Lighting Audits

The first step to a successful lighting upgrade is the lighting survey or audit. In this stage, which is essential to proper planning, the lighting manager gathers and organizes information about the existing lighting system and how it is used.

Collect General Information

Collect floorplans or reflected ceiling plans for the facility that show fixture locations and room dimensions (length in feet, width in feet, ceiling heights in feet and areas in square feet). Be sensitive that renovation work may have been performed over the years that has changed the original floorplans and/or reflected ceiling plans. If not available, create using graph paper.

Label each area (rooms, hallways, etc.) with a letter for future identification with sets of data that will be collected. Also label each area with a generic description (private office #2, lavatory #1, etc.). It may be desirable to put a sticker on each door hinge during the room-by-room survey that bears its identity that corresponds with the floorplan. This will accelerate the installation as well.

Also, gather as much information as possible about the building and its history; try to determine what future plans there are if any for the building.

Collect Occupant Information

A good way to learn about how occupants feel about their lighting system is with a survey. Ask about their satisfaction with the level and quality of lighting in each area. Talk with maintenance staff about equipment condition and any recurring problems. An additional benefit of doing this is that it may help create "buy in" among building occupants for the new lighting system.

Should this path be taken, however, how caution in evaluating the answers; the occupants know little about lighting - - in fact, they rarely notice it unless something goes wrong. For example, an occupant saying there is too much light in an area probably is saying that it is too bright, which is an issue of glare, not quantity of footcandles.

Call the contact at the site prior to visit and confirm appointment, access to all areas, requirements for any lifts and ladders & any safety equipment or security clearance requirements for the location.

Collect Lighting Information

For each area, identify:

- Hours of operation
- Specific type of fixture: indicate mfg. name & model number if possible, - this can be found on the fixture or on the lighting fixture schedule section of the building plans.
- For LED retrofit options (Shoeboxes, Wallpacks, Cobraheads, Downlights, Floods etc) measure the interior dimensions of the fixture. photograph each measurement (length, width & depth) using a tape measure in place
- Number of fixtures for each type (use hand-held mechanical counters for accuracy)
- Number of lamps per fixture
- Number of lamps per ballast
- Type of lamps with labeled photos of each – photograph the lamp base as well
- Wattages of lamps
- Type of ballasts
- Voltage of each fixture
- Fixture & lens condition
- Whether fixtures are air-handlers, part of the air distribution system
- Availability of daylight
- Tasks that are performed in the space (with light level targets)
- Use of partitions
- Unique fixture types or physical features
- Area dimensions
- Height of the tasks
- Fixture mounting height for each fixture

- Room surface reflectances and colors of major objects and room surfaces
- Indicate any & all fixtures that are on a dimming system & identify the dimming system
- Indicate any occupancy sensors, timers or photocells on fixtures
- See following pages for examples of fixture & lamp photo documentation

Also determine lighting waste disposal regulations and costs.

Use the Standardized forms created to help capture and organize information by area.

It may be desirable to plot existing light levels with a light meter, although this may result in misleading data because the condition of the fixture and point of life for the lamps may not be consistent from fixture to fixture. For this reason, it may be desirable to simply calculate existing light levels.

Fixture & Lamp Photo Documentation:

Canopy Fixture

Canopy Fixture Dimensions

Canopy Fixture Label

Flood Fixture Label

Flood Fixture Dimensions

Parking Lot Pole Mounted Shoebox Fixture

Parking Lot Pole Mounted Cobrahead Fixture

Wall Pack Fixture

Exterior Sconce Fixture

High Bay Fixtures

Metal Halide Lamps

Fluorescent Tube Label