

# Mould, Moisture and Indoor Air Quality

Elia Sterling, President\*

**T**heodor Sterling Associates Ltd. has provided environmental services in British Columbia since 1973. During that time, the real estate industry has seen indoor air quality (IAQ) become an issue of increasing importance. Approximately 75 per cent of the public is concerned about the quality of the air they breathe in our buildings while government organizations such as Health Canada, the WCB, and CMHC have determined that poor IAQ affects 20-30 per cent of office and institutional buildings and an even greater proportion of residential buildings. In 1998 the WCB adopted comprehensive IAQ regulations for IAQ in all workplaces in BC.

Until recently, air quality concerns in buildings have been linked to ventilation system problems. However, today the vast majority of IAQ investigation requests we receive relate to mould and moisture concerns.

In British Columbia, we have seen a convergence of indoor-air-quality-related mould and moisture problems with building envelope and HVAC system failures. Mould and moisture in buildings have been identified as a key risk factor for a 75 per cent increase in respiratory illness, allergies, and asthma. The Barrett Commission on Leaky Buildings determined that mould and moisture resulting from building envelope failures can impact the structural durability of the building and the health of the building occupants and the construction workers.

Mould and moisture damage can be caused by a number of factors:

1. Moisture and condensation in the HVAC System.
2. Leaks in the building envelope from the foundation up to the roof.
3. Leaks from faulty plumbing or poor workmanship.
4. Moisture existing in the building materials before construction and sealed into the envelope.
5. Moisture from occupant activities such as showering or bathing.
6. Moisture from combustion sources, such as stoves and water heaters.
7. Poor site drainage.

Solving mould and moisture problems are the shared responsibility of the building industry including architects and engineers, contractors, owners and operators, building code officials and building inspectors as well as building users.

## IMPLEMENT MOISTURE MANAGEMENT AND MOULD SCREENING AS PART OF YOUR PRO-ACTIVE IAQ PROGRAM

The potential liability for not properly responding to mould and moisture problems is staggering.

Recently a Texas jury awarded \$32 Million to a family for damages caused by poorly repaired water damage to their home. This large judgment has caused the insurance industry to reduce policy coverage for mould caused by moisture damage.

A prudent building management team should implement a moisture management program as a risk management tool to prevent IAQ and mould problems from developing due to moisture damage. However, moisture management cannot completely prevent all water-related incidents from occurring. Once an incident has occurred diagnosing and solving moisture-related mould problems is complex and costly. The greatest cost of investigating mould and moisture concerns in buildings is the destructive testing of the building envelope and the HVAC System. In many cases, it is possible to avoid this cost by implementing a less-destructive screening procedure developed by our firm.

Using this screening approach, moisture related problems can either be ruled out, or the specific location of likely damage can be more accurately pinpointed. Once those areas of damage have been identified and the extent of damage has been determined, appropriate, cost-effective repairs and cleaning or decontamination can be implemented.

Considering the increasing liability exposure and reduced insurance coverage for mould damage to buildings, combined with the increasing public awareness regarding the health effects of mould and IAQ, including moisture management as part of a proactive IAQ program is an effective risk management tool.

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