TELECOMMUNICATIONS EQUIPMENT

1. Many churches are approached to ascertain whether they would be willing to have equipment installed in them. Whilst the vast majority are for base stations for mobile telephones there are now others which hold equipment for television booster and aircraft navigation systems.

There are a number of surveyors travelling round the country looking for suitable sites on behalf of operating companies. Especially in the current financial times these can potentially provide a valuable income source with, after installation, little impact on the day to day running of the church building. That having been said there are still a number of PCCs who will object and not entertain these installations either on the grounds of 'secularisation' or more likely health grounds. Others have objected due the type of material that may be sent via the base station, especially to iPhone.

2. If the PCC does agree to go ahead then the planning stage will commence. It is of paramount importance that the ringers are involved from the very earliest stage, it is most likely that it is their space that is going to be most affected.

Any design and installation will be carried out by a specialist company on behalf of the mobile phone operator. Any work, however, is likely to be carried out by sub-contractors or sub-sub-contractors and this is an area that will need very careful monitoring. There are likely to be conflicts between technical requirements of the company and the day to day needs of the church. For bellringers there are likely to be many concerns not least how the equipment will be fitted, having said that much of the newer equipment being used is of a much smaller size.

From the earliest planning stage the ringers need to demonstrate to the PCC that they have an essential contribution to make. It is very useful to have one nominated point of contact for the bell ringers. Prior to any work commencing it is essential that proper surveys take place on behalf of the bell ringers, even if equipment is not being installed between the ringing chamber and bell chamber there can be a difference to internal and external sound levels. As plans progress they are likely to be amended so it is essential that bell ringers take a key role in vetting and advising on them at all stages. Problems have still arisen when the contractors undertaking the installation have not followed the agreed plans.

3. The equipment can be split into different sections, some of these will have little direct impact on the bell ringers. Consideration should be given to the position of all equipment, could it be a problem in the future? Would it interefere with any work entailing removal or replacement of bells and their fittings that may have to be undertaken.

A) Power Supply. There will be a need for a new power supply from the street dedicated to the equipment.

B) Electrical Cabinet. This may be positioned outside the church building.

C) Internal Cables. These will stretch from the Electrical Cabinet up inside the tower. Careful consideration needs to be taken in deciding on their route. In some cases clock weight shafts have been utilised, however this may necessitate changes being made to the clock movement. Any new opening through tower floors are likely to lead to changes in the sound level of the bells when rung. Care obviously needs to be taken that none of them foul the bells when rung. Bear in mind all the levels that the wiring will have to pass through. This is one area where in some cases problems have arisen. The contractors carrying out the work have not adhered to the agreed plans, cables have been left taking the shortest route which has meant through bell pits and in one case through a bell wheel.

D) Main Equipment. The contractor will ideally being looking to install this in a dedicated room if there is one available. If this is not an option then careful consideration needs to be given to its location. Although in recent times their size has reduced they can still weigh a few hundred kilogrammes. In normal operation they will generate heat, this may be in the order of a few kilowatts. In addition they may have to be fitted with ventilation fans, these will produce a low hum when operating. Bell ringers need to be satisfied that the space occupied along with the heat and possible noise do not interfere with ringing. It is a far from ideal situation to have these sited in the ringing chamber. Also remember, if sited in the bell chamber, any possible adverse effect of the heat on bell fittings or a wooden frame. The contractor should be able to advise of the likely amount of heat that will be generated and how this will be dealt with.

E) Antenna. In many cases this will be installed behind the louvres. The contractor will need ongoing access to these for maintenance and so in all likelihood will install new access ladders and working platforms. Plans for all new ladders and platforms should be commented on by the bell ringers at an early consultation stage. The ladders should conform to Health and Safety requirements. Any ladders will almost certainly be fixed and include safety hoops, so ensure they will not interfere with the ringing of the bells in anyway. The antenna may be fitted behind the louvres and these may have to be replaced. Wood, slate and stone is opaque to radio waves and will not let them pass through, the contractor is likely to replace them with ones made from GRP 'stealth' material of a similar shape and colour to the original. Remember to ensure that these will still leave enough room for the bells to be rung. One consequence of replacing the louvres is that external sound levels may be reduced. The old louvres in all certainty will need to be stored for any future replacement if the equipment is removed.

F) Firewalls. The contractor will want to insulate all their equipment to prevent fire damage. If there is a separate equipment room it will probably be fitted with an inert gas fire damper. Be aware of any suggestion of fitting a 'fire lobby' as these will take a reasonable amount of space to install.

4. With all the proper planning have been carried out then a contractor will want to start work. The bell ringers need to have planned carefully for this stage. There is likely to be a large amount of masonry dust. Any financial burden of protecting items should have been considered and payment agreed in advance via the PCC

with the contractor. Any items likely to be damaged should be removed for safe storage. The best advice is for the PCC to consult one of the bell hanging/foundries and a specialist clock firm prior to any agreements being made with the contractor. It may be that some bell fittings or chiming wires need to be removed for the duration of the work. Again the cost should be agreed in advance with the contractor. The contractor may well install scaffolding to allow safe working during the installation period.

5. There are many objections to mobile phone equipment being installed on health grounds due to exposure to increased radiation. The contractor will seek to reassure by stating that their work is within the guidelines published by The International Commission on Non–Ionising Radiation Protection (ICNIRP). These are dated 1998 but there is an ICNIRP statement from 2009 which reconfirms the 1998 basic restrictions in the frequency range 100 kHz – 300 GHz until further notice. Although this frequency range will more than cover 3G and 4G mobile phones it should be borne in mind that work is currently being undertaken on the next generation (5G) mobile phones. As yet there has been nothing published to update the frequency range 5G mobile phones will work at.

More information is also available from the Health & Safety Executive, this can be found by using the following link. http://www.hse.gov.uk/pubns/books/hsg281.htm

Although any installation will be decided by the faculty procedure and not the local planning procedure it should be remembered that when considering a faculty application the DAC will follow planning guidelines. In the case of Emmanuel church, Bentley (Lichfield Diocese) it was stated that 'faculty cannot be refused over a possible health risk not substantiated by evidence'. A further case is of St Luke's church, Charlton (Southwark Diocese), this state's 'determination must be on planning grounds not health or needs'. What this means in simple terms is even if there are already a number of mobile phone base stations in an area that is not a valid reason to reject another one.

Historic England are a statutory consultee on any proposed installation, their latest guidance can be found by using the following link.
https://content.historicengland.org.uk/images-books/publications/installation-telecomms-equip-in-places-of-worship/installation-of-telecommunications-equip-pow-20170811.pdf/

The levels referred to in the above guidelines are for those in front of the antenna. There would be an exclusion zone in front of the equipment of between 10 – 15 metres. As this is likely to be well above ground level there should be no health risks to members of the public. What needs to be borne in mind is back-radiation, this could be of concern to anyone carrying out maintenance to the bells. Although it is claimed that this is at a lower level than in front of the antenna confirmation should be sought that the figures for this radiation are within the 'general public exposure' limits. The contractor may be reluctant to do this, again this should be done at the planning stage. They should however be able to commit in writing the maximum level, but then you may have to do some calculations yourself to confirm that the figures are in accordance with the ICNIRP Guidelines. These figures should be written into the contract. Further require that the contractor confirms that they

comply with their own design figures when the job is finished, do not be fobbed off with non-specific reassurances.

Bear in mind that the power output of the antenna will vary from time to time according to how many people are using their phones and therefore the base station. It is a good idea that the levels are periodically checked.

6. In operation there will be a need for the contractor to have access for maintenance, in emergencies this may be outside normal working hours. So it is essential that again the bell ringers are involved in the principles of how this will operate. Depending on access arrangements it may well be that the bells will need to be left in the down position between every ringing session. Advice from Ecclesiastical Insurance Group (EIG), who provide insurance cover for the majority of churches can be found by using the following link. www.ecclesiastical.com/churchmatters/images/telephone%20masts%20guidance%20note.

After any contractor has been allowed access to the tower all care should be taken to ensure that it is safe to ring the bells. No tools or other equipment have been left where they will come in contact with bells, their fittings and ropes when ringing takes place.

There appear have to been some cases where after installation of the equipment signs have been placed stating 'NO PERSONS BEYOND THIS POINT', the reason given for this being the levels of radiation. This has occurred where the contractor has been a company called NET Coverage Solutions (NETCS). They have been contacted and responded by saying that this is simply a false statement and access is always possible, also stating that this type of sign is damaging to their reputation and the confidence of the landlord. NETCS appear to be one of the major designers of this type of equipment and have worked in the Diocese of London, Southwark and Exeter. Designers should be asked to issue an ICNIRP compliance diagram clearly demonstrating any exclusion zones, and a written procedure note.

Although not a problem for bellringers from 4G signals there may be some television interference, this can be resolved by fitting a filter. In the past it has been discovered that easements to any contract may be difficult to deal with under the Telecommunications Act, again this should not be a problem that the bellringers would have to deal with.

The ringers must also prompt the PCC officers to ask the Diocesan Advisory Committee (DAC) for copies of the DAC's formal guidance document "Guidance for Parishes on Telecommunications Equipment in Churches". The PCC has access, through the Secretary to the DAC, to the specialist advice available from the DAC Bells advisor. The PCC has access also, through the General Secretary of the territorial/diocesan ringing association for the locality, county or diocese, to the specialist advice available from the territorial/Diocesan ringing association's Bells Adviser. The PCC should obtain both the DAC's formal guidance document, see above, and the specialist advices available from the above two sources, before expressing the slightest interest with a telecommunications company or its representative or agent. Nowadays in many Diocese the Bell Advisor to the DAC will

either be provided with details of all faculty applications or at least all those that impact not only one the bells but tower as well.

The officers of the territorial/diocesan ringing association must be fully alert in respect of those churches in their area whose towers are silent, either because the bells are at present unringable or because the bells are at present not rung for lack of ringers. They should brief the PCC officers of each of these churches about the risks in taking any step now which might in due course turn out to be irreversible in the heritage sense of the word, or might delay or prevent a bell restoration project, or might discourage the training of a band of ringers.

In many cases the planning from initial contact to installation commencing has taken a number of years, the installation phase should be quicker although there have been instances where this has also dragged on for much longer than initially stated. This should be borne in mind as during the installation it is unlikely that the bells can be rung.