CASE STUDY

CorkSol solves damp & mould issue at 1960's East London tower block

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Social housing block in Tower Hamlets.

The Problem

A community-led social housing provider, with over 3800 homes, had a vision to regenerate its estate and bring about a sustained improvement in the quality of life for residents. They have employed trained electrical engineer Steve for the last two years to manage maintenance projects across their estate of social housing in the Tower Hamlets area of London.

One such project was a 26-storey, 107-flat towerblock, constructed in the late 1960s of a solid concrete superstructure with a partial brick skin. At least 80% of the flats were suffering from ever-increasing **damp**, **mould** and **condensation problems** which had been a problem for years. The problem was mainly on the outside skin walls at ceiling and skirting board level where the airflow was low, and in the window reveals which could get very cold overnight and got worse the higher up the block you were. Steve believed there to be a number of factors which had contributed to the damp problems increasing over the years.

Poorly conceived past retro-fit projects, including plastic double glazed windows and unreliable modern fans in the four central building extract ducts had made the problem worse, not better. Added to this was the changing demographic of the residents, with typically more people living in each flat, creating more moisture through increased cooking and washing activities and coupled with a reluctance to open the windows when they did so.

In particular, one resident of a single-bed flat on the fourth floor regularly complained several times a month to the estate management board of cold and black spot mould, that her "walls were sweating" and that her clothes and furniture were becoming

so damp that several items had to be thrown out.

Steve decided to address the ventilation problem first, deciding that if that did not solve the problem they would move on to treating the walls. They installed new fans in the kitchens and bathrooms, cleaned out the ductwork connecting to the central building ventilation system, and renewed the air duct valve. Finally, they added trickle vents to the windows.

An air movement survey confirmed that ventilation to the flat now should have been more than adequate but the damp was still present and the extent of the black mould continued to increase.

Black mould is rife in the flats, but especially at ceiling and floor level and around the window reveals.

The most severe patch of black spot mould, just before the remedial work began.

The Solution

Steve looked for suitable thermal wall treatments to increase the temperature of the internal walls but which wouldn't create other knock-on problems. He ruled out traditional Internal Wall Insulation (IWI) solutions as the room size would have been reduced to an unacceptable degree in such small flats (IWI solutions being typically at least 100mm deep).

Steve also considered that thicker IWI systems gave problems with the costs of repositioning fixtures and fittings such as light switches, power points, radiators, and door frames, requiring multiple trades to be co-ordinated and paid for. Finally, traditional IWI also left the possibility of air gaps and cold bridges being left at the fixing points, seams and returns,

causing damp problems to recur, both on the surface and in interstitial layers.

Steve had seen this problem occur previously in the bigger top-floor penthouses, where polystyrene insulation slabs skimmed over with plaster were installed, and where the damp and mould had penetrated back through and, in Steve's words, could only be described as "horrendous".

Steve's final choice for the wall treatment – CorkSol **sprayed cork granules with a plaster overskim** – seemed to have the potential to resolve all these issues. The solution is only 8mm thick in total, meaning that the room size would be barely affected and the repositioning of fittings would not be required.

The solution gives a **powerful thermal insulating performance** for its slim size, and eliminates any fears of cold bridging or air gaps as it is sprayed on in a single seamless layer, including around window reveals and returns. Another key benefit of CorkSol is that the material is **highly breathable** (vapour-open) meaning that any residual dampness in the walls can transpire away harmlessly over time.

The granular CorkSol layer, spray-applied seamlessly including round the window reveal, ready to accept the final plaster skim.

CorkSol's local approved applicator in East London, Pete Lydon of The Good Plastering Company, carried out the work in four stages over two days.

First he cleaned down the mouldy walls with a specialist bleach wash. He then spray applied two coats of fine grain CorkSol, each coat 3mm deep, ensuring an even and continuous coverage.

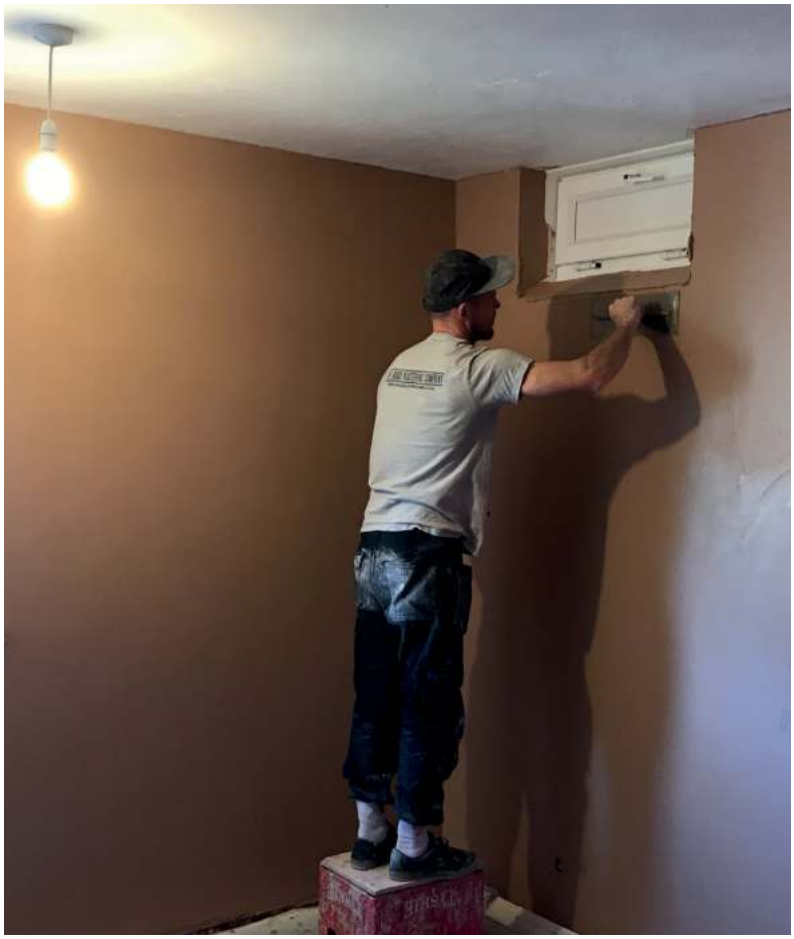
Finally, the wall was given a standard 2mm skim of plaster, giving an 8mm overall depth.

The Outcome

In the 12 months since the project was completed, the tenant continues to be very happy with the solution. The days of weekly complaints are long gone. The flat has remained totally **clear of damp, condensation and mould; the internal temperature is warmer and more stable**. **Heating bills are reduced** and the overall living comfort is very significantly improved for the tenants.

In the Covid-19 era, the nation's focus on respiratory health has never been greater, and the public is now starting to show concern of the clear link between domestic living conditions and the respiratory system. The NHS officially acknowledges that "if you have damp and mould in your home you're more likely to have respiratory infections, allergies or asthma. Damp and mould can also affect the immune system."

For Steve, his "dual pronged attack" has brought three-fold benefits. Not only have the complaints melted away, but he has helped deliver his organisation's vision by bringing about a "sustained improvement in the quality of life for residents", and he also knows that the chances of Covid-related respiratory complications have now been significantly contained. Now, with the confidence of knowing they have a solution which works reliably across all four seasons, Steve and his team are planning to fit the same system in many of the other flats, starting with ripping out the failed polystyrene in those "horrendous" penthouses!



The Good Plastering Company apply the final plaster skim, leaving the room only 8mm smaller.

All images of the issues present beforehand and the remedial work conducted were taken at case location.

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Steve

Maintenance Manager