LIGHTING NEWS LETTER

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LIGHTING A CITY? STEFAN R GRAF OF ILLUMINART, A LIGHTING PROFESSIONAL DESIGN FIRM IN YPSILANTI MICHIGAN, HAS SOME THOUGHTS TO SHARE.

Q: Why a newsletter on lighting for city streetscapes?

A: I was speaking with a landscape consultant on the subject, and he told me that his home town of London, Ontario was planning to relight the downtown district. He received over 60 phone calls from lighting sales representatives promoting various products for the job. It was obvious from our conversation that there's a serious lack of awareness about the real issues of lighting for downtown districts. The only exposure most folks get about lighting is from the lighting equipment suppliers.

Q: What else is there to know that the suppliers and their representatives don't emphasize to clients?

A: There's a lot to know and be aware of before making decisions about lighting, especially for a commercial district in an important downtown area. There are issues of visibility, psychological impressions, color perception, costs and the 'value added' of good design to the businesses in the district over time. Weighing all this information before making a decision is important for city governments and more important, to the people that visit and live in the district. This is especially valuable if it's a district that's interested in attracting people and promoting commerce.

Q: Aren't most of these issues raised and addressed by the city planners, engineers and the lighting sales representatives?

A: Usually, not. The suppliers are really interested in promoting their products. Lighting design is often simplified down to looking at catalog sheets then picking a fixture style that satisfies a decorative theme for the city. Sure, it should look nice in the daytime but its real value is how the fixture performs after dark. Many fixtures look the same in the catalogs but have completely different quality and performance characteristics. Many manufacturers offer similar style equipment. It helps to review them all. Unless engineers are active in lighting education programs, they aren't up to date on the latest research that addresses night time visibility issues and techniques required to accomplish good illumination. The data is changing so quickly that unless one attends lighting seminars and conferences on a regular basis, it's difficult, if not impossible, to have all of the necessary information to make the best, informed decision. Too often lighting design is oversimplified into a foot-candle calculation. The distribution of light is important, but it's only one small part of the necessary considerations.

Q: Can working with a professional lighting designer be helpful?

A: Well, without sounding too biased, it's essential to have a professional lighting designer on the

planning team -someone that is specializes in lighting that doesn't sell equipment and who's active in new lighting programs, research and continuing education. Lighting has become too specialized to risk the costs of not doing it right the first time.

Q: Why pay a lighting designer when city engineers can get free advice from the suppliers?

A: The cost of a professional service fee may be offset many times by the 'value added' provided by the designer, not only in potential equipment cost savings but in the potential for good lighting to increase nighttime commerce to the district. Cities that have experienced the benefit of good design can certainly testify to that.

Q: What other issues should be considered in planning a city lighting system?

A: Visual performance, comfort (glare control), color perception, nighttime attraction, architectural highlighting, light pollution, light trespass, maintenance, the cost of the lighting system over time and the image the illumination creates to the observer, after dark, are all important issues. It all translates into providing 'community responsive' design solutions.

Q: You didn't mention the fixture style.

A: That's because it's probably the least important issue to achieving good illumination.

Q: What are some of the questions that should be asked up front when you're involved in lighting a cityscape?

A: What is the function and what are the goals of lighting in a downtown district after dark? Is it valuable for a visitor to have a pleasant experience? Is a sense of safety and security important? Is a positive psychological impression something that is desired? Is the nighttime image important? What should that be? Are there architectural elements that should be highlighted? Would the city like to increase pedestrian traffic after dark to shops and restaurants? Are we interested in conservation, reduction of wasted light energy and light trespass? To get the best results, you need to remember that illumination is for, and affects, people.

Q: What is light trespass?

A: Light trespass is a term that describes the effect created when the illumination adversely influences people in the community, in their adjacent properties. It's essentially stray light.

Q: What should city planners and engineers look for in a city lighting system?

A: Look at equipment performance, visual comfort, long term maintenance issues, life cycle cost evaluations between various systems, product availability, service by the manufacturer, and the potential impact lighting can have if it increases (or decreases) revenues to a commercial district

after dark. And definitely evaluate the equipment and costs from various manufacturers. It's also important to note that many lighting systems direct too much light up, into the atmosphere. It not only reduces visibility of sky conditions but is very expensive and wasteful. It is estimated that this wasted light from poorly designed lighting costs Americans over 2.5 billion dollars each year in energy use. This results just from a lack of awareness or consciousness by folks making the lighting decisions.

Q: When should these issues be considered? Why are they important?

A: They must be addressed before the lighting selection process can even begin. If these issues were important to most cities, they wouldn't end up with the poor quality lighting that we see often in downtown areas that were just re-lighted. Instead of the new lighting being attractive, comfortable and efficient, we see lighting that is distracting, doesn't help improve visibility, is wasteful and unpleasant. Worst of all, instead of supporting good visibility, it detracts from it with poor color rendering and high source glare. Is the goal to attract people, or not? I can understand how this may be the case with an old lighting system, but it's sad when the old system is replaced and the new one is just as bad or even worse.

Q: Is there any type of lamp technology that's considered best for city usage?

A: Use metal halide lamps, not high pressure sodium lamps. Research supports evidence that white light, with blue in the color spectrum, is many times more efficient than yellow light in the mesopic and scotopic (nighttime) range of human vision. Colors look more natural with metal halide lamps and they produce a more attractive and pleasant environment. Depth perception, visual acuity and reaction time also improve. The slight cost increase in maintenance with metal halide is insignificant compared to the value of the benefits realized over high pressure sodium lamps.

Q: Is glare an important issue?

A: Very. Select lighting with optical systems that will minimize direct glare. Excessive glare is the number one "enemy" of good lighting practice- it's visual noise. Its distracting, annoying, adversely affects ones ability to see well and may even contribute to problems with safety and security. You don't want your lighting to 'shout' at you- it should support the visual process and provide a pleasing experience to the observer.

Q: Is it useful to do a site survey of a town that has good lighting?

A: It would be very valuable to locate downtown districts that have what's considered good lighting and visit it to see the difference. It may be difficult for many people to understand these issues of visibility, so site visits would be very educational. Locally, I think Ann Arbor, Michigan features great lighting on Main St. and poor lighting on some of the adjacent streets. This is a good city to visit and learn from. The Main Street merchants feel that the lighting has had a very positive impact on their nighttime business. Susan Pollay at the Ann Arbor Downtown Development Authority can tell you more about that.

Q: Is there any information on lighting a city online?

A: Definitely- visit the websites of: The IALD / International Association of Lighting Designers (www.iald.org), IES / Illuminating Engineering Society (www.iesna.org), IDA / International Dark Sky Association (www.darksky.org), LRC / Lighting Research Institute at Rensselaer (www.lrc.rpi.edu), and NLB / National Lighting Bureau (www.nlb.org). I wish to suggest that you try to find sites that are not sponsored by manufacturers, to receive information that is free from possible conflicts of interest.

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