Lighting Retrofit Guidelines for Energy Audits

These Energy Audit Guidelines can help you streamline the process by providing several key questions to consider throughout the process, line-item checklists to reference, and important final steps to remember while wrapping up. Use the retail and industrial companion guidelines to help you with application specific audits.

### Facility Information Checklist

- Legal Business Name ___________________________________________________________________
- Facility Address _______________________________________________________________________
- Hours of Operation _____________________________________________________________________
- Facility Type _________________________________________________________________________
- Sq. Ft./Ceiling Ht. _____________________________________________________________________
- HVAC Type/Fuel _______________________________________________________________________
- Utility/Acct # ________________________________________________________________________

### Walkthrough Tools Checklist

- Pen & Audit Sheets
- Ballast Discriminator
- Digital Camera
- Light Meter
- Counter
- Monocular (Binocular)

*Don’t forget to include necessary safety equipment!

### Consider the Space

What is the age of the building and of existing light fixtures?
Bldg. _________  Fixtures _________

Is there an existing lighting control system?
☐ Yes  ☐ No  What is it? __________________________

What tasks are being performed in each space?
____________________________________________________________________________________

What is the average age of workers? _________________

Any natural light: windows or skylights? _________________
____________________________________________________________________________________

What about exterior lights; what are they (if any)?
____________________________________________________________________________________

Will customer use company labor or outside contractors for installation? _______________________

Will customer use outside contractor or vendor to do the audit?
____________________________________________________________________________________

Will there be more than one bid?
☐ Yes  ☐ No

Do the fixtures need to be removed or relocated?
☐ Yes  ☐ No

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Sales Details

☐ Confirm potential utility program eligibility.

☐ Is there a budget for energy upgrades? If so, what is the figure for the lighting/controls?

☐ What is the approximate time frame of lighting retrofit decision process?

☐ Who is the decision maker?

☐ Is there an opportunity to install samples for customer to see?  ☐ Yes  ☐ No

☐ What is the customer’s main motivation for the retrofit? Energy savings? Better quality lighting?

☐ Satisfying a green initiative?

☐ Have I shown direct energy savings benefits and the indirect financial benefits? (i.e. better sales in a retail environment, better security...)  

☐ Have I shown before and after picture from previous jobs from similar spaces?

☐ Do I have references from past satisfied customers?

☐ Why should the customer use my company? How can I communicate that in as few as words as possible?

Project Details

☐ Count all the fixtures in the building by location and include hours they are “on” for each space.

☐ What condition are the fixtures in? Consider new or retrofit options.

☐ Verify fluorescent ballasts - magnetic or electronic. Use your discriminator!

☐ Verify each lamp type - wattage, color and size. Snap photos if possible!

☐ Do not forget exit signs!

☐ Measure light levels at the task level of each space.

☐ What are the recommended light levels for key spaces? Check IES lighting level recommendations.

☐ What lighting technology should be considered for retrofit or redesign?

☐ What color temperature should new lighting system be?

☐ Make note of switch locations for each space to determine controls style and quantity.

☐ As you walk through each space, get a picture of main fixtures types, or anything unusual.

☐ Talk to employees - are they satisfied with current light levels? Make note of any employee comments. They will be helpful in what you propose.

☐ Talk to managers about any upcoming changes within the spaces. Discuss future needs.

Final Steps...

☐ Take all information and thoughtfully create a list of proposed fixtures.

☐ Refer to the IESNA Lighting Handbook 10th Edition for guidelines and light levels recommendations.

☐ Input audit into utility provided spreadsheet.

☐ Provide customer with options based on feedback from site audit. Always provide owners more than one option.

☐ Utilize lighting reps and distributors if assistance is needed in gathering specification sheets, technical data, and assisting with design layouts.