

# School & Facility Lighting Upgrade Worksheet

## A Complete Guide for Assessing, Planning & Executing Lighting Upgrades in Educational and Institutional Buildings

### Introduction to School & Facility Lighting Upgrades

Lighting plays a critical role in the safety, performance, and daily operation of schools, academic buildings, athletic complexes, community centers, and large public facilities. Quality lighting directly affects student focus, staff productivity, test performance, classroom comfort, security visibility, energy costs, and long-term building maintenance. Many schools still operate outdated fluorescent, HID, or incandescent fixtures that consume excessive energy, flicker, generate heat, contain hazardous materials, and require constant maintenance.

A lighting upgrade is more than simply swapping fixtures—it's a strategic improvement that enhances energy efficiency, reduces operational costs, improves visibility, boosts morale, and modernizes learning environments. This worksheet guides facility managers, administrators, and maintenance teams through a complete assessment of their existing lighting systems, helping identify what should be replaced, where improvements are needed, and how to plan the upgrade effectively.

This document is written to help you perform a comprehensive walkthrough of your school or facility, evaluate current lighting conditions, compare options, and prepare actionable notes that can be used by engineers, electricians, or procurement departments.

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### Lighting Assessment Fundamentals

Before making upgrades, it's essential to understand how your current lighting system performs. Schools often have a mix of fixture types across classrooms, hallways, gyms, cafeterias, libraries, auditoriums, and exterior locations. Aging fixtures produce inconsistent light levels, cast shadows, or fail prematurely—especially in high-use areas like hallways or gymnasiums.

During an assessment, inspect fixture condition, brightness levels, color temperature, energy consumption, ease of maintenance, and compatibility with modern controls. Many schools have insufficient lighting in older classrooms, while other areas are excessively bright or poorly distributed. Modern LED systems solve these issues through uniform

illumination, dimming controls, occupancy sensors, daylight harvesting, and smart building integration.

This worksheet helps you document these details so you can make informed upgrade decisions.

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## **General Facility Lighting Assessment**

This section covers observations and evaluations that apply throughout the entire building. Understanding the overall lighting condition sets the stage for detailed room-by-room assessments.

Look for flickering tubes, ballast noise, inconsistent brightness, mismatched lamp colors, damaged lenses, or outdated fixture housings. Note whether rooms feel dim, washed out, or harsh. Also identify energy inefficiencies such as T12 fluorescent tubes, HID parking lot lights, metal halide gym fixtures, or incandescent emergency lights.

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## **General Lighting Assessment Checklist**

### **Fixture Type Identification**

- Fluorescent (T8, T12, T5)
- Metal halide / HID
- Incandescent or halogen
- CFL
- High-bay or low-bay industrial fixtures
- LED (new or retrofit)

### **Condition Assessment**

- Flickering lamps or ballasts
- Burned-out tubes or bulbs
- Buzzing or humming fixtures
- Yellowed, cracked, or missing lenses
- Uneven light distribution

- Excessive heat from fixtures

### **Energy Considerations**

- Presence of legacy T12 systems
- High-wattage HID or metal halide fixtures
- Inconsistent or high electrical usage
- Lights left on in unoccupied areas

### **Visual Quality**

- Inconsistent color temperatures
- Rooms feeling dim or shadowy
- Glare on screens or whiteboards
- Poor visibility for reading or tasks

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## **Classroom Lighting Evaluation**

Classrooms require bright, even, glare-free lighting that supports concentration and reduces eye strain. In older schools, lights may produce uneven illumination or cast shadows across desks and teaching areas. Flickering fluorescents can impact student focus and comfort.

Modern LED classroom fixtures produce consistent light, offer multiple color temperatures, and can integrate with smart dimming controls that adjust throughout the day. Proper classroom lighting also supports A/V use by enabling dimming zones or task lighting near teaching walls.

During your walkthrough, evaluate each classroom independently. Record fixture type, brightness, flicker, condition, ease of cleaning/maintenance, and whether lighting levels meet the needs of both teachers and students.

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## **Classroom Checklist**

### **Lighting Quality**

- Adequate brightness for reading and writing

- No flickering lamps
- Even illumination across all desks
- Comfortable color temperature (3500K–4000K recommended)
- No shadows on teaching boards

#### **Fixture Condition**

- Lenses intact and clean
- No buzzing ballasts
- Fixture stable, not loose
- Minimal dust accumulation

#### **Control Systems**

- Functional wall switches
- Optional dimming systems
- Daylight integration (if windows present)
- Occupancy sensors installed or needed

#### **Upgrade Considerations**

- Replace fluorescents with LED panels
- Install dimmable fixtures
- Improve energy efficiency
- Add multi-zone switching for board lights vs. room lights

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### **Hallway & Corridor Lighting Evaluation**

Hallways and corridors operate nearly 100% of the school day, and poor lighting in these areas can contribute to safety concerns, supervision challenges, and increased energy waste. Because students move rapidly through corridors between classes, lighting must be bright, uniform, and shadow-free.

Older hallway fixtures often use outdated T12 or T8 fluorescents, which create dark spots or inconsistent light levels. Many hallways also lack occupancy or daylight sensors, resulting in lights running continuously—even during off-hours or holidays.

Assess fixture spacing, brightness, energy efficiency, and reliability in every corridor.

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## **Hallway & Corridor Checklist**

### **Lighting Performance**

- Bright, even illumination
- No dark spots or dim sections
- No flickering or discoloration
- Adequate lighting during emergencies

### **Fixture Condition**

- Securely mounted fixtures
- Clean lenses with no yellowing
- No buzzing or ballast hum
- No cracked or loose covers

### **Energy Controls**

- Occupancy sensors needed or present
- Daylight sensors where natural light exists
- Timers for off-hour energy reduction

### **Upgrade Considerations**

- LED strip fixtures or troffers
  - Smart controls to reduce operating cost
  - Improved fixture spacing or layout redesign
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## **Gymnasium, Auditorium & Athletic Areas**

Athletic areas require high-output lighting that provides excellent visibility for sports, events, performances, and assemblies. Many schools still use metal halide, sodium vapor, or other high-intensity discharge lights with long warm-up times, poor color rendering, and high energy usage.

Modern LED high-bay fixtures offer instant-on capability, excellent brightness, and energy savings of 60–80% compared to traditional gym lighting. Auditoriums benefit greatly from adjustable lighting, dimming controls, and improved color quality.

Document fixture type, performance during events, maintenance requirements, and opportunities for modernization.

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## **Gymnasium & Auditorium Checklist**

### **Lighting Performance**

- Adequate brightness for sports or stage use
- No multi-minute warm-up times
- Even light across floors and seating
- Good color rendering for events

### **Fixture Condition**

- No cracked reflectors
- No color shifting in old HID lamps
- Secure mounting at high bay levels
- No excessive buzzing or humming

### **Energy Consumption**

- Identify HID fixtures for replacement
- Measure long daily runtime
- Document energy usage concerns

### **Upgrade Opportunities**

- LED high-bay gym fixtures
- Smart dimming for performances

- Instant-on lighting for emergency use
  - Improved spotlighting for auditoriums
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### **Cafeteria, Library & Administrative Areas**

Cafeterias require bright, inviting lighting that enhances visibility during meals and after-school events. Libraries need lighting optimized for reading, computer use, and quiet study. Administrative offices demand flicker-free illumination that reduces eye strain for staff who spend long hours on computers.

Evaluate whether fixtures are outdated, mismatched, or causing glare. Document areas where lighting appears too harsh, too dim, or uneven.

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### **Cafeteria / Library / Admin Checklist**

#### **Lighting Quality**

- Soft, balanced brightness
- No glare on tables or screens
- Adequate task lighting in admin areas
- Comfortable color temperature

#### **Fixture Condition**

- Clean, intact lenses
- No flicker or hum
- No mismatched color temperatures

#### **Energy Management**

- LED upgrades feasible
- Occupancy sensors in low-traffic rooms
- Multi-zone controls for large spaces

#### **Improvements to Consider**

- LED troffers or panel fixtures

- Indirect lighting for comfortable environments
  - Task lighting for staff workstations
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## **Exterior & Security Lighting Assessment**

Exterior lighting is essential for safety during early morning arrivals, evening events, staff parking, and security patrols. Outdated HID parking lot lights consume massive energy while providing inconsistent brightness.

Modern LED floodlights, wall packs, and pole lights dramatically improve visibility while reducing operating costs. Evaluate the condition of all exterior fixtures, poles, lenses, timers, photocells, and mounting hardware.

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## **Exterior & Security Checklist**

### **Lighting Coverage**

- Adequate coverage of parking lots
- Good illumination of walkways
- No dark or unsafe areas
- Strong lighting for entrances/exits

### **Fixture Condition**

- No cracked, yellowed, or fogged lenses
- Secure mounting on poles or walls
- No buzzing ballasts
- No visible rust or corrosion

### **Energy Controls**

- Functional photocells
- Timers programmed correctly
- Motion sensors where appropriate

### **Upgrade Recommendations**

- LED wall packs
  - LED pole lights
  - Improved distribution patterns
  - Smart security lighting systems
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## **Lighting Controls, Sensors & Automation**

Lighting controls are essential for energy savings and modern facility management. Many schools still rely solely on manual switches, leading to unnecessary energy consumption. Smart systems help ensure lights only operate when needed.

Evaluate occupancy sensors, daylight sensors, dimmers, multi-level switching, scheduling systems, and integration with building automation.

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## **Controls & Automation Checklist**

### **Existing Controls**

- Manual-only switches
- Basic dimmers
- Outdated timers

### **Systems Needed**

- Occupancy sensors in classrooms
- Daylight harvesting near windows
- Smart scheduling for hall lights
- Central control integration

### **Upgrade Opportunities**

- Wireless controls
- App-based management
- Energy dashboards for reporting
- Automatic overtime shutoff

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## **Final Lighting Upgrade Planning Summary**

Once you complete the walkthrough, review all observations. Identify areas needing immediate replacement, energy-wasting fixtures, classrooms requiring better illumination, and opportunities for smart technology upgrades.

A modernized lighting system provides:

- Lower energy bills
- Reduced maintenance
- Better student performance
- Enhanced security
- Uniform, professional appearance
- Improved staff comfort
- Safer, brighter environments

Use this worksheet to prepare your project plan, budget requests, or quote requests from licensed electrical contractors.

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## **Final Upgrade Summary Checklist**

### **Immediate Needs**

- Burned-out fixtures
- Flickering or failing ballasts
- Unsafe or broken lenses
- Poorly lit hallways or entrances

### **High-Value Upgrades**

- Gymnasium LED conversions
- Classroom LED panel upgrades
- Corridor occupancy sensors
- Exterior pole light replacements

## **Planning Notes**

- Document fixture counts
- Record wattages and types
- Note ceiling heights
- Photograph problem areas
- Create room-by-room upgrade plan