

Water Damage And Mould Removal In A Supermarket

CASE STUDY

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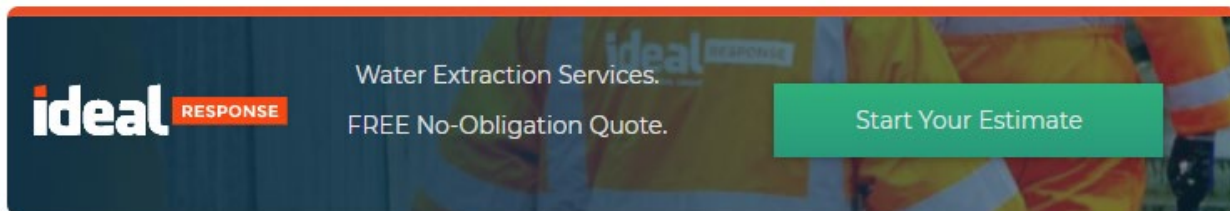
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THE CHALLENGE

No matter how well maintained a property or commercial premise may be, disaster can always strike due to outside forces or third parties. For a large UK supermarket, the construction of a hotel directly above the store was responsible for leaks from water pipes above which proved to be catastrophic for the supermarket.

Due to a substantial amount of water damage and damp, which eventually led to mould growth, the supermarket was deemed unsafe and had to close its doors. This not only effected regular shoppers and cost the supermarket income, but also put the jobs of supermarket workers at risk until the situation could be remedied.

The challenge for Ideal was to quickly assess the scale of water ingress and the extent and spread of fungal proliferation in order to provide an extensive remediation and drying regime.



THE IDEAL SOLUTION

The Ideal Response team were contacted by the refurbishment company who looked after the supermarket, and a site visit was arranged to assess the damage.

It was clear that the majority of areas in the supermarket had suffered substantial impact from leaking water, and secondary damage due to the ingress of rainwater. This damage included wet and contaminated sections of suspended ceiling, plasterboard, and significant amounts of mould which had spread in the premise. Mould can cause respiratory problems or infections, allergies and asthma – so it's health impact on humans should never be underestimated.

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Since remedial work would require the supermarket to be stripped out of contaminated materials, refrigerant equipment, casing and shelves, plus contaminated floor coverings, Ideal advised that a preliminary air and surface decontamination should be used to ensure those works could be carried out safely. For this we used a high-density HEPA-rated vacuum system to remove mould and mould spores.

Once our team had double bagged waste material for safe removal and disposal, we treated surface areas with a series of cleaning processes: first with a broad-spectrum biocide solution; then again with extraction using a high-density HEPA-rated vacuum system on any exposed surface mould; and finally with the release of the broad-spectrum biocide into the air (known as Ultra Low Volume fogging).

The thoroughness of our remediation programme was not over yet. Plasterboards which had not been highlighted for removal were thoroughly inspected through 30mm core holes drilled at regular intervals below skirting board height. Our team then repeated the cleaning process above on materials that fell outside of our accepted parameters.

All areas then received our air and surface decontamination process called BioSweep, which destroys indoor bio-contaminants and organic compounds including mould spores.

Finally, a speed drying programme was implemented in the building, with on-going monitoring and supervision throughout the drying cycle. Air and surface sampling was then completed to certify that the area was fit for re-occupation. There is no doubt that this remediation programme was an extensive one – but the Ideal team performed it as rapidly as possible and returned the supermarket back to a safe and hygienic condition for customers and staff.



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THE TECHNICAL BIT

Fungal proliferation requires a detailed remediation and drying regime to reduce the overall elements of risk to health and safety, the 'indoor environmental impact', plus the financial impact and future potential issues and liabilities to a commercial business like a supermarket.

Ideal Response therefore uses the latest cleaning techniques, technologies and specialist chemicals for mould eradication. For the supermarket remediation, these included:

- HEPA-rated vacuum system: Far more powerful and effective than a normal vacuum, this is used to trap mould spores, eliminating any chances that the mould spores can become airborne during the cleaning process.
- Broad-spectrum biocide solution: Most disinfectants are formulated to kill a specific set of organisms and to pass standardised lab protocols for the US EPA, DEFRA, EU, etc. This typically means

that they use the same somewhat dated chemical technology and provide similar results during the cleaning process. The broad-spectrum biocide solution which Ideal uses is called D7, and differs since it was developed and engineered to do much more, including the elimination and inactivation of DNA and RNA. This prevents any organism's re-growth and its ability to build resistance. D7 was designed to be efficacious on a wide range of substrates, and at different temperatures, humidities and soil load conditions, where other chemistries simply fail or have limited effectiveness. In addition, and unlike oxivir, bleach, formaldehyde and other cleaning products, D7 was designed to be non-corrosive, environmentally friendly and biodegradable.

- ULV fogging: While our broad-spectrum biocide solution remediates mould and effectively decontaminates affected surfaces, some residual staining can remain. That is why we also use Ultra Low Volume (ULV) fogging in affected areas. This releases a fine mist of the antimicrobial/broad-spectrum biocide into the air, targeting any non-visible, airborne mould spores that if not eradicated, can return to hard surfaces and allow for a future ingress of mould.

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- **BioSweep:** We use this latest technology as a final treatment for ozone decontamination and permanent eradication of indoor bio contaminants, volatile organic compounds and lingering smells. The BioSweep process is very effective at ensuring that small areas that could have been potentially missed or overlooked will be effectively treated, reducing any possible future issues with abnormal microbial growth. The BioSweep process employs a five-stage process of oxidation and is effective against many pathogens such as fungi and also fine particulates such as smoke, fumes, dust, etc. One portable BioSweep unit gives airborne and surface contamination destruction, and the process is safe for use on all materials, as well as being low-temperature and residue-free.
- **Restorative drying:** Drying is an essential final step in mould remediation. Our goal is to bring the materials to be dried back to a pre-incident condition, with moisture content – also known as Moisture Equivalency (WME) – not exceeding 14%. To achieve this, we reduce the moisture content of the affected materials using positive and negative pressure systems, by injecting heated 'dry air' under high pressure into the voids. We use desiccant units to provide ambient dry heated air which removes the large volumes of moisture from affected structures. The introduction of this heat significantly increases the efficiency of the drying process, since each unit is capable of processing 4,300 m³/hour of air, helping to meet our drying timeframe goals.

The drying process is carefully monitored and we are only satisfied when internal structural conditions are at, or better than, normal room conditions. At this point, any moisture which remains on and in the materials will not support active fungal growth; the materials will be in 'equilibrium' with normal room conditions; and structural and content materials will have finished drying themselves, unassisted by mechanical drying, without suffering further damage.

In the case of this supermarket flood and mould remediation, the conditions of the premise and materials within it were correctly returned to their pre-existing moisture levels, and the project was a great success in eliminating the ongoing dangers of mould.



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