



Street Lighting Asset Management Course: LED Retrofit, CMS and Maintenance Contracts

18 – 22 October 2026

Riyadh - KAFD district five-star



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Introduction:

Street lighting asset management with LED retrofit, CMS and maintenance contracts is a 5-day course for municipal and road-authority teams who own street-light networks, ending with a Street Lighting Asset and LED Retrofit Plan for a case municipality. Incomplete column registers, ageing lanterns, rising energy bills and slow fault repairs leave dark streets and weak grounds for funding upgrades. Nominees already manage lighting networks, contractors or budgets and learn through a modelling build of inventory, savings and contract figures. CoreConcept Training Center delivers this street lighting asset management course.

Course Objectives:

- Build a street-light inventory that records columns, brackets, lanterns, drivers, photocells, feeder pillars and cable circuits with condition grades
- Assign road-lighting classes to each street segment using the EN 13201 M, C and P class selection logic
- Prepare an LED retrofit business case with energy, maintenance and carbon savings and compare ESCO and PPP funding routes
- Specify a central management system with node communications, dimming profiles, fault alarms and smart-pole add-ons
- Set fault response KPIs, night scouting routines and outage targets for a lighting maintenance service
- Draft an outsourced street-lighting maintenance contract with service levels, payment deductions and asset handback terms

Target Audience:

- Municipal lighting teams responsible for the street-light register, energy accounts and renewal budgets
 - Road-authority electrical teams responsible for highway and tunnel approach lighting networks
 - Smart city and infrastructure teams responsible for connected streetlight nodes and pole-mounted devices
 - Contract management teams responsible for supervising outsourced lighting maintenance providers
 - Energy and sustainability teams responsible for public lighting retrofit and savings verification
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Course Outline:

Day 1: Street-Light Network Inventory and Condition

- Street-Light Asset Hierarchy From Feeder Pillar to Lantern
- Column Structural Condition Survey and Corrosion Grading
- Feeder Pillar, Cable Circuit and Earthing Inspection Records
- GIS Street-Light Register Fields and Asset Numbering Labels
- Night Scouting Survey of Outages and Dim Lanterns

Day 2: Road-Lighting Classes, Standards and LED Technology

- EN 13201 M, C and P Class Selection Parameters
- CIE Road Lighting Guidance on Adaptive Lighting Levels
- LED Lantern Specification Covering Drivers, Optics and Surge Protection
- Colour Temperature Choice for Residential and Arterial Streets
- Lantern Ingress Rating and Thermal Management for Hot Climates

Day 3: LED Retrofit Business Case and Funding Models

- Baseline Energy Model From Wattage Inventory and Burning Hours
- LED Retrofit Savings Calculation With Dimming and Maintenance Effects
- Net Present Value and Payback Comparison of Retrofit Phasing
- ESCO Shared-Savings and Assured-Savings Performance Contract Structures
- PPP Availability Payment Model for City-Wide Retrofit

Day 4: Central Management Systems, Smart Poles and Fault Response

- CMS Node Communications Over Wireless Mesh, LPWAN and Power Line
- Part-Night Dimming Profiles and Presence Sensor Logic
- CMS Alarm Data for Lamp Failure and Energy Anomaly Detection
- Smart-Pole Add-Ons Covering CCTV, EV Charging and Environmental Sensors
- Fault Response KPIs for Repair Times and Lit Percentage

Day 5: Modelling Build of the Street Lighting Asset and LED Retrofit Plan

- Case Municipality Inventory Dataset Cleansing and Condition Ranking
 - Retrofit Savings Model and Funding Route Selection for the Case
 - CMS Dimming Schedule and Smart-Pole Scope for Priority Corridors
 - Maintenance Contract Service Levels, Deductions and Handback Terms
 - Street Lighting Asset and LED Retrofit Plan Completion and Defence
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Skills You Will Gain:

- Street-Light Asset Registration
- Column Condition Grading
- Road-Lighting Class Assignment
- Retrofit Savings Modelling
- Energy Performance Contract Appraisal
- Lighting Control System Specification
- Lighting Maintenance Contract Supervision
- Outage Performance Reporting

Why Attend This Course:

- Deliver a Street Lighting Asset and LED Retrofit Plan to the municipal engineering director and the finance committee for approval
- Choose between self-funded, ESCO and PPP retrofit routes using savings, payback and risk transfer figures
- Prevent column collapses, long dark-street outages and disputed contractor invoices caused by poor asset data and weak service levels
- Share the inventory template, savings model and contract KPI sheet with lighting, energy and procurement colleagues

Conclusion:

Back at work, the participant hands the Street Lighting Asset and LED Retrofit Plan to the municipal engineering director, the energy manager and the procurement unit. They use it to approve retrofit phases, select a funding route, scope the central management system and tender the maintenance service. After the first retrofit phase and contract quarter, the unit should compare metered energy, CMS fault alarms, repair times and lit percentage against the plan and update the asset register and savings model.

Frequently Asked Questions FAQ:

What should participants know before a street lighting asset management course on LED retrofit and CMS?

Participants should already manage street-light networks, lighting contractors or public lighting budgets. Basic electrical knowledge and spreadsheet skills are enough. Bringing an extract of their own lighting register, energy bills or maintenance contract helps them apply the models to their network.

How does a street lighting asset management course differ from a building lighting design course?

It manages an existing outdoor network as a set of assets: inventory, condition, retrofit funding, control systems and maintenance contracts. A lighting design course calculates lux grids, glare and luminaire layouts for individual buildings and sites, and does not cover funding models or contract performance.

Why do street lighting LED retrofit projects often use an ESCO or PPP model?

LED conversion has a high upfront cost but steady energy and maintenance savings. An ESCO or PPP partner funds the works, carries part of the performance risk and is repaid from savings or availability payments, so the owner can retrofit faster without a single large capital outlay.

What do participants take back from the street lighting asset management course?

Participants take back a Street Lighting Asset and LED Retrofit Plan with a ranked asset register, a retrofit savings and funding model, a CMS dimming and smart-pole scope, and maintenance contract service levels they can adapt to their own network.