
Fire Prevention in Churches and Halls

Churches and other church buildings are often unique within their communities; some are important nationally for reasons of architecture or contents. Fire protection is important, both for the preservation of the building and for the safety of the users of such buildings. Precautions can be divided between those incorporated into the structure and those carried out by the users.

In addition, from the 1st of October 2006, churches, church halls and outdoor events were brought under fire safety legislation as "Places of public assembly". This aspect is covered fully in Advisory Leaflet 33 'Fire Safety – Legislation affecting Church Buildings and activities' available from the DAC team. The legislation requires you to conduct a 'Fire Risk Assessment' (FRA) of your building(s) and improve the fire protection of the building as a result of any short-comings your FRA discovers. The following are matters that should be taken into account during your FRA and in day to day use.

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1. Structural Precautions

These include:

Fire Compartmentation The building is designed, built or modified to reduce the spread of smoke and flame from a fire. In particular attention should be paid to large roof voids, under-floor voids, towers and other places with difficult access. Such fire separation can either be permanent, or where access is required, by the installation of certified fire-resisting door-sets (ie. doors and frames approved by the Loss Prevention Certification Board (LPCB) [part of the Building Research Establishment Ltd.] or similar schemes).

Fire Venting Roofs in particular can be fitted with automatic vents which open in the event of a fire to release the hot gases and smoke. This reduces the speed of spread of a fire and helps to make easier access for fire-fighters.

Active fire protection These include fitting automatic detector systems to raise the alarm of fire as soon as possible and the use of automatic sprinkler systems to control the fire before it can significantly spread; see paragraph 5 below for more information on these systems.

2. User Precautions

Secure the building against arson attack as much as possible. Within the limits of an 'open church' policy, keep people away from towers, boiler rooms and store rooms. (But display information in the church as to where the keys can be got for access in an emergency)

Electrical equipment See that that the electrical system is regularly checked and tested according to the IEE Regulations (BS7671), that they are not misused and that portable equipment is also in good order. Your electrician should provide the appropriate certificate for any alterations or extensions. Avoid temporary cables wherever possible and when they have to be used place them where the risk of damage is minimal. Never run cables under carpets where they may be damaged unseen, overheat or form a trip hazard. All electrical heating equipment should be fixed and guarded against accidental contact from furniture, paper, books, curtains and the like.

Gas equipment See that this is maintained and checked regularly and that gas heaters are guarded as necessary.

Boiler houses These should be properly ventilated to allow proper combustion of fuel (if a balanced flue system is not used) and to prevent a build-up of heat around the boiler. Keep clear of rubbish. Do not use for storage, particularly petrol lawnmowers or other garden maintenance equipment. (See Appendix for more information on the storage of petrol and petrol-powered equipment.)

Solid Fuel Heating Ensure ashes are removed in metal containers and placed away from the building to cool off before disposal.

Rubbish (including wheelie bins) Remove rubbish as soon as possible from buildings. Store it well away from buildings - if in wheeled rubbish bins secure these away from a building. It is a favourite trick of arsonists to place such a bin next to a building and then set the bin on fire in the hope the building also catches fire. (If stored close to the building, rubbish bins can also help thieves access metal roofs on churches). We offer the following advice:

- Place rubbish bins in a location away from any building
- If a 'wheelie bin' is used, either provide a means of securing it in place or place it in an area where it cannot be easily moved against a building
- If the area is prone to vandalism, consider making the rubbish storage area secure against access by fencing or other means.

Candles Carefully use these, preferably in proper holders. Keep away from curtains, drapes, Christmas trees and other flammable material. All candles should be spaced away from each other; for example the 'nightlight' type of candle should always be at least its own diameter from any neighbour.

Kitchens Many churches have small kitchens; church halls may have more extensive cooking facilities. During cooking there should always be at least one person in the kitchen to supervise and ensure things don't boil over, overheat or put out the gas. It is recommended that deep-fat frying is completely banned and oven-baked food used in preference.

Hot Work Where work, such as lead roofing or plumbing, involving the use of heat-producing tools is being carried out, special precautions should be followed:

- If possible, arrange that all hot work is carried out away from the building
- Ensure that extra extinguishers are available close to the hot work area
- Agree with the contractor a system of issuing 'hot work' permits
- Include in each permit the time in each day that the hot work will cease
- Inspect the building 30 minutes and 1 hour after the work has finished to ensure there is no fire.

Full details will be found in the Ecclesiastical Insurance booklet on fire precautions – see 'Further Reading' below.

3. Recommended quantities of fire-fighting equipment

(These are based on BS5306: Part 8:2012, Code of practice for the selection and installation

of portable fire extinguishers, and extinguishers that are made to BS EN 3 standard.)

- (a) At least two water fire extinguishers with a rating of 26A or equivalent should be provided for floor areas up to 400sq.m. Above 400sq.m the standard recommends a number dependent on floor area. (Small areas of floor, such as galleries, may not need to be equipped if adequate extinguishers are close by, but check against your Fire Risk Assessment and with your insurer.) Equivalents include 'Hydrospray' and other water-additive extinguishers and 'AFFF Foam spray' multi-purpose extinguishers. These are often of 6 litre capacity and easier to move and use than the plain water extinguishers.
- (b) There should be additional extinguishers near to the following equipment:
- Central heating boiler (oil) – foam
 - Central heating boiler (gas) – *using an extinguisher on a gas fire is hazardous* – ensure the location of a gas cut-off valve outside the boiler house is known and clearly marked.
 - Electrical equipment (intake, fuse-boxes, organ blower, etc.) – CO₂;
 - Kitchen with cooking facilities – fire blanket.

Please note that:

(1) Dry Powder Extinguishers: Paragraph 5.4.3 of BS5306-8 recommends that such extinguishers should only be used indoors where an appropriate risk assessment has taken place to account for the hazards of this extinguisher when discharged indoors. In addition the Ecclesiastical Insurance Group requested some years ago that dry powder extinguishers should not be used in churches. The powder discharged from them can cause damage to the building and it may cost tens of thousands of pounds to clear it away, particularly if it gets into organs.

(2) It is recommended that fires in kitchens are tackled only by using a fire blanket and turning off the heat source. A CO₂ extinguisher, previously recommended for kitchen use, may, in inexperienced hands, result in the fire being spread rather than extinguished.

4. Inspections

The fire-fighting equipment should be checked regularly – your FRA should guide you on the frequency. It is suggested that weekly (for churches used during the week) or monthly (for churches used less frequently) to see that:

Each item of equipment is in the right place

It has not been used or damaged

(A written record may need to be kept of such inspections under the fire safety legislation introduced in 2006.)

Professional inspections should be carried out at recommended intervals by a qualified contractor (preferably approved under the British Approvals for Fire Equipment (BAFE) scheme or as required by your insurer) and any recommendations they make should be given due consideration by those responsible for the upkeep of the building (see Sources of Advice at the end of this leaflet). Records of the professional checks on equipment must be kept.

Quinquennial inspection reports should record the presence of fire-fighting equipment. They will also ask if the Fire Risk Assessment required by the legislation has been carried out.

5. Active Fire Protection

Fire protection can be enhanced in two ways. Such enhancement may be able to compensate in older buildings for structural deficiencies which may not be capable of alteration because of the impossibility of so doing.

If your Fire Risk Assessment identifies a risk that may be overcome by the installation of a fire detection system or a sprinkler system, contact the DAC's Consultant on Fire precautions via the Diocesan Office. A separate advice leaflet on Fire Alarm Systems (advisory leaflet 40) is available.

Fire Detection

Modern electronics provides a wide range of detection equipment suitable for use in churches. This includes beam and sampling systems which are particularly suited to the large and historic interiors of churches. The more conventional 'point' type detectors can be used in vestries, storerooms and church halls. Not only does a properly installed detection system give early warning of a fire, it also raises the alarm to ensure the safety of the users. The FRA may show that a fire alarm system is needed to give adequate warning in the event of a fire.

It is preferable that a system incorporating detectors is connected to a remote alarm centre so that the alarm can be raised as quickly as possible when the building is unoccupied as a property protection measure.

An automatic fire detection system should be installed by a company approved by the BAFE Scheme or by the LPCB or by your insurer. The choice of detector for a particular location should be left to the fire alarm company. In churches where incense or many candles are used, this should be discussed with the company to reduce the possibility of unwanted alarms.

Sprinklers

These are a combined detector and extinguisher. A heat-sensitive element opens a valve automatically to release water close to the seat of a fire. Unlike the systems seen in some films, only individual 'heads' open; most fires are put out with 5 or less heads and with much less water, and damage, than the water applied by the Fire Service. At present it is not thought that any church has sprinklers fitted. But owners of historic buildings are coming to realise that sprinklers may solve a number of problems in the protection of old buildings. A ready source of water, mains or stored, and pumps are usually required, so this solution is perhaps only suitable for a limited number of large or particularly special buildings.

6. Church Halls

There are additional fire hazards in church halls compared to those present in the church. It is also likely that for functions there may be larger numbers of people present than usually come into the building. For that reason it is important that extra care is taken to ensure the safety of the building users.

General Precautions

- Emergency lighting and fire alarm systems should be installed as a matter of course and in accordance with the FRA findings. The emergency lighting should include modern exit signs incorporating the 'running man' symbol. Such systems to be regularly checked by the church, and serviced at recommended intervals by competent personnel. Records should be kept of all inspections and tests.
- Keep rubbish to a minimum and remove from the building as soon as possible.

Storage

Always a problem. See that

- passageways and exits are kept clear;
- storerooms have fixed heating and lights;
- stored items are not close to heaters, radiators or lights.

Cooking

- do not leave chip-pans, frying pans or other hot equipment unattended during cooking; (use oven-baked food in preference to frying);
- ensure all cooking equipment is turned off when the cooking is done.

Stages - Scenery, temporary lighting

- scenery should be 'fireproofed' - see any good theatre handbook;
- stage lighting should be checked regularly (before every production and at least once a year) for loose connections, damaged cables and other faulty equipment;
- There should be the minimum amount of equipment stored on stage or in the 'wings' for the safety of performers and the hall.

Exercise Mats

These have a potential for intense burning with considerable smoke production:

- ensure that mats are made of combustion-modified foam;
- store in a room away from any ignition source, see that the door of the room is self-closing, and preferably kept locked;
- consider installing a smoke detector as part of the fire alarm system.

7. Special Functions

For special functions inside or outside the church buildings, there may be larger numbers of people present than usual. There are likely to be additional fire hazards which people may not be used to. For that reason it is important that extra care is taken to ensure the safety of those present. The FRA must include such activities (including outdoor ones) before they take place.

Inside buildings

Temporary Exhibitions

Examples include flower and craft festivals, work of church organisations etc., and may involve the use of extra lighting, computers and notice boards. Fire precautions include:

- keep passages and doorways clear, especially from cables;
- turn off and unplug all extra electrical items at night;
- put up extra EXIT signs for those who do not know the building;
- ensure stewards know what action to take in an emergency.

Jumble sales

These involve the temporary importation of clothing and other flammable materials; in addition the object of such sales is to attract people in - therefore:

- keep exits and passageways completely clear of obstruction,
- ensure all stall-holders know what to do in the event of fire,
- do not offer furniture for sale - unless you can prove it complies with the Furniture and Furnishings (Fire)(Safety) Regulations 1988
- as a matter of good practice, do not offer electrical equipment for sale

Outside buildings

Typical fire hazards include cooking (e.g. barbecues) and bonfires.

- site barbecues and bonfires well away from buildings and marquees;
- ensure that extra fire extinguishing equipment is available, e.g. buckets of water and a fire blanket (DO NOT remove extinguishers from any building!);
- ensure stewards know what action to take in an emergency - ensure there is access to at least one telephone, fixed or mobile.

8. Sources of advice

Independent advice on fire extinguishing equipment and other fire prevention matters is available from the Community Safety section of the County Fire and Rescue Service – see entries in the telephone book. Advice is also available from the DAC Consultant on fire precautions – contact via the DAC team; see below.

9. Further reading

A Guide aimed specifically at the majority of existing churches, and much easier to understand than the official guides, is available:

[“Fire Safety for Traditional Church Buildings of Small and Medium Size”](#)

This was published in 2017 by the Institution of Fire Engineers Heritage Special Interest Group, on which the Diocese was represented. It is available in the list of [Advice Leaflets](#) on the Diocesan website.

This booklet may not be suitable for churches built in the past 30 years or were built from the start as a multi-functional building, or which have seating for more than 300 people; the official guides should then be consulted.

The Ecclesiastical Insurance Group produced guidance and advice relating to fire safety, which is available at <https://www.ecclesiastical.com/risk-management/church-fire-articles/>.

Additional information and advice is available from the DAC team.

Contact details are available at www.stalbans.anglican.org/dac/who-s-who-in-buildings/.

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Appendix 1 – Storage of Petrol and Petrol-Powered Tools

Could your mower bring down the church?

We have found several churches storing petrol-driven mowers in boiler rooms where the burner flame could ignite any petrol vapour leaking from the mower with explosive effect!

We offer this advice to help churches avoid such a disaster. The Ecclesiastical Insurance Company also has its requirements and there are legal limits on petrol storage, which you should know about. In summary:

- **Do not store petrol-powered tools and fuel in any part of a church building.** They are best stored in a separate shed, well secured, that has no ignition source present. See also Advice Leaflet 41 on the construction and siting of sheds relative to other buildings.
- **If a mower has to be stored in part of the church, it should be drained of fuel and this should be done outdoors**
- Petrol can only be stored in the fuel tank of the tool(s) and in approved containers, up to a maximum of 30 litres of fuel, as follows.

Type of container	Maximum quantity of petrol per container	Maximum number of containers
metal	20 litres	1 full
plastic	10 litres	3 full

- To keep more than 30 litres you will need to notify the local Petroleum Enforcement Authority.
- Always refill petrol-powered tools in the open air; never inside any building. Refill well away from any ignition source and with the engine turned off.
- If it is impossible to store mowers etc. in their own shed, then they should be kept in their own storage area. It must have ventilation at high and low level to remove vapour resulting from a leak. It should be separated from the rest of the building by walls and ceiling of 1-hour fire resistance. These walls must be solid without any opening, such as a door, through which petrol vapour could pass into the building. Access should be from outside only and be kept well secured except when the tools are being removed or replaced.
- Exclude any source of ignition from the storage area, e.g. electrical equipment.
- A foam extinguisher should be available in the area or from nearby.

Appendix 2 – Siting and Construction of Storage Sheds

Introduction

An incident at a church in the Diocese, where a wooden shed in close proximity to a church caught fire and caused severe damage to part of the church, has prompted the issue of this Advisory Leaflet.

This leaflet is about small single-story sheds or buildings built for the storage of equipment, such as gardening tools, mowers, or chairs or other items which may not be used frequently. It does not apply to the use of temporary offices or similar 'Portacabin' style buildings, for which the makers/suppliers should supply recommendations about spacing from other buildings.

Construction

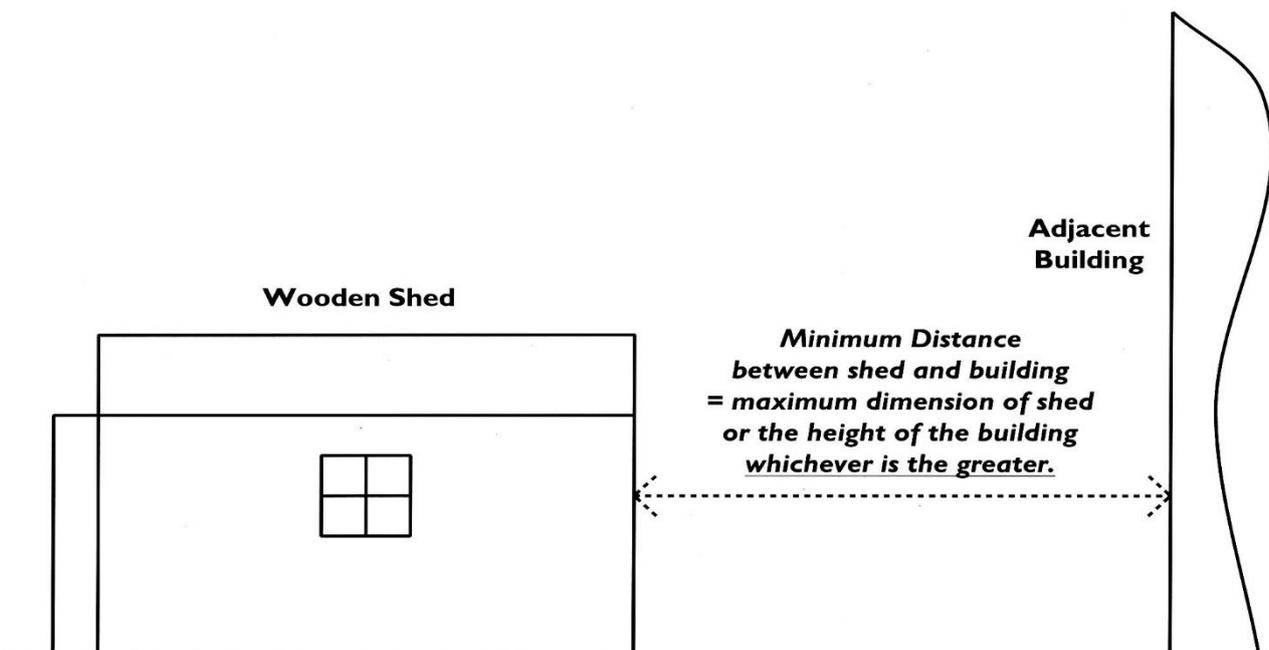
Sheds may be constructed of:

- Wood, which has the advantages of appearance and ease of erection but has the major drawback of being highly flammable and a considerable source of fuel itself. Flame-retardant paints may give resistance to small ignition sources but may not protect against a determined arson attack.
- Metal, which has the benefit of being reasonably resistant to fire but may have security problems and can be susceptible to arson.
- Concrete, which is inherently fire-resistant, but may not be very attractive.

Siting of wooden sheds

These should NOT be placed next to buildings – a space should be left as in the diagram overleaf. Preferably the building should also be on the down-wind side of the main building – in the Diocese the prevailing wind comes from the south-west.

These recommendations are based on the likely height of the flames and the effect of any wind pushing the flames towards the adjacent building.



Siting of sheds close to a building

Where the shed has to be close to a building, then the choice lies between metal and concrete. The following points should be observed for both these types of sheds:

- place near a wall which has no window openings above the shed, if possible;
- no doors or windows in the wall of the shed nearest the building;
- a minimum space between building and shed of 1m (3ft) for metal sheds and 0.5m (1.5ft) for concrete sheds.