Tristar Lighting™

Rapid manufacturing and precision delivery of energy efficient lighting solutions.

Avoiding the 10 Most Expensive Mistakes When Retrofitting Lamps and Ballasts

NAESCO's Midwest Regional Meeting

Delivering Value to Customers in the Midwest:
Refining Your Project Structure to Reflect Today's Market
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What We'll be Talking About

- How to Be Very Happy Replacing T8's
- Losing 15% Electricity for 11 Years: 5 Free and Easy Strategies
- Task versus General Lighting: Decreasing Costs while Increasing Quality
- Why Southwest Airlines Beat USAirways: Reason #6
- *One Size Fits All* Lighting Solutions: Maybe Save a Little Now, Definitely Lose a Lot Forever
- Socket Headaches
- Sad Lens Stories
- Surprising and Not So Surprising Reflector Findings
- Increasing the Accuracy of Your Installation Estimates
- Minimizing Installation Costs: Precision Delivery is the Silver Bullet

Introduction

Objective is to maximize the *long term* energy and labor savings

- Major tricks and traps of the commercial energy efficient lighting retrofit process
- Uncover hidden labor, maintenance, and energy costs

How to Be Very Happy Replacing T8's

- 10 year old T8's are *not* energy efficient
  - 90% of the 4.8 million commercial U.S. buildings > 10 years old
  - *The most efficient products have been developed in the last 10 years*
- Decrease consumption by up to one third or more = very fast payback
- Large sales opportunity

Losing 15% Electricity for 11 Years: 5 Free and Easy Strategies

Over-lighting / lamping is the problem

- Don't check the Illuminating Engineering Society guidelines
  - Provides optimal light level per task recommendations
- Repeat a bad idea
  - Replace over-lit areas specified incorrectly 11 years ago with the same overlit levels
- If multiple tasks are performed in one area
  - Where specifically are the different tasks performed?
  - Light to the maximum needed for that specific area
  - Most efficient long term solution is frequently a checkerboard design
- Auditor measures the current light output with dirty and/or yellowed lenses
  - When the new clean one is installed get 7% more light than needed
  - User would have preferred 7% electricity savings for 11 years
- Auditor measures the current light output with dirty luminaire
  - When the new clean one is installed get more light than needed
  - User would have preferred electricity savings for 11 years

Task Versus General Lighting: Decreasing Costs While Increasing Quality

- Decrease general illumination
- Increase task specific illumination
- Auto on / off via motion sensor
- Higher quality, greater energy savings

Why Southwest Airlines Beat USAirways: Reason #6

Standardizing parts (lamp types in this case)

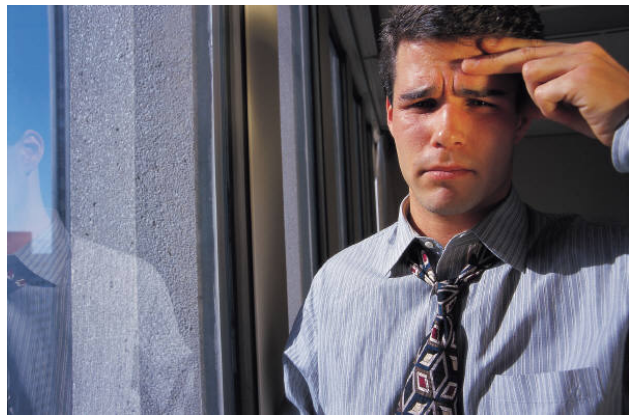
- Big future maintenance issue
- Decreases the number of items inventoried
- Better economies of scale on purchasing the fewer lamp types
- 4 foot is easier to work with than 8 foot

One Size Fits All Lighting Solutions: Maybe Save a Little Now, Definitely Lose a Lot Forever

- The easy way: walk through large facility, choose 4 closest fixtures and install
  - Quick, easy
  - Decreased savings every month for life of fixtures (10+ years)
- The efficient way: determine specific needs, create cost optimized solution
  - Get exactly the correct light levels
  - Maximize energy savings over life of fixtures
  - Can be *very* substantial long term financial savings

Socket Headaches

- Retrofit kits which do not replace the sockets
  - Soon, they start failing…
  - *One at a time*
- Super high costs
  - $$
  - Aggravation
  - For the life of fixture (10+ years)
- *Where do I get the new socket that fits?*



Sad Lens Stories

Retrofit kits which do not replace the lens

- Yellow
- Much less energy efficient
- Replace if cheap and easy to change; if not install *new fixture*

Surprising and Not So Surprising Reflector Findings

- Reflectors frequently misused
  - Installed when not necessary
  - Not installed when would have been very helpful
- Wrong type of reflector increases the cost *and* decreases the efficiency

Increasing the Accuracy of Your Installation Estimates

- All labor and materials not captured when estimating the cost to *retrofit* fixtures
  - Issues require the (expensive) electricians to hunt down components
  - Extra costs frequently change the retrofit vs. replacement equation
    - Plus, lose the benefits of new fixtures
- Versus *replacing* fixture, which is more accurate
  - Labor and materials per fixture is known with great certainty
  - Example: 4’ to 4’ takes 15 minutes ± 3 minutes, and costs $45, *exactly*

Minimizing Installation Costs: Precision Delivery is the Silver Bullet

Fulfillment: Getting the Right Stuff to Exactly the Right Place at the Right Time in the Right Quantities Undamaged *Without 9 Phone Calls*

- Lost fixtures – electricians wander around looking for them
- *Each individual building* on a project gets one or many *mixed* pallets
- Each pallet is unique to sub-locations within a particular building
- Reverse load the trailer for unloading based on delivery geography
- Map of trailer contents taped to inside door with per pallet index
- Color of box label identifies different product types in identically sized boxes
- Place room location on box label
- Reduce breakage: use longer pallets that are also capable of more weight
- Trailer rental for staged deployment during length of construction project

Precision Delivery?

Optimize the packing, labeling, palletizing, and shipping for the **customer and installer** ***not*** for the lighting vendor

Conclusion

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- ✓ Uncover hidden labor, maintenance, and energy costs

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