

Mould and Other Environmental Risk Management Issues in Leasing

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Theodor Sterling Associates

- Established in 1973
- Recognized leader in the field of indoor air quality, mould and hazmat consulting services
- Providing services across Canada



Why should environmental issues be addressed?

- Regulation or Legislation
- Due diligence
- Public and Tenant Awareness
- Risk Management
- Insurance or Litigation
- Leasing, tenant satisfaction and retention



Environmental issues that affect Leasing

- Indoor air quality (IAQ)
- Mould and moisture
- Hazardous materials
- Sub-surface soil and groundwater contamination
 - This factor is usually address in Phase I or II ESA's as part of property transfer and Financing

Indoor Air Quality and Leasing

- Very important tenant satisfaction factor
- Is included as either general or specific criteria in lease document
- Some jurisdictions have adopted workplace IAQ regulations (BC)



Estimated Costs of Poor IAQ

\$ 6-14 Billion Respiratory Disease

\$ 2-4 Billion Asthma and Allergies

\$ 10-30 Billion Sick Building Syndrome

**\$ 20-160 Billion Reduced worker
performance (unrelated
to health)**

Indoor Air Quality In Leasing

- Factors affecting IAQ
 - HVAC system design, operation and maintenance
 - Materials and product off-gassing
 - Indoor (tenant) activities (printing, forklifts, industrial processes etc.)
 - Sub-surface soil contamination



Specific Causes of Indoor Air Quality Related Problems

<u>Cause of Problem</u>	<u>% of Times</u>
Ventilation	36%
Thermal Control	19%
Ventilation Infiltration	10%
Cross-contamination	11%
Indoor Sources	9%
Microbial Contamination	7%
Site Infiltration	2%
Undetermined Cause	6%

* Source: IAQ Investigations conducted since 1981 by Theodor Sterling Associates Ltd.

Mould and Moisture In Leasing

Today the vast majority of IAQ problems are caused by mold and bacteria infestation due to moisture in the HVAC system and moisture in the building envelope.



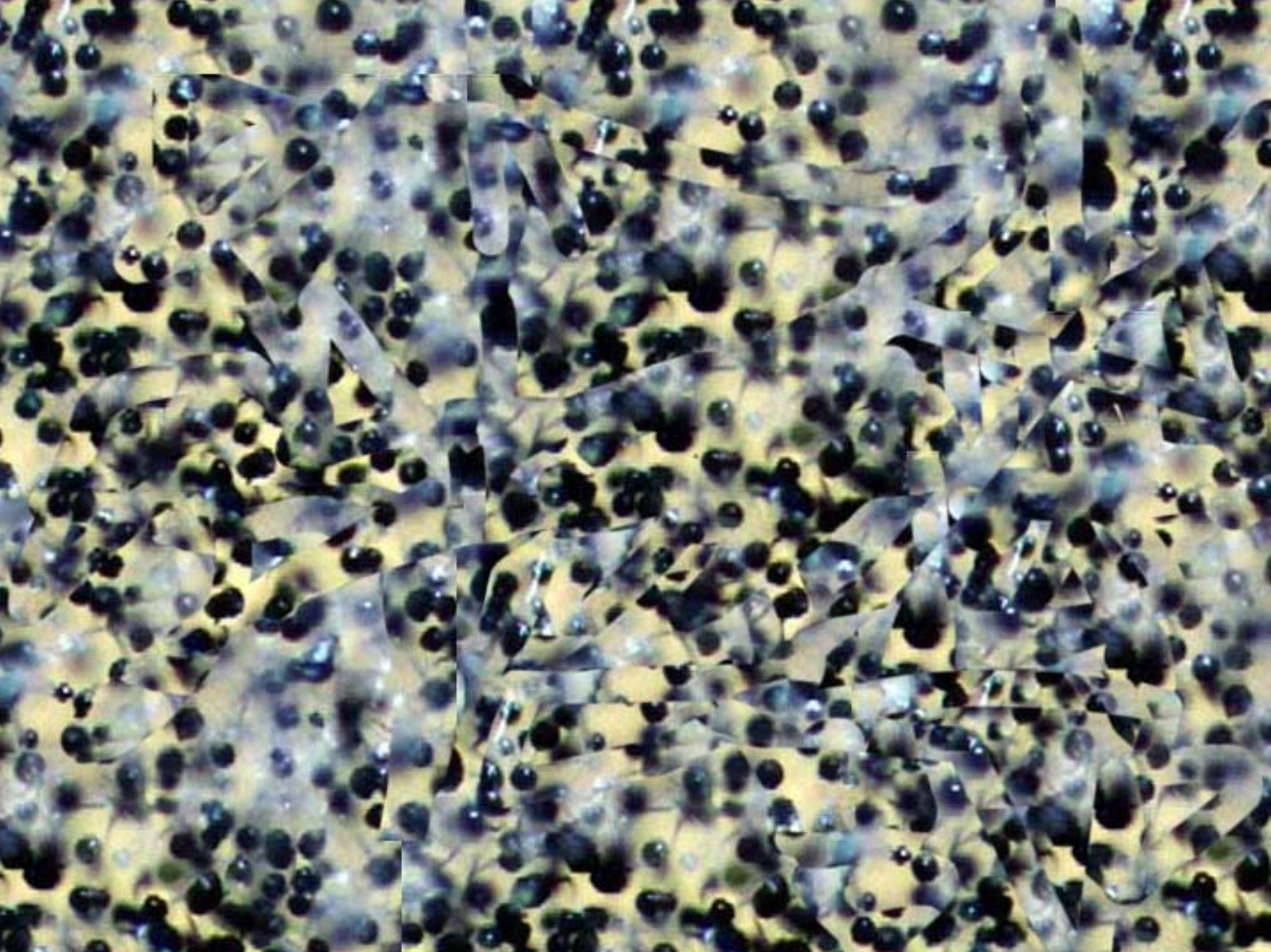
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Mould and Moisture In Leasing

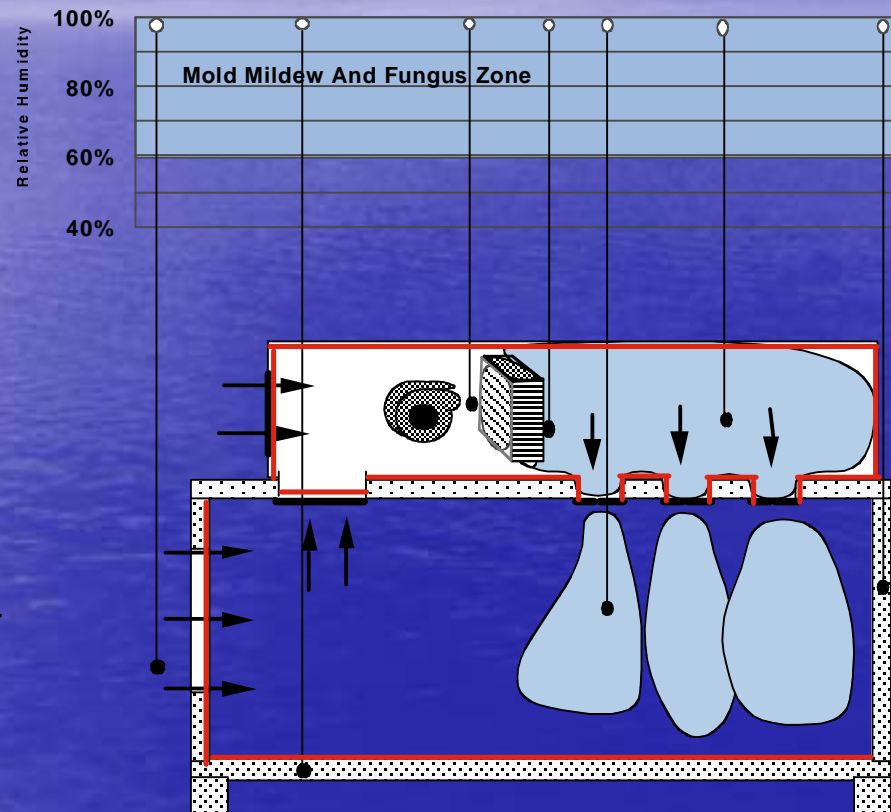
Moisture should not occur inside buildings.



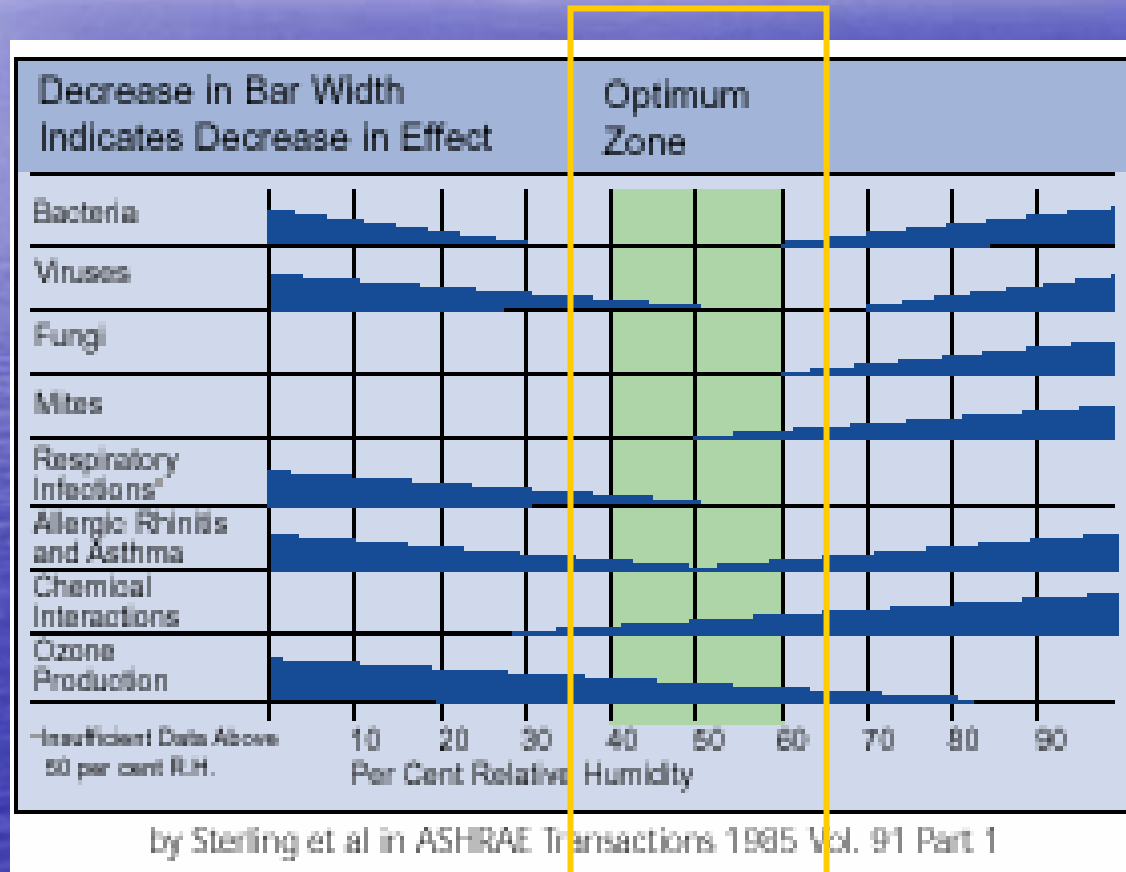
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Building Moisture Trap



Humidity and Health



Mould and Moisture in Leasing

- Mould concerns are extremely important to tenants and the public
- Moisture is often included in lease agreements in terms both of comfort and insurance factors
- Mould and moisture constitute a significant Insurance Risk Management Issue
- There is no mould regulation but are various guidelines

Leaky Buildings

- **Mold and moisture problems in buildings have become a \$Billion issue that has captured the attention of legislators, litigators and the insurance industry.**



Estimated Costs of Poor IAQ

**In 2002 the US Insurance Industry
paid out more than \$3 Billion in
Mold related Claims**



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Estimated Costs of Poor IAQ

In 2003 the Insurance Information Institute issued a report on Mold describing Mold litigation as a "Perfect Storm":

- A few high profile plaintiffs
- The ingenuity of the plaintiffs bar
- Intense media coverage
- Uncertain Science



Hazardous materials

- Asbestos is still present in most buildings constructed before 1985
- PCBs are found in ballasts and transformers
- Lead paint is often found under coatings in older structures
- Mercury can be present in thermostats and fluorescent light bulbs



Mitigate these risks

- Indoor air quality
 - Implement a Proactive IAQ program
 - Inspect and Maintain HVAC system
 - Use low emitting materials and products where practical
 - Contain construction areas and utilize negative pressure
 - Ensure compliance with ASHRAE ventilation and thermal comfort Standards and Guidelines

Mitigate these risks

- Mould
 - Institute a moisture management program
 - Deal with water leaks immediately
 - Conduct regular inspections for water related issues
 - Abate mould as per applicable guidelines (remove drywall and fibreglass – clean steel, concrete, etc.)

Mitigate these risks

- Asbestos
 - If present OH&S Regulations require an asbestos management program
 - Keep an up-to-date inventory
 - Educate staff, tenants/contractors
 - Abate as required (i.e. due to condition or potential to be disturbed during renovation or demolition)
- PCBs, Lead, Mercury
 - Tend to be identified and addressed during real estate and financing transactions

Thank you!!

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