

The Commercial LV Infrastructure Upgrade Guide

12 assessment points for property managers, facilities directors, estates teams

WHY THIS MATTERS

Unplanned switchboard failure costs 3–5x a planned upgrade — most buildings are past their 25-year design life

WARNING SIGNS YOUR LV INFRASTRUCTURE IS DUE FOR UPGRADE

- ☐ Nuisance tripping under normal loads
- ☐ Distribution boards running hot to touch
- ☐ No spare board capacity or tandem MCBs fitted
- ☐ Switchgear over 25 years old
- ☐ No current EICR on file
- ☐ Cat A or Cat B fit-out planned for this building

WHAT A FULL LV SITE ASSESSMENT COVERS

- ☐ LV board capacity — current max demand, spare ways, rated current vs actual load
- ☐ EICR condition inspection — age, degradation, protection device calibration, C1/C2/C3 findings
- ☐ Single-line diagram production or update — full topology from mains to final circuits
- ☐ Protection coordination study — discrimination verification across distribution hierarchy
- ☐ Cable sizing and containment survey — sub-main conductors assessed against BS 7671 tables
- ☐ Regulatory gap analysis — 18th Edition RCD and AFDD requirements vs existing installation

⚠ DNO & REGULATORY OBLIGATIONS

Where load changes are significant, DNO (Distribution Network Operator) notification is a legal requirement before connection. Any Cat A or Cat B fit-out that affects the electrical infrastructure triggers **BS 7671 18th Edition compliance for the whole installation**, not just new circuits. Failure to engage a NICEIC-approved contractor with design capability may invalidate building insurance and void equipment warranties.

PROPERTY MANAGERS

An LV site assessment is essential documentation for any planned Cat A or Cat B fit-out. Without it, design consultants cannot accurately specify incoming power requirements, and building insurers may challenge liability in the event of an electrical incident.

FACILITIES DIRECTORS

LV switchgear past its 25-year design life presents compliance and operational risk. A failing board does not fail gracefully — unplanned tripping, downtime, and emergency replacement are the operational consequence of deferred investment. Annual capacity checks against current load are the minimum due-diligence standard.

THE 6-STAGE LV UPGRADE PROCESS

- 1 Stage 1: Desktop Assessment** *1–2 weeks*
- 2 Stage 2: Engineering Design** *2–4 weeks*
- 3 Stage 3: Procurement** *4–8 weeks*
- 4 Stage 4: Phased Installation** *agreed with client*
- 5 Stage 5: Testing and Commissioning** *1–3 days*
- 6 Stage 6: Documentation and Handover** *1 week*

VERIFY YOUR LV CONTRACTOR BEFORE AWARDING

- ☐ NICEIC or ECA approval verified at niceic.com or eca.co.uk — not just letterhead
- ☐ Design capability: single-line diagram and protection coordination study from comparable project
- ☐ Manufacturer accreditation: Schneider Electric, ABB, Eaton, Hager — confirm current not historical
- ☐ Professional indemnity insurance: certificate of currency, current year, separate from PL/EL cover
- ☐ Comparable project references: same board rating, building size, programme complexity

KEY TAKEAWAYS FOR FACILITIES AND PROPERTY TEAMS

- Most commercial buildings need an LV assessment before any significant fit-out or load change
- A single-line diagram and EICR are the minimum documentation for any commercial building
- Planned upgrades cost 3–5x less than emergency switchboard replacements
- Contractor verification is essential — NICEIC Approved is the minimum standard

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LV switchgear design · BS 7671 18th Edition · City & Guilds 2391-52 qualified

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