

Lighting Retrofit Guidelines for Energy Audits

These Energy Audit Guidelines can help you streamline your retrofit 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 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 average age of workers? _____

Any natural light: windows or skylights? _____

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

Will they use company labor or outside contractors for installation? _____

Will they 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

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 owner'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 new 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.
- Input audit into utility provided spread sheet.
- Utilize lighting reps and distributors if assistance is needed in gathering specification sheets, technical data and assisting with design layouts.
- Refer to the IESNA Lighting Handbook 10th Edition for guidelines and light levels recommendations.
- Provide customer with options based on feedback from site audit. Always provide owners more than one option.