

O&M Manuals

STANDARD LIGHTING

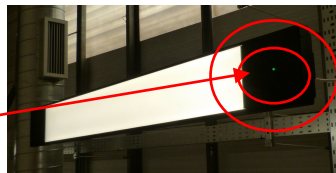
INSTALLED ELECTRICAL EQUIPMENT INVENTORY	3
STANDARD LIGHTING & EMERGENCY CONVERSIONS.....	3
Inventory	3
INSTALLED ELECTRICAL EQUIPMENT INVENTORY	4
LIGHTING CONNECTIONS.....	4
Inventory	4
INSTALLED ELECTRICAL EQUIPMENT INVENTORY	5
EMERGENCY KNOCK OFF MANUAL SWITCHING	5
Inventory	5
KEY FUNCTIONS.....	6
STANDARD LUMINAIRES CONVERTED INTO EMERGENCY LUMINAIRES.....	7
OPERATIONAL MATRIX.....	8
OPERATION	9
MAINTENANCE MATRIX	10
Programmed Maintenance Schedules	10
Standard standby mode	10
Observational.....	10
Annual Practical Maintenance	11
The purpose of lighting maintenance.....	11
The importance of lighting maintenance	11
Common tasks involved in lighting maintenance.....	11
Duration of lighting maintenance	11
Contribution to energy efficiency	11
Three Yearly Practical Maintenance – additional to annual programmed maintenance.....	11
SPECIALIST MAINTENANCE REQUIREMENTS	12
MAINTENANCE	13
SPARE PARTS MATRIX.....	14
Spare parts by specialist maintenance contractors	14
SPARE PARTS.....	15
CLEANING MATRIX	16
Specialist cleaning contractors – Residual risks	16
CLEANING	17
DISMANTLING AND DISPOSALS	18

INSTALLED ELECTRICAL EQUIPMENT INVENTORY

STANDARD LIGHTING & EMERGENCY CONVERSIONS

ORIGIN OF EQUIPMENT	DETAILS	CONTACT NUMBERS
Project reference	Henry Hickman LRC Building	
Installed by	Cooper Haynes Limited 6&7 Lower High Street Stourbridge DY8 1TE	
Dates of installation	Start date July 2025	Completion date October 2025
Supplied by	Collingwood Lighting Sywell Aerodrome EGBK Brooklands House Northampton NN6 0BT	01604 495151
Preferred manufacturer	Collingwood Lighting Sywell Aerodrome EGBK Brooklands House Northampton NN6 0BT	01604 495151
System category	Standard electrical systems	
Required to function	240V mains distributed electrical power	
Electrical Load type	Resistive	
System description	Standard lighting, also known as general or ambient lighting, is primarily used to provide a foundational level of illumination for a space, ensuring it's safe and comfortable to navigate and use for its intended purpose. It essentially fills in the gaps and creates an even light level throughout the building	
Spare capacity	Designed to allow for 25% additional capacity from a new installation Extra capacity is achieved by additional equipment within the scope of the mains supply and supporting systems availability	
Classification	New installation with new power source	
Disposal classification	Recyclable - Requires certification of "Duty of Care" disposal methods	
Duty of Care legislation	A duty of care certificate or waste transfer note (WTN) is a legal document covering the disposal of waste under the Environmental Protection Act serving as proof that waste is legally and responsibly disposed to ensure there's a clear trail from when any type of waste is produced to its point of disposal.	

Inventory

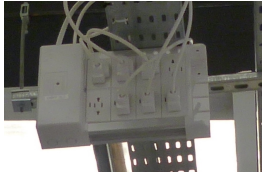
MODEL/PART NO	DESCRIPTION	IMAGE
VTB1N	"Versa Tile" suspended standard luminaire monitored by PIR controls	
VTB1NEM	"Versa Tile" suspended Emergency converted luminaire monitored by PIR controls, note that emergency luminaires display a green LED diode to confirm stand by mode is operable	
PIR1	Ceiling mounted PIR ensures luminaires remains operational when area is occupied and will switch off luminaires after 30 minutes after no occupation is detected	

INSTALLED ELECTRICAL EQUIPMENT INVENTORY

LIGHTING CONNECTIONS

ORIGIN OF EQUIPMENT	DETAILS	CONTACT NUMBERS
Project reference	Henry Hickman LRC Building	
Installed by	Cooper Haynes Limited 6&7 Lower High Street Stourbridge DY8 1TE	
Dates of installation	Start date July 2025	Completion date October 2025
Supplied by	Electrical Wholesaler of choice	
Preferred manufacturer	Hager Limited Hortonwood 50 Telford Shropshire TF1 7FT	01952 675675
System category	Standard electrical systems	
Required to function	240V mains distributed electrical power	
Electrical Load type	Resistive	
System description	To provide a centralised point where multiple lighting circuits, control signals, and interfaces between luminaires and the control system are brought together in an organised and accessible manner.	
Spare capacity	Designed to allow for 25% additional capacity from a new installation Extra capacity is achieved by additional equipment within the scope of the mains supply and supporting systems availability	
Classification	New installation with new power source	
Disposal classification	Recyclable - Requires certification of "Duty of Care" disposal methods	
Duty of Care legislation	A duty of care certificate or waste transfer note (WTN) is a legal document covering the disposal of waste under the Environmental Protection Act serving as proof that waste is legally and responsibly disposed to ensure there's a clear trail from when any type of waste is produced to its point of disposal.	

Inventory

MODEL/PART NO	DESCRIPTION	IMAGE
Hager "Klik"	Lighting distribution units	
KLDS8	8way distribution units	
KM1725	3pin plugs white – standard luminaires	
KM1727	4pin plugs red – emergency luminaires	

INSTALLED ELECTRICAL EQUIPMENT INVENTORY

EMERGENCY KNOCK OFF MANUAL SWITCHING

ORIGIN OF EQUIPMENT	DETAILS	CONTACT NUMBERS
Project reference	Henry Hickman LRC Building	
Installed by	Cooper Haynes Limited 6&7 Lower High Street Stourbridge DY8 1TE	
Dates of installation	Start date July 2025	Completion date October 2025
Supplied by	Electrical Wholesaler of choice	
Preferred manufacturer	Schneider Electric Stafford Park 5 Telford TF3 3BL	0330 587 8030
System category	Standard electrical systems	
Required to function	240V mains distributed electrical power	
Electrical Load type	Resistive	
System description	Lighting contactors in a din rail mounted IP enclosure that when activated, shuts down standard luminaires and prevents emergency luminaires automatically being activated	
Spare capacity	Designed to allow for 25% additional capacity from a new installation Extra capacity is achieved by additional equipment within the scope of the mains supply and supporting systems availability	
Classification	New installation with new power source	
Disposal classification	Recyclable - Requires certification of "Duty of Care" disposal methods	
Duty of Care legislation	A duty of care certificate or waste transfer note (WTN) is a legal document covering the disposal of waste under the Environmental Protection Act serving as proof that waste is legally and responsibly disposed to ensure there's a clear trail from when any type of waste is produced to its point of disposal.	

Inventory

MODEL/PART NO	DESCRIPTION	IMAGE
Schneider AC9C20532	Din rail mounted lighting contactor	
GME	Din rail mounted housing for lighting contactor	

All lighting and emergency lighting systems within the LRC can be shut down by custom lighting contactors

This process shuts down standard lighting circuits and prevents emergency lighting circuits from automatic change over to restore emergency designate luminaires active even in the event of normal emergency

This installation is not intended for regular use, and only induced under the ongoing threat of personal attacks on LRC occupants. After use, the contactors will be manually reset

Note – unless activated, this system will not prevent the standard operations of emergency lighting conversations or stand alone systems

KEY FUNCTIONS

Functions of Artificial Lighting include both practical and aesthetic roles across various settings such as homes, workplaces, schools, and public spaces. Here are the main functions:

Illumination (Primary Function)

- To provide adequate light where natural light is unavailable or insufficient (e.g., at night or in dark rooms).
- Overhead lights in commercial buildings, streetlights, desk lamps.

Enhancing Visibility and Safety

- To ensure people can see clearly and avoid accidents, especially in workplaces, roads, and public spaces.
- Emergency lighting, stairwell lights, vehicle headlights.

Supporting Tasks and Productivity

- To provide the right type and intensity of light for specific activities such as reading, cooking, surgery, or manufacturing.
- Task lighting in offices, surgical lights, workbench lamps.

Creating Ambience and Mood

- To influence the atmosphere and emotional response of a space.

Highlighting Architecture and Décor

- To draw attention to interior or exterior design features.
- Accent lighting on artworks, façade lighting on buildings, uplighters for statues.

Security and Surveillance

- To deter crime and improve the effectiveness of CCTV and security monitoring.
- Floodlights, motion-sensor lights around buildings.

Time Regulation

- To support biological rhythms (circadian cycles) and simulate day-night cycles in controlled environments.
- Lighting in commercial buildings

STANDARD LUMINAIRES CONVERTED INTO EMERGENCY LUMINAIRES

This process involves modifying a normal light fitting (luminaire) so that it can operate as an emergency light during a mains power failure.

Converting a Standard Luminaire

- Instead of installing separate emergency lights, a standard luminaire can be converted to serve dual purposes:
- Provide normal lighting during regular operation.
- Automatically switch to battery-powered emergency lighting when mains power fails.

The Conversion

- A conversion kit is installed inside or near the existing luminaire, typically including:

Component	Function
Battery Pack	Powers the luminaire during a power failure 3 hours runtime
Inverter / Emergency Control Gear	Switches power from mains to battery and limits current to prevent damage
Test Switch	Allows manual testing of emergency function
Indicator LED	Shows status (charging, fault, etc.)

How It Works (in Maintained Mode)

- During normal operation, the luminaire runs off mains electricity.
- When mains power fails, the emergency module switches to battery power.

The light either:

- Stays on (maintained emergency), or
- Turns on only in an emergency (non-maintained emergency).

Key Types of Conversion:

Type	Description
Maintained	Luminaire operates normally and also during emergencies
Non-Maintained	Only operates when mains power fails
Sustained	Contains both mains and emergency lamps, running separately

Important Conversion Considerations:

- Compatibility: Not all standard luminaires are suitable for conversion (especially some LED types).
- Battery Size and Placement: Must be housed safely and allow for adequate ventilation.
- Testing & Compliance: Converted luminaires must meet BS 5266 and EN 60598-2-22 standards.
- Testing Access: Must include an indicator LED and allow for functional and duration tests.

Advantages of Converting Luminaires:

- Aesthetic Consistency: Maintains uniformity with existing lighting design.
- Cost-Effective: Saves space and reduces the number of fittings.
- Practical in Retrofitting: Ideal when upgrading existing installations.

Converted luminaire identification

- The model number will continue to be the manufactures reference
- This reference of a converted luminaire will be suffixed by a letter E

Example

- Standard model number – A123567
- Emergency converted reference - A123567/E

OPERATIONAL MATRIX

Functions	Artificial lighting serves multiple key functions, extending beyond simple illumination. It's used to enhance spaces, improve functionality, and create desired moods and atmospheres. It plays a crucial role in both interior and exterior environments, impacting our perception of space and influencing our activities.
Operations	Manual switching
Controlled by	Host equipment
Operational set ups	Is carried out by the installers using manufacturer's instructions and specifications, systems are presented at recommended factory settings upon hand over unless specific modifications have been requested by the occupant beforehand. All operational procedures are safe when used as intended by design and installation
Start up	Manual switching
Close down	Manual switching
Adjustments made by	Made by installers only
Potential faults	Fault finding in lighting circuits typically involves a systematic approach to identify the source of the problem, often when a circuit breaker trips or lights aren't working correctly. Common causes include blown lamps, loose connections, or damaged wiring, and while simple checks like replacing a bulb are within DIY limits
Hierarchy	Mains power → sub mains to distribution board → local designated distribution boards → circuit protection devices → final circuit wiring → terminations into luminaires → lighting controls → switching → monitoring devices and surveillance
Season Changes	Not applicable
Power source	240V mains distributed electrical power
Operatives level of training	Basic operator standard
Local shutdown in emergency	Emergency electrical system shutdowns can be initiated via Emergency Power Off (EPO) systems, emergency stop buttons, or manual isolation, crucial for safety in various situations like fires, evacuations, or equipment malfunctions, and are often integrated with uninterruptible power supplies (UPS) and building management systems (BMS).
Returning to mains supply	All safety precautions are applied and in compliance with BS 7671 IET Regulations Isolate faulty equipment using local switching if possible Isolate overall mains supply Trip the MCB/RCBO at the local Distribution Board Remove and repair emergency fault in consultation with NICEIC Contractor Repair or replace faulty items in consultation with NICEIC Contractor Retest and commission replaced items Once considered safe, trip MCB/RCBO Return to mains power
IN THE EVENT THAT THESE SYSTEMS "TRIP" IT IS A SIGN OF A MALFUCTION OR POWER FAULT DO NOT FORCE THIS OR ANY OTHER SYSTEM TO OPERATE USING UN-AUTHORISED METHODS DO NOT RETROFIT FAULTY COMPONENTS BY USING UN-AUTHORISED METHODS	

OPERATION

Operating commercial lighting involves managing, controlling, and maintaining lighting systems to ensure safety, energy efficiency, and appropriate illumination for the activities performed in a commercial space such as offices, shops, schools, or warehouses.

Power Supply and Control

- Supplied by the Low Voltage (LV) distribution system.

Control Methods:

- Manual switches (on/off switches or dimmers)
- Timers (e.g., for signage lighting)
- Sensors (e.g., motion or daylight sensors)
- Automated control systems (e.g., Building Management Systems (BMS))

Types of Commercial Lighting

- Ambient lighting: General illumination for overall visibility (e.g., LED panel lights)
- Task lighting: Focused light for specific tasks (e.g., desk lamps, workbench lights)
- Accent lighting: Highlights architectural or decorative features
- Emergency lighting: Operates during power failure for safe evacuation

Operation Techniques

- Zoning: Lighting is divided into zones so only necessary areas are lit, improving energy efficiency.
- Dimming Controls: Adjusts light levels based on need, reducing energy use.
- Daylight Harvesting: Uses sensors to adjust artificial lighting depending on available natural light.
- Occupancy Sensors: Lights turn on when people are present and off when they leave.

Maintenance and Monitoring

- Routine inspections: Ensure all lights are functional and safe.
- Lamp replacement: Periodic replacement of bulbs or LEDs.
- Cleaning fixtures: To maintain brightness and reduce overheating.
- Energy monitoring: Track usage to identify savings and inefficiencies.

Energy Efficiency Practices

- Use of LED lighting instead of older technologies (fluorescent, incandescent).
- Implement lighting schedules to reduce unnecessary operation.
- Integrate with smart control systems for automation and optimisation.

MAINTENANCE MATRIX

Programmed Maintenance Schedules

Maintenance periodical	Daily	Weekly	Quarterly	6 Monthly	Annually	Overhaul
Observational	✓	✓	✓	✓	✓	5 years
Cleaning			✓	✓	✓	
Practical			✓	✓	✓	
Observational procedures can be conducted by occupants who will report to maintenance team						
Conducted by in house trained operatives, and part of a programmed regime						
Carried out by Specialist contractors only						
ENSURE THAT DURING MAINTENANCE THAT NO BACKUP GENERATORS OR UNINTERRUPTABLE POWER SUPPLIES ATTEMPT TO RE-INSTITUTE MAINS POWER IN THE EVENT OF ISOLATION FROM PRIMARY MAINS SUPPLIES WHILE MAINTAINING OR SERVICES EQUIPMENT						

Standard standby mode

SEE	Notice any changes that become apparent from normal day-to-day appearances When light source requires changing they are likely to flash on and off or flicker and will do so until replaced
LISTEN	No audible sounds are emitted during normal operations
SMELL	Equipment does not emit odours during standard operational procedures
FEEL	Equipment does not vibrate during normal operational procedures

Observational

SEE	Noticeable changes in appearance of appliances or service items - Observe → - Excessive build-up of dust or dirt deposits - Warning LED's are operational - Missing covers - Damaged covers - Exposed conductors or cables - Thermal damage - Mechanical damage - Fixing screws are missing - Equipment has become un-attached from its mounting - Signs of misuse - Stand-alone systems are operating normally - Remote sensors have not become detached from the controlling panel - Emergency evacuation routes are labelled and sign posted
LISTEN	Noticeable changes in the noise that services or appliances make - Observe → - Running louder - Quieter than they usually do - Systems that had an operational noise, have become silent - Unusual humming noises - Rattling sounds suggesting loose components.
SMELL	Appliances and services can become over heated if oversubscribed, burning or smouldering smells are evidence that a fire hazard could exists indicating short circuited or a loose connection hidden in the fabric of the building - Observe → - Burning smells - Acrid smells of smouldering mouldings
FEEL	Abnormal vibration from appliances or services are often indicate a major malfunction - Observe → - Heavier than normal vibration when switching on - Heavier than normal vibration when switching off - Intermittent vibrations that become heavier the longer the appliance is operational
ACTION REQUIRED	Report to the Resident Site Maintenance team with an invitation to evaluate the issue quickly.

Annual Practical Maintenance

1. Check all lighting fixtures regularly to ensure they are working properly
2. Replace burnt out light sources promptly to maintain consistent lighting levels
3. Inspect wiring and connections to prevent electrical issues
4. Clean luminaires and lenses to improve lighting efficiency
5. Installation of energy efficient lighting systems saving energy costs
6. Check luminaires with transformers, control gear and other accessories
7. Creation of a re-lamping schedule
8. Light sources are the same colour temperature
9. Clean luminaire surfaces to increase performance

The purpose of lighting maintenance

1. Lighting maintenance involves regular upkeep and care of lighting systems to ensure optimal performance and longevity
2. It helps maintain proper illumination levels, energy efficiency, and safety within residential, commercial, or industrial spaces

The importance of lighting maintenance

1. It ensures proper visibility and safety by maintaining optimal illumination levels.
2. Regular maintenance extends the lifespan of lighting fixtures and components.
3. It reduces the risk of lighting failures and the need for emergency replacements.
4. Lighting maintenance promotes energy efficiency by replacing inefficient lighting with energy-saving alternatives.
5. Well-maintained lighting enhances the aesthetics and ambiance of a space.

Common tasks involved in lighting maintenance

1. Inspecting lighting fixtures for any damage or signs of wear.
2. Cleaning fixtures and lenses to remove dust, dirt, and debris.
3. Replacing faulty or burnt-out bulbs promptly.
4. Checking and repairing wiring connections as needed.
5. Adjusting and aligning fixtures for optimal lighting distribution

Duration of lighting maintenance

1. The frequency of lighting maintenance depends on factors such as the type of lighting system, usage patterns, and environmental conditions.
2. Generally, routine inspections and cleaning should be conducted at least once or twice a year, with more frequent bulb replacements as needed

Contribution to energy efficiency

1. Lighting maintenance plays a significant role in improving energy efficiency.
2. By replacing outdated or inefficient lighting fixtures with energy-saving options, such as LED bulbs, and ensuring the proper functioning of the lighting system, energy consumption can be significantly reduced.

Three Yearly Practical Maintenance – additional to annual programmed maintenance

1. All procedures as annual maintenance and servicing
2. All electrical circuit testing and certification
3. Manufacturers service agreements if part of maintenance requirements
4. Lamp replacement schedules are carried out
5. Where used, lighting controls systems are fully operational
6. Interfacing to BMS Systems where designed
7. Replacement of essential components as per manufacturers recommendations

SPECIALIST MAINTENANCE REQUIREMENTS

MATTERS	SPECIALITY
Inspecting	Regularly inspect equipment to identify potential safety hazards
Training	Ensures that operators are suitably trained to ensure equipment is operated safely and efficiently
Operational	Ensure equipment is working to optimum levels of efficiency and performance
Maintenance	Maintenance is conducted by a specialist trained by or employed by the original equipment manufactures
Troubleshooting	Troubleshoot issues and perform repairs to minimise malfunctions, assistance in the event of malfunctions or breakdowns
Maintenance records	Maintain and update records of servicing, maintenance and correct spare part administration
Servicing	Ensure that equipment properly serviced and calibrated within the programmed schedules and manufacturers specific requirements
Spare parts	Spare parts are administered correctly using authorised spare parts and fitted correctly in line with manufacturers requirements
Coordinating schedules	Collaborate with other departments to coordinate maintenance schedules
Implementing programmes	Implement preventive maintenance programmes to inspect, repair, and maintain systems and components of the specific equipment
Health and safety	in accordance with occupant's health and safety requirements and the obligations held by the specialist whilst on site
<u>IT IS RECOMMENDED THAT MAINTENANCE IS CARRIED OUT BY SPECIALIST CONTRACTORS ONLY</u>	

MAINTENANCE

Proper maintenance of commercial lighting ensures safety, energy efficiency, consistent performance, and compliance with regulations. It includes routine inspections, cleaning, replacement, and testing of components.

Routine Inspection

- Flickering or dim lights
- Burnt-out lamps or LEDs
- Loose fittings or exposed wires
- Damaged lenses, diffusers, or covers
- Buzzing sounds from ballasts or transformers

Cleaning Fixtures

- Dust and dirt reduce light output and cause overheating.
- Wipe down light covers, diffusers, and reflectors
- Vacuum or blow out vents if applicable
- Clean sensor lenses for motion/daylight sensors

Lamp and Component Replacement

- Burnt-out lamps (fluorescent tubes, halogens, etc.)
- Failing LEDs or drivers
- Faulty ballasts, starters, or transformers
- Use energy-efficient replacements (e.g. upgrade fluorescents to LEDs)

Functional Testing

- Emergency lighting: Test monthly for functionality and annually for full duration (e.g., 3-hour test)
- Sensor lighting: Ensure occupancy and daylight sensors activate lights correctly
- Controls and switches: Test manual and automated control systems

Safety Checks

- Proper insulation, secure mountings, correct earthing
- Ensure fittings are not overheating or placed near flammable materials
- Ensure ladders, platforms, and PPE are used safely during maintenance

Documentation - Keep records of:

- Maintenance dates
- Replacements done
- Emergency lighting test results
- Inspection findings and corrective actions

Upgrades and Improvements

- Schedule periodic reviews to:
- Replace aging systems
- Install smart lighting controls
- Optimise layouts for new workspace needs

SPARE PARTS MATRIX

ONLY AUTHORISED SPARE PARTS ARE FITTED AND NOT DANGEROUS RETRO-FITS USED TO FORCE SYSTEMS TO OPERATE DURING A MALFUNCTION OR TRIPPING SITUATION

All spare parts and components must be replaced on a like-for-like basis, ensuring materials, dimensions, acoustic performance, and fire rating match the original manufacturer's specification "Do not install retrofit or non-original spares; only manufacturer-approved like-for-like replacement parts shall be fitted

Note – For more intricate items of equipment an identification number is securely attached by means of a printed label or etched directly to each item.

This serial number is unique to that piece of equipment and any spare parts are recognised using this serial number.

For more complex items it is the case that the entire unit of equipment needs to be replaced.

During servicing or maintenance, the servicing engineer will record this unique identification number and use it as a reference to ensure parts or replacements are specific to that unit.

Spare parts by specialist maintenance contractors

All spare parts are supplied by the original equipment manufacturer (OEM) or specialist contractor to ensure compatibility and compliance with system design; ensuring that generic or retrofit parts are not be used

SPARE PARTS

Check and confirm the current serial number of the part in situ with the installers prior to ordering or replacement, ensuring full traceability and correct specification. Often serial numbers are changed between original installation and the time elapsed between spare parts being required

Maintaining a stock of essential spare parts for commercial lighting is important for minimizing downtime and ensuring quick repairs. The parts required may vary based on the type of lighting (LED, fluorescent, halogen, etc.), but here are the most common spares

Light Sources

- LED lamps/bulbs
- Fluorescent tubes (T8, T5, etc.)
- Compact fluorescent lamps (CFLs)
- Halogen lamps or incandescent bulbs (less common now)

Electrical Components

- LED drivers for LED lighting systems
- Ballasts for fluorescent and HID lamps
- Starters for older fluorescent fittings
- Transformers for low-voltage halogen lights

Control Devices

- Light switches manual, dimmer, push-button
- Timers programmable for scheduled lighting
- Occupancy sensors motion detectors
- Daylight sensors photocells for daylight harvesting
- Smart control modules for connected/BMS systems

Structural Components

- Lamp holders' bayonet, Edison screw, GU10, etc.
- Light fittings and casings
- Diffusers and lenses acrylic or polycarbonate cover
- Reflectors to enhance light distribution

Mounting & Fixing Hardware

- Mounting brackets
- Suspension kits for hanging lights
- Clips, screws, and fasteners
- Gaskets and seals for waterproof or outdoor lights

Emergency Lighting Spares

- Rechargeable batteries
- Emergency light modules
- Test key switches
- LED indicators

Miscellaneous

- Wiring looms
- Cable connectors and terminal blocks
- Labels and signage (e.g., for emergency lights)

CLEANING MATRIX

Ensure all main services are isolated and locked off before hand and do not return until the equipment has been proven to be safe to do so

1. Rags and brushes - The use of rags and brushes lightly used will remove dust and dirt deposits adequately from the interior and exterior of the equipment
2. Liquids or solvents - Used only where specified on contacts or extreme cases. Be aware of COSHH regulations and the use of PPE during applications
3. Vacuum cleaning - The use of a vacuum cleaner lightly used will remove dust and dirt deposits adequately from the interior and exterior of the equipment
4. Sweeping and moping - The area around the equipment being cleaned can be swept or moped as required and in plant room or service cupboards

Specialist cleaning contractors – Residual risks

The employment of a specialist cleaner is required to carry out specific requirement where residual risks exist, such as;

1. The removal of excesses of grease.
2. Removing lubricating oils or caustic waste
3. Removal of contaminated or excessive dirt deposits
4. Require the use of specialist and harmful chemicals that require a license to use
5. Specialist disposals and licensed disposal methods
6. Animal waste or droppings
7. Working at heights
8. Heavy handling
9. Cleaning requiring pressure systems, compressed air or hot steam cleaning
10. Incorrect cleaning could result in poor performance levels or misalignment
11. Equipment is sensitive to any interference by anyone other than the installers or manufactures due to set points
12. The removal of harmful gases
13. Hot liquids such as water or steam under pressure
14. Refrigerant gases
15. Where breathing equipment is an essential

ALL MAINS POWER IS DISCONNECTED PRIOR TO CLEANING

CLEANING

Cleaning commercial lighting is essential for maintaining brightness, energy efficiency, and safety.

Dust, insects, and grime can significantly reduce light output and increase fire risk or equipment failure.

Safety First

- Turn off power at the distribution board before cleaning.
- Allow lights to cool especially halogens and fluorescents
- Use PPE: Gloves, safety glasses, and stable ladders or platforms.
- Follow signage and lockout/tagout procedures in high-risk areas.

What to Clean

Component	Cleaning Method
Lamps/Bulbs	Wipe with a soft dry or damp cloth (no solvents)
Diffusers/Lenses	Remove and clean with mild detergent and warm water
Reflectors	Gently wipe with non-abrasive cloth or brush
Sensors	Clean lenses carefully to avoid false readings

Things to Avoid

- Avoid spraying cleaners directly on fixtures.
- Do not use abrasive pads, ammonia, or solvent-based cleaners on plastic parts.
- Never clean while powered or with wet hands.

After Cleaning

- Inspect for damaged components cracks, loose fittings, burn marks
- Reinstall all covers and diffusers securely.
- Restore power and check light operation.

DISMANTLING AND DISPOSALS

Key Legal & Regulatory Considerations (UK)

When disposing of lighting equipment, comply with waste, electrical, and hazardous-materials regulations.

Regulation / Principle	Implication for lighting disposal
WEEE Regulations (Waste Electrical and Electronic Equipment Regulations 2013, amended)	Lighting equipment (lamps, luminaires, LED units, fluorescent tubes, etc) is generally classed as "electrical and electronic equipment" and handled under WEEE rules.
Hazardous waste rules	Some lamps, especially fluorescent / gas discharge types, contain mercury or other hazardous substances. These require careful handling and cannot be disposed with general waste.
Waste carrier / licensed disposal	If transporting, storing, or disposing of waste on a commercial or large scale, you may need a waste-carrier licence or to use licensed waste-disposal contractors.
Duty of care	Even before something becomes "waste," a responsibility to ensure it is stored, handled, transported and disposed of properly so as not to cause environmental harm.
Producer / distributor obligations	Manufacturers, importers or distributors of lighting equipment have responsibilities under WEEE to finance collection, treatment & recycling of their products

Steps / Best Practices for Dismantling & Disposal – Conventional Luminaires

Planning and Survey

- Identify all luminaires, lamps, fixtures, wiring, control gear (ballasts, drivers, etc).
- Determine which items contain hazardous substances (e.g. fluorescent tubes, HID lamps, mercury, etc).
- Assess access, health & safety requirements (working at height, electrical isolation, etc).

Safety & Isolation

- Isolate electricity supply; switch off circuits, lock off, tag.
- Use appropriate PPE (gloves, eye protection, masks) especially when handling tubes or fixtures that may break.
- Lay down protective sheets (tarpaulin, drop cloths) to protect the floor and contain debris.

Dismantling / Removal

- Remove lamps first (fluorescent, LED, HID) carefully, avoiding breakage. Use gentle methods per manufacturer's instructions.
- Remove and separate control gear (ballasts, drivers, starters). Some older ballasts may contain PCBs (if very old) and must be handled as hazardous.
- Detach wiring, brackets, parts of the luminaire housing and separate into material types (metal, plastic, glass, wiring) as much as practical.
- Label and segregate waste streams: e.g. tubes, hazardous parts, metals, plastics, general non-hazardous parts.

Storage & Packaging

- For fluorescent tubes / gas discharge lamps: use secure containers (e.g. purpose-built tube boxes) that minimize movement and reduce breakage risk
- Clearly mark containers as "WEEE – lighting / lamps" or "hazardous" as needed.
- Store in a dry, secure location pending collection.

Transport & Transfer

- Use a licensed waste carrier for transporting WEEE waste to authorized recycling or treatment facilities.
- Maintain waste transfer notes / documentation as required by law (type, quantity, origin, destination).

Treatment / Recycling

- For fluorescent tubes and gas discharge lamps: specialist recycling, separation of mercury, glass, metals, phosphor, etc
- For LED / non-hazardous parts: disassembly and reprocessing of metals, plastics, electronic components.
- Luminaires housing (metal, plastics) can often be recycled after removal of electrical parts.

Certification & Records

- Obtain recycling / destruction certificates from the waste processor / recycler.
- Keep records (e.g. waste transfer notes) for statutory periods (often several years) to evidence compliance with "duty of care."

Risks, Challenges & Considerations

- Breakage of lamps — e.g. fluorescent tubes contain mercury; broken tubes can release mercury vapour, so strict handling is needed.
- Old ballasts / components containing PCBs — if luminaires are very old, they may contain hazardous substances requiring special disposal.
- Mixed materials — many luminaire bodies combine metal, plastic, glass, wiring; separation is labor-intensive.
- Cost — proper disposal (transport, handling, specialist recycling) is more expensive than dumping, so you need to budget for this.
- Regulatory enforcement / fines — improper disposal (e.g. tipping WEEE in general waste or landfill) is illegal and can incur penalties.
- Logistics — in large buildings, access, scheduling, and safety (working at height, scaffolding) complicates removal.

Example Considerations Specific to Lighting Types

Lighting / lamp type	Special considerations
Fluorescent tubes / CFL / gas discharge lamps	Mercury handling, use tube boxes, specialist recycling required, cannot go to landfill.
LED / non-hazardous luminaires	Often safer, with less toxic materials. Still, they are WEEE and should be recycled properly.
Ballasts / drivers / electronic gear	May contain capacitors, metals, plastics; older ones may contain PCBs.
Housing / frames / mounts	Metal, plastics which can often be recycled once de-energized and cleaned of electronics.

Practical Tips & Resources

Use specialist lighting / electrical contractors experienced in WEEE removal.

Many waste management companies provide fluorescent lamp / lighting disposal services; for example, RJS Waste offers fluorescent recycling in certain regions.

Check local council or regional recycling centres for drop-off or collection services for lighting waste.

Ensure contracts with contractors include obligations for proper disposal and certification.

Plan the removal in stages if needed (e.g. remove lamps first, then mountings) to reduce operational disruption.

Steps / Best Practices for Dismantling & Disposal – LED Luminaires

All redundant LED luminaires and associated light sources carefully isolated from the electrical supply by a competent person in accordance with safe isolation procedures.

- Luminaires dismantled in a controlled manner, ensuring that any integral drivers, emergency batteries, or control gear are removed and segregated.
- Components containing electronic parts (e.g. LED drivers, circuit boards, emergency batteries) treated as WEEE (Waste Electrical and Electronic Equipment) and disposed of via an authorised waste carrier in compliance with the WEEE Directive and current UK environmental legislation.
- LED light sources and optical components not be disposed of with general waste; they must be collected separately for specialist recycling.
- Any batteries (NiCd, Li-ion, or other types from emergency luminaires) removed and disposed of in accordance with the Hazardous Waste Regulations and manufacturer's recommendations.
- Steel, aluminium, and other metal housings segregated and sent for scrap metal recycling where practicable.
- Plastic diffusers, lenses, and other non-recyclable components disposed of through an approved waste management facility.
- A waste transfer note or hazardous waste consignment note (where applicable) obtained and retained within the Health & Safety File.
- Works carried out by suitably qualified electricians or specialist contractors, and all dismantling complies with site-specific risk assessments and method statements