

LIGHTING SETS THE TONE

Design and occupant productivity factor into retrofit decisions

BY MATTHEW BRADFORD

A lot of consideration goes into lighting design. Whether the intent is to turn heads in retail, set the mood in a condo, or convey a corporate brand, the right luminaires in the right hands can go a long way towards defining any space.

"The role of lighting designers is to integrate the art, science and business of light," offers Deborah Gottesman, Principal with Gottesman Associates. "We are the bridge between the infrastructure of electrical engineering, the architect's design intent as well as the owner's practical environmental and budgetary requirements."

"By considering all facets of light, we create beautiful, comfortable, and functional spaces for people to enjoy, which contributes to the value of our clients' properties," she adds.

Delivering that value requires a team-based approach. Lighting designers must work with all project stakeholders to realize the client's vision and do so within the limitations of the project. That includes collaborating with architects and designers at the beginning of a project to determine how lighting systems will factor into the space's physical design and features.

"Lighting is critical to architectural design. In fact, many of the great architects of the past have said architecture is about how light creates space," agrees David Warne, Principal at Group GSA. "Whether the lighting itself is part of the dramatic



sculptural form or is quietly hidden but adding tones, warmth and contrast, it is an important tool in the design tool box. Because of this, the lighting design process is very collaborative between architect, engineer, and lighting designer."

A lighting designer's priority is to bring a client's vision to life. All clients are unique, and their intentions will vary. There are no "go-to" templates to lighting design; it is an organic process that requires all parties to make informed choices well before the first lamp is installed.

An effective lighting design starts off with understanding about what tasks are going to be performed in the space that the lighting systems will need to illuminate. This requires clients to take the time to

determine what tone they want to set in their office, condo, or retail environment. Will it be energetic or calm? Modern or retro? Professional or casual?

The temptation may be there to rush past these opening questions and select luminaires that simply look good without truly understanding the atmosphere they are ultimately going to inherit. Without a basic understanding of lighting options and principles, however, this approach sets up a poor foundation for design.

WORKING THE SPACE

From welcoming lobbies to luxurious boardrooms, there are plenty of options when it comes to setting a tone. For example, office environments typically

employ lighting designs that emphasize specific tasks while conveying a comfortable but professional environment through softer tones and edges and indirect lighting.

Strategically placed lights can also define work zones and meetings spaces, while accent lighting can be installed to draw visitors' attentions to brand identifiers and interior highlights.

All combined, considerations like these can transform a cookie-cutter office into a unique corporate headquarters. Here again, it all begins with a well-defined vision.

"You need to know what tasks are involved in the space, who will be using it, what emotions you're trying to evoke, and the key architectural features and elements that need to be considered," advises Ellen Godson, Principal at EFG Lighting Consultants. "On top of all that, you need to determine if there will be any challenges with installation or maintenance, what the client's budget is, and if there are LEED Certification requirements."

These factors are also important when designing lighting for public condominium areas, which include lobbies, amenity rooms, and corridors. Factors such as floor finishes, wall coverings, and architectural highlights come in to play.

For residential interiors, designers must also determine whether the goal is to keep people moving or encourage them to linger. To move people quickly through a lobby, for example, one must create a feeling of energy by possibly working with glass and spotlights that reflect off higher gloss finishes. This treatment causes people to perceive more light and glare, making them more alert and more apt to move quicker through common spaces like a front entrance. Alternatively, using subtler lighting sources, more textures in furniture with less gloss, and softer and warmer colour schemes will have the opposite effect.

Well-lit condo interiors can also convey the calibre of a building. "Typically, low- to mid-range residences have more uniform lighting from diffuse sources, and higher-end residences have higher contrast ratios with most of the lighting serving to accent interior design elements and materials," maintains Rhomney Forbes-Gray, Principal with Lightbrigade Architectural Lighting Design.

All told, lighting designs are key to defining a space for work, life or play. Drafting an

effective game plan, however, counts on a strong relationship between clients, lighting designers, and related trades.

"We have to make sure that the fixtures not only mesh with the vocabulary of the design, but that they are placed appropriately so the effect in the space is what the designers intended," Gottesman says. "Every space has to be considered on its own merits."

RETHINKING RETROFITS

Lighting retrofits are prime opportunities to bolster energy efficiency and redefine the space. As such, building owners and managers would do well to take advantage of retrofits to invest in new lighting assets and designs that will achieve these goals.

Lighting retrofit can be either easy and straightforward, or more complex with higher upfront costs. Which path a client takes depends on a number of factors, including the age of the building, its original function, and what purpose it may serve down the road.

For example, when retrofitting a space that was designed and built in the 1980s or early '90s, designers consider that the existing lighting wasn't initially designed for people who are constantly working in front of computer monitors, tablets, and smartphones. As such, replacing 100% existing light levels wouldn't be appropriate for the people working there today, nor in the future. Measuring the amount of light in the space and the glare from the luminaires are more relevant factors today than 25 years ago.

Setting retrofit goals means understanding a building's past, the client's current needs and future expectations. That means understanding why the retrofit is being done and what can realistically be achieved.

Is it to meet an energy savings or capitalize on local utility incentives? Is it to do a complete retrofit or is it to be done space by space? Will the retrofit be sufficient to utilize the existing lighting grid and spread the light as desired or will it require moving and adjusting the luminaires with new lenses to enhance or diffuse the light?

Other retrofit considerations include: whether or not existing light controls will play nice with new luminaires; if the project must meet ASHRAE/OBC or other standards; what the client is hoping to get in long-term return on investment; and how long the project is expected to last.

Retrofit strategies must take the long-term cost of replacements and maintenance into account. This means calculating total life-cycle expenses and comparing them with upfront investments.

"When evaluating the cost-benefit of any investment, clients should be considering the cost of the whole system and looking at the big picture, because per unit cost can be misleading," advises Gottesman. "Our designs have demonstrated that more efficient – and sometimes more costly – product will result in a layout with less fixtures. This reduces overall materials and labour costs, which translates to lower operating costs for the life of the system, including not only energy and replacement parts, but the owner's manpower required to service the system. These savings are substantially more than our design fees and, in the end, the owners get a cost-effective design that improves the value of their property."

Lastly, it's important to see beyond energy savings when approaching a retrofit. That is, while being eco-friendly and cutting utility costs are worthy goals, one must balance green ambitions with occupant comfort. ■



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