

# Insulating a solid-brick wall in a Victorian house

## Background

The property is an end-of-terrace Victorian house, extended and upgraded about 15-20 years ago. The house is a letting property and since all landlords must now produce an EPC to give to the new tenant, an energy audit was carried out and report prepared.

The inspection showed that the main roof insulation was below the current recommended level of 270mm and that the flank wall of the rear bedroom was only a half-brick (115mm) thick. The bedroom was very cold. The EPC calculated was 59, which is in band D for Energy Efficiency Rating and also band D for the Environmental (CO<sup>2</sup>) Impact Rating.

## The Work Required

In order to improve the conditions in the bedroom and the Energy Efficiency for the house as a whole, top-up fibreglass insulation was added to the roof void. The flank wall was lined with PIR (Polyisocyanurate rigid) insulation, which was then battened and covered by plasterboard. This resulted in an increased U-value for the wall of 0.25 W/m<sup>2</sup>K.



An essential requirement of the building insulation 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 heating, which in turn reduces the use of fossil fuels and CO<sup>2</sup> emissions. The very low thermal conductivity of PIR insulation board enables low U-values to be achieved with the minimum of thickness. This minimises the overall thickness of the building fabric allowing maximum utilisation of internal space for a given 'building footprint'.

## The Schedule of Work

Wall surfaces are prepared by removing any wallpaper and skirting boards and electrical fittings. PIR Insulation boards are fitted from floor to ceiling. Horizontal treated-timber battens are fitted over the insulation at the top and bottom of the wall to hold the boards in place. The board joints are sealed with tape to create a Vapour Control Layer.

Vertical battens are then fitted over the insulation at appropriate spacing to provide adequate fixings for plasterboard. Additional battens are required around all openings to provide fixings for linings and grounds for skirtings etc. The Plasterboard lining was then fitted and skim finished. Skirting boards and electrical sockets are then refitted.



## Conclusion

The EPC has now been recalculated and has increased to 64 for Energy Efficiency Rating which has reduced the heating energy used to give a better Environmental (CO<sup>2</sup>) Impact Rating. The house is now warmer and the bedroom much more comfortable for the tenant. Energy consumption and running costs are lower which makes the house a more attractive letting prospect and benefits the environment.



a simple matter of  application

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