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Balancing Sustainability, Efficiency, And Well-Being Through Daylighting

Thoughtfully integrated daylighting strategies can help facility leaders improve overall building performance while supporting occupant well-being.

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By Dr. Neall Digert, **Kingspan Light + Air** (<https://www.kingspanlightandair.us/about-us/>)

Today's building teams are under pressure to accomplish more than ever before. Owners and facility managers are expected to reduce energy consumption, advance sustainability goals, and create healthier environments, often while operating under tighter budgets and rising performance expectations.

Increasingly, these priorities are viewed as interconnected components of overall building performance, rather than separate initiatives. The most successful facilities are those that can advance all three objectives simultaneously, and one strategy uniquely positioned to accomplish this is daylighting.

Advancing Sustainability Goals

Buildings account for a significant share of global energy consumption, and electric lighting alone represents approximately **15%–20% of the world's electricity use** (<https://www.sciencedirect.com/science/article/abs/pii/S0378778822001967?via%3Dihub>). As organizations pursue decarbonization strategies and work toward net-zero goals, reducing lighting energy demand has become a major opportunity for improving building performance.

Passive design strategies such as daylighting are becoming increasingly important as building owners face more stringent energy codes, corporate sustainability commitments, and investor expectations around environmental performance. In many cases, reducing energy demand is one of the most cost-effective paths toward achieving long-term carbon reduction goals.

The industry's **leading certification systems** (<https://www.kingspanlightandair.us/knowledge-articles/daylighting-in-leed-and-breeam-standards/>) are also reinforcing the value of daylight. The **newest version of LEED** (<https://www.usgbc.org/leed/v5>) places significant emphasis on both climate action and quality-of-life initiatives, recognizing that high-performing buildings must deliver environmental and human benefits simultaneously. Likewise, WELL and Fitwel include strategies that prioritize access to daylight as part of creating healthier indoor environments.

For facility professionals, this evolution signals an important shift: building strategies can no longer address sustainability, efficiency, and occupant experience independently.

Improving Energy Performance



One of the most immediate benefits of daylighting is its ability to reduce dependence on electric lighting. Properly designed daylighting strategies can reduce lighting energy demand by 40%–80%, depending on building type, orientation, and the integration of daylight-responsive controls.

These reductions can translate into meaningful savings while also helping organizations lower greenhouse gas emissions associated with building operations. Daylighting strategies can become even more effective when integrated with controls, sensors, and automated systems that adjust artificial lighting based on available natural light.

As energy costs continue to rise and organizations seek opportunities to improve building performance, reducing lighting demand represents a practical and impactful strategy that can deliver measurable results over the life of a building.

Supporting Occupant Health And Well-Being

The conversation around lighting has evolved. For decades, the primary objective was simply to illuminate spaces sufficiently for occupants to perform tasks. Today, the focus is increasingly on creating environments that support how people think, feel, and function.

Research continues to demonstrate the relationship between natural light and human performance, with studies linking access to daylight and views to improved cognitive performance, greater satisfaction, and **reduced eyestrain**

(<https://www.sciencedirect.com/science/article/pii/S036013231930589X?via%3Dihub>).

Exposure to natural daylight has also **been associated**

(<https://pubmed.ncbi.nlm.nih.gov/28526259/>) with improved sleep quality, increased alertness, reduced fatigue, and higher levels of overall satisfaction with indoor environments.

Demand for wellness-focused environments continues to grow as organizations recognize the relationship between building interiors and occupant experience. Increasingly, access to natural light is viewed not simply as an amenity but as an important element in creating spaces that support health, satisfaction, and overall quality of life.

In healthcare settings, access to natural daylight has been **associated with shorter hospital stays** (<https://pubmed.ncbi.nlm.nih.gov/30546262/>) and improved patient outcomes.



These benefits have sparked an industry-wide trend: creating spaces that support human well-being is becoming a business imperative, not simply a design aspiration.

Designing For Performance, Not Just Daylight

Successfully integrating daylight into buildings requires more than simply adding windows or skylights.

Without careful planning, excessive daylight can introduce glare, increase solar heat gain, and negatively impact occupant comfort. The most effective daylighting strategies balance access to natural light with considerations such as climate, building orientation, glazing performance, and the functional needs of interior spaces.

This is why early-stage planning is so important.

Advances in daylight modeling (<https://standard.wellcertified.com/light/daylight-modeling>) and simulation technologies now allow design teams to predict how daylight will perform within a building before construction begins. Metrics such as spatial daylight autonomy, annual sunlight exposure, and useful daylight illuminance enable project teams to evaluate potential outcomes and optimize building performance.

As daylighting becomes an increasingly important component of building performance, educational resources such as Kingspan Light + Air's **Daylighting Hub** (<https://www.kingspanlightandair.us/resources/daylighting-hub/>) and **design guide** (<https://campaign.kingspanlightandair.com/the-benefits-of-daylighting-in-architectural-design-ebook-kingspan-light-air-north-america>) provide research, case studies, and practical guidance to help facility professionals and design teams better understand how different daylighting strategies and materials can support sustainability, energy efficiency, and occupant well-being goals.

By incorporating daylighting strategies early in the design process, building owners and facility managers can better align environmental objectives, operational goals, and occupant needs.

A Strategy That Serves Multiple Objectives



Building strategies can simultaneously lower energy demand, support environmental objectives, and improve occupant experience. Thoughtful daylighting is one of the rare

approaches that can meaningfully advance all three.

As the built environment continues to evolve, the facilities that perform best will be those that recognize the connection between people and place. Natural daylight is more than a design feature. It is an essential tool for creating buildings that are resilient, efficient, and centered on the people who use them every day.

Read more about workplace interiors on Facility Executive

(<https://facilityexecutive.com/topics/workplace-and-interiors/interior-design/>).

About Neall Digert



Neall Digert, Ph.D., MIES, Vice President, Innovation and Market Development for Kingspan Light + Air North America, has over 30 years of consulting and education experience working in the energy/lighting/daylighting design and research fields, specializing in the design and application of advanced lighting and daylighting systems for commercial building applications.

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