planning first and designing a complete lighting upgrade that includes best-in-class LED fixtures, future savings can be controlled. With most LED fixtures now coming with control options built in that savings will just add up. Taking the time to review the utility rebates your facility is entitled to, investigating better warranty options, and the like, will yield significant cost savings and greater efficiency gains.

Of course, none of this is possible without funding and in the case of a large building like a school, this upgrade could be a $10 million investment. This is a significant hurdle to overcome, never mind continued disruptions to the supply chain, a skilled labor shortage, and new sustainability requirements. Having an industry partner that keenly understands the product landscape, supplier ecosystem, warranty options, and specific installation requirements, can help you increase energy efficiency, reduce operating costs, and drive bottom line savings.

This bill not only lays the groundwork for long term energy efficiencies and safety gains across facilities but sets a new standard for manufacturers and others to follow. For those in the 40 states that still allow fluorescent lighting, it is only a matter of time until that changes, so hold off on stocking up on any lighting materials and ponder whether the good, better, or best approach may guide your efforts when your time does come.


**About the Author**

Sean Grasby

Sean Grasby is a transformative leader with over 20 years of experience driving business growth and strategic innovation across diverse industries,...

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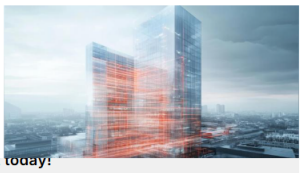
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CASE STUDIES

# Lighting Design Strategies Help Bridge the Divide between Comfort and Efficiency in Commercial Properties

Explore how the team at BlackRock's New York City headquarters used lighting, shade, and control strategies to maximize comfort and meet the company's goals.

Shawn Fisher • Jan. 8, 2025 • 5 min read

1



BlackRock's office was designed to encourage collaboration.

Companies are rethinking the office environment, investing more in resilient and collaborative spaces, sustainability and wellness, and creative touches that communicate company culture.

When transforming that vision into reality—whether it is a renovation, fit-out, or new building—lighting systems play a vital role. Light control is essential to creating welcoming spaces that support employee-centric design and meet or exceed building codes.

We'll take an in-depth look at how the team at BlackRock used innovative light, shade, and control strategies to maximize comfort and create a vibrant, collaborative, and productive environment with these four design goals in mind:

1. Consolidate employees in a single New York City location to encourage collaboration and emphasize a unified culture
2. Establish an inclusive work environment that prioritizes employee well-being and comfort
3. Create an adaptive space that will serve BlackRock's needs today and, in the future
4. Prioritize energy reduction, limit material waste, and achieve LEED Platinum certification

## Prioritize Collaboration and Flexibility



Shades help control daylight in the space while reducing glare.

Reimagining BlackRock's New York headquarters started with a vision to co-locate 4,000 New York City employees from their separate buildings into a single, modern, 1 million-square-foot headquarters—with iconic views and desirable amenities—in Manhattan's Hudson Yards Development. The lighting control system was an immediate focus since lighting, daylight, and shading impacted every aspect of the 15-story space.


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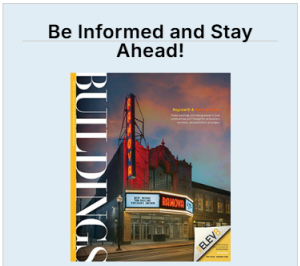
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Inspired by New York City, architects at NBBJ approached the design as a scaled-down urban plan that balances group workspace and focus areas, mirroring the city's gathering








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urban plan that balances group workspace and focus areas, mirroring the city's gathering places and private retreats. Each "cityscape" had to work independently and within the comprehensive plan while being easily replicated from floor to floor.

Common across floors is an integrated lighting and shading solution designed to draw natural light deep into the space and make the most of the building's floor-to-ceiling windows. Glare—always a design consideration—was especially challenging on the BlackRock project since, in addition to standard sun glare, the proximity of other glass-facade buildings causes sunlight to reflect into the space at unusual angles throughout the day.

In a space intended for a lifetime of use, the lighting system needed to easily accommodate flexibility while delivering innovative performance over time. Beyond gathering people together in a physical space, the building design fosters connection, eschewing perimeter offices to democratize daylight and encouraging employees to interact and collaborate throughout the space, whether gathering in the massive auditorium, holding meetings in huddle rooms, catching up in the employee pantries, or stopping at the oculus overlooking the main stairwell.

With this goal in mind, lighting designer Stephen Margulies, partner at One Lux Studio, designed an innovative, cloud-connected, wireless lighting solution that utilizes individual fixture control throughout the space. This kind of granular control enables wireless flexibility in each fixture and facilitates the integration of automated shades into the lighting system while saving closet space and installation time.



Luminaire-level lighting control is provided throughout the office.

## Consider the Way Light Impacts Every Space

The BlackRock team also embraced the power of dynamic light to improve the indoor environment. Tunable white lighting was installed throughout the open office areas and programmed to change with the time of day to support the occupants' daily routines.

Stephen Margulies describes the organic transitions and their impact on the space: "You don't notice it changing because it happens over time. We have four triggers throughout the day starting with the 'morning' scene as the offices open, fading to 'afternoon' at noon, and then to 'evening' half an hour before sunset. The 'nighttime scene' is triggered when they shut this place down, which might happen at 10 or 11:00 at night. These scenes draw that natural-feeling light deeper into the floorplate, so everyone works under light that feels right—whether they have a window seat or not."

In tandem with the programmed lighting scenes, automated shades on all windows adjust automatically throughout the day, preserving access to city views while minimizing uncomfortable glare and solar heat gain. An important plus is that the shades move quietly and in unison, avoiding aesthetic distractions inside and outside the space.

## Plan for the Future

Choosing wireless technology proved a crucial investment for ensuring performance, flexibility, and efficiency. Individual fixture control installed directly into the more than 9,000 LED fixtures further enables the lighting to be easily rezoned and reprogrammed with no rewiring required.

Barry Novick, technology strategist at BlackRock, emphasized why this is such an important design consideration: "We've already gone through changing business needs, and the lighting control component has been seamless. We just reprogrammed the wireless switch on the walls and the fixtures ... and it's really been wonderful. This project changed the norm for what people expect from a lighting control system. It sets the bar higher."

The wireless solution made a significant impact on the job throughout the process—simplifying installation, saving labor, and lowering materials costs. The lighting design included a broad mix of downlights, linear luminaries, and pendants, all of which were delivered with the individual fixture controls pre-installed, resulting in tremendous flexibility and the ability to provide actionable energy and occupancy data while maintaining an uncluttered ceiling.

## Service and Support Can Be a Game Changer

Beyond system design and installation, success can depend on getting exemplary service and support from initial design through installation and beyond. Look for manufacturing partners with proven wireless expertise, a commitment to caring for the client, and uncompromising support.

Barry Novick emphasizes their providers were critical to BlackRock's confidence in the project's success, and lighting played a key role: "We broke a lot of new ground in this building. Lighting control is one of the many areas." The new, LEED-platinum-certified BlackRock headquarters exceeds expectations of comfort, efficiency, and flexibility while celebrating the people and honoring BlackRock's quest for sustainable and future-forward solutions.


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JP Janelle Penny M · JANUARY 13, 2025 PINNED

What do you think of the way BlackRock's headquarters uses lighting, shading, and controls to achieve the company's goals?

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ARCHITECTURE

# INNOVATION | L-Prize Manufacturing & Installation Phase launches, with goal of accessibility to great lighting for all

L-Prize Phase III requirements and bonus points demonstrate DOE's emphasis on practical advances for people and the planet, writes PNNL's KATE HICKCOX.

Kate Hickcox, Lighting Research Scientist • Oct. 15, 2024 • 5 min read







To be eligible for an L-Prize, luminaires and connected systems must be in production, commercially available, and installed in a building.

The Manufacturing & Installation Phase of the L-Prize has launched, putting us closer to the day when innovations sparked by the L-Prize will make their way into real buildings. To recap, the U.S. Department of Energy (DOE) launched the L-Prize competition in 2021 to unlock the full potential of LED technology in public and commercial buildings — such as schools, retail spaces, and offices — where combining high luminaire efficacy with exceptional lighting quality, data-driven control and functionality, and sustainable design and construction can have the most significant positive impact. In 2022, the L-Prize announced four Concept Phase winners, and in 2023, six winners in the Prototype Phase. In all cases, the organizers were astounded by the creative thinking and innovation of those chosen for awards.

The competition has evolved, reflecting the participant questions, feedback, and experience of each phase. After the Concept Phase, we separated the competition into a Luminaire track and a Connected Systems track to offer opportunities for more innovators to compete. Participants could enter the Prototype Phase on one or both tracks, whether or not they had taken part in the Concept Phase.

With the launch of Phase 3, Manufacturing & Installation (M&I), the same guidance applies: Entrants can enter one or both tracks, with no past participation required. This is where it gets real: To be eligible for an L-Prize, luminaires and connected systems must be in production, commercially available, and installed in a building.


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This final phase of the competition is scheduled to run for 22 months and offers a $10 million prize pool, divided between up to four winners based on the number of points awarded by an expert review panel. The minimum prize amount for a winner is $1 million.

## New points for distinction

The competition's entry requirements offer multiple paths to success, with bonus points in several categories that support DOE's commitment to energy efficiency, occupant wellbeing, and resilience in buildings. Judges will look at the Affordability and Value Proposition of the luminaires and connected systems and offer up to 10 bonus points for entries that include impactful innovations to reduce up-front cost, improve the ability of users to afford the product, and/or improve the value proposition of the technology. Up to another 10 bonus points can be awarded to luminaires that include impactful and science-backed innovations to improve the health or wellbeing of building occupants.

In this third phase, we are also offering new requirements and bonus points beyond technical performance and innovation. We want to see U.S. manufacturing content, and a well-designed production and deployment plan. Life-cycle carbon and environmental impacts are a major focus of the competition, and all entries must include a verified life-cycle assessment. We're looking for things like reduced energy use over the lifetime of the luminaire and extended lifetimes, if possible. We'd like to see reduced use of harmful materials in manufacturing and a decrease in carbon impacts.

We're also awarding bonus points in the area of Materials and Sustainability Innovation. DOE is looking for examples of improved material health or transparency, where problems or issues with the health impacts of materials were addressed, how these problems or issues were discovered or researched, the solution, and any waypoints that are of interest


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in the process of arriving at the final solution.

On the Connected Systems track, we are requiring system resilience, where during a loss of connection to the internet, all lighting control strategies (task tuning, scheduling, occupancy sensing, daylight harvesting, and manual control) continue to function in luminaires while associated control devices function in their pre-programmed state prior to loss of connection. For longer power interruptions of up to 48 hours, and upon power reconnection, all lighting control strategies must continue to be implemented by luminaires according to their configuration prior to loss of connection.

## Site installation resources

As you can see, the L-Prize design team was ambitious in drafting the rules, and we are calling on all lighting innovators to take up the challenge, enter the competition, or team with an existing entrant. If your building could serve as an installation site, let DOE know! The installation site must not be one of the competitor's own facilities or directly affiliated with the competitor. The site must be open to visitation by DOE to observe, document, and confirm the installation. And, of course, a location in a building that serves the local community would be welcomed.

DOE recognizes that some entrants may have difficulty finding a host site. To remove this barrier to participation, DOE has created a Resource List to facilitate connections between potential entrants and those interested in serving as host sites. Please visit www.herox.com/LPrize/resources to learn more. I want to encourage all innovators to take part in the L-Prize and become part of the solution as we revolutionize lighting in commercial buildings.


**About the Author**

Kate Hickcox, Lighting Research Scientist

KATE HICKCOX joined Pacific Northwest National Laboratory (PNNL) in 2020. She is a creative thinker with over 20 years of experience in lighting,...

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ARCHITECTURE

# SSL IN ACTION | Acclaim Lighting illuminates high-traffic walkway in Maitland, Florida

Pedestrian bridge features color-changing lighting to help ensure safe passage over busy interstate while adding beacon of radiant light on city skyline.

Related To: Acclaim Lighting • Oct. 2, 2024 • 4 min read




Pedestrian bridge connects high-use sidewalks across Florida Interstate 4 at Maitland Boulevard.

When the Florida Department of Transportation (FDOT) wanted to erect a new pedestrian bridge crossing Interstate 4 at Maitland Boulevard, it had two primary criteria in mind: First, the bridge had to be highly functional, and second, it needed to appear aesthetically pleasing at night. Ultimately, the I-4 bridge project became a reality to create a safer and more convenient route for pedestrians and bicyclists to cross the busy highway. It also became an attractive addition to the cityscape in the construction process.

The bridge connects existing sidewalks along Wymore Road and Lake Destiny Drive, providing a 12-foot-wide, 700-foot-long walkway over the interstate. It connects Maitland's east-west trail from the Dommerich neighborhood on the city's east side to Fennell Park on the west. The route extends past all three public schools in Maitland: Orangewood Presbyterian School, the Maitland Community Park, Lake Destiny Soccer fields, and the Keller Road Baseball Complex.

In total, 18 different structural pieces weighing more than 270 tons connect the bridge across I-4. Benches and bike racks are located on both sides of the bridge to give bicyclists and pedestrians space to rest while overlooking the interstate.


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Eastbound and westbound motorists are greeted with an iconic bridge design accentuated by a blue wave of fencing and white backlit letters that spell out "Maitland." The mid-span pylons that reach 45 feet above the bridge are highlighted by inlaid variable-color LED rings topped by glass lanterns. The pylons feature high-power, color-changing DynaGraze HO Exterior DMX LED outdoor linear fixtures from Acclaim Lighting. Available in 1- and 4-foot sections, the fixtures offer multiple configurations, including RGB, RGBW, and Dynamic White, for dramatic color combinations.


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Built to last with a robust IP66 housing and featuring a multi-voltage switching power supply and optional glare control, the DynaGraze HO Exterior DMX fixtures were well suited to this outdoor linear grazing application. The LED fixtures feature high color saturation and dynamic programming capabilities. They will maintain 70 percent of their lumens for 150,000 hours, ensuring a safe environment for pedestrians for many years while providing a colorful and vibrant focal point in the city's skyline.

For trace and the city color lighting, FDOT specified Flex Spectrum Exterior, an IP68-rated, RGBW flexible LED circuit strip. It is designed to offer a wide range of colors to choose from in applications where both color and dedicated white are required. By mixing blue with 3000K inside the quad-color diode, Flex Spectrum Exterior can deliver a range from 3000K–7000K, while maintaining CRI above 80.

The LED circuit strip is supported by the AL Driver 800, a multi-protocol, 800W driver for low-voltage LED products. The input control protocols include DMX, RDM, 0–10V, and DALI; it also includes 24V DC/PWM output. AL Drive 800 provides maximum flexibility with front-end control preferences. The Flex Spectrum Exterior with AL-800 LED Drivers were also used to illuminate the city name.

In addition, 4-foot Pixel Graze fixtures were used for wall washing, while Dyna Drum SO Color with Pixel Graze was specified for each of the lantern lights, comprising five fixtures. Pixel Graze is a high power, indoor/outdoor LED fixture with quad-color spectrum or dynamic white options. Available in 1- and 4-foot sections, it features a compact profile and offers high-quality color mixing and saturation.

Dyna Drum SO Color was also used for the downtown viaduct girder lighting. With its adjustable yoke, on-board digital display, and a 100–277VAC internal power supply, it is ideal for facade lighting applications and as an area floodlight.

Meanwhile, AL Dot AC, a direct view, RDM/DMX node, designed for low-resolution graphics displays and individual dots of color, serves as the flyover bridge's necklace lights. It features an internal DMX+ AC driver and all-aluminum construction to complete the look of the bridge and surrounding area. Snoots and glare shields were incorporated for the floodlights and linear luminaires to mask the light sources along the pedestrian paths, ensuring visual comfort and safety, according to Acclaim Lighting general manager Michael Giardina.

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ARCHITECTURE

# LIGHT BITES | Lighting, controls, and design firms announce new personnel

New hires demonstrate the breadth of exciting opportunities in the North American lighting and controls market.

Carrie Meadows • Sept. 17, 2024 • 2 min read




A recent round of staffing announcements brings new perspectives and talents to North American businesses spanning lighting management systems, architectural and custom lighting, and connected lighting technologies.

### Howard Yaphe lands at LumenTruss

Howard Yaphe has joined the executive management team at Montreal-based lighting manufacturer LumenTruss as vice president of strategy & innovation. Most recently, Yaphe served as CEO at architectural lighting and controls developer Axis Lighting. Over his extensive career at companies including Canlyte, Lightolier, Philips Lighting, and Axis, Yaphe has been named on more than 160 patents in luminaire design and technology.

### John Sublett joins Distech Controls

With past executive roles at smart building systems and home automation organizations, John Sublett brings more than two decades of expertise in software and hardware platforms to intelligent buildings systems provider Distech Controls — part of the Acuity Brands Intelligent Spaces Group. Distech president Martin Villeneuve said Sublett's appointment as vice president of research & development "strategically aligns with our ongoing efforts to lead in the industry by anticipating the evolving needs of our customers."

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### Sheridan Markham signs on at Yellow Goat Design




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Lighting, screen, and sculptural art design firm Yellow Goat Design has announced the addition of design associate Sheridan Markham to its woman-led team. As a designer at BDHM and Good, Rich, Markham worked on projects for brands such as Google, Royal Caribbean, IHG, and Hyatt, among others. She will collaborate with in-house design and production staff at Yellow Goat Design on new collections, as well as leaning on her interior design background to showcase the firm's capabilities to the architecture & design community.

### Jeff Ross connects with Schréder

Connected lighting and smart cities specialist Jeff Ross has joined Schréder as business segment manager for connected lighting in North America. Leveraging prior experience at smart solutions providers TerraGo Technologies and Itron, Ross will be responsible for expanding Schréder's growth strategy into smart city initiatives by developing a new team and nurturing relationships with cities, municipalities, and departments of transportation.


### About the Author



Carrie Meadows
**EDITOR-IN-CHIEF, LEDS MAGAZINE**

Carrie Meadows has more than 20 years of experience in the publishing and media industry. She worked with the PennWell...

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