THE CHURCH OF ENGLAND

DIOCESE OF SALISBURY

Diocesan Advisory Committee (DAC)
Electrical Installation and Maintenance
In Churches

GUIDANCE NOTE

September 2023

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Introduction

This advice note has been developed and approved by Salisbury DAC to assist PCCs in electrical maintenance and installations for churches. It covers many aspects specific to churches particularly those things that PCC members are likely to come across on a regular basis.

As with many things electrical works are regulated by national legislation and health and safety. These are subject to revision and as such are always to take precedent. This guidance note is not intended as a replacement to current legislation and the DAC always encourage the PCC to ensure they are working within the law and with appropriately accredited and trained professionals.

If in doubt please do get in touch with the Church Buildings Team at: DAC@salisbury.anglican.org

Electrical Contractor Status

The eligibility of the electrician or electrical contractor must be verified first. Only FULL SCOPE approved members of NICEIC, ECA or NAPIT who are registered and assessed to carry out work on commercial installations should be employed to undertake new installations, alterations, maintenance (including quinquennial inspection reports), and minor works.

The QS of the business should hold City & Guilds 2391-51 & 2391-52 or EAL 4337 & 4338 qualifications. The Registered Competent Person website will help when first looking for a contractor by selecting the "To undertake an electrical safety report" tab.

Only the highest standard of workmanship should be allowed. Operatives should be skilled tradespeople, who are aware of the historic and architectural importance of the building.

Please note: NICEIC Domestic Installer only, ELECSA, BSI, STROMA members or other Part "P" only electricians are NOT acceptable.

Insurance

The insurance documentation for the contractor should **always** be checked for validity **before** work begins, including the amount of public liability cover. The minimum amount of public liability cover should be **£5,000,000**. This cover may have to be increased to £10,000,000 for some of our larger buildings. Professional Indemnity Insurance (Min £300,000) is also required for contractors undertaking electrical installation condition reports for the quinquennial inspection and other design & build works.

Electrical Installation Condition Reports, Tests, and Inspections

Health and Safety legislation (Electricity at Work Regulations 1989) states that every electrical installation must be properly maintained. This legal necessity is common sense. Wiring systems and electrical equipment can and do deteriorate over time, develop faults, and sustain damage in normal use. The problem is that a wiring system which has developed some major fault and is potentially dangerous can continue to work. In church buildings which are often used on an occasional basis, perhaps even as little as a couple of hours a week, it can be a long time before anything is found to be wrong. Despite the requirements of the law, many electrical systems are left unattended for many years. Architects, when carrying out their quinquennial inspection are required to recommend an electrical installation condition report, if it is found to be out of date or is soon to expire the 5-year maximum.

REMEMBER: Such a recommendation must not be ignored as this will have a detrimental effect on the insurance cover of the church.

The inspection and testing procedure and parameters and set down in the IET Wiring Regulations BS7671 as amended. It is important that the competency of the person carrying out the inspection and test is of the appropriate standard having gained the sufficient education and knowledge to be fully conversant with the aspects required to carry out such an important inspection.

The Inspecting & Testing electrician MUST hold City & Guilds 2391-51 & 2391-52 or EAL 4337 & 4338 qualifications. (This is an insurance led requirement)

Some electrical contractors arrive ill-equipped to access high level areas. It is essential that contractors visit the church first and correctly assess what access equipment is needed to reach these high-level areas. The use, by the electrical contractor, of the "Operational Limitations" section in the report should be avoided where access has not been correctly thought about. High level sections that are repeatedly missed due to access problems & written limitations, can and have gone 20 years or more without being inspected or tested.

Completion Of Electrical Works

When any electrical work is completed, the electrical contractor must issue an Electrical Installation Certificate or Minor Works Certificate. The certificate should correctly detail the work carried out, the test results obtained and the inclusion of a name and signature of the electrical contractor declaring all is safe to use and compliant to the latest amended edition of BS7671 (the electrical regulations).

All certification documents should be kept safe together as they will provide a valuable history of the work carried out over the years, and by whom, including the progress of any deterioration, if applicable, of the installation.

Wiring Systems

The wiring systems permitted for use in churches are as follows: -

- Mineral-insulated metal sheathed cables.
- Cables drawn into steel conduit or trunking.
- Cables drawn into heavy-gauge high impact plastic conduit.
- FP200 Gold (or a direct equivalent fire rated cable) at high level or protected against mechanical damage at low level.
- Steel Wired Armoured Cable (SWA/LSF)

Any new wiring or additions to the existing wiring installation must follow these criteria regardless of the type and installation method of any of the existing wiring.

PVC T&E wiring and mini plastic trunking are not appropriate wiring materials to use in churches.

The choice of a wiring system is made against a background of many varied criteria. Safety is of vital importance, but there are other criteria too, including durability, good value for money, and how the installation looks in the context of the building. Regulation 521.10.202 regarding "Premature Collapse of Cables in the event of a fire, must be correctly followed for all electrical, audio & AV cables.

Temporary Wiring

Temporary wiring is often required for trials of proposed new equipment or reordering projects, temporary wiring MUST always comply with BS7671 and to the above "Wiring Systems" section.

Extension leads are not to be used for a period of more than 4 months and never used in areas where a trip hazard could be created. Extension leads must also not be used on stairs or under carpets and should always be selected correctly for length and power loading.

Portable Appliances

Portable appliances, e.g., heaters, vacuum cleaners, lights, and tea urns etc. should always be checked for safety on a regular basis. Some electrical companies offer PAT (Portable Appliance Testing) as a service. This should be included in a maintenance program; the regularity of these tests is the responsibility of the PCC and is dependent on the type of use the appliances get. A competent person in the parish should be responsible for looking after appliances by visually checking them for breakage, pulled flexes and general damage/wear & tear. If any appliance is found to be damaged or suspected to be anything other than 100% safe, the item should be removed from service and given to a suitable professional for repair and PAT testing again before being put back into service.

Electric Heating

If your church has tubular heaters at low level around the walls or under the pews, these tubes must always be guarded. Heating tubes can have a touch temperature of up to 150 degrees Centigrade. BS7671 (The electrical Regulations) require all open metal heaters of this type that emit a touch temperature in excess of 80 Degrees to be guarded. Quartz radiant heaters are not recommended by the DAC for new heating installations because of the intensity of the light emitted. DAC's have found that this light is distracting during a service destroying ambiance.

When applying for a faculty that includes electric heating, detailed information is essential showing the type and loading of the new proposed heaters and the loading of any existing electrical heating including details of the electrical supply/distribution.

RCD's

Socket outlets should always be protected by RCD's (earth fault protection devices) rated at 30ma. It is also recommended that lighting circuits also have RCD protection with a minimum rating of 100ma but 30ma is advisable. All RCD's must be selected and installed as per BS7671. RCD's give added protection to persons using electrical equipment in the event of a fault and could save lives.

AFDD's

With the introduction of AFDD's (Arc Fault Detection Devices), although not a mandatory requirement to be installed in churches, the benefits of these devices are considerable & should be considered in the design of circuit protection that will help to prevent electrical fires or physical injuries.

SPD's or Surge Protection Devices

With increasing use of electronic equipment in churches, it is recommended that SPD's or "Surge Protection Devices" are installed to help protect from the all-too-common electrical spikes and surges, often present during a lightning storm, that can destroy many types of sensitive equipment. SPDs are self-contained units, normally hard wired in at the main intake & sub-board distribution positions. Type 1 SPDs should always be installed where lightning conductors are present, additionally where a church is fed via overhead power lines.

Lightning Conductor Bonding

A lightning conductor, if present, must be bonded as an extraneous conductive part (as per BS7671) and connected to the main earthing terminal. It is normal practice to inform the steeplejacks who look after the conductor for approval & to confirm the correct location of the bond connection to the lightning conductor and the materials to be used. A lightning conductor down tape should never be drilled to attach a bonding crimp lug.

Information to be enclosed with a list B faculty application for electrical work.

1. Details of the proposed electrical work, heating, lighting, power sockets, repairs etc. and any loading information.
2. The name, address & qualifications of the electrician/electrical contractor and their trade affiliation (NICEIC – ECA)
3. Confirmation of public liability & professional indemnity insurance cover
4. Information of the chosen cable types, colour of the cables if applicable, containment and routes.
5. Drawings and pictures showing proposed cable routes and equipment.
6. If electric heating is being considered, a power loading schedule is required.
7. A lighting design scheme showing proposed lux levels.