

Builders Sustainability Guide

The UK's housing stock is amongst the least energy efficient in Europe and has an impact on the UK's annual carbon emissions. Improving energy efficiency of buildings will help to save on energy bills, reduce emissions and make homes more comfortable to live. In larger spectrum sustainable houses will help reduce reliance on fuel imports and will help UK's targets of an 80 per cent reduction in carbon emissions by 2050.

This guide is a step by step advice for builders on how to make an existing houses more energy efficient. Every month we will publish the extract from 'An Illustrated Guide to Building Energy Efficient Homes' by Low Carbon Hub to help LCH raise the awareness about the retrofits and refurbishments options. This guidance should help builders improve their services with regards to refurbish-

ment or quality of new builds. Following the presented advice will help builders meet requirements of Building Regulations, reduce the risk of condensation, heat loss and damp in the completed refurbishments or new builds.

We recommend to cut the poster presented on the next page and save it for future reference or display it on site.

SUMMARY - TOP ISSUES LEADING TO POOR PERFORMANCE



PROBLEMS

- Different, lesser performing insulation fitted.
- Insulation not installed correctly – gaps behind insulation around cavity closures. e.g. insulation cut short of reveals.
- Product substitution for poorer materials: blocks, insulation, windows, lintels, boiler, controls, fans, windows, doors and lights all affect the energy efficiency of a new home.
- Air leakage through small gaps in insulation, blockwork and plasterboard can lead to heat losses and condensation issues.
- Ventilation fans not commissioned correctly. Domestic Ventilation Compliance Guide not followed.
- Cold air blowing behind or through insulation. e.g. insulation floating off substrate.
- Cold bridging: steel, concrete or timber structure going through insulation layer.
- Site damage of fragile materials including insulation, blocks and windows. Rain and mud will worsen performance of materials.
- Services: ducting, TV aerial, lights can all disrupt insulation in roof causing heat loss / cold spots.
- Windows installed badly leading to airleakage and heat loss.



RECOMMENDATIONS

- Check insulation against design specification.
- Must be installed to BBA or manufacturer guidelines: no gaps, tight up against blockwork or roof/floor to ensure no air route behind insulation.
- Check materials are same as design specification or discuss with architect/designer and site manager.
- Make sure insulation has no gaps and is sufficiently sealed at joints/ends.
- Check against design specification. Commissioning of fans should be completed by a competent person. e.g. BPEC Certification for Domestic Ventilation.
- Fit insulation close to structure, and ensure it is windtight. Seal accordingly.
- Consult with design team. Designer to reduce cold bridges as Part L Building Regulations.
- Ensure that insulation and other fragile materials are not damaged by rain, wind and mechanical damage.
- Check insulation in roof is continuous after all services have been installed. Ensure services in service zone to stop this. Label importance of insulation for homeowner.
- Ensure correct windows installed with less than 10mm tolerance.

FOUNDATION / GROUNDWORKS

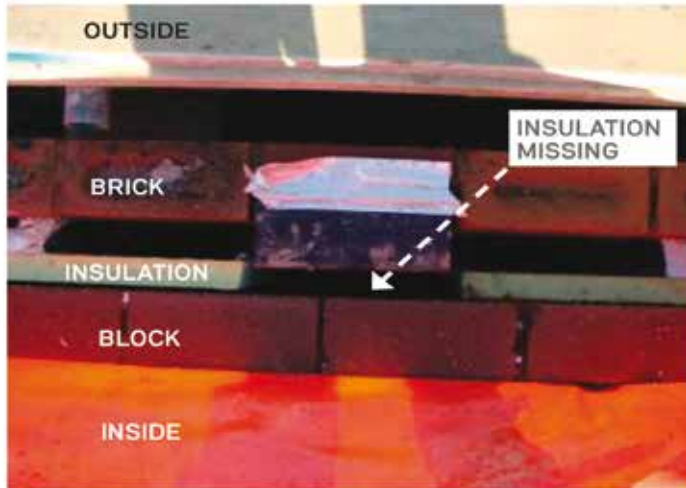


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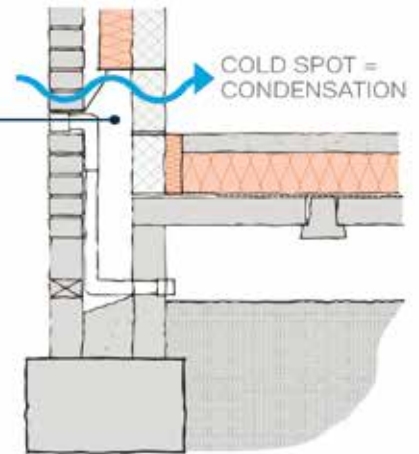


PROBLEM TO AVOID

INSULATION MISSING BELOW DPC



PLAN OF SUB FLOOR VENT BLOCKING INSULATION

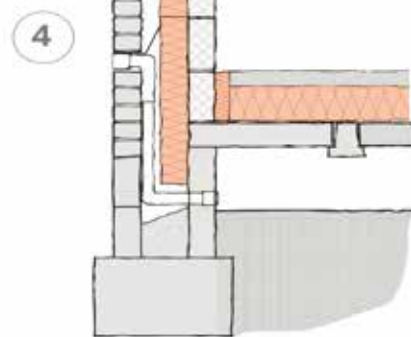
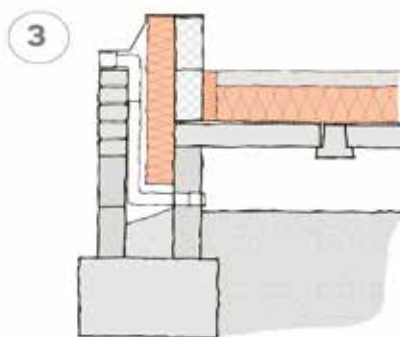
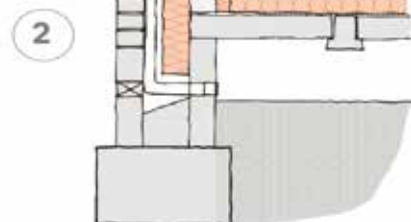
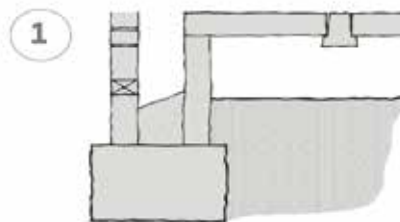


PERISCOPE VENT SECTION



WHAT TO DO?

- Keep cavity and inner block smooth and free of 'mortar snots' (1)
- Fit insulation below DPC level to depth shown in drawing (2)
- Fit insulation boards tight to blockwork with no air gap (3)
- Install cavity tray over insulation (4)
- Use blocks with correct thermal conductivity



GOOD PRACTICE

Continuous insulation below floor level

Please print and use in your site office,
for further information www.zerocarbonhub.org



Extract from Zero Carbon Hub publication