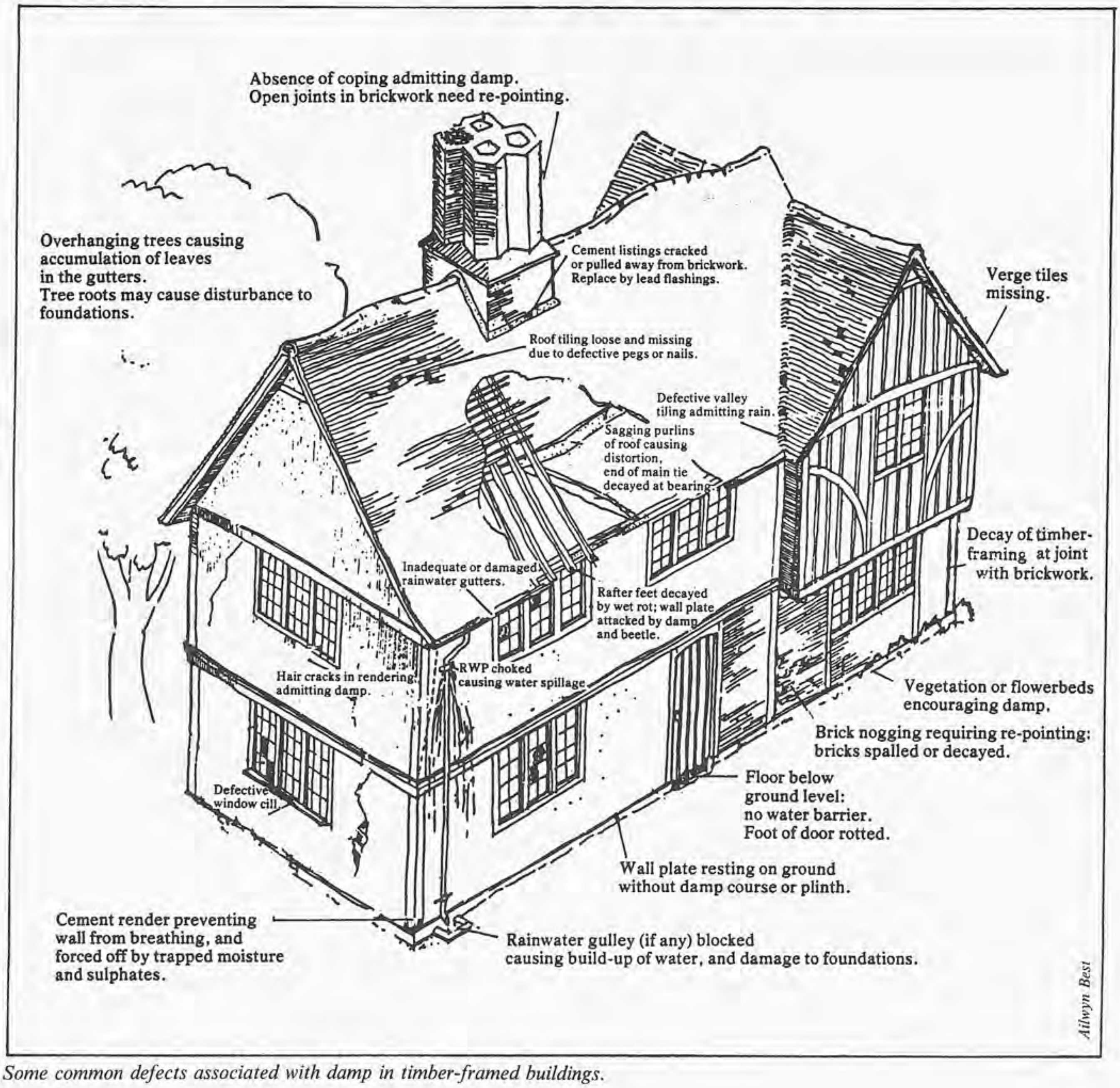
Society for the Protection of Ancient Buildings

Treatment of damp in old buildings

Technical pamphlet 8 by Andrew R. Thomas AA, Dipl. RIBA

Contents

There are various forms of decay which commonly afflict the fabric of old buildings. Most of these can be attributed, in one way or another, to the presence of excessive dampness. Water containing impurities carried up from the soil or from the wall itself can attack building materials physically or chemically and damp conditions encourage the growth of woodrotting fungi, the infestation of timber by woodboring insects and the corrosion of metals. Excessive dampness inside buildings can damage decorations and furniture and create conditions which are uncomfortable or harmful to the health of the occupants.



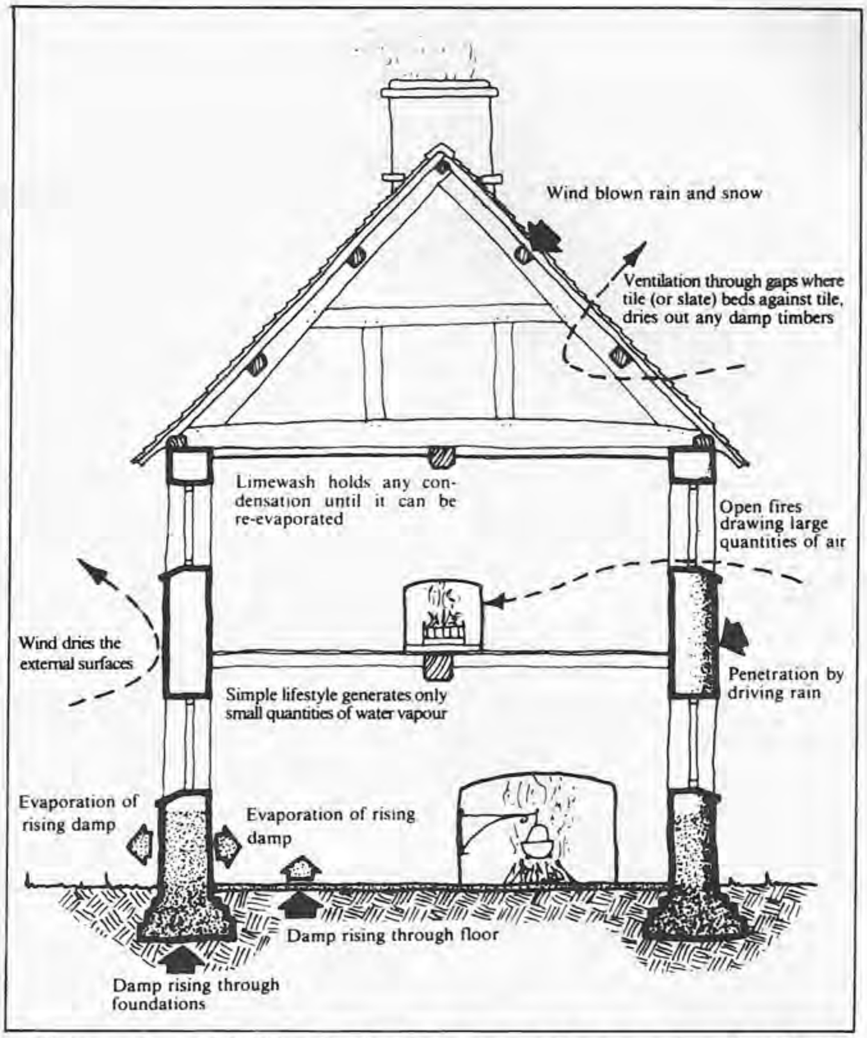
Some common defects associated with damp in timber-framed buildings.

1 The causes of dampness

Most building materials are porous to some degree and will absorb small quantities of water from the air. This moisture content, which varies in response to changes in the humidity of the surrounding air will not usually damage the material nor induce decay. It is quite normal to find structural roof timbers containing 12–16% of water (by weight). The timber is not susceptible to fungal attack until its moisture content has been raised above 21%. This is generally caused by leaks, condensation or contact with damp masonry.

Traditional building materials such as stone, soft brick, limewash and lime based mortars and plasters are more porous than their modern substitutes. They will therefore absorb more water but have the advantage of allowing it to evaporate freely under drier conditions.

Most old buildings have solid walls, no damp-proof courses and no roofing felt beneath their tiles or slates. Heavily driving rain or rising damp from the soil can both enter.



1. Diagram of an old building showing the movement of moisture through traditional materials

Before central heating was commonplace, buildings were heated by open fires which drew in large quantities of air through loosely fitting windows and doors. This high rate of ventilation would have quickly evaporated moisture from porous internal surfaces while the wind dried out any damp roof timbers or porous external wall surfaces. (Fig. 1)

Modern standards of comfort and warmth, with a consequent decrease in ventilation, and the use of certain modern materials for decoration and repair, have perpetuated and even caused persistent dampness in many old buildings. It must not be overlooked that in later buildings, say post 1830, newly installed central heating, if not modulated, can cause by its high rate of drying out, massive efflorescence on the internal plaster surface. At a later stage however, the central heating can ameliorate this first destructive effect by the subsequent greater warmth and dryness in the atmosphere.

Rain penetration and spillage

Rain penetration can be caused by the effects of incorrect design, bad workmanship, structural movement, the wrong choice of or decay of materials, badly executed repairs or the lack of routine maintenance.

Roofs, chimneys and parapets, being the most exposed parts of a building are particularly susceptible to rain penetration. In the absence of roofing felt, rain or snow can be driven into the roofspace through cracked or displaced tiles or drawn through cracks in leadwork by capillary action. The abutment of a roof to a chimney or parapet is vulnerable, particularly if cement mortar has been used to seal the junction instead of lead flashings, although fillets of properly gauged lime mortar have been used successfully for this purpose.

Leaves, moss and dirt will quickly build up in gutters obstructing the free passage of water and causing leakage or overflow. Leakage from parapet gutters is particularly serious because the spaces beneath tend to be warm, unventilated and contain the bearings of the roof trusses. Dry rot originating from blocked or defective parapet gutters has led to the destruction of many old buildings. A downpipe will often become choked with leaves near the ground causing water to back up the pipe and spurt out of joints or cracks on to the adjacent wall. Such concentrated and prolonged wetting is likely to cause damp patches internally and growths of moss externally which prolong the dampness by retaining moisture.

Cracked downpipes, particularly square section cast iron, in which the crack may

Destructive effects of unmaintained guttering be undetected against the wall are another source of damp in walls.

Old walls are generally constructed from porous units set in a lime mortar of equal or greater porosity. Water falling on the outer face will be absorbed and slowly seep inwards. If the wall is of sufficient thickness and the joints are sound, this water will be drawn back to the surface and be re-evaporated when the rain has stopped, before it can reach the inner face. Driving rain can penetrate even a thick wall through weak points such as cracks and open joints. Traditionally walls in exposed positions, which were decayed or of insufficient thickness, were covered with a protective lime based render or roughcast which effectively reduced the rate of rain penetration. These porous renders will allow evaporation from the external face of the wall. Modern renders made with cement are brittle and of low porosity. They tend to crack easily as the wall undergoes small thermal or structural movements. Water will tend to stream down the surface of a hard render and be drawn into fine cracks by capillary action where it cannot easily escape by evaporation. Consequently moisture may build up behind the render coat and eventually find its way to the inside face.

Rising damp

If a porous walling material such as brick or stone is in contact with damp soil, moisture will be drawn into the pores by a physical process called capillary action. The absorbed moisture will rise in the wall to a height at which there is a balance between the rate of evaporation and

A band of dampness and discolouration usually 300 to 900 mm above ground level suggests an absent or defective damp-proof course

the rate at which it can be drawn up by capillary forces. This height will vary somewhat with the time of year and the level of the water table of the soil.

Before the Public Health Act of 1875 it was not compulsory to provide the walls of a building with damp-proof courses. Most old buildings lack these and therefore damp will rise in the walls to some degree.

Flagstone or brick floors used to be laid directly upon the bare earth and the moisture which rose through these floors would be carried away by ventilation. (Fig. 1)

Any impervious covering laid over such a floor will become soaking wet underneath and any attempt to seal wall surfaces will reduce evaporation, so driving the damp further up the wall.

Rising damp usually contains salts carried up from the soil or dissolved from the walling material. Some of these salts are hygroscopic, i.e. they absorb moisture from the air. Their presence will maintain the dampness even after the rising damp has been eliminated.

In some cases where a damp boundary wall of a garden abuts the external wall of a house, damp can be conducted to the contiguous areas of the house wall.

Condensation

Moisture is present in the atmosphere in the form of water vapour which is invisible. The amount is limited but increases with temperature. As air is warmed it will absorb more vapour but if this air is cooled, the vapour will, at a certain temperature called the dew-point, revert to liquid water. If any surface inside a building is below dew-point temperature it will cool the air next to it causing condensation. The condensate will be absorbed by porous surfaces or appear as tiny droplets on hard, shiny surfaces. Condensation is therefore dependent upon the temperature of surfaces and the humidity of the surrounding air.

Many old buildings are difficult or expensive to heat because their internal surfaces are cold due to dampness or poor insulation. If ventilation is reduced in an attempt to conserve warmth, the air humidity inside the building will be increased by water vapour produced by the evaporation of rising damp or domestic activities such as cooking, washing up, clothes drying and bathing. Any surface which is below the dew-point temperature will become damp by condensation.

Water vapour exerts a pressure which causes humid air to move through porous building materials towards drier air outside. If the temperature at some point within the material falls below the dew-point temperature, interstitial condensation will occur (i.e. within the cavities as well as on the surface of the material). The resulting dampness will reduce the thermal insulation value of the wall which will increase the risk of condensation on the surface.

Condensation can occur in a thick walled building of high thermal capacity such as a church if it is heated intermittently. The heating installation does not have time to warm the surfaces above the dew-point temperature while the already warmed air is absorbing vapour. A rapid change from cold to warm, humid weather can produce a similar effect.

Chimney flues can become damp through condensation. Modern boilers and closed stoves draw in considerably less air than open fires. The warm, humid flue gases rise slowly and are likely to condense on any part of the flue which is exposed or has poor thermal insulation. The acidic condensate will attack mortar and can carry tarry deposits through the brickwork into the building to stain wallpaper or plaster. (See S.P.A.B. Technical Pamphlet 3. Chimneys in Old Buildings.)

2 Tracing the cause

The incorrect diagnosis of a damp problem may lead to expensive remedial measures which cause unnecessary damage to the building fabric. It is essential to trace the real cause or causes of dampness before attempting a remedy. A moisture meter is a useful aid in quantifying dampness or tracing its extent because a material can be damp although it appears to be dry or feels dry.

Roofs, parapets, gutters and downpipes

A careful inspection of the roof, parapets, gutters and abutments should be made, especially exposed horizontal surfaces and areas which are likely to collect water. Water from leaks can run down rafters or more occasionally the underside of the roof to appear inside the building some distance away. It can be difficult to decide whether a damp patch on a ceiling is due to a roof leak, dripping condensation or both. A thorough inspection of the roof-space during a period of wind and rain should settle the question. It is equally instructive to observe the performance of the rainwater disposal system during heavy rainfall. The rain water head, gutters and downpipes which appeared to deal adequately with average rainfall can fail under heavy and prolonged periods of rain.

Walls

The condition of external wall surfaces should be carefully examined paying particular attention to the pointing. There have been occasions, though relatively rare, when the dampness has been due to the failure of water supply pipes which had been embedded at an earlier date within the wall.

Rain penetration usually produces well defined damp patches, especially on south or west facing walls. The dampness may evaporate in a few days but will reappear after a period of heavy rain.

The effects of rising damp usually extend from 1 ft (300 mm) to 3 ft (900 mm) above floor level and exhibit a sharp change from wet to dry or a 'tidemark' stain on wallpaper. Contaminating salts may be seen as white deposits or feathery crystals but mould growth is unusual, and usually suggests condensation.

Dampness due to condensation is characterised by diffuse areas of damp, beads of moisture on hard shiny surfaces and growths of mould on wallpaper, plaster and paintwork. It is usually intermittent and independent of rainy weather. Wardrobes and kitchen cupboards built against external walls are often badly affected.

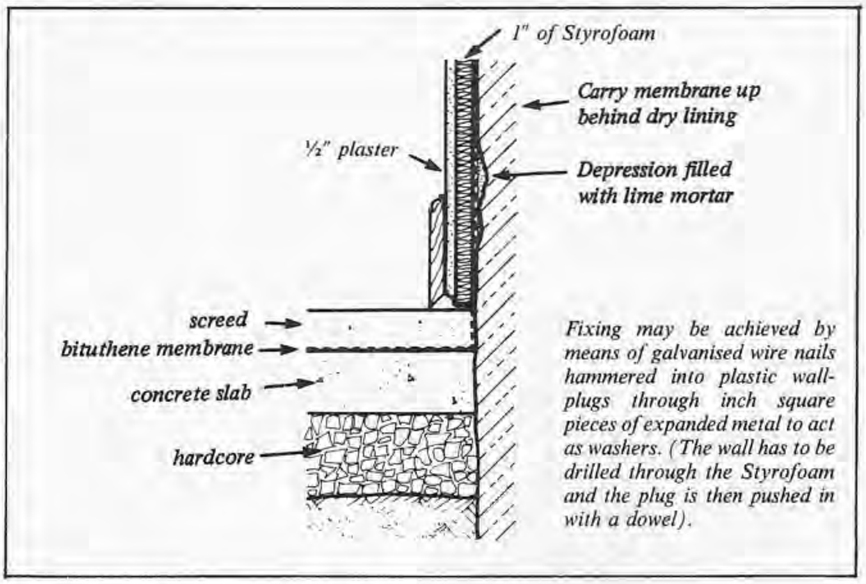
3 Eliminating rain penetration

Roof repair

Roof tiles or slates may become cracked or displaced as a result of decayed fixings or subsidence in the supporting structure. Individual units can be replaced but at a certain stage in the life of any roof it will need stripping and recovering. Underfelting is useful but may be inappropriate for some old roofs. If it is used, it is essential that the roofspace be provided with additional ventilation and counter battens will be required for certain types of stone tiles and slate. Modern mastics or resins should not be used in an attempt to seal a roof or secure the covering. Such treatments have been known to fail quickly and damage the covering to such an extent as to preclude the reuse of the roof covering in the traditional manner. The repair of an old roof should be carried out by a competent builder who is experienced in this type of conservative work.

Maintenance of gutters and downpipes and protection of walls

Gutters and downpipes should be cleaned and inspected regularly and damaged cornices, string-courses and other projections designed to carry water away from the walls should be repaired or if missing, reinstated. Some very exposed walls suffer from rain penetration because they are decayed or of insufficient thickness. A traditional solution to this problem was slate or tile hanging which provided protection from driving rain with little hindrance to evaporation from the wall. Alternatively the wall was provided with additional protection by a coat of lime based render or roughcast and finished with limewash. Limewash alone will reduce rain penetration by its ability to absorb water. The lime which has filled cracks will quickly become saturated and act as a barrier to further water. These remedies are effective but cannot be used if the appearance of the wall must remain unaltered. Colourless water repellents have been developed to reduce capillary absorption by lining the pores of the walling material. They are based upon silicone or siliconate resins in solution or silicone emulsions. Although the treatment effectively reduces absorption it will also slow down the rate of moisture evaporation from within the wall and may increase penetration through cracks or defective joints. Contaminating salts often crystallise harmlessly on the face of brick or stone walling. If the rate of evaporation is slowed down by the application of a water repellent this crystallisation is likely to occur within the pores of the material, just below the surface, causing spalling or powdering. Water repellents can be useful for reducing rain penetration through exposed elements such as parapet cappings, window cills, mullions and jambs but it is important to select the correct type of repellent, carefully follow the manufacturer's instructions and repair any defective pointing before treatment. They should never be applied internally as this is likely to cause spalling. However, the effects of these water repellents last about five years at the best, and a reapplication is hardly a suitable remedy, if it requires the use again of expensive scaffolding.



2. Dry lining to inadequate external walls.

Timber framed buildings

Rain penetration in old timber framed buildings usually occurs at the joints between the panel infilling and the framing. Panels of lath or wattle and daub (a mixture of lime, cow dung, etc. pressed in a plastic state in between wattles and staves,) are efficient if kept in good repair. Old panels should be patched with the appropriate traditional materials which are daub, lime/hair plaster and limewash. If a panel is missing or beyond repair it can be renewed, with the addition of thermal insulation.

Cracks in oak framing should not be filled with cement mortar as this will retain moisture and encourage decay. A mixture of fine oak sawdust and

'Unibond' adhesive, 1:1 by volume, is suitable for this purpose. A water based wood stain may be added to achieve the desired colour. The mixture should be pressed tightly into the crack or cavity and, when dry, may be worked in the same way as natural timber.

4 Eliminating rising damp

Rising damp can be lessened or even eliminated by improving soil drainage, increasing the rate of evaporation from external wall surfaces or by inserting a damp-proof course. The choice of a suitable method will depend upon the type of wall construction, its thickness and soil conditions.

Site drainage

Soil drainage has proved particularly effective in buildings with thick rubble walls as in many old churches where the provision of a damp-proof course would have been prohibitively expensive. The method illustrated in Fig. 3 will cause little disturbance to the wall and help to ensure its structural stability. (See S.P.A.B. Technical Pamphlet 1. Outward Leaning Walls). Drains must be carefully laid to a slight fall, minimum 1:150, with provision for rodding; they must be connected to a water disposal route such as a stream, drain, sewer or into a field. The modern type of soil drainpipe is thin walled, flexible and perforated pvc pipe, 110 mm diameter (Wavin Osmadrain or similar) as used in agriculture. To prevent silt seeping into the drain, line base and outer side of pit with I.C.I. Terram 1000 filter membrane or B.S.P. Fibretex F2B; tack the top of this to a treated sawn timber edgeboard. The top of the gravel should be 6 in below floor level. Simply lowering the ground level next to an external wall has proved effective in some cases.

Rendered surfaces

If the external face of a wall is sealed by a dense render or modern paint the damp can only move to the inner face, or upwards. A dense cement based render should be removed, where its removal will not shatter the surface behind the existing render, and be replaced by a soft and porous lime-based render and finished with limewash. Modern paints and textured finishes have a low porosity and should never be applied to old walls.

Ceramic tubes

Evaporation can be further increased by the insertion of porous ceramic tubes set in hygroscopic mortar. This proprietary treatment has proved successful in the right circumstances, i.e. when the base of the wall is exposed to ventilation. In an area below ground level they may not be effective. The work must be done under expert supervision.

Damp-proof course insertion

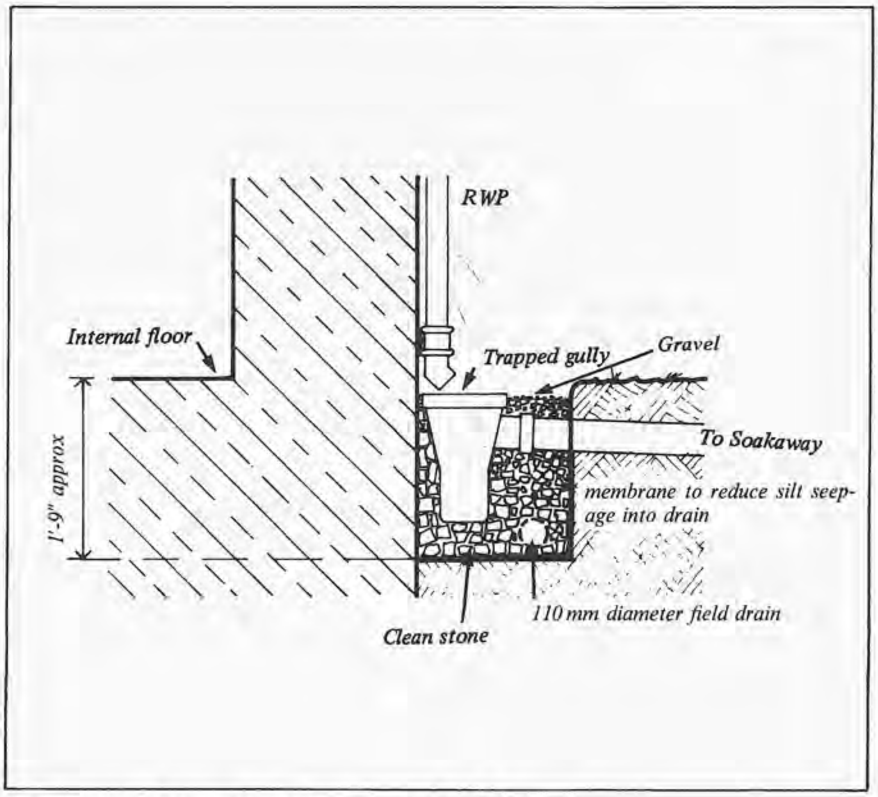
A conventional damp proof course of impermeable sheet material can be inserted, in short sections, into a slit cut through the wall by means of a special saw. This method is effective but expensive and is only suitable for brickwork or regularly coursed masonry and in relatively thin walls.

Chemical treatment

A barrier to rising damp can be formed by saturating a band of masonry at its base, 6 in (150 mm) to 18 in (450 mm) high, depending on the thickness and composition of the wall, with solutions of certain waterproofers or water repellents. There are resins which will form an impermeable later in the wall, while silicones and siliconates inhibit capillary action by lining the pores of the masonry. These liquids are injected by gravity feed or under pressure through holes drilled along the base of the wall. To be effective, the band of walling must be completely saturated and this may be difficult if a wall is very thick, wet or contains voids.

Electro-osmosis

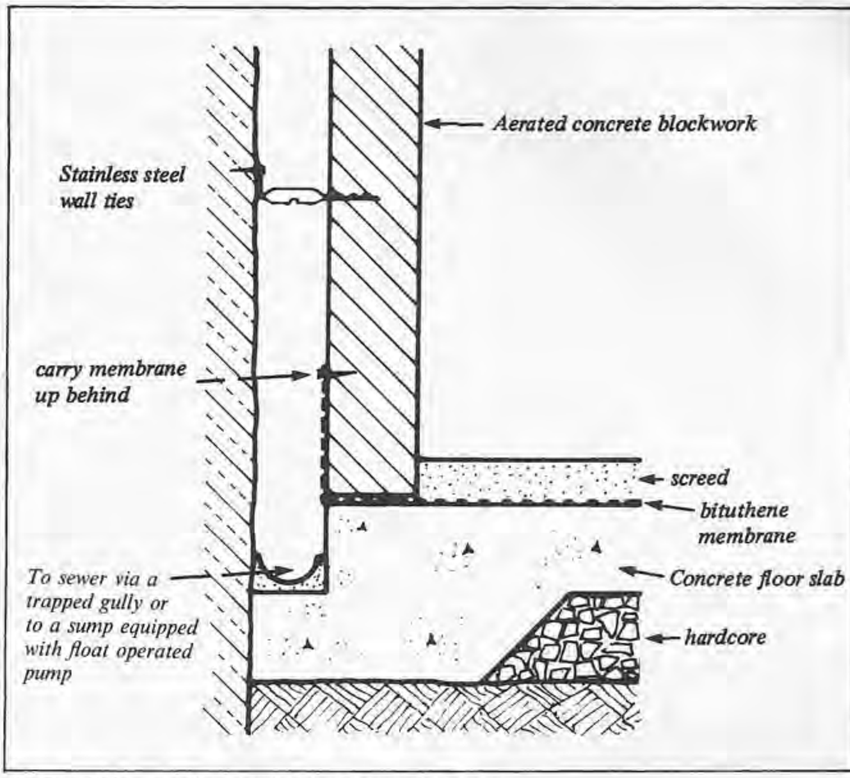
There are two systems which are based upon the theory of electro-osmosis. Damp walls are minutely charged with electricity and it is claimed that the removal of this charge will prevent damp from rising by capillary action. One system provides a conducting tape at the base of the wall connected to an earth terminal while the other depends upon a small applied potential. Failure has been known with the 'passive' system and the 'active' system is thought to be more effective. However, the reliability of these systems has been the subject of controversy and the experience of the S.P.A.B. to date precludes it from making any positive recommendation.



3. Reduction of rising damp with increased soil drainage.

Insertion of membrane

Damp rising through flagstones or brick floors can be checked by carefully lifting the units and relaying them on a fresh bedding of dry sand which in turn is laid on a continuous impermeable membrane such as Polythene. Where there exists a sound floor screed without a damp proof membrane, a mastic coated polythene membrane, e.g. 'Bituthene', may be laid over the screed with lapped joints and topped with a new screed, quarry tiles on a mortar bed or tongue and grooved flooring on a thin foam padding. The membrane should be carried up behind skirtings or a dry-lining as illustrated in Fig. 2. Removal of this evaporation area, which brick or stone flagging tend to provide will reduce the quantity of water vapour entering the building, thus alleviating condensation; however sealing off the floor surface can have the tendency to raise the level of rising damp in the walls. Thus floors should be tackled in conjunction with soil drainage or damp-proof course installation.



4. Dry lining a cellar troubled with seeping water.

5 Eliminating condensation

Condensation within a building can be eliminated by reducing air humidity or maintaining the surfaces above the dew-point temperature.

High levels of humidity are caused by rising damp, excessive vapour production and inadequate ventilation. The elimination of rising damp will substantially reduce the air humidity but other sources should be considered.

A certain quantity of vapour produced by the occupation of a domestic building is inevitable though it can be removed by reasonable rates of ventilation. Clothes drying indoors and the use of paraffin or mobile gas heaters should be avoided and tumble driers must be vented to the outside air.

Source of vapour	Approx. amount daily
4 people breathing	2–3 litres
4 people cooking	2 litres
washing up	1 litre
bathing	1.5 litres
clothes washing	2 litres
clothes drying	6 litres
paraffin or mobile gas heaters	2–5 litres

Surfaces can be maintained above the dew-point temperature by a suitable mode of heating and improved thermal insulation. Many old buildings with thick walls have a potentially high standard of insulation but this is often reduced considerably by dampness present in the wall. Another reason for low surface temperatures could be the slow response of high heat capacity fabric to intermittent heating. A continuous low level of heating is required, radiant heat being better than convective for higher surface temperatures. Churches and other buildings which are used intermittently cannot be heated continuously for reasons of economy. In buildings such as these, for wall surfaces, limewash should be used in preference to modern paints. It will absorb condensation and prevent the wall from 'running with water'.

The passage of water vapour into spaces where it is likely to condense can be prevented by a vapour barrier of an impermeable material such as polythene or aluminium foil. Joints between sheets should be lapped and sealed with adhesive tape. Ceilings below a cold roofspace should be thoroughly insulated from above and a vapour barrier introduced. Attics and roofspaces should always be well ventilated and waterpipes thoroughly lagged. When infill panels of a timber framed building have to be replaced, any new panel should include a vapour barrier and efficient insulation.

Interstitial condensation may be eliminated by preventing the entry of vapour into the wall. This can be achieved by providing a vapour barrier on the inside face of the wall or the warm side of the major element of insulation. This remedy may be incompatible with the character of the building, in which case an attempt should be made to ensure that vapour levels are kept low and evaporation can take place at the external face of the wall.

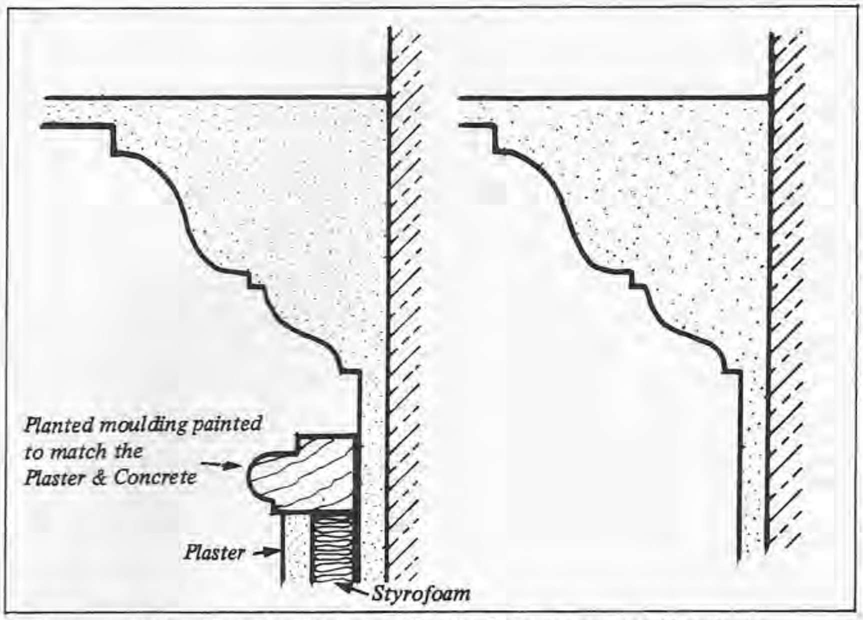
Condensation can be troublesome in wardrobes or kitchen cupboards built against external walls. This can be alleviated by increasing the ventilation of the cupboard to the room and lining the surface with 1 in (25 mm) or so of expanded polystyrene sheet.

Condensation in chimney flues can be treated by providing the flue with a proper lining. (Refer to S.P.A.B. Technical Pamphlet 3. Chimneys in Old Buildings.)

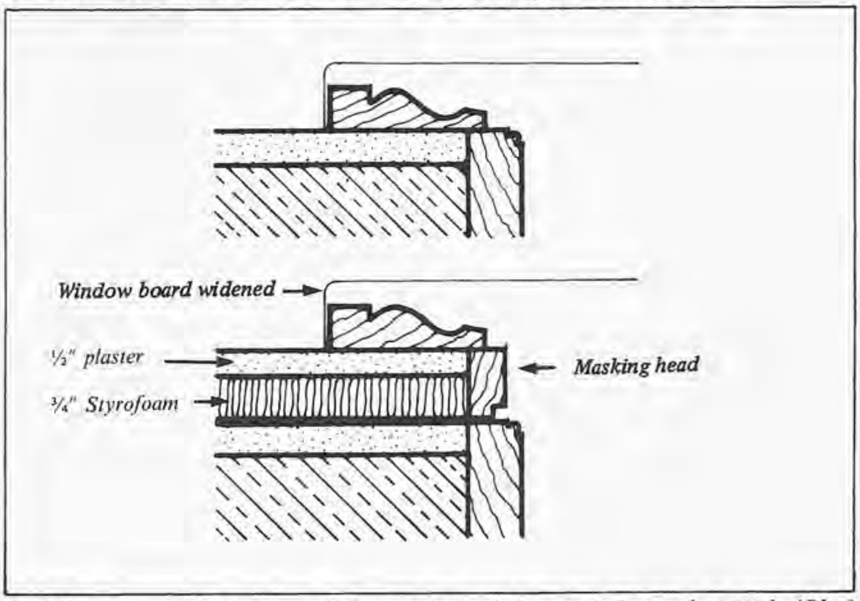
There will be cases where in some rooms former fireplaces and chimney flues have been sealed up. Often these can be opened up or fitted with adjustable grills so that additional ventilation can be achieved.

6 Internal wall treatments

Damp walls may take a year to dry out after the source of moisture has been eliminated. Prolonged penetrating or rising damp often leaves a wall contaminated by hygroscopic salts which absorb moisture from the air causing dampness when the air is humid. These salts may also result from the use of sea-sand in mortar, from coke or ashes heaped against the wall, or in farm buildings, the storage or artificial fertilisers.



5. Accommodating the extra thickness of a dry lining at cornice (Section).



6 and 7. Accommodating extra thickness of a dry lining at window or door jambs (Plan).

Salt accumulations on plain faced walls are best treated by repeatedly brushing away crystalline deposits and washing down with clean water. Plastered wall surfaces pose a more difficult problem. The contaminated plaster can be removed but if replaced before the wall has dried out the new plaster is likely to become contaminated by salts retained in the wall.

Relining walls

Old plastered wall surfaces possess functional and aesthetic qualities which cannot be reproduced by modern methods and materials. The intermittent appearance of damp patches due to the presence of hygroscopic salts may be a small price to pay for conservation in this instance.

Surveyors generally recommend that after a damp-proof course has been installed the plaster should be hacked off to a height of 1 ft 6 in (450 mm) above the affected area and the wall should be replastered over a first coat of dense cement render. This expensive and messy operation is often either unnecessary or inappropriate in old buildings and it is very difficult to blend new plastering with old whilst avoiding a visible junction. Unfortunately these measures are usually requirements in an injected damp-proof course guarantee which is insisted upon by most mortgage companies. (The rendering will conveniently mask any failure in the injected dpc). A letter to the mortgage company from an architect or independent surveyor dismissing the need for replastering in specific instances, may prevent unnecessary damage and expense.

Dry lining is a useful remedial measure on external walls which are too thin to provide adequate thermal insulation or are prone to damp penetration and cannot be treated externally. In recent years the use of **closed cell** expanded polystyrene, e.g. 'Styrofoam IB' has increased in popularity. It is tough, non-absorbent, rot proof and has a very high thermal insulation value. The foam layer will isolate the wall from the plaster finish, act as a vapour barrier to prevent interstitial condensation and alleviate surface condensation problems. It can be argued that damp will build up behind such a lining but in old walls the dampness resulting from rain penetration will be intermittent. The dampness will tend to migrate to the outer surface and evaporate during dry weather. The foam may be applied directly to old plaster but very uneven walls may need 'dubbing out' with gauged lime mortar to fill cavities and depressions. Fixing is best achieved by a non-ferrous direct mechanical method as opposed to adhesives. Masonry nails are effective but must be used in conjunction with a 'washer' such as a 1 in square piece of galvanised expanded metal to stop the head from pulling through the foam.

Closed cell foam lining must be protected with at least ½ in of plaster which may be applied directly to the foam surface. One or two coats of bonding plaster followed by a finishing coat is recommended by the manufacturers. The extra thickness of the dry lining may be accommodated at the door and window openings by carefully removing skirtings and architraves and replacing them after the lining has been installed with some slight modifications as illustrated in Figs. 6 & 7. Removal of the old plaster and using ¾ in (20 mm) foam will minimise the added thickness.

Cellars which are seriously affected by penetrating dampness to the extent where water creeps through joints in the walling are best treated by building an inner wall of lightweight concrete blockwork restrained by stainless steel ties. (The ties may be fixed by shot firing or masonry nails.) The 2–3 in cavity must be drained to the sewer via a trapped gulley or, where this is not possible, a sump may be formed. The sump can be kept dry by means of a float operated electric pump. See Fig. 4. This method is far more reliable than traditional 'tanking' which tends to be expensive and depends upon faultless workmanship.

Limewash, distemper and fungicide

Plastic emulsion or oil paints should not be used for the decoration of old wall surfaces because they tend to fail quickly when applied to damp materials and impede the evaporation of moisture from within the wall. Limewash is ideal for the purpose because it is unaffected by damp and extremely porous. A soft distemper such as 'Walpamur' is an alternative where the recurrence of damp is less likely, or the nature and use of the building precludes the use of limewash. Proprietary sealers, primers and stabilizing solutions will not cure damp patches on plaster and if applied to stone can cause spalling or powdering of the surface. Persistent dampness will encourage the growth of various kinds of mould on internal decorations and moss on external stonework. This may be removed by scrubbing or scraping and the affected area treated with a proprietary fungicide designed for this purpose. This is not a permanent cure unless the source of damp is eliminated.

7 Flood damage

Flooding usually produces dampness similar in effect to rising damp but in an exaggerated form. Many old walls are constructed from two skins of masonry with a core of rubble and porous lime mortar. They may absorb considerable quantities of water and take months, if not years, to dry out.

A flooded building should be ventilated as much as possible and panelling or joinery fixed to the walls should be removed until the walls are completely dry.

Panelling and furniture must be allowed to dry out naturally in an unheated space if warping or splitting is to be avoided. Flooding by seawater is particularly serious because masonry contaminated with salt is liable to decay.

(The Building Research Station Digest No. 152 deals with this subject in detail.)

Acknowledgement

We owe much to an early draft by a former committee member David Martin, RIBA.

The greater part of the present text and diagrams 1–7 are by Andrew Thomas. The cover drawing by Ailwyn Best is from Donald Insall's book 'The Care of Old Buildings Today'.

Technical Pamplets Published

1. *Outward Leaning Walls* by John E M Macgregor OBE, FSA, FRIBA
2. *Strengthening Timber Floors* by John E M Macgregor OBE, FSA, FRIBA
3. *Chimneys in Old Buildings* by Gilbert Williams FRIBA
4. *Cleaning Stone and Brick* by John Ashurst DArch, RIBA
5. *Pointing Stone and Brick* by Gilbert Williams FRIBA
6. *Fire Safety in Historic Buildings* by Alan Parnell FRIBA, FSIAD, FIFE, Dip TP and David Ashford ACII
7. *Fire Safety in Historic Buildings–Part II* to be published
9. *Electrical Installations in Old Buildings* by Alistair Hunt RIBA
10. *The Care and Repair of Thatched Roofs* by Peter Brockett and Adela Wright ARIBA

The Headley Trust

The Society is indebted to the Headley Trust for a financial contribution towards the first publication of this pamphlet.

SPAB Membership

The Society welcomes new members. Details of activities are available from:

The Secretary,
The Society for the Protection of Ancient Buildings,
37 Spital Square,
London E1 6DY.
Tel: 01-377 1644

The Society for the Protection of Ancient Buildings

Advises on all problems affecting old buildings, giving technical advice on their treatment and repair. Buildings ecclesiastical and secular, large and small, including mills, barns, dovecotes and bridges, come within the scope of the Society.

Investigates cases of buildings suffering from neglect or threatened by damaging treatment or with destruction.

Prepares surveys and reports on the historic areas of cities, towns and villages and is willing to advise planning authorities and others on the designation of conservation areas. Keeps records of past repair work and cases.

Holds annual courses on the repair of ancient buildings for architects, surveyors and builders.

Administers scholarships, which enable architectural students to study old buildings and their repair.

Arranges public lectures on specific subjects dealing with old buildings.

Provides speakers on all aspects of the Society's work, and mounts exhibitions.

Organises conferences to highlight current problems in the field of preservation.

Sponsors public appeals for funds for the preservation of important buildings.

Publishes information on the history and care of old buildings, their features and fittings. A list of these publications may be obtained on application.

Reprinted by Eyre & Spottiswoode Ltd, London and Margate

August 1986