

## An Invisible Threat to Health: Mold in Building Structures

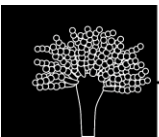
### I - Introduction

The risk of mold should not be underestimated. If environments are not properly controlled, mold can infiltrate every corner of life, potentially causing chronic mold-related illnesses and even posing a threat to life. The death of a 2-year-old boy in the United Kingdom in 2020 has garnered worldwide attention, as its cause was found to be linked to mold.

According to reports, the young boy lived in a harsh living environment for an extended period. The living space was damp, and extensive black mold was visible on the walls and ceilings of the bedroom, kitchen, and bathroom, indicating a long-standing mold issue in the area. What raised an alarm was that **mold growth structures were detected in the boy's blood and lungs**, suggesting that the residents may **have been inhaling a substantial amount of mold spores** over an extended period. Following an investigation by medical authorities, it was found that mold had entered the boy's body, causing severe swelling and congestion in his throat, trachea,

and respiratory passages. Organs exhibited a severe **allergic reaction** to the mold, ultimately leading to difficulty in breathing and **posing life-threatening risks**.

**The mold contamination of architectural structures has become a serious issue posing health hazards**, and such problems are widely prevalent in various settings, including educational campuses, office spaces, residential communities, manufacturing facilities, hospitals, logistics, warehouses, and more. Different groups of people spaces like these have the potential to be affected by mold. Individuals with a weakened immune systems, such as children, pregnant women, patients, or the elderly are especially vulnerable. When the environment is filled with mold spores, **it can lead to respiratory discomfort, allergic reactions, or other respiratory system diseases**. In severe cases, it can result in pneumonia or even death. Therefore, effective prevention of the threats posed by environmental mold is crucial.



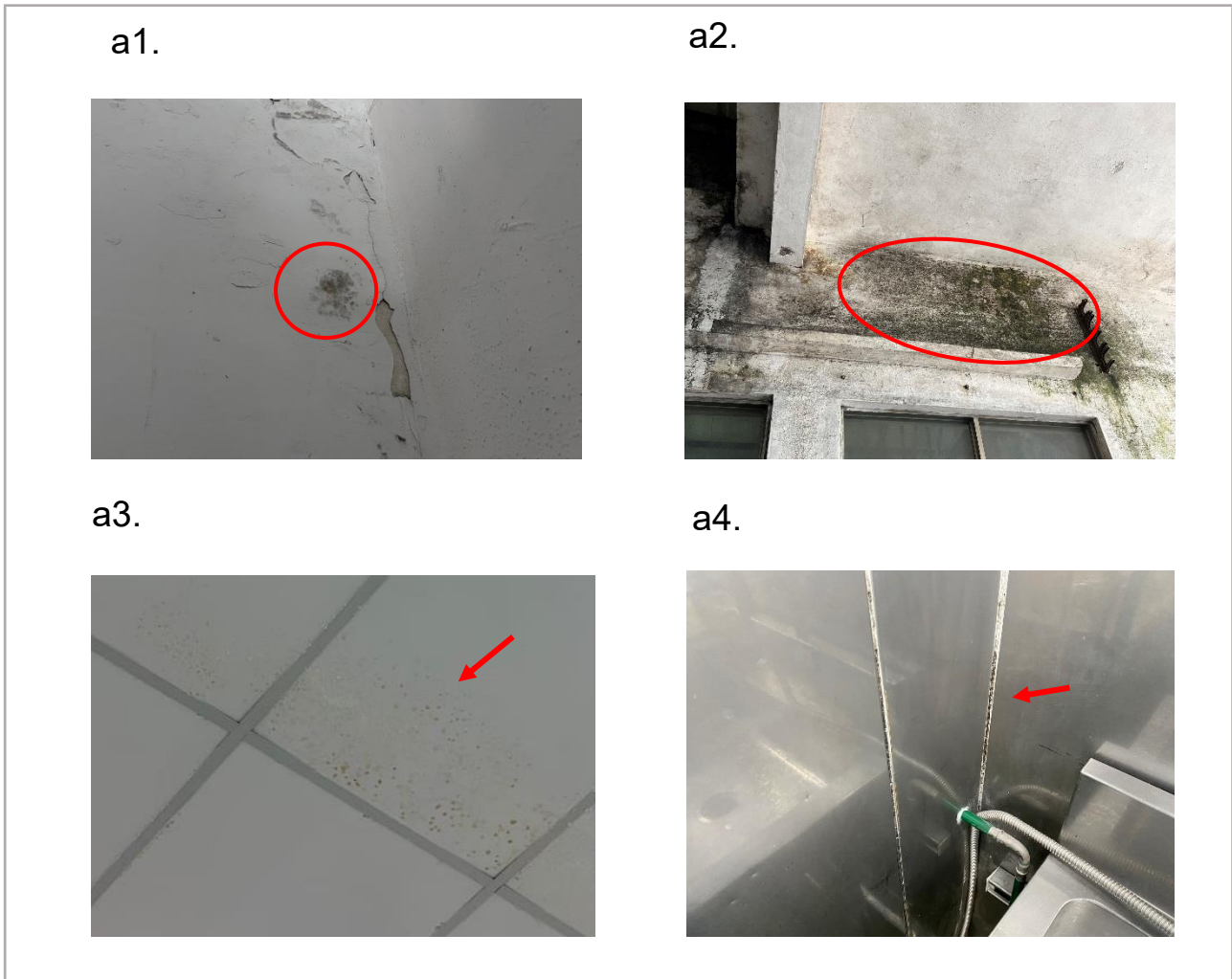
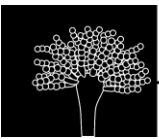
According to past assessment cases at the YCM Mold Research Center (MRC), there is often an overlooked risk of mold growth in building structures, including ceilings, walls, floors, windowsills, and curtains. These structural surfaces may become favorable environments for mold growth due to factors such as humidity, poor ventilation, and the presence of nutrient sources, turning into potential sources of mold contamination. YCM MRC analyzes the risks associated

with mold in building structures and provides reference guidelines for environmental management.

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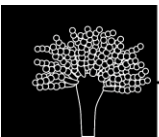
## **II - Results**

Leveraging years in assessing mold issues in building structures, YCM MRC presents common mold risk factors in play (Figure 1). The diagram highlights potential problematic areas, offers improvement suggestions, and addresses the health risks associated with mold proliferation.



**Figure 1. Common visible mold risks in shoe factories**

a1.- a2. Moldy walls; a3. Damp and moldy ceiling; a4. Moldy silicone.



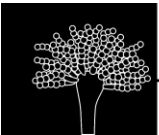
### III - Conclusion

The presence and concentration of mold spores in the air cannot be visually detected, making it essential to meticulously prevent sources of mold in the environment. This precaution is crucial to avoid mold reproduction, prevent cross-contamination issues, and mitigate the impact on other building structures or product quality, potentially endangering the health of residents and personnel.

Drawing on the extensive assessment cases of the YCM MRC, we frequently encounter **instances of mold on walls** in work or living environments. This is often an overlooked mold risk. If not promptly and properly addressed, the extent of mold will rapidly expand, adversely affecting the surrounding structures and equipment. Once mold is detected on the walls, immediate removal is necessary to prevent its spread to other areas and the development of a more severe mold issue. For instance, in environments with high water usage, such as leather, textile, or metal manufacturing plants, or in the bathroom environment at home, it is crucial to pay close attention to the issue

of architectural structures developing mold. If the humidity or moisture in these environments is not properly controlled, the wall structures can easily absorb ambient moisture, providing an ideal growth environment for mold spores in the air. Once **mold spores attach**, they **initiate growth, reproduction, and spread**, leading to extensive mold contamination and increased health risks.

In addition to mold issues on walls, attention must also be directed to the ceiling and commonly used silicone filler in gaps for any signs of mold. Due to the different growth structure of mold compared to bacteria, once mold reproduces, **its hyphae can penetrate deep into the building structure, causing persistent damage**. Even if the surface mold is removed, the mold situation may still recur. Specific genera such as *Aspergillus* spp. and *Penicillium* spp. are commonly found in environments. Apart from causing mold on leather or textile products, they also have the potential to produce toxic substances or release organic compounds, leading to respiratory diseases in humans, including coughing, asthma, allergic



reactions, and even damage to the immune system, nervous system, and organ functions.

The YCM Mold Research Center (MRC) possesses specialized knowledge and an extensive practical assessment experience, enabling precise evaluations of mold risks in the environment. We can provide natural,

non-chemical mold prevention recommendations, aiming to prevent the impact of mold issues on human health and product quality. Our goal is to contribute in the creation of safe and healthy work and living environments for everyone.