

Understanding & Preventing Metal Theft from Churches



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**PROPERTY
TEAM**  THE CHURCH
OF ENGLAND
BIRMINGHAM



This 18th Century lead hopper is protected by barbed wire which looks awful but does the job!

Front cover photograph: St. Cuthbert's Church, Halsall, West Lancashire.

All photographs in this publication are by Ian Simpson unless stated otherwise.

Introduction

The theft of metals – particularly lead, but also copper, brass and bronze – from churches is a serious and escalating problem. In recent years it has developed from being a crime carried out by opportunists into the activity of well-resourced and ruthless criminal gangs. In 2019 alone, several ancient churches in Oxfordshire, Wiltshire, Lincolnshire and Suffolk have been targeted with the most badly-damaged facing repair bills in excess of half a million pounds. Rural churches within easy access of either a port or the motorway network have borne the brunt of this desecration.

Churches – all churches, regardless of age, style or Listing status – need to wake up to the reality of this threat and make sure that they are aware of the measures they can take to prevent this crime from happening on their premises. Everybody in the community can play a part in keeping the metal thieves at bay. If the worst does happen, it is essential that everybody involved knows how to respond.

This guide contains information on:

- Which metals are vulnerable and why;
- The damage which can be caused by metal theft;
- How to protect your church against metal theft;
- What to do if your church suffers from metal theft;
- Where to find more detailed information and guidance.

This guide is not a statement of the law but is intended to give you good general guidance.

If you are unsure have any questions or need further advice then please do not hesitate to contact the author:

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Top Tips

Do

- engage as many people in the community as possible, educating them about metal theft and encouraging them to report suspicious activity.
- be vigilant – keep an eye open for signs your church has suffered an attempted or actual metal theft. Be aware of suspicious behaviour, vehicles or drones in the vicinity of your church and report these to the Police.
- use a range of strategies to deter and defeat the criminals.
- make sure your external metal is marked with a forensic marking solution and that this has been registered.
- keep all gates, etc., locked at night or when the church is not in use.

Do not

- assume your church is too high or too visible to be attractive to metal thieves. It isn't.
- leave ladders, bins or anything else near to the building for potential thieves to climb upon.
- carry out any work to protect or replace metal without first obtaining a Faculty (and Planning Permission if required) authorising it.
- fail to report to the Police, immediately, any incidence of metal theft – or attempted metal theft – at your church.

Metal Theft

To many people, the phrase “metal theft” might conjure up the image of a rogue, like Club Paper Jack in Alan Povey’s *Owd Grandad Piggott* stories, trying to scrape a living by hawking pieces of scrap lead flashing acquired in dubious circumstances.

The reality is that the theft of metals from buildings, railways and power distribution networks is a huge illegal industry, controlled by criminal gangs and costing the economy billions every year.

Controls introduced by the Government from 2013 led to a brief reduction in metal theft. Banning UK scrapyards from making cash payments for lead and other valuable metals put many of the opportunist thieves out of business. Recently however we have seen a resurgence in the theft of copper and lead as metal prices rise. Organised gangs of criminals now have the infrastructure in place to get stolen metal out of the country and beyond the reach of British law enforcement agencies.

In August 2018 a Liverpool church suffered the theft of around 130 square metres of copper from its roof (*photo, right*). The criminals behind this attack had clearly researched their target, only taking metal which was not visible from the ground. It is believed they may have used a drone to help plan the theft.



A variety of metals are at risk, and the criminals will go to great lengths – and take huge risks – to steal them. Even live high tension electrical cables are not immune to theft (a heritage tramway in Manchester recently suffered the theft of all its overhead wires, for example). Metal thieves think nothing of climbing 20m or higher to strip lead from a church roof. The fact is that booming world demand for metals, particularly in China, makes the trade in stolen metal an extremely lucrative one.



As far as churches are concerned the metals most likely to be targeted are lead (roofs / flashings) and copper (roofs / lightning conductors).

Most churches (the exceptions generally being more modern ones) will have some lead on the roof. The versatility of lead and the ease with which it can be formed into complex shapes mean that it can be used to cover an entire roof, line gutters, form architectural features or protect junctions between the roof and the stonework of the building. It is an extremely durable material and there are cases of lead roofs lasting two centuries or more. Some older churches also have cast lead hopper heads and downspouts.

The criminal interest in lead stems from it being an essential component of car batteries for which there is currently enormous demand in Asia. It is heart-breaking to think of our priceless Christian heritage being pillaged for such a purpose.

Copper is another metal which is targeted by the criminal fraternity as it is extensively used in electronics manufacturing; indeed, almost every electronic device contains some copper as it is an excellent conductor of electricity. It is currently being used faster than it can be mined and refined, meaning that it fetches a high price.

Copper is sometimes found on church roofs or spires – where oxidation gives it a characteristic green colour – and most lightning conductors are made of the metal. Copper pipes (particularly if they are outside the building) and wires may also be vulnerable. The vulnerability of external copper piping is one of the principal drawbacks of air-source heat pump (ASHP) heating systems.

It is despicable, but sadly true, that even war memorials have been targeted by metal thieves. Often the plaques commemorating the fallen fetch little more than £100 each as scrap metal; they may cost twenty times as much to replace but the financial cost is nothing compared to the distress caused by such an appalling act of vandalism.



Consequential Damage

“Consequential damage” is the term used by insurers to describe additional damage to the building caused by the removal of metal and by the thieves’ attempts to access and escape from the building in the process of committing the crime. It is possible that considerable damage may be caused even if the thieves do not succeed in removing metal. In the photograph above, the roof damage results from an attempt to steal the rolled lead ridge. The fact that this is over 15m up on a building by a busy road junction proves that metal thieves are ready to take deadly risks.

The damage caused by metal thieves may be extensive and cost several times more than the cost of replacing the stolen metal. In one case in southern England criminals stole a copper lightning conductor – scrap value maybe £100 – by attaching one end of the rope to the conductor and the other to their vehicle. They simply drove forward to pull the conductor down, an action which resulted in such severe masonry damage that part of the tower collapsed.

Lead theft from roofs can lead to consequential damage through water ingress – after all, the purpose of the lead being there was to keep water out of the building. Often this is immediately evident as the first rainfall after the theft results in water dripping into the church.



Unfortunately this is not always the case and prolonged undetected water ingress into a roof void can result in dry rot attacking the roof timbers causing catastrophic damage for which six-figure repair bills are not unheard of.

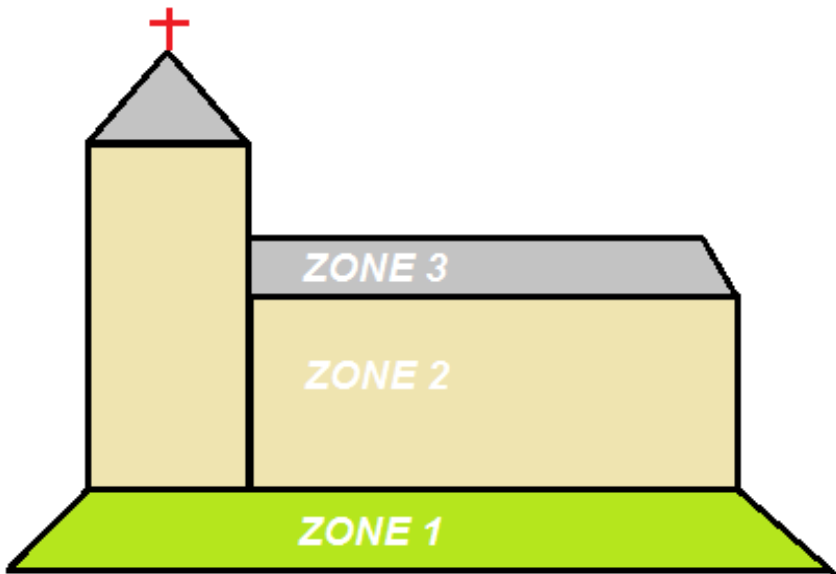
Metal thieves do not care about the damage they cause to historic buildings, or about the distress they cause to those who love and care for them. The Government does, however, recognise the problem and has designated Heritage Crime as a factor which can increase the sentences handed down to offenders.

When a church in Crosby, near Liverpool, was targeted in June 2014 (*photo, above*) over £42,000 of damage was caused in the process of stealing lead that the Police estimated may have been worth £1,500. The damage included sections of cast iron gutter which had to be made to special order in order to carry out a full repair. The bulk of the cost fell upon the parishioners and their fund raising efforts within the wider community – time and money which could otherwise have been invested in the mission and good work of the church.

It is, of course, better to prevent the problem than have to deal with its results, so let us turn our attention to developing a strategy for keeping the thieves at bay.

Preventing Metal Theft

The fight against metal theft may be visualised as taking place in three zones:



Zone 1 is the ground level where the focus is on people-based and generally low-cost and low-technology actions to educate, raise awareness and build relationships aimed at fighting metal theft.

Zone 2 is the area between the ground and the roof. Actions here are targeted at reducing the accessibility of the building to criminals and involve solutions of low-to-medium cost and technology.

Zone 3 is the roof itself. If the criminals succeed in making it this far, the final line of defence consists of high-technology (and therefore mostly relatively expensive) means of making it as difficult as possible for thieves to succeed, and of identifying them and linking them to the crime if they do.

Zone 1 – Ground Level

The key here is to engage with as many people as possible: building awareness of the problem of metal theft, encouraging vigilance (but NOT vigilante-ism!) and educating the community in the value of heritage buildings in general and that of your church in particular.

Encourage congregation members and local residents alike to watch out for suspicious activity around the church, particularly in the evening and at night, and report any such behaviour noted to the Police. Maintenance contractors do not generally attend at night so workmen or vans in the vicinity of the church should be reported (genuine contractors attending a real out-of-hour emergency will not be offended by being challenged) and a free poster which can be laminated and placed on notice boards may be downloaded at

<http://iansimpson.eu/LeadTheftPoster.pdf> (or scan the QR code, *right*).

Note that it is illegal to fly an unmanned aerial vehicle (drone) with a camera within 50m of a building without permission. Be vigilant and challenge – or report – anyone you see doing so.

Even if they are not members of the church, most residents in any given community are unhappy to think of crime taking place in their midst and will be pleased to co-operate with any initiative to reduce it. If extra persuasion is needed, remind them that metal thieves do not just steal from churches: the next target might be the local school, library... or their homes. Cases of whole terraces of housing being stripped of their flashings overnight are on record.

If your church has a link with a local school, use it to educate the children about metal theft and the part they can play in reducing it now and in the future.

Create local networks, linking with other churches (synagogues, mosques, temples...) and nearby public buildings to share expertise and intelligence. This can be formalised into an official HeritageWatch scheme for your area.



Police statistics show that buildings which are – or which appear to be – unused or unoccupied are at much greater risk of being targeted.

If your church looks closed or derelict then NOW is the time to make it look open, used and cared-for again! Clear any litter and weeds away, replace all out-of-date signs and attend to any minor repairs and paintwork touch-ups which may be required.

Besides theft prevention, it is crucial to your church's mission that it looks open and loved!

If your church has gates, make sure they are closed and locked at night so thieves cannot access the building. In particular, make sure that it is impossible to bring vehicles close to the building. Remember that metal is heavy so the further they have to carry it to their vehicles the less attractive it becomes, not least because whilst they are carrying the metal they are at the highest risk of being caught.

Finally, if your church has already been targeted by metal thieves in the last twelve months, it is statistically at a much higher risk of being targeted again, probably by the same people. As the Book of Proverbs (26:11) tells us, “a dog returns to its own vomit”.



Official Advice from West Mercia Police

If you discover an act of metal theft, or other heritage crime, taking place, call 999 but do NOT try and tackle the criminals as they will be carrying knives, jemmys and other tools which they may use as weapons.

If you discover the crime after the criminals have left the scene, call 101.

Zone 2 – Between the Ground and the Roof

The focus in this zone is on making it more difficult for would-be thieves to reach the valuable metal, the challenge being to balance making it obvious to the criminal that security measures are in place with the need to make the building as attractive and accessible as possible to genuine visitors.

The first obvious measure is to make sure that anything which criminals could use to climb up into or onto the building is moved away, out of their reach. Wheeled bins in particular should be locked in a shed or securely chained to railings away from the building as not only are these used by criminals to get a “leg up”, they are also used as wheelbarrows to transport ill-gotten gains off site.

It should go without saying that ALL ladders need to be locked away inside the building.

Remarkably, in the course of researching the original (2014) version of this booklet, I discovered that one church which had had a “clear out” had left a redundant ladder outside, just waiting to be used by metal thieves (*above, left*).

DON'T DO IT!!! If metal theft takes place and it is found the church's own negligence contributed to it, the insurance policy will be invalid.

Special precautions need to be taken if there is scaffolding in place for building works. You **MUST** advise your insurer if this is the case and follow their advice.



As a minimum you will be required to sheet the scaffolding to a minimum of 3m – possibly 5m – and fit a temporary alarm system.

Planting spiky shrubs or bushes can act as a deterrent to unauthorised access, but their siting needs to be chosen carefully in order to avoid reducing accessibility for maintenance work and for genuine building users. You also need to account for the likely size to which a shrub might eventually grow. Generally speaking, any major planting schemes will require a Faculty so you should approach the Diocesan Advisory Committee (DAC) for advice first.

Lightning conductors may be effectively protected by enclosing the bottom two metres or so within a close-fitting sheath of a cheaper metal.



This lightning conductor is fitted with a protective sheath.



This one wasn't!



Fitting downward-facing spikes (sometimes known as a “crown of thorns”) towards the tops of downspouts makes the task of climbing up more difficult and so offers a highly visible deterrent.

These are rather ugly devices (*left*), however, and you will need both Faculty and Planning Permission to fit them. Your Statement of Need will need to show clearly how the benefit offered by the spikes outweighs any harm done to the appearance of the building.



Razor wire and barbed tape are not, as is commonly believed, illegal in themselves but there are two major disadvantages to their use. Aesthetically they are awful, and they can cause serious injury to intruders. As the law currently stands a church could be held liable for such injuries and as such these materials cannot be recommended except in extreme circumstances. Speak to your insurer first if you are considering them!

“Vandal grease” or “anti-climb paint” (a type of paint which never completely dries) can be effective when applied to downspouts, etc., but never apply it below 2m (6’ 6”) above the ground. You must display prominent signs warning that it has been applied.

One measure which you **MUST** take in Zone 2 is to ensure that the signage for your forensic marking solution (either SmartWater™ or SelectaDNA™ - more details in the next section) is clearly and prominently displayed, ideally at a height of around 1.8m to 2m above the ground. Check regularly to see that the signs haven’t been removed or become illegible – these signs are an important deterrent and their absence will result in your insurance policy being invalidated in the event of a metal theft.

In recent years some churches have taken to the use of perimeter alarms to deter unwanted visitors from the churchyard during the hours of darkness. These are effective in certain circumstances but obviously can’t be used where there is a need for members of the public to use the grounds. They are little use in churchyards without lockable gates.

Sensor-activated lighting is more likely to be effective as a deterrent to thieves, particularly if they would need to carry stolen material some distance before getting to their vehicle. In general, good lighting works against almost all forms of antisocial behaviour which take place in churchyards.

Zone 3 – On the Roof

Security measures taken in Zone 3 are the most high-technology and expensive, and they should be regarded as the last line of defence after measures taken in the two lower zones.

One of the perceived attractions to the metal thief was the anonymity of the stolen metal – once stripped and taken off site it was very difficult to link it to the building from which it was stolen, which meant that obtaining successful prosecutions against the criminals was nearly impossible. This changed with the invention of forensic marking solutions which are applied directly to the metal.

A forensic marking solution contains a unique chemical “fingerprint” which – though invisible to the naked eye – can be detected using ultra-violet light. It is practically impossible to remove and allows metal to be traced back to the building from which it was taken, thus removing the anonymity of the metal.

There are two commonly-used forensic marking solutions on the market: SmartWater™ which is a colourless liquid like water and SelectaDNA™ which can be obtained as an aerosol or as a grease. Whilst individual insurers have their own preferences both systems are equally acceptable and both have resulted in successful prosecutions against metal thieves. The use of a forensic marking solution is now a condition of church insurance policies where metal theft cover is required.

It is important to note that not only must the marking solution be applied and the appropriate warning signs displayed, the product must also be registered for the insurance cover to be valid.

Forensic marking solutions have a limited life and experience has shown that the compound needs to be reapplied about every five years in order to remain effective.

Roof alarm systems are not cheap, but they are effective. In one case known to the author, two rural churches in Lancashire about four miles apart were targeted by lead thieves on the same night. One of the churches had been fitted with a roof alarm which activated, causing the thieves to flee empty-handed. The other church sadly had no roof alarm and, whilst only a small piece of lead was stolen, the consequential damage to the stonework cost nearly £10,000 to make good.

A typical roof alarm system will cost around £7,000 (plus VAT, which for listed churches can be reclaimed) plus a monthly fee for monitoring.

Insurers offer improved cover for metals protected by an approved alarm system and so when considering a roof alarm it is essential that you seek your insurer's advice. Insurers will provide a specification which your alarm system will need to meet in order to qualify for full cover.

Strobe lighting and / or Security Smoke may also be connected to a roof alarm system to disorientate any criminals who make it on to the roof and to draw attention to the crime taking place.

CCTV systems may be used in conjunction with a roof alarm system but there are disadvantages to doing so. First, there is the cost, which is likely to be a similar sum to the roof alarm if not greater. Secondly, criminals can hide their faces to avoid identification. Thirdly, the CCTV cameras themselves can become a target for theft.



Faculties and Permissions

From 1st April 2020 the Faculty Jurisdiction (Amendment) Rules 2019 come into force which will bring the installation of a roof alarm – including one with an image capture facility – in to List A, meaning that it will no longer require a Faculty. CCTV and the installation of intruder alarms will become List B items which will require the Archdeacon's written permission. Until then, any of these items will still require Faculty permission. The application of forensic marker solutions will remain, as it is now, a List A item.

NB: This summarises the position as it relates to Church of England buildings. Other denominations should check with the appropriate authorities before carrying out any work.

In The Event Of Metal Theft

If you discover that metal has been stolen from your church, your two priorities are to 1) Report it and 2) Prevent further damage.

When you report the incident to the Police, make sure you get them to log the incident as Heritage Crime. This will help ensure stiffer sentences for the perpetrators if they are convicted; it also helps the Police track crimes of this nature and work towards preventing future crimes.

You should also let your insurers know, together with your Archdeacon and the Diocesan Advisory Committee (DAC). If the building is Listed Grade I or II* you must also inform Historic England.

You will need to make temporary repairs to prevent water getting into the building where lead has been stolen from the roof – your Archdeacon should be able to authorise these.

If the theft occurred some time before it was noticed there may already have been considerable water ingress which will need to be dealt with.

If the theft is discovered shortly after it occurred, be aware of the likelihood that the thieves could return. This is particularly true if there is still a substantial amount of metal in place. Increase vigilance, consider engaging a firm of security guards to patrol at night and make sure any items which could assist the thieves on their return are removed. Check to see if any stolen metal has been left nearby – in bins or under bushes, perhaps – for the thieves to collect upon their return.

You will need to begin the process of thinking how the stolen metal will be replaced, either with the same material or an alternative, and how this will be paid for. You will also need to look at improved security measures. You are not alone, however: your Architect, the Diocesan Advisory Committee (or equivalent), your Insurers and your local Places of Worship Support Officer are all here to guide and assist you through this process.

Remember! If you come across an act of metal theft in progress call 999 and inform the Police but do NOT attempt to tackle or challenge the thieves yourself.

Lead or Lead Substitute?

It is tempting, following the theft of lead from a church roof, to imagine that such damage can be prevented from recurring in the future by replacing the stolen lead with a different material. There are circumstances where this is the right approach, but they are few and far between; substitution of lead should never be a default option.

Lead was specified for church roofs from the middle ages onwards for a number of very good reasons. It was a plentiful, naturally-occurring material (there were many small-scale lead mines around the UK), it was easy to work and, once in place, could be expected to last 150 years or more before it needed to be replaced. Any holes or splits could be easily patched by welding on some fresh lead. It also had good acoustic properties, deadening the sound of heavy rain or hailstones on the church roof.

These advantages of lead over any of the potential substitutes mean, even today, that it is still the best material to use despite the risk of theft.

Terne-coated stainless steel (TCSS) is often proposed as a replacement for lead which it does, superficially, resemble. It is far from easy to work: unlike lead which can be worked on-site, all complex details have to be prefabricated off-site. Damage cannot be made good with on-site hot work. The life-span of TCSS is unknown but estimated at about 100 years – it hasn't been around nearly as long as lead – and it lacks the acoustic advantages of lead. Despite being clearly an inferior material, TCSS often works out more expensive than lead when the two are compared against each other for the same job.

TCSS's resemblance to lead means it could be mistaken for it, resulting in an attempt to steal the metal causing damage and disruption.

There are various plastic / polymer compounds available which claim to be lead substitutes. They simply aren't. One such product proudly claims a 25-year service life – even if this is true (it hasn't been in use that long yet) it would need to be replaced six times during the standard life span of a lead roof. In the long term, this is not wise stewardship of a church's resources.

Materials such as plastic sheeting and felt can be used temporarily to keep the building watertight following a lead theft if there is likely to be a delay before lead is reinstated. Plastic sheeting should not be in place for more than

eighteen months as it will start to break down under exposure to the sun's ultraviolet light whilst felt has a maximum life of five years in this context.

Have an Emergency Plan!

Make sure your church is prepared – know whom to call and what to do if your church is unlucky enough to be the victim of metal theft.

Call the Police immediately – 999 if the theft is in progress, 101 otherwise.

At the very least the Vicar (or equivalent) and Churchwardens should have the numbers to hand of the church architect, insurance company, an emergency contractor (24hr number for preference), and the regional Historic England office. All need to be contacted at the earliest opportunity.

It is helpful if you can contact a local scrap dealer who is a member of the Scrap Metal Dealers Association (SMDA) which has a network through which all scrap dealers can be alerted to watch out for stolen metal.

Further Guidance and Information

Historic England, "Metal Theft from Historic Buildings" (2017), available as free PDF download at <https://historicengland.org.uk/advice/caring-for-heritage/places-of-worship/places-of-worship-at-risk/metal-theft/>

Ecclesiastical Insurance offers a self-assessment tool for determining to what extent your church is at risk, available at <https://www.ecclesiastical.com/documents/theft-of-metal-checklist.pdf>

The Lead Contractors Association is the industry body which vets leadwork firms and provides a guarantee on their work. Find out more at <https://leadcontractors.co.uk/>

Scrap Metal Dealers Association: <https://smda.org.uk/>

The Society for the Protection of Ancient Buildings (SPAB) offers advice on roof maintenance at <https://www.spab.org.uk/advice/roof-maintenance>

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