

The Future of Outdoor Lighting

Conservation-Conscious Installations that are Friendly to the Environment



Poorly designed outdoor lighting systems waste energy and pollute views of the darkened nighttime sky.

Before artificial illumination became widespread through the use of electricity, most human activity ceased during hours of darkness as a practical matter. Now we sleep less and live in a 24-hour-a-day society, thanks to lighting.

Recent blackouts underscore our dependence on lighting as well as an underlying danger – excessive lighting may result in power shortages, blackouts and crises with heavy social and economic costs. Conservation has become a chief concern in the design of all lighting.

Past outdoor lighting standards and practices focused on minimum quantities of illumination with little thought to conservation. Lighting designers working with these standards often exceeded minimums, as witnessed by the abundance of bright car lots and fuel station canopies, resulting in wasted power.

The environment is affected by excessive outdoor lighting. While the most common concern expressed is obtrusive light, owners must be aware that macro-level concerns also exist. Over lighting means more power must be produced and transmitted, activities that negatively affect the environment through the consumption of raw materials, occupancy of precious space, and production of greenhouse gases.

The new age of lighting includes the following trends.

- **New Standards** such as California's Title 24, LEED and CSA C653 attempt to address lighting issues through the establishment of unit power density for outdoor lighting and other considerations. These standards seek to address efficiency,

one of the chief considerations in conservation.

- **Environmentally-Friendly Fixtures** direct light output to intended locations rather than the spilling it into the sky or onto adjacent properties. Reducing "wasted light" means preservation of the nighttime environment and less energy consumption. Properly designed facilities reduce glare, sky glow and light trespass.
- **New Design Techniques.** New outdoor lighting design advancements include visibility-based standards and methods. While the new techniques require specialized knowledge and design skills, the results can be impressive as visibility is increased while capital and operating costs are decreased.
- **Visibility-Based Lighting Design** (as contrasted with design based on the quantity of illumination) founded on advanced research. This movement is the direct result of modern computing power that allows more complex calculations to be undertaken to verify theoretical assumptions. Simply put research shows more light is not always better when visibility is the criteria.
- **Controls** that improve efficiency and reduce power needs.

Stay tuned for the next series of Advisors that will address the **New Age of Lighting** and what solutions are "on the shelves" or "in the pipeline." As a leader in outdoor lighting, DMD is fully committed to offer our clients value through education and application of modern design techniques.

Advisor

An e-newsletter keeping owners and design professionals informed of advances in technology and practice

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This issue of the Advisor may be of interest to the following individuals

- ☒ Architects
- ☒ Landscape Architects
- ☒ Civil Engineers
- ☒ Traffic Engineers
- ☒ Environmental Specialists
- ☒ Public Officials

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