

## BUILDING MATERIALS FOR PERIOD PROPERTIES: THE IMPORTANCE OF LIME

Every period property owner should be aware of the importance of using the correct materials when planning any works to their building, regardless of how small or large they may be.

Over the last decade or so a greater understanding has developed by period property owners about the damage caused by using 'modern' materials that are not compatible with traditional building construction. However, sadly inappropriate repairs are still commonplace.

There has been more damage caused to our historic buildings over the last century compared to the previous centuries of gentle weathering. The biggest culprit is Portland cement, a material found on almost every building site. Its introduction in the nineteenth century as a new 'wonder material' that sets hard and fast saw the rapid demise of pure lime mortars, lime plasters and lime renders, the materials at the heart of virtually every historic building. Cement certainly has a significant role to play in modern construction, but for most period properties it can cause serious problems.

The characteristics of cement that have made it so popular are the exact properties that cause havoc with traditional buildings. Vernacular building materials do vary from one location to another and their durability differs. However traditional buildings were typically constructed using soft, porous and relatively flexible materials such as handmade bricks, timber, stone and cob, and used lime mortars, plasters, renders and washes in their construction. These materials allow the building to 'breathe'. They do not stop the ingress of water but absorb moisture evenly over the whole surface, acting like a sponge, drawing moisture away from the building structure, allowing it to evaporate harmlessly. The hard, brittle and impervious nature of cement based materials traps moisture within the structure, which can lead to damp timber decay and the breakdown of brick and stone.

If you take a masonry building that has been pointed with hard cement based mortar, the way in which the structure expels unwanted moisture changes. A pointing mortar should always be softer than the masonry surrounding it; as a result moisture is drawn out through the mortar joints rather than being trapped within the masonry. With cement mortar this function is reversed and moisture stays trapped within the masonry, leaving it vulnerable to frost and the resulting breakdown of the masonry. A pointing mortar should be sacrificial to the material it surrounds; it is far cheaper to re-point than replace damaged bricks or stone.

In timber framed buildings we often see the infill panels within the frame rendered with a cement render and painted with modern masonry paint. Here the timbers are left highly vulnerable to the effects of wet rot and insect attack. Numerous timber frames have suffered from the introduction of modern impervious materials, which tend to channel water in and around the timbers, and so over time can cause major timber decay and structural issues. Rainwater that runs down a wall repaired using lime mortars and renders is drawn into the surface evenly and, due to their porosity, is allowed to escape unhindered.

The main focus of this brief article has been on Portland cement, but any material that is designed to repel water such as modern masonry paints, water repellent treatments for masonry and mastic pointing can all cause serious problems. Well intentioned repairs to historic buildings can result in expensive problems if owners allow the wrong materials to be used. If you are planning any works to your house make sure you employ a builder that is experienced and has a good understanding of historic buildings and the traditional materials.

Visit [www.owlsworthijp.co.uk](http://www.owlsworthijp.co.uk) and [www.oldhousestore.co.uk](http://www.oldhousestore.co.uk) for more information on traditional building materials.

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## COMPANY INFORMATION

Established for 20 years, Owlsworth IJP provides a sympathetic, exceptional construction service for period properties and historic structures. Recognised as a leading building conservation contractor, they pride themselves on excellence and professionalism.

Their experience and understanding of traditional properties, building techniques and traditional materials is exemplary. They employ the majority of their stonemasons, carpenters, lime plasterers, bricklayers and blacksmiths, ensuring that the quality of every project meets their high standards.



The Chantry House, Henley on Thames



Cogges Manor, Witney



A lime rendered witchert (cob) house



Cement damage to a structural timber frame





Damage by a cement render



Damp damage caused by a cement render