**ADVICE ON NEW AND REFURBISHING ELECTRICAL WIRING**

**IN YOUR CHURCH AND MAINTAINING THE EXISTING WIRING**

Before doing any work on the electrical wiring in your Church the PCC must be aware that Churches are **not** domestic dwellings, but under the law are considered to be commercial premises, which means that any work done on your electrical system is subject to the requirements of the ‘Electricity at Work Regulations 1989’. This Act of Parliament places many obligations on the PCC as trustees of the premises and employers of electrical contractors, which can only be met by employing competent electrical contractors who are on the ‘Approved Contractor Register’ of the NICEIC the recognised approvals body for the UK or ECA or NAPIT list of contractor members. An electrician registered with the NICEIC as a ‘Domestic Installer’ is not appropriate especially for major works.

Many Churches do not have a wiring schematic of the present wiring, but the Regulations require that you do have a wiring diagram showing all work that has been carried out on the completion of the modifications or extension to the existing system. Whilst this may add some cost to the work it is common sense to do so as there is a permanent record of what has been done in your Church and future work will be easier and cheaper because the new contractor will know where he is starting from. Even if you use the same contractor each time, without drawings people may forget and mistakes or at worst accidents happen!

Before initiating any significant work in your Church it is recommended that those responsible for the completion of the Faculty Application make themselves aware of the Church Care1 website document – Guidance Note, Electrical Wiring Installations in Churches. This document gives a lot of advice on the technical matters associated with new electrical installations. Remembering that this is a building to which the public have access, simple solutions are not appropriate. For instance the use of ‘flat twin core and earth’ is not recommended, all wiring should be in low smoke, zero halogen, flame retardant cables such as Prysimian FP200 Flex 2 core plus earthor mineral insulated copper cable (MICC). Cores should be sized for the application current, but typically 2.5mm2 would be appropriate. The new FP200 cables will have a ‘low smoke and fume’ (LSF) sheath to ensure that the cables are not liable, like ordinary PVC cables, to produce corrosive halogens and copious smoke in the event of a fire, which is not only a life-safety issue but also reduces the smoke damage to the contents of an historic building.

Your architect should be asked to produce a specification for the work that is to be carried out, which will ensure that the prospective contractor will be able to produce a quotation that is technically competent. For example, the cable routing and containment must be compliant with regulations, if single core cable is to be used it must be contained in steel or rigid heavy gauge high-impact conduit or trunking, where this conduit or trunking can be installed without physical or visual damage to the Church building. The conduit or trunking must be painted the same colour as the surface to which it is fixed. Finally the wiring must conform to the requirements of the Institution of Engineering and Technology (IET) Wiring Regulations (BS 7671:2008), latest edition.

PCC may be tempted to reuse existing cables, which if old MICC cables, these do not have a plastic sheath, it is often possible to re-use these, providing that cable faults are not shown up during the electrical tests and that voltdrop and earth-loop impedance calculations are carried out to ensure that the existing MICC cables still comply with BS 7671:2001. Even if the insulation resistance of the cables failed the tests, all might not be lost; frequently it is the electrical equipment connected to the cable which is at fault and not the actual cable. Please note old vulcanised rubber (VIR) cables should never be reused but replaced immediately.

System protection is very important, in any new installation all socket outlets must be protected by a Residual Current Detector, RCD, which trips if the current flow difference between the live and neutral circuits exceeds a very low value, usually 15 mAmps.

**EXISTING WIRING**

The Electrical Regulations, BS 7671: 2001 state that electrical wiring should be regularly tested. In Guidance Notes Number 3, a supplement of BS 7671:2001, a table gives recommended frequency of testing for various buildings. In ecclesiastical and secular historic buildings, it is generally accepted that for new buildings or if a building has been rewired, the first test should be after five years, thereafter periodic tests should be carried out every 5 years. In practice, however, the periodic testing of electrical wiring rarely takes place, as it is considered to be a very costly and disruptive exercise. However, many insurance companies will insist on the minimal 5 yearly test.

**PORTABLE APPLIANCE TESTING**

Portable Appliance Testing (PAT) covers equipment such as cleaners, portable electric heaters, computers, projectors. The frequency of testing depends upon the type of appliance, the location of the equipment and how often it is used. The HSE publication *Maintaining portable electrical equipment in offices and other low-risk environments* www.hse.gov.uk/pubns/indg236.pdf gives further advice.

It is recommended that the PCC ensures that a thorough physical examination of all portable appliances is conducted regularly to ensure that worn flexes, broken plugs or sockets etc. are replaced immediately. Any electrical equipment found to be faulty should be replaced or discarded appropriately.

It may seem that there are a lot of regulations that have to be complied with in doing any electrical work – this is true but they are there to ensure that you the PCC get a job done that is of high quality and is safe!!!

**ELECTRICITY KILLS, NEVER FORGET THIS!**