

OUTDOOR LIGHTING

Many communities place great emphasis on safety and appearance as common elements expressed in comprehensive plans and zoning laws. However, outdoor lighting, a critical component of safety and appearance, is rarely mentioned. Even though today's lighting (such as LED technology) may be brighter than traditional fixtures, a lack of standards and treating lighting as an afterthought in the review process hampers its effectiveness. Yet, done properly, lighting can make communities safer and more attractive.

Lighting levels

Street and commercial lighting should be distinctive and at a human scale, while preventing excessive glare or unnecessary upward lighting into the night sky. Attractive site and street lighting extends the viability of central areas and commercial uses, makes public areas seem more secure, and promotes entertainment activities after daylight. However, existing lighting often features uniform fixtures on overly high poles, broadcasting too much light on neighboring properties and streets, or into the night sky. Evenly distributed light levels are more important for comfort and security than high contrast lighting that produces bright glare and dark shadows.

Energy Wasted

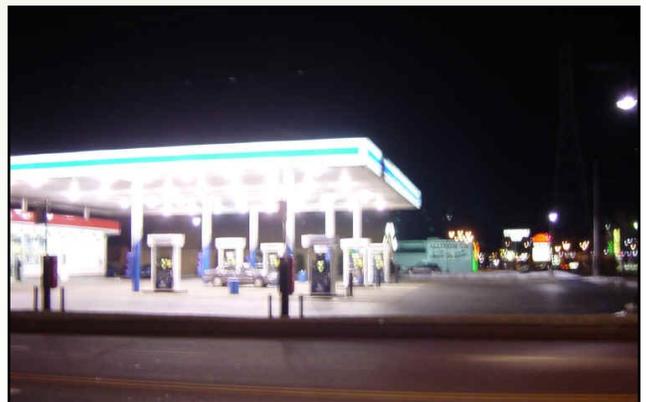
A dark-sky advocacy group estimates that over two billion dollars in energy costs is wasted every year in the United States with light spillover into the night sky via unshielded outdoor lights. This deprives many people's view of the night sky. Under clear conditions, roughly 2,500 stars and the Milky Way should be visible; on the same night city residents might see only 25 or so scattered stars. Lighting that is adequate for the intended task, but not overly bright, and fixtures that focus all light on the intended area and restrict light into the sky can save considerable money and bring back views of the stars.

COMMON LIGHTING PROBLEMS:

- Glare** = Fixtures too bright and/or directed off the site, can shine into drivers' eyes.
- Energy loss** = Inefficient bulb or fixture type; costly wasteful lighting of surrounding areas.
- Color** = Certain fixtures create an unattractive blue-green or yellow-orange glow.
- Sky Glow** = Light or glare shining upward, lighting up the night sky, washing out star views.

Glare example:

A business that features unshielded light poles encircling a parking lot that are tilted upward, aiming into the eyes of nearby drivers and spilling well beyond the landscape buffer at the property line.



Canopy Lighting glare:

Glaringly bright canopy lighting can actually reduce overall visibility by making adjacent areas look dark by comparison. Balanced down lighting is more effective than overly bright lighting and all canopy lighting should be recessed to limit glare.

Effective Lighting

Lighting designed and implemented effectively can highlight the right features and components of a site without producing glare and obscuring the night sky. Good light fixtures are shielded, maintain adequate light intensity, only shine where intended, and are turned off when they aren't needed.

LIGHTING GUIDELINES

- Do not over-light: people begin to feel comfortable at 0.1 to 1 foot-candle; 2 to 5 foot-candles are only needed in high security areas; brighter than 5 foot-candles can be a waste of energy and a source of glare. Manufacturers can provide standards and photometric details (foot-candle estimates depending on height of fixture and bulb intensity).
- Include full shielding that eliminates glare, especially off-site, with no light above the horizontal level into the night sky.
- Encourage lighting that accents distinctive architectural features, but discourage "uplighting" or illuminated banding that is primarily for advertising purposes.
- Make street and pedestrian area lighting human-scale (10 to 15 feet high); parking lot lights need not exceed 20 to 25 feet in height (Unless in large lots).
- Space fixtures approximately four times the height.
- Light outdoor signs from the top; if internally lit signs are proposed, dark backgrounds and light lettering produce less glare and are easier to read.
- Avoid mercury vapor and low pressure sodium fixtures, as well as laser lighting or searchlights for advertising purposes.



Car dealership lighting example:

The photo above illustrates the car dealership has well shielded lights that amply illuminate the inventory while limiting glare onto neighboring properties and streets.

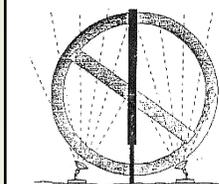
Below: three examples of shielded light fixtures



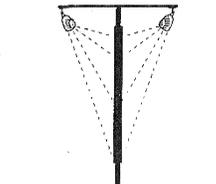
LIGHT FIXTURE DESIGNS

Not recommended

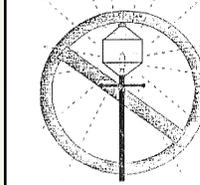
Recommended



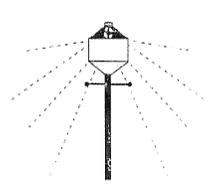
Ground-mounted billboard floodlights



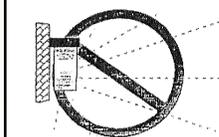
Top-mounted billboard floodlights (carefully focused onto billboard)



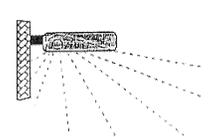
Post-style lamp (more than 1800 lumens)



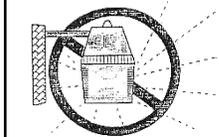
Post-style lamp (lamp set in opaque top)



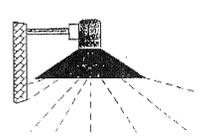
Typical "wall pack"



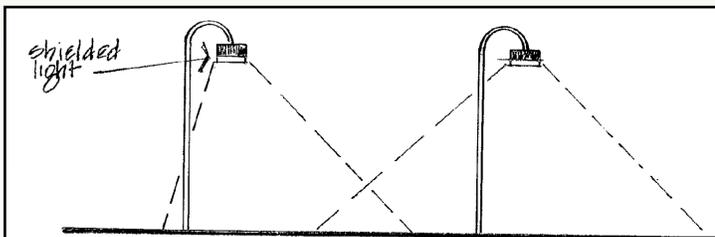
Opaque reflector (lamp inside)



Typical "yard light"



Area flood light with hood



Shielded light spread example

Shielded lights limit the spread of the light from the fixture while limiting glare spread onto neighboring properties, roads and upward sky glow.