



# Historic Buildings

A conservation guide for owners



## *Introduction*

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This advice presumes that the owner of an historic building has bought the building because they prefer old buildings to new. In addition that the building is appreciated for what it is rather than being seen as raw material to be swept away for a property development programme.

The first words of advice to a first time owner of an historic building has to be "don't panic". Buildings do not tend to fall down and time should always be taken to get to know the building before large sums of money are spent to prevent suspected imminent collapse. Help is available from your local conservation officer or specialist historic buildings surveyor. (The conservation officer advice is free). A check list of suspected or expected items of repair should be drawn up.

If the building has been owned by someone whose main concern had been to live in a "modern" house then inappropriate repairs by builders unused to the idiosyncrasies of a traditional building may have been carried out. Again, do not panic as there is usually a good solution for poor repairs.

This is not is not an exhaustive "how to renovate your house" book, but hopefully a guide to the first points to be considered when deciding upon conservation.

Cement pointing accelerates stone decay - Photo: Mark Clitherow



## *Damp*

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Damp is not uncommon in old houses and is the main source of worry for owners and surveyors who are not familiar with old buildings.

Damp is usually the result of one or all of the following three things; lack of maintenance, inappropriate repairs and cutting off ventilation.

Lack of maintenance can range from simply failing to unblock gutters and neglecting roof repairs to the less obvious like allowing outside ground levels to build up against the house walls.

Of course these simple maintenance tasks need to be carried out even on new houses but on older houses such neglect has had longer to cause damage.



Results of water ingress - Photo: Alan Simons

## *Sources of problems*

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A sound roof and sound footings are the key to solving problems. Keeping a roof in good repair is obvious, what is less obvious is how to keep damp out of the walls. The simple answer is you don't and any attempt to do so will exacerbate the problem. This statement perhaps needs qualifying. The use of inappropriate materials can cause problems. The problems start when water enters the wall and is not allowed to escape easily. Walls must be allowed to "breathe". Water from the ground or in the form of rain will always get into the walls, but with the use of the appropriate materials on the surface of the wall the water can easily return to the atmosphere. Traditional building materials do not trap moisture within the walls. Most traditionally built buildings have solid walls; many do not have substantial



foundations and probably do not have a damp proof course (DPC) or damp proof membrane (DPM), but remember they have managed to remain standing this long and therefore the original construction method must be sound.

The use of modern, less permeable materials trap water within the walls. The natural first reaction to this scenario is to apply harder and harder materials to the wall in an effort to keep the water at bay. Hair line fissures in the hard render allow water into the structure but prevent its escape. In a stone building the water will cause internal staining and an unhealthy atmosphere but in cob building the effect can be disastrous. When cob is encased between two hard impermeable layers of render and plaster, the material can on occasion become so saturated with water that it reaches a stage where it becomes fluid and slumps causing the house to collapse.

Ink cap fungus. Even major fungus growth will disappear when the water is eliminated and the house dries out.

- Photo: English Heritage

## Atmospheric moisture

People, pets, heaters and cooking appliances give off moisture. If the house does not have sufficient ventilation the moisture will cause problems. Without adequate ventilation from elsewhere, sealing doors and windows and blocking ventilation bricks has the effect of trapping moisture laden air within the building.



Keep ventilation ways open – Photo: Mark Clitherow

The warm damp air condenses out against cold window glass and runs down onto the wood work and causes decay. Moisture will also condense out against hard internal plaster and then find its way into the wall's main structure. If this continues the wall becomes water logged across its thickness, this is known as a cold bridge. A cold bridge will cause the problem to accelerate.

## Chimneys

Blocked fireplaces with unventilated capped chimneys have a two-fold effect on the health of the building. A blocked-up fireplace with a poorly maintained chimney acts as moisture reservoir when rain enters the chimney on wet days. Lack of ventilation through the chimney stack allows damp to build up in the building.

The water can also react with the remains of the soot and form corrosive compounds which destroy bricks and stains internal finishes. An open fireplace not only provides a source of warmth but also helps with ventilation. If a fireplace has been blocked provision must be made to allow air to be drawn up through the stack and out through the top of the chimney.

An unused chimney with no capping provision – Photo: Mark Clitherow



## *Pest infestation*

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An adult woodworm - Photo: English Heritage



A deathwatch beetle grub - Photo: English Heritage

Damp within a building will also allow the appearance of the next big worry for home owners, the dreaded woodworm and wood rot. The activities of both these organisms are desirable in the natural environment but not in the home. Insects and wood rots both need moisture to thrive and consequently the best way to avoid them is to keep the building dry.

Drying out a building will put an end to them, however drying out cannot be an instant process.

Where these two problems are evident some localised treatment to eradicate them immediately will stop them spreading while the building is given time to dry out.

## *Checking the roof*

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As damp is the common cause of problems to a building's structure, then keeping water out, or allowing trapped water to escape, are the main priorities. A good roof is essential so the first step is to check the roof for defects. An undulating roof is not a problem but missing or slipped tiles and slates will eventually lead to leaks. If you have access to the roof space and can inspect the underside of the slates and battens you can easily spot the signs of water ingress by the stains left behind by the leaks.

Remember if evidence of water ingress is found, the water could be entering through a hole well away from the internal evidence. Holes in the roof can allow water to run down timbers or partitions to emerge internally some distance from the fault. In the case of



Access your roof void and inspect timbers – Photo: Mark Clitherow

that a preliminary visual check for any obvious loss of material, badly eroded ridges or valleys should be made. A thatched roof can look as though it is in a precarious state without it necessarily having any leaks. It is always worth having a thatcher's view on the state of the roof and of any repairs they consider are necessary.

Consult the conservation officer if total stripping of the thatch is advocated. Even a leaking thatch roof does not mean that the whole roof needs stripping back to the timbers. A new top coat, ridge or work to the valleys is probably all that is needed. Only when a building has been badly neglected and a substantial amount of base coat has been allowed to rot will it need to be totally rethatched. Some thatched roofs contain base coats that date back to mediaeval times and every effort should be made to preserve this material.



A typical thatch in good repair, the horizontal sways showing the repaired areas. – Photo: Mark Clitherow



Check all guttering for effectiveness whilst it is raining - Photo: Alan Simons

## *Rainwater*

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Gutters and down pipes are best checked in the rain to find out if they are overflowing or leaking. Also check that the water that has been captured by the gutters and down pipes is carried away from the building by adequate drains or gullies. If any part of this system is not functioning correctly then they should be inspected for blockages. If all are running freely but still not coping with the amount of water, then rainwater goods with a greater capacity should be considered. If the roof needs repair, having the flashing, chimneys, gutters and down-pipes checked and repaired at the same time will save money in the long run.

## *Fireplaces*

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Before roof work is carried out it is worth considering if fireplaces are going to be unblocked and reused. If a fireplace has been blocked for some time, debris has probably accumulated within the flue and access from above is sometimes necessary for repairs. If unblocking a fireplace for reuse, a check should be made for any blockages in the flue. Before a newly unblocked fireplace is going to be used for the first time an experienced chimney sweep should be asked to check for defects in the flue. If the

Unblocked fireplaces can help a damp building to dry out - Photo: Mark Clitherow



chimney is to remain unused, then ventilation provision should be made at each hearth with an uninterrupted flow to the chimney pot. This should be provided with protection so that rain cannot get in but air can still get out.



A professionally cowled pot  
- Photo: Mark Clitherow

## Walls

The presence of cracks in a wall does not necessarily mean huge structural problems. The analysis of the reason for cracking is a matter for skilled interpretation and if cracks are a cause for concern, then a structural engineer with experience in traditional buildings should be consulted. Cracks can be present in the wall for a number of reasons and although visible may be the result of past alterations or defects and may no longer represent a threat to the structural stability of the building. It is usual for houses to move slightly with the changes in the weather and the seasons. Houses built with traditional methods and materials can cope with these changes.

### The action of water within walls

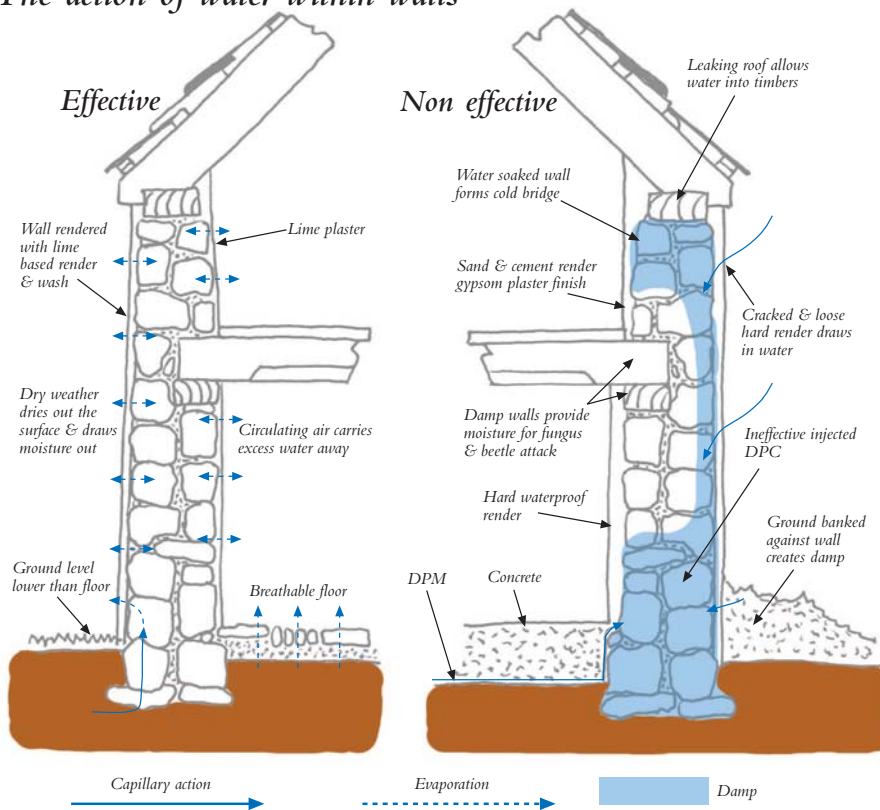


Illustration: Mark Clitherow

## *Rigid materials in flexible buildings*

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Problems are caused by the inability of non traditional, rigid plasters and renders to cope with any movement in the building. Cracks appear in the hard render which allow water to penetrate. Traditional lime render allows the building to "breathe", that is to say it does not trap water in the wall. Any rain that is absorbed by the wall returns to the atmosphere through the natural actions of the sun and the wind on the walls surface. The building will perform better in the absence of these rigid materials and by far the best remedy is to replace them with a more appropriate material. Lime based renders and plasters without any Portland cement are the best option. This approach will provide long term benefits for the building.

Although a wall that is entirely covered with a soft render performs well, localised patching of a hard rendered wall with soft materials is not effective. Water will always find its way behind the hard render and get trapped there. Always replace like with like. Rigid materials have the worst effect near ground level. If the option to replace the whole of the hard render cannot be taken a good solution is to remove the bottom two feet of the render and break the contact between it and the ground. This should ensure that any moisture in the walls at this level is allowed to escape into the atmosphere rather than travelling further up the wall. The cut back render should be finished with a drip edge so that water running down the walls is not guided into the base of the wall.

Lime putty supplied in airtight container - Photo: Mark Clitherow



## *Ground surfacing*

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Materials such as concrete or tarmac should finish at least two feet away from the wall. A continuous impermeable material should not surround the house. Any water trapped below an impermeable ground covering will focus on the walls as an easy route back into the atmosphere. In general, ground level on the outside of the house should ideally be level or lower than the inside floor. Flower beds or resurfaced pathways against the house tend to allow the outside ground level to gradually rise. These levels should be reduced in order to allow the lower part of the wall to breathe. It was not usual to provide thatched buildings with gutters. Thatched buildings were usually provided with generous overhangs to shed water away from the house foundations. It was common practice to leave the earth bare around the building but a gravel surface is preferable to earth or flower beds as moisture will evaporate more readily. A later practice is to install an aggregate filled trench around their perimeter to deal with the water running off the roof. These trenches are commonly known as French drains and unfortunately over the years they have a tendency to become covered with soil and cease to act efficiently. Again, reducing outside levels will increase their efficiency or allow them to be dug out and refilled with clean aggregate.

## *Land drainage*

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It was not common practice to build a house in places where water would cause a problem. Over the years surrounding land drainage patterns may have been altered and water courses re-routed, this can have an effect on the building. Therefore if the house is suffering from the effects of water logged ground conditions, any simple drainage system that was installed previously may need to be augmented. If, for instance, French drains are excavated the opportunity can be taken to install modern ground drains below the aggregate to guide water away from the building.

## *Internal wall finishes*

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Internal walls are easier and less expensive to deal with. After the remedial work has been carried out to the drainage system and to the external walls to stop water ingress, it is worth allowing time for the building to dry out before carrying out any work to the internal wall finishes that have suffered from the damp.

When inappropriate materials are applied to a traditional building the effect they have is not immediately apparent. The effect is long term and owners do not always appreciate that any damp problems the house is presently suffering from, may be caused by inappropriate work that had been carried out at an earlier date. Ideally walls should be stripped of modern paint

or paper. In the majority of cases, if done carefully, the original lime plaster walls will still be found. Once the original plaster is exposed it can be repaired or re-plastered with a new lime plaster and finished with a breathable paint. Traditionally the finish would have been a distemper or lime wash.

### *Damp proof courses*

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The retro fitting of DPCs is not an exact science. Without completely dismantling a wall and installing a continuous waterproof layer above a buildings foundations, a guarantee cannot be given for a DPCs effectiveness. DPCs are often insisted on by mortgage lenders. The mortgage company usually has a standard form asking if a DPC is present. Their forms do not allow for manoeuvre and it is up to the home owner to employ the services of a suitably qualified surveyor to explain to the company why a DPC isn't present: the reason why it is not needed, that there is no proven way to install one and why it is undesirable to try and install one in a wall of solid construction. Most mortgage lenders are reasonable and can see why their standard form cannot be applied to some older properties.

### *Windows*

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Most traditional buildings have windows of either wood or metal of various designs and all can be repaired. On very old windows every effort should be made to retain the maximum of historic fabric. There are specialists who can carry out the more demanding tasks like frame repairs or re-leading for example.

Windows are one area of work where an inexperienced home owner can undertake renovations given patience and a few tools. Often careful stripping back of many layers of paint and rust, with a little attention to the hinges can transform a window's operation and improve its effectiveness at keeping out draughts.



Typical sash window. Wooden windows can give good service for hundreds of years with simple maintenance. - Photo: Mark Clitherow

## *Window failure*

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In the recent past modern machinery has allowed wood of dubious quality to be processed into window components. The result of this has given wooden windows a reputation for poor performance, but this ignores the many wooden windows in perfect working order that can date back hundreds of years. Premature failure is usually restricted to fairly modern casement windows where, if badly rotted, consideration should be given to complete replacement with a better quality window and the opportunity taken to replace it with a window suitable for the character of the house. Plastic windows can never reproduce the fine detailing often found in period joinery.

The latest manufacturing techniques allow the suppliers of wooden windows to give long product guarantees. Where a good quality window is suffering from recent neglect, refurbishment is the best route. Piecing in good quality timber to replace failed elements can prolong the life of a window. While refurbishing windows the opportunity can be taken to upgrade to higher draught proofing standards. Windows that are an odd shape but always open and close properly are not a problem. They have got their odd shape from some earlier movement of the building which has now stopped. The windows have been altered to accommodate the movement and are now at rest. Older windows can seldom be modified to accept double glazing, but an effective alternative is to install secondary glazing, where a separate frame houses a second layer of glass.

## *Ground floors*

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Ground floors can present a challenge to new owners for a number of reasons. A large number of houses have their ground floor surfaces in direct contact with the earth. This may not be a problem until they are covered over with a non permeable material. Fitted carpets are not desirable because they tend to inhibit the passage of moisture between the ground and the atmosphere. If the previous drainage guidelines have been followed excessive amounts of water should not be trying to escape through the floor.

When the original floor surfacing has been removed then concrete has often been laid either with or without a DPM. Again if the guidelines have been followed the moisture from under the floor (which is now trying to escape via the walls) can be coped with by walls that are able to "breathe". However if the walls cannot easily cope with the extra moisture then consideration ought to be given to the re-installation of a floor with ventilation beneath. Another option, if space allows, is for a suspended floor to be installed above the concrete complete with an adequate airspace between to provide ventilation.

### *Typical 1st floor construction*

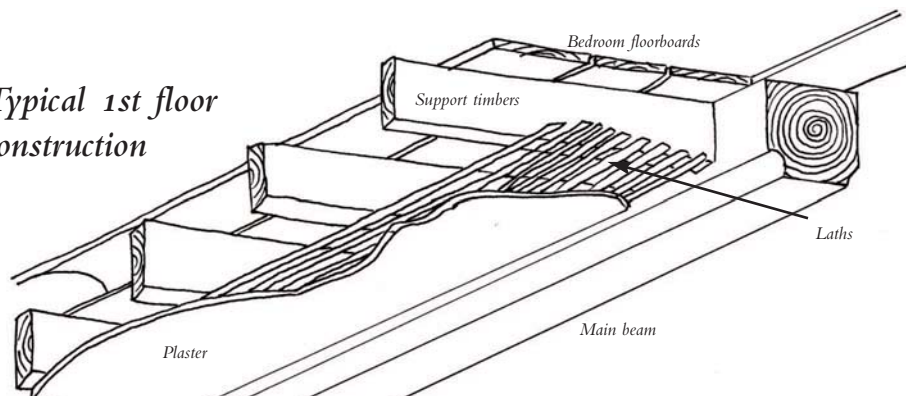


Illustration: Mark Clitherow

### *Upper Floors*

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First floors in older buildings often depend upon substantial timbers to carry their weight. These large timbers are built into the wall and can usually be seen from the ground floor. Traditionally the smaller section timbers that make up the rest of the floors structure are covered with laths and plaster. The more recent fashion has been to remove the laths and plaster and expose the floor joists. This exposure makes inspecting them very easy. Some movement and shrinkage at the point where one timber meets another should be expected.

In the past many floors were built from smaller section timber than would be specified in today's buildings, however even if they are slightly springy when walked over, there are two things in favour of these floors. One is that they were usually built out of better quality timber and the other is that they are still functioning as intended. Gaps between floors and between floors and skirting boards could be evidence of earlier movement within the building. Repairs to fill these gaps should be monitored in order to ascertain whether the building is still moving. Again care must be exercised in ensuring that no unnecessary modifications are carried out to structures that are functioning properly.



Exposed beams - Photo: Mark Clitherow

## *Timbers in walls*

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The main point of inspection should be at the place where the ceiling beams enter the wall. If the timbers have become damp either now or in the past they will have produced the perfect conditions for beetle or fungus attack. If the wall is dry the conditions for these pests no longer exist and they will not be active. However if the damp conditions have prevailed over a long period of time the attack might have reduced the amount of good timber available to act as support and a strengthening scheme might be needed to restore structural integrity to the floor. Check the area immediately below where these ceiling timbers enter the wall. The timbers rest on a stone or timber pad. Stone pads do not usually present a problem but timber embedded in a damp wall can be a source of failure. Inspecting these elements of the structure is a little more difficult as they are generally covered with plaster. The obvious sign of a failed pad is cracked plasterwork beneath the beam. If the wall is going to be re-plastered leave enough time between hacking off and re-plastering to inspect and replace these pads if necessary.

## *Beams over windows*

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Floor beams are often supported on the lintels above windows. If the lintels are failing through decay their load will be transferred to the window frames which are likely to distort. Sometimes alterations to a window to accommodate resulting distortion are a clue that the lintel needs repair. Of course odd shaped windows that function correctly may just be a sign that the building has settled in the past and now form a curiosity rather than indicating impending collapse.



Typical exposed beams allow easy examination  
- Photo: Alan Simons

## *Summary*

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The advice contained in this booklet is intended to give the first time owners of an older property a brief outline of the first thing to look for when considering a purchase or starting repairs. It does not remove the necessity of getting advice from a surveyor who has a good track record of dealing with this type of building.

Looking at the areas highlighted within these pages should help the owner or prospective owner towards the understanding of a building's structure and the way in which it works. This basic understanding of how the building works should help when engaging professionals to carry out surveys or repairs to your house.

## *Listed Building Consent (LBC).*

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If your historic building is listed you will need to apply for Listed Building Consent for works that affect the character of the building. LBC must be applied for before you carry out any works that are not classed as simple repair or maintenance. LBC must be applied for if any works are carried out to the inside or outside of the house including any work within the building's curtilage that affects its setting.

If you would like to speak to the Historic Buildings Officer or a planning officer from the Exmoor National Park Authority prior to any formal application please see details below. An information leaflet about listed buildings is available from the Authority or at our website at [www.exmoor-nationalpark.gov.uk](http://www.exmoor-nationalpark.gov.uk)

## *Help and advice*

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For further information or to arrange a site visit please contact Mark Clitherow (Historic Buildings Officer) or the Planning Department, who will be pleased to advise you.



Working to ensure that Exmoor remains beautiful for all to enjoy, in harmony with a thriving community.

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