

## Getting it right the first time

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What's that musty smell? Mold?

Mold is a tell-tale sign of a moisture problem; and a clarion call to action. In the aftermath of Super Storm Sandy, this we can't afford to ignore. All buildings undergo cycles of wetting /drying; this is normal and warrants nothing extraordinary. If leaks are repaired and floors and walls dried, mold problems are avoided. But persistent dampness and excessive moisture can be devastating.

For commercial building owners, mold prevention means knowing what to do, who will do it, and getting it done.

**Step 1 - Prevention:** When it comes to mold problems, the expense of major forensic and repair work can be prevented at the outset. An overall moisture condition survey can be conducted before a building is purchased, including analysis of the roof and the building envelope for cracks, defects and penetrations. The survey includes review of previous reports, recommended improvements, work done, and interviews to discover unresolved problem areas. Because root causes of moisture/mold growth, and the extent of conditions are often complex, a team approach (architect, professional engineer, certified industrial hygienist), may yield the most comprehensive survey, and should be considered for that reason.

Over time, and with the assistance of forensic architects, the building envelope can be maintained so that it serves as a barrier that responds intelligently to wind, moisture, pressure, expansion and contraction, and so that the water management details (e.g., drainage planes and flashing) work.

When repairing water-damaged walls and roofs, owners have the desirable option of rebuilding them smarter.

Mechanical and electrical engineers evaluate MEP systems and help with plans to replace, repair, back up and relocate vulnerable equipment. In NYC after Super Storm Sandy, fuel tanks and pumps have been encased in flood protection with watertight manholes; utility vaults and distribution panels relocated to second floors; electrical panels fully sealed; and stackable flood barriers set up.

**Step 2 - Management:** For new construction, litigation often centers on claims that materials got wet during construction, leading to mold damage. This type of claim is often legitimate—within 48 hours mold begins to grow on gypsum wallboard. The key is to prevent water damage, such as by requiring the GC to assume responsibility for sequencing and coordinating work, including temporary protection to assure that water does not get in, and materials are kept dry.

Industrial hygienists help owners with moisture management plans, including inspection/maintenance schedules. These plans help coordinate a professional response and establish a chain-of-command and a network of ready help, with expectations that a response can be scaled properly for any given situation. Needed resources can be deployed, enabling owners to demonstrate appropriate due diligence, preserving the building and protecting health.

**Step 3 - Remediation:** If there is mold, it should be promptly remediated. If mold is suspected on the

basis of odors, complaints and dissatisfaction, but not discovered, then forensic work by an experienced certified industrial hygienist can be useful, revealing evidence of hidden, problematic mold. If moldy gypsum is being removed and there is a question of how far mold damage extends, then surface or bulk sampling, in combination with moisture mapping may be useful. The certified industrial hygienist's report is used to develop plans for repair/remediation, protect occupants during repair, and, in some cases, to inform insurance adjusters and/or doctors.

Industrial hygienists help pre-qualify mold remediation firms, checking for certifications from IICRC or other reputable institutions, and mold liability insurance and coverage. Some remediation contractors employ pesticides, ozone, chlorine dioxide, and other chemicals that worsen air quality or lead to new problems. Beware of aggressive marketing of products whose value may ultimately be called into question. The Federal Trade Commission requires that material claims be truthful and substantiated, and has challenged a number of companies making anti-microbial claims.

It is essential that tenants and staff be protected during remediation work. In case of pre-existing respiratory conditions, relocation may be appropriate. Contractors should be independent of the investigators and the testing laboratories associated with remediation work.

Via teamwork, vigilance, care and clear directions, moisture is controlled, with mold growth prevented.

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