

# Insulating a solid floor and walls in a Victorian house

## Background

The house is a detached Victorian property which had no effective damp-proof course and where under-floor ventilation was poor. Unsurprisingly the ground-floor flooring timbers were affected by wet rot. Condensation was also occurring and causing black mould to form on some walls. It was evident that extensive re-plastering and floor repairs were going to be required. Due to the damp and condensation the sitting room and dining room were cold and difficult to heat and as a result were used only infrequently by the owner.



## The Work Required

Initially, a damp-proof course was required. The suspended timber floors were surrounded by solid floors in other areas of the house and satisfactory improvements to the sub-floor ventilation were difficult to achieve. The owner elected to replace the ground floor suspended flooring with a conventional solid floor incorporating a damp-proof membrane and insulation.

## Carrying out the work

Wall surfaces were prepared by removing skirting boards, defective damp and salt contaminated plasterwork and electrical fittings. A damp-proof course was installed by drilling the walls and injecting Dryzone damp-proofing cream. Dryzone is not in liquid form or injected under pressure and is a safer and cleaner product to use. It is ideal for use in an occupied property and on a party wall.



Hardcore being laid.

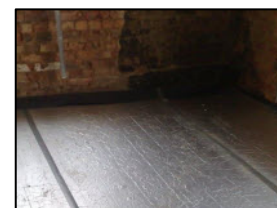
The solid floor was built up in layers. Firstly, all floor timbers were removed and the floor excavated to the required level. Washed hardcore was laid and compacted and sand blinding and a damp-proof membrane placed on top. A concrete slab was poured and PIR insulation board was located over the oversite and the joints were taped to form a vapour barrier. Finally, T & G flooring grade chipboard panels (to BS5669 (1985)) were installed over the insulation to form the new floor surface.



New concrete slab being poured

An essential requirement of upgrading older solid-wall properties is to ensure that the building fabric is as well insulated as possible to prevent excessive heat loss. This reduces the amount of energy required to provide space heating which in turn reduces the use of fossil fuel and CO<sub>2</sub> emissions and means lower costs. To achieve this improvement a decision was taken to re-plaster the walls with an insulated plaster.

Wall-Reform insulated remedial damp-proof plaster was applied to the walls. Wall-Reform is a cement based render base coating containing expanded polystyrene lime beads and other additives to form an insulated render. The thermal properties of this product raise the temperature of the wall and help to combat condensation and mould- growth problems. The system combines traditional building industry methods with the benefits of solid wall insulation.



Taped PIR insulation board



## Benefits

The sitting room and dining rooms which were damp, cold and difficult to heat are now dry, warmer and more comfortable for the homeowner and have been returned to daily use. The home requires less energy to heat and the running costs have been reduced which is cheaper for the homeowner and carbon efficient for the environment.

