provide the municipality with much more effective use of their parkland. A higher ratio of lighted fields per acre in residential neighbourhood parks resulted in a considerable overall capital cost saving. As a result of the light control on the playing surface, the upward light component has been greatly reduced.

In recent years, the Dark Sky Society in the United States and Canada has been lobbying to legislate to reduce or control the amount of night sky light pollution created by all exterior lighting designs. The Dark Sky Society is a group of scientists, naturalists and environmentalists who are interested in controlling the nighttime glow visible over most large cities in North America. This glow seriously hampers the work of astronomers. It is claimed that this sky glow also confuses migratory birds which directly affects the balance of nature.

The concern for the control of spill light is rapidly becoming a major design aspect in many municipalities. One municipality in Canada, located in the Greater Toronto Area, now has a light pollution bylaw. All site plan submissions must include a complete detailed exterior lighting layout that must conform to this bylaw. One of the most difficult criterion of this bylaw is that no lighting fixture will allow more than two percent of the light output that it produces to go above the horizontal plane of that fixture. Obviously, the spun aluminum sports floodlight is not used in this municipality.

Almost all lamp and lighting fixtures available to the Canadian designer come from American research and development laboratories. Our market in Canada is not large enough to support the developmental costs for Canadian-only products. The work of groups such as The Dark Sky Society has now created a market in the United States for an environmentally friendly sports lighting fixture. Larger markets create more product design creativity and hence more market competition. Today, there are new products on the market which, due to their increased operating efficiency, more than offset the minor price increase compared to the older design spun aluminum sports floodlight. As with all purchases, the most cost-effective system is not always the best. The lighting system that you install should provide for 25 to 30 years of effective use, not years of aggravation. A capital cost increase of $15,000 amortized over 30 years is a very small price to pay for a quality lighting installation.

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Recommended lighting design criteria for all sports played in the United States and Canada have been established by the Illuminating Engineering Society of North America. Most sports associations that publish their own specifications for lighting, have simply followed I.E.S.N.A. recommended practices. When most people discuss the lighting of a sports facility, they refer only to foot/candle levels. They are actually referring to the maintained average foot/candle levels. The average lighting level is only one of many important rules that must be followed to provide a successful sports lighting project.

Poor on-field lighting uniformity, especially in critical play areas, can expose the facility owners to serious risk management implications. Lack of a scheduled maintenance program can also create a serious hazard as lamps can deteriorate or fall.

There are lighting product sales techniques that rely solely on a lighting design computer to market their product while lighting your field. Agreed, computers are a useful design aid, but they do not play baseball or soccer. Reducing pole heights, or reducing the number of poles is a cost-effective way of reducing the price of your new installation and may satisfy the foot/candle average level on the playing field. Lighting uniformity and pole locations are far more important to the play of the game than is the average lighting level.

If you or your lighting consultant have not used a specific new product or design application on a previous installation, arrange to see a couple of completed facilities similar to yours, at night, and if possible, while in use. A new installation that is improperly specified can create a serious risk management situation and it is only after the project is complete that you realize that you have a problem. A few evenings of research can avoid 25 years of grief or several thousand dollars of retrofit work. ◆

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