

# 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

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- 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?  
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## Project Details

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- 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...

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- 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 10<sup>th</sup> Edition for guidelines and light levels recommendations.
- Provide customer with options based on feedback from site audit. Always provide owners more than one option.