Outdoor and Landscape Lighting: The Quiet Revolution

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At night, the cityscape is a sea of lights. The montage of outdoor lighting in many ways defines the city's character at night, defines the community and each building, and brings nature into sculpted view. After grimacing at the orange glare of municipal (low bid) street lighting, we pause to appreciate a building meticulously sculpted with concealed sources. Some buildings are awash with light, others reveal efficiently highlighted key architectural features. In many ways, outdoor and landscape lighting plays an integral role in mankind's quest to "scorn the darkness" and beautify the world around us.

In the realm of design, exterior lighting provides an arena in which the lighting designer is set free to implement an arsenal of new-fangled technologies, expanding the old bag of tricks. The selection of industry improvements now available includes new light sources, more reliable ballasts, increased availability for multi-voltage applications, and a wider variety of ingeniously designed light fixtures. In this article, we will discuss some new developments in outdoor and landscape lighting and elements of a successful design.

Design Concepts

Surprisingly, some facilities professionals still believe that the purpose of outdoor lighting is simply safety and security. Luckily, many conservation commissions across the country request that designs for commercial/industrial property developments blend in harmoniously with the existing landscape. This is where lighting designers can use their technical knowledge, pure imaginations, and intuitive design skills to make an architectural statement with light.

Proper planning is essential. The first step is to fully understand the environment to be lighted, the architectural features, the age of the area, and the general demographics. An on-site visit, perhaps with a camera, would be helpful. Back at the office, the design process is fairly straightforward. It is fairly easy to select the fixtures, light sources, and the electronic components when designing street or pedestrian lighting. Lighting properties and their adjoining landscapes is quite different story, however, as system selection is not always a simple matter of floodlighting and a few bollards.

The state-of-the-art for landscape lighting design combines technologies. Whether using line voltage, low voltage, or the current "rage" of fiber optics, the design project can succeed only after much preparation and simulation. In-depth preparation and planning often requires several passes at a number of scenarios before reaching a final design solution. All of the approaches may share common concerns, such as cost, maintained uniformity, quality, extraneous light control (light pollution,) and heightened visual/color acuity.

The designer is faced with a significant task of sifting through piles of data to assess:

- the light source (wattage and family)
- the fixture type (direct, flood, spot, cut-off, andscape, wall pack)
- installation characteristics
- product variety

In many cases, the designer may save hours of work using sophisticated computer software packages that can simulate the final results in minutes. The process of scenario elimination generally features point-by-point calculations, a full analysis of lifecycle costing, construction scheduling, and, perhaps, a fully lighted layout presented via a flying three-dimensional tour of the finished product.

A Classic Look

Years ago, the use of gas lanterns dressed in swirling castings charmed the nighttime streets. Although gas lanterns have gone extinct, the form of these fixtures has stood the test of time. These lantern-style fixtures have reappeared in abundance in many of America's founding cities. The classic looks in the lines of Hadco, Holophane, Wellsbach, Whatley, and others help to create a nostalgic look in the modern urban nightscape. During the daylight hours, these classically-styled fixtures sport a look that fits into the city culture. At night, the mix of aesthetics and improvement in visibility at dusk transforms the darkness to urbanite safety.

The Space Age

For those desiring a slick, space-age fixture design coupled with a seemingly impeccable photometric performance for general site/lot lighting, the ever-present shoebox design has been evolving. New shapes and distributions, variations on the original cobra-head design, use advanced optics to control beamspread, glare, and spillage.

The modified cobra-head family using inverted conical reflectors is found in fixtures carrying descriptors such as Contracline, Pericline, and Conquest. All fixtures within these families are designed to improve visibility through control of glare and enhanced uniformity.

Landscape Opportunities

Residential landscape lighting lets homeowners enhance and personalize their landscapes and driveways with well-placed pools of light. The large home outlet stores sell several varieties of do-it-yourself kits, many made by cheap "bang 'em out" manufacturers. Only the authentic high-quality products designed and manufactured by such companies as Architectural Landscape Lighting, Bega, Fiberstars, Hydrel, Intermatic, Kim Lighting, Lumiere, Sterner, Stonco, and other offer built-in reliability.

One design consideration in landscape lighting is whether to use line-voltage or low-voltage fixtures. The benefits of low-voltage systems come from the low installation cots via direct-burial wiring, ease of installation, simplicity of control, high CRI sources, and the rugged construction of the fixtures. Minor disadvantages include the lack of choices outside slight variations on the toadstool mushroom theme. Low-voltage sources are generally limited to low wattages and may require line-voltage sources for supplemental lighting. What's more, the wiring should still be run below the frost line (not essential, but good practice.) In contrast, line-voltage systems allow designers to bring line voltage to any point along the installation route, giving the convenience of an installed electrical outlet (NEMA 3R enclosure) in the middle of the garden or next to the pool. The choices are fairly broad and can satisfy most design appetites.

The most interesting developments in landscape lighting come from a relatively new application for a technology popularized during the psychedelic era. After the lava lamp, the glass fiber sculpture was one of the more fascinating toys of the era. No longer a toy, fiber-optic lighting is now a powerful tool for landscape designers. The benefits of fiber-optic lighting in landscape applications include no heat, no electricity, simplified maintenance, and ease of use in wet applications.

Companies making innovative fiber-optic products with a support system to match are few. Fiberstars and LSI, among others, do offer outstanding value and performance, however. Continuing advances in light sources are making the choice of fiber optics more attractive than ever. Watch for the Philips QL lamp with a 60,000-hour rated life and the "sulfur" lamp to make appearances in the light engine area. ·