

# Light Up Your Life, the Smart Way

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Gazing out the cockpit window as your plane leaves a New York City Airport, you are able to witness innumerable rows of dotted light overflowing into an electronic blanket of illumination, stretching far beyond your field of vision.

Why do we see this? What exactly are these lights twirling around our night sky?

These strings of artificial light, synonymous with modern life, are being used, in part, to light up a dark sky. This misuse of illumination means billions of dissipated dollars and a long term environmental impact.

The International Dark-Sky Association, a non-profit industry advocacy group, estimates that 30% of all US outdoor lighting is wasted by being directed skyward. Conservatively estimated at \$1.5 Billion in yearly wasted electricity, this 30% requires the needless burning of 6 million tons of coal every year. Wasted or poor indoor lighting accounts for additional monetary and energy losses. Improper lighting can also have a negative psychosocial impact, including everything from depression to insomnia to eye strain.

In a world obsessed with efficiency and cost, improper lighting is a growing concern. Groups of involved professionals, namely the Illuminating Engineers Society of North America (IESNA), are organizing around the world to address and educate the public about the problems of improper lighting use. The IESNA is a consortium of Lighting Designers, Engineers, Architects and Lighting Manufacturers. I attended a lecture series sponsored on their behalf. The Quality of the Visual Environment Lecture Series: It Ain't Just Foot-candles Any More! was given by Stefan Graf, a professional lighting designer from the Michigan based lighting design firm, Illuminart.

This straight-laced yet animated speaker opened up with a jaunty tune he penned himself about lighting quality, then jumped right into the issue. The purpose of the informational session was broken down into four main points: to increase the awareness of the value added by the new IESNA lighting quality Design guide, to identify the long term fiscal benefits of lighting quality, to protect the owners of building projects and users, and to create an awareness of loss prevention in specifying and project management lighting systems designs.

According to Mr. Graf, the "role of the lighting designer is to match and rank the needs of the people using the space with the economic objectives, and then translate the results into a workable design and functional installation."

In or outside of a structure, the Human, Economic, Environmental, and Architectural elements are all profoundly influenced by their lighting. Human elements served by lighting include task performance, visual comfort, social communication and overall aesthetic judgment. Architectural elements include the form of the building, style, the composition of materials and influence building codes and standards. Economic and environmental elements include installations, operation and energy costs, and its impact on the environment.

There is no organized, easily identifiable label of lighting designer. The role of consultant is limited solely to consultations. The IESNA intends on making the career a widely known and accepted merging of architecture and interior design. The lighting designer would keep the problem of light trespass (unwanted light entering from an extraneous source) and light glare to a minimum.

Mr. Graf displayed several examples of lighting gone bad: inefficient museum lights, poor parking lot lighting, aesthetically upsetting electricity inside of Macy's even carries its hidden costs. In retail stores such as Macy's, lighting can make a "mini-environment" for a given display, highlighting a carousel of impulse purchase merchandise.

In parking lots and access roads and at entrances and exits, effective lighting can be used to highlight hazards. This increased safety translates into time saved on emergency response, fines, workers compensation, and lowered insurance rates.

Light also sets the mood. Choosing lamps that will produce certain tones, moods and color effects, you are much more likely to obtain the desired ambience. Think about it: schools don't install soft blue lights in classrooms; they want you alert and awake.

Pollution prevention is the keystone to a lighting designer's task. Energy-efficient lighting offers the potential for saving electricity which, in turn, prevents air pollution caused by electricity generation. The Environmental Protection Agency estimates that electric use for lighting would be cut by 50 percent, 232 tons (four percent of the nation's total) sulfur dioxide emissions by 1.7 million tons (7 percent of national total), and nitrous oxide emissions by 900,000 tons (4 percent of national total).

The lecture series concluded with a call to action by designers, architects, civic leaders and the general public. Long term benefits must be chosen over "it's-not-in-my-interest" short term profits. Lighting is not a marketing strategy, but a crucial resource that must not be misused.