

A UNICCO White Paper:



# Outsourcing Lighting System Design And Maintenance

**UNICCO**  
INTEGRATED FACILITIES SERVICES®

# OUTSOURCING LIGHTING SYSTEM DESIGN & MAINTENANCE

*Robert Hazen, UNICCO Lighting Services*

## **Overview**

The commercial, industrial or institutional lighting buyer is primarily concerned with buying supplies at the best price and then addressing problems later on as they arise – which they inevitably do. This is because companies normally take their lighting system for granted, as long as people can see and don't complain.

Buyers typically have a “deal” with a regular lamp & ballast supplier that supplies their requirements on an as-needed basis. When employees or tenants notice a lamp out, replacements are brought up from stock and installed by the “jack of all trades” maintenance person, or maybe even a store clerk.

## **“Cost of Light”**

Most companies are not aware of the financial impacts and proven positive effects of cost effective, quality lighting on people, productivity and profits. They are typically unaware of the “cost of light” and the factors that affect getting full value for their lighting dollar.

That is why so many companies are surprised to learn that there have been specialists available who have been providing comprehensive lighting services for over 50 years. These services include consultation, system design, installation, planned maintenance, group relamping and lighting retrofits. By utilizing these services, the user can provide occupants with quality illumination *and* maximize the company's return on its lighting dollars. National lighting management companies have skilled labor and the latest knowledge and equipment to service all aspects of a lighting system. Many of these specialists are members of the interNational Association of Lighting Maintenance Contractors (NALMCO), [www.nalmco.org](http://www.nalmco.org). Many are also members of the Illuminating Engineering Society of North America (IESNA), [www.iesna.org](http://www.iesna.org).

The first thing a specialized lighting maintenance contractor typically will do for the user is explain the impact of “cost of light.” Typically, the lamps and ballasts on which a user places so much emphasis to get the best deal, represent only 4-6% of the annual cost of operating a lighting system. The maintenance costs to change and clean lamps and ballasts usually represents from 8-12% percent of annual lighting costs. Thus the bulk of the “cost of light” is the cost of electricity to operate the system – usually 82-88% percent of annual costs.

Once a customer recognizes what the true “cost of light” involves, the lighting maintenance contractor can then recommend updated and upgraded systems that may

cut the energy portion of the annual costs as much as 45-50%. Many users are extremely surprised to learn the impact of new lighting technologies; this is where the lighting specialists earn their keep.

*"If it's working, don't fix it."* This concept does not apply to working fluorescent and high intensity discharge lamp and ballast systems because their efficiency normally and inevitably decreases as systems get older. Maintenance issues with these products revolve around:

- Lamps losing delivered light as they get old, as much as 25-40% (lumen depreciation)
- Fixtures getting dirty, as much as 40-50% (luminaire dirt depreciation)
- Electrical problems (hard starting lamps, low ballast secondary voltage, socket and capacitor problems, etc.)

## **Outsourcing Lighting Services**

Why switch from a do-it-yourself program to outsourcing with a lighting maintenance professional?

- First you get lighting expertise. You will save significant operating costs, especially on both energy and maintenance, because the professional lighting maintenance contractor knows what makes the system run optimally
- Second, you will free up manpower to perform other important facilities tasks
- Third, you will get all the light you are buying
- Fourth, planned maintenance programs offered by these specialists will prevent most unexpected surprises and reduce the high costs of rush or emergency service
- Fifth, you will prevent most lighting electrical problems by planning in advance and following through with proper inspections and maintenance

Most lighting contractors will provide turnkey, or soup-to-nuts, service:

- Lighting system analysis and proposals
- Quality of lighting recommendations
- Planned group relamping and fixture cleaning program
- On call or emergency services and response
- Energy saving solutions
- Equal billing contractual programs
- Programs for all types of lighting – indoor, area, outdoor, sign, industrial
- On-going consultation and lighting advice

The concept of outsourcing lighting services and maintenance to professionals is the same as applied to HVAC maintenance, elevator maintenance, computer maintenance, cleaning, etc. – all are well-accepted and expanding outsourcing services. However, many companies still think they can save a few dollars in lighting by doing it in-house with maintenance generalists. But that has not been the case for a growing number of smart energy users who have chosen the outsourcing route and improved their bottom line as well as their lighting, resulting in happier employees, tenants and customers.

## **Converting to New T8 Lighting: The Maintenance Trap Door**

Property owners/managers and retail store facility managers alike are renovating and retrofitting their spaces to new T8, T5 and/or Compact Fluorescent (CF) lighting systems. The drivers for this are generally twofold: a desire to reduce the energy operating costs of lighting 30-40% and the desire to improve the quality of space lighting.

Most renovation/retrofit proposals also include expected additional maintenance savings in their payback analysis. These savings are based on the expected average life ratings of the existing lamp-ballast combination. They typically compare the current maintenance costs based on spot relamping to the post-retrofit costs based on failures following the retrofit, which is similar to a group relamp. (Of course, these savings would not be as great given that the owner would have normally scheduled a group relamp of his/her current system at the time of the retrofit.)

Most proposals that include anticipated maintenance savings emphasize that the T8/T5 lamps usually carry a 2-year manufacturer's warranty and the electronic ballasts carry a 5-year warranty. But when warranted lamps and ballasts fail, who changes them? The labor costs in most cases, whether an in-house maintenance person or in the case of multi-site premises, the field maintenance personnel or area contractor, far exceed the costs of the replaced warranted product. More importantly, over time the failures in the new system will inevitably approach that of the previous system. Thus, the facility stocks a few "extra" lamps, ballasts, transformers etc. on-site to cover these expected failures. After a few years the stocks get larger as the failure rates increase. Thus there are millions of dollars tied up in service inventories at many post-retrofit/renovation sites across North America.

The best way to improve this situation is for owners/managers to specify that the contractor performing the lighting conversion/retrofit include planned maintenance as part of the proposal. This program would include:

- Perform the initial renovation/retrofit
- Inspect spaces/zones/locations on a regular, periodic basis for outages
- Respond to emergencies
- Administer the client's lamp/ballast warranty
- Schedule interim fixture/lens cleaning, if applicable
- Plan with the owner/manager the next group relamp of the new system based on mix of light sources, burning hours and specified maintained light levels

Many sites retrofitted to T8/CF in the early 1990's have yet to be cleaned and relamped. The failure rates and service call activity at these sites will be (if not already) a costly nuisance to the owners. T8 lamp failures are often 10% per year while CF failures are often 20% per year, or more. Why follow a "love 'em and leave 'em" approach to your considerable investment in a new or retrofitted lighting system? Plan for maintenance *now* – before you convert. You will benefit from fewer failures, reduced administrative costs, improved long-term system appearance and – most importantly – happier occupants, customers and tenants.

*Bob Hazen is Manager, Lighting Services Business Development with UNICCO. He has over 28 years of experience in all aspects of lighting and lighting maintenance.*

**Lighting Services Resources on the Internet:**

<http://www.unicco.com>  
[www.nalmco.org](http://www.nalmco.org)  
[www.iesna.org](http://www.iesna.org)  
[www.sylvania.com](http://www.sylvania.com)  
[www.GELighting.com](http://www.GELighting.com)  
[www.philipslighting.com](http://www.philipslighting.com)



INTEGRATED FACILITIES SERVICES\*

**U.S.**

888-751-9100  
UNICCO Service Company  
275 Grove Street  
Newton, MA 02466

**Canada**

800-263-8970  
UNICCO Facility Services Canada  
411 Richmond Street East  
Toronto, Ontario M5A 3S5

[www.unicco.com](http://www.unicco.com)  
[marketing@unicco.com](mailto:marketing@unicco.com)