



# Insulated Floors

# An introduction to Insulated Floors for Old Buildings

Breathable, insulated and limecrete floors have now become quite common in the UK but one design does not fit all buildings and this is one in a series of case studies which may help you decide on the best floor build up for your old building.

It has long been recognised that in old buildings we should avoid pushing dampness in to walls from the ground by not using un draining compacted fill, cement subbases and impermeable layers and membranes.

By allowing the lowest section of the floor build up, the sub base, to drain freely and by insulating within and above this sub base it is possible to create well insulated free draining floors that help prevent dampness rising up walls in old buildings. This case study illustrates one such build up.



# The Aisled Barn, Halifax.

The Aisled Barn which sits in the upper part of the Shibden Valley in Halifax comprises of a sixteenth century oak timber frame and thick stone outer walls some of which were rebuilt in the late eighteenth century. It has been sensitively converted to a home, retaining all the original timber frame, conserving the fabric of the building and retaining as much of the character and history within the building as was possible.

The owners were keen to avoid problems seen elsewhere where buildings have removed earth floors and replaced them with compacted ungraded hardcore and concrete sub bases preventing any water that gets under the building from draining away.

At the Aisled barn a later concrete floor covering was taken up, together with earth, stone and brick to excavate a depth of 425mm from the proposed finished



floor level. The clay ground below stone stylobates which support the principal timber frame posts was held in place by casting a square collar around them to allow an excavation to this depth. It is important that any ground below foundations are not undermined in digging out for a light weight sub base.



The floor was then built up from the bottom with 250mm of free draining 'Foamit 30' foamed glass subbase. This had some perforated drainage pipes laid within it. Whilst the clay ground around the building appears to help keep the water out of the building it would also act as a well and drainage needed to be provided.

Above this a compacted sub base was placed a damp proof membrane, 75mm of polyurethane insulation, underfloor heating pipes and 100 mm of polished concrete.



## Further Advice

Further advice and support is available from...

Womersley's Ltd

Ravensthorpe Indust Est, Low Mill Lane, Ravensthorpe

