

BRIEFING NOTES:

CONTROL OF DAMP IN DOMESTIC BUILDINGS - A CASE STUDY

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### *Control of Damp - a Case Study*

The fundamental point to bear in mind when dealing with older buildings is that their fabric is permeable and must be allowed to breathe. Many older buildings were built without any form of damp proof course or membrane. This is not a problem, however, as long as the finishes and construction allow water vapour to pass through and escape to the air.

Difficulties do arise in such buildings when inflexible or impermeable materials are introduced, often in an ill-founded attempt to keep out moisture. Instead, they tend to trap moisture in the building fabric where it can do great harm or to drive it somewhere there has not been a problem before.

For instance, there are some signs of damp in the party wall between this cottage and its neighbour. When this was the external wall of the building any moisture in the ground was able to evaporate directly to air or through the suspended timber floor inside. On the neighbouring side there is now, in all likelihood, an impermeable concrete floor and impermeable wall finish. The timber floor next to the wall in the cottage has also been replaced with concrete, giving trapped ground moisture no route for escape except up into the wall. Similarly, erosion of the soft lime pointing near ground level on the garden elevation is probably being caused by the impermeable masonry paint higher up preventing moisture escaping across most of the surface and thus concentrating its effects in one small area.

Consulting conventional damp control companies in these circumstances is not likely to be helpful. They have a limited range of barrier products to sell, none of which would actually be advisable. Introducing injected chemical or inserted mechanical DPCs in flint rubble walls is virtually impossible and unlikely to be effective. Installing impermeable dry linings in an effort to control the problem could drive moisture even further up the walls in an effort to escape, perhaps to the point where it could start to damage the first floor structure.

Instead, as part of the renovation, we would propose to follow conventional historic building practice by restoring the permeability of the finishes wherever possible so that moisture can, once again, escape harmlessly. Specifically we propose to:

- Break out the area of concrete floor in the living room and install permeable floor finishes.
- Remove masonry paint from brick and flint where possible. Because of the softness of the mortar this will probably have to be a long-term process of removing loosened paint as it pushed off from behind by vapour pressure.
- Decorate using specialist permeable lime or clay plasters and permeable finishes (lime washes, distempers etc.)
- Consider removing some or all of the masonry-painted render at first floor level and replace it with permeable lime render and lime wash.

### *Control of Timber Decay*

The point about fungal or insect infestation of the building is also contentious. Buildings microbiologists and entomologists such as Dr Brian Ridout and Dr Jagjit Singh (both of whom now advise English Heritage, the National Trust and other building owners on the best way of dealing with these problems) have conclusively shown that neither rot nor wood-burning insects will thrive in dry, heated buildings. A little localized spot treatment may be helpful to speed up the natural process of eradication, but as long as the sources of moisture in an old building have been dealt with the problem will quite quickly die out. Conversely, in a wet, badly maintained building, even conventional chemical treatments tend not to be effective for very long. It is certainly the case that many timber treatment companies spend most of their time treating timber that was either never infested in the first place, was attacked when wet at some time in the past but in which any activity has now ceased or timber in which any activity would soon have died out in any case.

The first need is to establish whether or not there is a currently active infestation. As it happens this is a relatively easy at this time of year. Both of the main problem insect species (furniture beetle and death watch beetle) emerge from the timber in May and June as adults to lay their eggs. During this time they are quite strongly attracted to light. The simplest way to tell if these species are present in a building is simply to look for dead adults on the windowsills in mid-summer.

In order to deal with the possibility of insect or fungal attack in the house, therefore, we propose to:

- ☒ Put into action a whole building strategy for dealing with dampness as set out above and including a thorough overhaul of the cottage's rainwater goods.
- ☒ Remove the remaining area of unventilated suspended timber floor in the living room, which we feel to be vulnerable and replace with permeable solid floor construction.
- ☒ Inspect regularly for any evidence of on going insect attack over the next couple of months and, if any is found, take further action.

The problem in consulting timber treatment and damp proofing companies to advise in these situations is that the only solutions they can offer are those that they sell. As I have pointed out, these are not the most effective way of dealing with damp and infestation in older buildings. A whole building solution which deals with the causes of the problem rather than just the symptoms is likely to be more effective but requires greater understanding of the construction of such buildings and of the way in which they work.

