



Prevention is Better Than Cure

The maintenance and upkeep of ageing buildings

Introduction

Buildings don't collapse overnight, it takes time for a building to deteriorate, which means there is time to prevent the deterioration from happening. It can be draining on internal resources and finances to constantly have to ensure that buildings are safe and fit for use, especially during the winter months.

During a time of year when environmental factors can cause significant additional problems, we have summarised how effective maintenance can proactively minimise additional damage and get you from being in reactive "firefighting" mode and into a proactive mindset. For larger maintenance issues we suggest considering a longer term plan which will allow the School to keep operations running smoothly without causing a delay in carrying out essential maintenance.

How do you build a maintenance plan?

Assess each building individually;

- What condition is it in?
- Does the building have a lifespan?
- How is the building being used? Is it fit for purpose?
- Could it have a better use?
- When was the roof last inspected?
- When were the gutters last inspected?
- Are there any signs of cracking or subsidence?
- When were the fixed electrics last checked?
- How old is the wiring?
- If there are commercial kitchens, when was the extractor and ductwork last cleaned?
- Do you have a record of local trades people's contact details should you need them in an emergency?
- Is there a budget available for maintenance and repairs?

Historic buildings

Having a robust plan for the maintenance of historic buildings can be less costly than letting the building deteriorate. If these types of buildings are left unmanaged, damage can worsen until urgent repairs become necessary which can far exceed the original costings of maintenance. Additionally, if the building is listed then Listed Building Consent from the local authority may be required before any demolition works or the removal of fixtures commences. Consent may also be required for any alterations or extensions which could affect the character of the building.

Planning permission and building regulations approval may also be required and if a building is in a conservation area but not specifically listed this also may apply. It is always advisable to contact the local authority planning department before undertaking any works. It is important to remember that an insurance policy is not a maintenance contract and will only cover repairs resulting from damage following specified events, such as fire, storm or flood. It is a general condition of insurance that all reasonable steps must be taken to prevent loss or damage to the property insured and to maintain the property in a good condition and in a good state of repair. If a building is poorly maintained and subsequently becomes damaged following an insured loss, the property owner could be required to contribute towards the cost of carrying out repairs.

In addition, it is advisable that you should check your insurance policy for any policy conditions that you need to adhere to. These, for example, could be inspections of roofs and guttering, cleaning in kitchens and electrical testing, you should be able to find these in your policy schedule and associated policy wording. Where you have any unoccupied buildings, be sure to notify your insurance broker as soon as possible as further conditions may apply as well as reduced coverage while unoccupied.

There is a danger that historic buildings could be permanently damaged if repairs are not carried out by skilled persons using the proper techniques and materials. Only reputable professionals with experience of working on historic buildings should be employed. This includes surveyors, architects, builders and other trades. Wherever possible, repairs should be carried out to the historic fabric rather than replacing original features with new materials.

Routine maintenance which does not materially alter the building in any way would not normally need consent. However, maintenance work might require consent if the structure is a scheduled ancient monument. If in doubt its is always best to contact the Local Authority first.



Routine maintenance

Relatively simple jobs, undertaken on a regular basis, can have a significant impact in keeping a building in good order over the long term. The most important aspect of maintenance is the protection of a building from water and damp penetration. All necessary safety precautions should be taken when working at high levels, particularly on roofs. Ladders are a means of access, not a safe working platform. If you do not have the appropriate scaffolding then work should be left to contractors. The use of binoculars to check high level areas like the roof or chimney from the ground can be a safer option if safe access is not available.

The following maintenance should be undertaken reasonably regularly, preferably during the spring and autumn:

Check the roof - to prevent damp and other weatherrelated damage, all roofs should be checked to ensure they are in good order and any missing or slipped slates and tiles should be replaced. Ridge tiles should also be checked to ensure they have not become loose which could allow water ingress, you should also make sure flashings remain watertight. Arranging for a professional to put back a loose or missing slate or tile is much cheaper than repairing or replacing roof timbers. These are all simple protective measures which if undertaken regularly, can save a great deal of time and trouble later by avoiding expensive repair or replacement costs.

Unblock roof valleys, gutters, channels, hopper heads and downpipes - these should be inspected and any debris or blockages cleared after heavy leaf fall, ideally every autumn if not more frequently. This is to ensure a free-flow of storm water and to prevent overflowing, which could cause damage to the fabric of the building. In addition, during cold weather, water, which is unable to drain away will freeze and expand, possibly causing further damage. Are there any leaking joints? Storm drains and soakaways should also be checked to ensure that water is satisfactorily carried away from the structure.

Additionally, if a downpipe is blocked, any trapped rainwater may crack or shatter the downpipe if it freezes. Signs of soil being washed away at ground level or splashes of soil at the base of walls can be an indication that water is not being caught by the gutter. If gutters are fixed to timber fascia boards, check the condition of fascia boards. You can also use a mirror to check the rear side of pipes for cracks and corrosion.

- Does rainwater cascade over the gutter from the roof? Inspect while it is raining and note any leakages
- Does the water pool in any one area?
- Do the gutters slope correctly towards outlets? You can check this by pouring water into the gutter and checking that it drains away
- Are pipes securely fixed to the wall?
- Are there any signs of staining or algae growth, or any washed-out mortar joints, on the wall behind the pipe?

Drainage gullies - inspections should be carried out every autumn and preferably more often. Check that drainage gullies are free from silt, debris, vegetation and other objects and make sure that all gully inlets are covered by a grating where possible. **Pitched roof coverings –** inspect these regularly, especially after storms or high winds. Any debris on the ground will give you an indication of any possible roof problems and a visual check can assist in checking if there are any loose, slipped, broken or missing slates or tiles.

Is there a lot of moss? This could potentially block gutters and pipes or stop water running off the roof. Retained water in moss can cause thatch roofs to rot. Looking for signs of dampness on ceilings or in loft spaces can give a possible indication of roof leaks.

Flat roof coverings - Inspect for any splits, tears, cracks or holes and look for signs of dampness on ceilings or in roof voids as a possible indication of roof leaks.

Repaint - the routine painting of external woodwork can be essential to prevent dampness and the onset of rot. However, painting may not be advisable or appropriate for the structural wood work of a timber framed building. Putty in windows should also be regularly inspected and replaced where necessary, as should the bedding of the window within the wall. In the case of listed buildings and those in conservation areas, there may be restrictions on the choice of colour. The existing colour should not be changed significantly without referring to the Local Authority Planning Department.

Remove plants – climbing plants and creepers, particularly ivy, can cause damage to buildings. It may cause persistently damp walls and can also block roof valleys and gutters. Ivy can also penetrate mortar joints and may eventually cause the cracking of masonry. The excessive growth of climbing plants can also cause damage to foundations. Climbing plants should be strictly controlled or, ideally, removed. Ivy must never be aggressively pulled away from a wall as this could cause damage to both the masonry and mortar joints, it should be removed very carefully.

Re-pointing brick and stonework - re-pointing should always be carried out using a similar mortar type to match the original. For historic buildings, this will usually mean a lime-based mortar. A hard cement-based mortar can lead to cracking and the possible collapse of the walling material. Where joints are eroded, repointing is important as it can prevent water from penetrating joints and causing damage in freezing weather. Where the mortar is soft but the joint is not badly eroded action does not always be required. **Repairs to doors -** where a door has become damaged or decayed, it is usually only in a small part - commonly the bottom rail due to water damage. The replacement of the entire door is not always necessary and the splicing-in of a new bottom rail could be all that is required.

Repairs to windows - as a general rule, repair should always be considered before replacement. Decay will usually only affect a small part of the window and new sections of wood can be pieced-in, thus prolonging the window's life span. The use of UPVC is usually unacceptable for historic buildings.

Plasters and renders - plaster or render should not normally be applied to a surface that is not already rendered. However, where there is evidence of an earlier, lost render, there may be good technical reasons for reinstating one of an appropriate traditional composition. In the case of listed buildings, Listed Building Consent would usually have to be obtained before doing so, particularly externally.

Where repairs are being carried out, it is necessary to identify the type of plaster or render which was used in order that a similar type may be used for the repair. The colour, texture and porosity of the new render should be the same as the existing. Traditional limebased materials are often used, waterproof renders such as modern, hard cement renders are often not as these can produce an impermeable skin which can trap moisture, causing damage to the underlying fabric of the building. Render should not be painted with modern, waterproof paints, which will not allow a building to breathe. Limewash is the traditional protective coating for lime plaster and is suitable for limestone, lime render, wattle and daub, and cob buildings. Limewash allows a building to 'breathe' so that any moisture may evaporate and not become trapped in the walls.

Exterior and the base of walls - Look for defects in stonework, brickwork and rendering such as cracks, deep erosion, missing pointing or crumbling. Is there any deep erosion or missing pointing in the joints? Are there any cracks? Any green staining, algae or vegetation that might suggest issues with drainage systems, flashings or weathering details? If so, the removal of plants and vegetation growing on or close to the building could assist issues.

Check to ensure that ground levels are at least 150 millimetres below the level of any known damp-proof course or 150 millimetres below internal floor levels and ensure that vents are not obstructed.

Cleaning stone, brickwork and timber - the cleaning of listed buildings may require Listed Building Consent. If you are in any doubt, contact your Local Authority Conservation Officer. Cleaning should only be undertaken if essential as part of a wider scheme of repair and should always be carried out by experienced contractors. The nature of the material to be cleaned should be correctly identified, including the type of brickwork and the type of stone. The degree of resistance to cleaning, of both brick and stone, will vary depending on the hardness of the material.

Areas which are not being cleaned, such as doors and windows, should be properly protected during the cleaning process. The three principal methods for cleaning both brick and stone are washing, mechanical and chemical. Expert advice should be obtained before embarking on any cleaning process as any damage is likely to be irreversible.



Heating and electrics

Damage to historic buildings can often be caused by poorly maintained heating systems and electrical installations. Old pipework can leak and cause water damage and due to the increased number of electrical appliances now in use in most buildings, old electrical wiring can become overloaded, heat up and cause fires.

Gas fired central heating systems should be subject to an annual maintenance contract with a Gas Safe registered installer. The annual maintenance check should include all radiators and pipes as well as the boiler itself to ensure there are no leaks.

Oil fired boilers should be subject to an annual maintenance contract by an OFTEC registered technician. Oil storage tanks should be protected with a bund or catch-pit to collect any oil which may leak from a damaged or ruptured tank.

All water installations including pipes and tanks should be adequately lagged to protect them from freezing in colder weather.

Every five years, or ten in the case of residential properties, electrical installations should be checked for safety by a qualified electrical contractor. Poor maintenance of the electrical systems can lead to fires, especially in listed buildings where electrical wiring is often old. Any defective wiring or equipment should be brought up to the relevant standard under the present Institution of Engineering and Technology (IET) Regulations.

Alterations or extensions to the fixed electrical system should always be carried out by an approved contractor. Only electrical contractors with full scope registration or membership to work on commercial installations with the National Inspection Council for Electrical Installation Contracting (NICEIC), The Electrical Contractors' Association (ECA), The Electrical Contractors' Association of Scotland (SELECT) or The National Association of Professional Inspectors and Testers (NAPIT) should be employed.

Electricians or electrical contractors who are only registered to undertake work on domestic installations under Part P of the Building Regulations should not be used unless the building is solely occupied as a private dwelling.

Chimneys and flues

Open fires are often found in historic buildings and routine maintenance is necessary to reduce the risk of chimney fires. This is particularly the case with thatched properties. Chimneys in use should be swept at least annually, preferably by a member of The Guild of Master Chimney Sweeps or a HETAS approved chimney sweep. Generally, the chimney should be swept at the end of the 'burning' season and just before the start of the next. Depending on the type of fuel used, the chimney may require sweeping more often.

Chimneys should be regularly examined to ensure they are not damaged, checking for cracks, loose or bulging stones or brick, and badly eroded or open joints. Chimneys should also be inspected at least once every 3 years by a HETAS registered chimney engineer to ensure the liner and brickwork remain in good condition. If there is any evidence of damage, repairs should be undertaken before the chimney is used again. It is important to conduct regular visual checks and can be checked from the ground using binoculars; Are the chimney stacks or chimney pots leaning? Are any chimney pots out of position? Is there any vegetation growing out of the chimney?

Other considerations

Temporary heaters

Should your main heating system fail during the winter months you may wish to consider using electric convector or fan-assisted heaters which have thermostatic cut-outs that operate in the event of over-heating, these are often used as a temporary measure.

Liquid petroleum gas (LPG) heaters give off lots of water vapour which can have an adverse effect on the building and can lead to the onset of rot in woodwork. If they are used, cylinders should be kept to a minimum and preferably changed in the open air in a wellventilated area away from any source of ignition.

Electric radiant heaters and paraffin/oil fired heaters should avoid being used as they carry a higher risk.

Portable heaters should be sited well clear of combustible materials and, where possible, protected against the possibility of being knocked over or moved accidentally by the fitting of guards. Temporary heaters should not be left unattended for long periods or used when the building is unoccupied and should never be moved when switched on.

Pathways

There is a duty of care to ensure that any staff, service users or visitors to your organisation are safe. Unfortunately, slips and trips can happen, particularly when there is ice and snow on the ground. By introducing some suitable procedures to make access routes which are affected by ice, frost or snow, safe can assist in mitigating the risk.

This includes, identifying the outdoor areas used by pedestrians that are most likely to be affected; monitoring the temperature and weather forecasts to identify when adverse weather may affect access routes; gritting areas prone to be slippery in frosty or icy conditions; diverting pedestrians to less slippery walkways and cordoning off those that are unsafe; and keeping them informed of which car parks and access routes are open. Providing adequate lighting to ensure people are able to see and avoid hazards on the ground is particularly important during winter months with darker mornings and evenings

Water Leaks

Water leaks that go unchecked can cause thousands of pounds worth of damage and properties can take months to dry out before repairs can be completed. You may, therefore, need to relocate to alternative premises in order to continue to operate in the event of an incident.

If a small water leak were to quickly escalate into a much larger loss, whilst your insurance policy may provide cover it cannot compensate for the inconvenience and disruption you may face. Acting quickly when you discover a water leak can mean the difference between a small clean up job or extensive damage and inconvenience.

What to do if you find a leak

Did you know that the potential water loss from a burst pipe can be as much as 400 litres an hour - that's about the same as four full bath tubs of water! So whenever you find or suspect a leak, you should take immediate action.

- Turn off your water supply at the main stopcock
- Turn off the electrics and heating
- Drain the water systems by turning on your taps
- If it's safe to so do remove items at risk of damage to a dry area
- If water is seeping through ceilings and it is safe to do so, try to collect it in a suitable receptacle
- Again only if it is safe to do so, if a ceiling is bulging you can consider piercing it to release the water and prevent the ceiling collapsing.
- Never touch wet wiring or electrical items.

Remember that if electrical wiring or equipment gets wet to always consult an electrician before using again.



Tips for preventing leaks

- Periodically check your stopcock to ensure it turns on and off easily
- Have pipework regularly inspected and maintained by an accredited plumber such as a member of the 'Association of Plumbing and Heating Contractors', 'Chartered Institute of Plumbing and Heating Engineers' or 'WaterSafe' approved plumber. WaterSafe is a free online search facility funded by the water industry to help you find competent and qualified plumbers in your area
- Arrange for your pipework to be routinely inspected and maintained. Keep on top of simple maintenance jobs like fixing dripping taps. Investigate leaks and damp patches at the earliest opportunit**y**
- Check water tanks and cylinders for any corrosion and arrange for central heating systems to be maintained annually
- Install a frostat to your heating system, lag or fit trace heating to exposed pipework where there is a risk of freezing
- Know the location of your stopcock and other isolation valves. Periodically check them to ensure they operate properly. Stopcocks are often found under a sink or in garages. Location labels can be used to highlight where they are in the event of a water leak
- Consider introducing additional isolation valves if you have a complex water system e.g. at individual floor level or to individual appliances

If the property is going to be vacant for an extended period, consider isolating and draining down the water supply or ensure heating to the property is maintained to at least 10 degrees Celsius. Please note, it may be a condition of your insurance policy to isolate building services during extended periods of unoccupancy. If you are unsure, check with your insurer

- Never leave the plug in water basins or baths
- Install leak detection devices in high-risk areas. These devices will detect a water leak in the earlier stages, can raise an alert and isolate the water supply, minimising the damage caused. They can also be linked to building management systems (BMS) or offsite facilities to support remote monitoring
- Flow detection devices may also be considered. These monitor the flow of water in the pipework to your property and isolate it if abnormal flow conditions are detected
- Locate high value items clear of any overhead water tanks or pipework
- Select and use appropriate plumbing products. You should use products that meet the requirements of the Water Supply (Water Fittings) Regulations. The Water Regulations Advisory Scheme (WRAS) operate an approved products scheme which may assist
- Check your business continuity plans contemplate
 water leaks and how you will respond

Burst pipes

The cost and inconvenience caused by a burst pipe can be considerable. Just a small fracture can release gallons of water, damaging masonry and plaster, carpets and other contents.

- Make sure the boiler and heating system is serviced regularly and check that the thermostat is working correctly
- Check the insulation on your water pipes and cold water tank those in an attic or other vulnerable spaces should be lagged or similarly protected
- Make sure any external taps are turned off and disconnect any hoses/ check the insulation
- Keep your heating on throughout the winter months

How to stop a burst pipe

If a pipe does burst, you can turn off your water to prevent further damage by turning off the water supply at the stopcock, opening taps in the property to safely release water from the system to drains and try to catch any excess water in a bucket or other container. Do not use any electrics if you believe these may have been affected by the escaping water. You will need to get the electrics checked by a qualified and competent electrician for safety reasons.

Devices are available which can detect excessive water flow and either send a warning or automatically turn off the water. Leak detection systems are also available, which send a warning to a designated person enabling them to take appropriate action and hopefully mitigate any damage.

Frozen pipes

Fixing frozen pipes in particular can be costly, an insurance claim caused by pipes bursting due to freezing is on average much more expensive than any other escape of water claims.

If you discover a frozen pipe, don't wait for it to burst. Turn off your water supply and then slowly thaw the affected pipe by introducing gentle heat to the area, such as with a hairdryer, heater or hot water bottle.

Do not attempt to thaw the pipe with a blow torch or other open flame.





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