

# Environmental News

FOR THE STAFF & CLIENTS OF PHH ENVIRONMENTAL LIMITED

## MOULD STANDARDS – A MOVING TARGET?

By Jim Bagley, M.C.I.O.B.

### Background

Since 1995 there have been a series of publications produced by various expert bodies that have addressed the issue of mould evaluation and remediation. In the absence of prescriptive regulations and standards (of which there are few, if any, in Canada) these various publications have influenced the risk management decisions and responses of public health professionals, property managers, remediation contractors and consultants. Keeping abreast of changes in expert opinion is a key to ensuring that due diligence requirements are being met.

### Pre 2001 Standards

Health Canada was one of the first authorities in North America to produce comprehensive guidelines (*Fungal Contamination in Public Buildings: A Guide to Recognition and Management*, Federal-Provincial Advisory Committee on Environmental and Occupational Health, Ottawa, Ontario, 1995). This document still remains one of the most useful



*Gypsum board contamination*

primers and includes an investigation algorithm which is as relevant today as it was six years ago. The New York City Health Department published guidelines on the assessment and remediation of *Stachybotrys* in 1993, which were updated in April 2000 to include contamination by all fungal species

(New York Department of Health, *Guidelines on Assessment and Remediation of Fungi in Indoor Environments*, April 2000). This document was adopted by a number of parties, primarily because it used simple risk assessment criteria based on the quantity of visible fungal growth. This document never purported; however, to have any mandate, and the views expressed were those of a small select group of individuals.

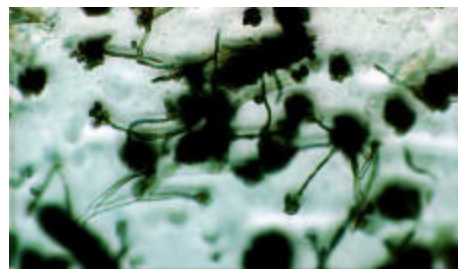
### New Consensus Standards

Two documents have been published in 2001 that have the weight of established professional and governmental organisations behind them. The American Industrial Hygiene Association (AIHA) had not published a major document on mould contamination since 1996. Their publication *Report of Microbial Growth Task Force*, AIHA Press, May 2001 sets out to augment existing standards and reaffirms the following key points from other documents:

- All fungal growth in occupied buildings, regardless of species, should be remediated as soon as possible and the moisture source rectified.
- Density and extent of mould growth should determine the degree of remediation and containment procedures.
- Remediation should comprise removal of contaminated semi-porous materials, cleaning of surfaces and removing remaining dusts.
- The use of bleach or other biocides is questionable in most instances.
- Atopic individuals and infants should be removed from affected areas during remediation work.

The US Environmental Protection Agency (EPA) had been silent on the issue of mould for some time. This organisation, representing the US Federal Government, produces standards and guidelines on environmental

issues that are consistently adopted throughout North America and the rest of the world. In March 2001 the EPA published *Mold Remediation in Schools and Commercial Buildings*.



*Stachybotrys under microscope*

The EPA states that this guide is "designed primarily for building managers", and "should serve as a reference for mold and moisture remediators". Compliance with current EPA recommendations, particularly when there are other somewhat contradictory and conflicting materials also currently available, is likely to be accepted as a clear demonstration of due diligence.

- The EPA has adopted the New York City Health Department principle of selecting remediation guidelines on the basis of the size of the affected area.

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- They acknowledge that there is a lack of any conclusive research on specific methods appropriate at a certain number of square feet, but recognise that some simple criteria are required to enable remediators to select appropriate techniques.
- The EPA document, unlike previous guides, details remediation techniques for various materials.
- This document stresses the need for containment of contaminated areas and negative pressure during remediation to protect occupants and remediators from exposure to mould.
- The resources list provided by the EPA is extensive, and provides contact details for a wide range of other bodies that provide specialist information on aspects of mould remediation and health not addressed in previous material.
- The EPA document is available online at: <http://www.epa.gov/iaq/molds/index.html>, or can be obtained from any PHH Environmental office.



*Hidden mould*

### **SOME KEY QUESTIONS ANSWERED**

The following are some of the questions most frequently asked by property managers, remediators and building occupants. Answers given are based wherever possible on the AIHA and EPA 2001 guidelines.

#### **What Regulator Will Require Me to Respond to Mould Contamination?**

Despite the paucity of explicit Federal and Provincial Regulations on this issue a wide range of regulators including Workers Compensation Boards and Medical Health Officers have invoked their powers to make

property owners and employers act on mould contamination when brought to their attention.

#### **What degree and type of containment is required for mould remediation?**

Any area of contamination in excess of 10 square feet should be contained using polythene barriers. The containment area should be kept under negative pressure using exhaust fans. For containment in excess of 100 square feet the containment should include a decontamination chamber to allow safe uncontaminated access and egress.

#### **Are biocides needed to remediate mould-contaminated materials?**

The use of biocides such as chlorine bleach is not recommended as routine practice during mould contamination. The effectiveness of bleach in reducing allergenic and toxigenic materials in remediation work has not been demonstrated. (In limited cases such as contamination by sewage pre-remediation, biocidal treatment may be useful to reduce concentrations of viable bacteria and viruses.)

#### **Should building occupants remain in the vicinity of remediation activities?**

The use of effective containment during remediation work will greatly reduce the potential for exposure of building occupants to fungal spores and metabolites. If possible remediation activities should be scheduled during off-hours when building occupants are less likely to be effected. The remediation plan should consider and accommodate individuals with asthma, allergies, compromised immune systems and other health-related concerns.

#### **Is sampling necessary?**

If visible mould growth is present, sampling is not necessary to plan a remediation strategy. Where litigation is involved (or likely to be) or the sources of mould contamination are unclear sampling may be required as part of the initial site evaluation. Sampling may also be useful in order to determine if an area has been adequately cleaned or remediated.

#### **What constitutes a successful remediation?**

- The moisture problem has been fixed or eliminated.
- All contaminated material has been



*Controlled removal*

removed and all dust cleaned up.

- Mouldy odours should no longer be present.
- Species and concentration of moulds in the building should be similar to those found outside.
- People should be able to re-occupy the space without health complaints or physical symptoms.

#### **What about Mould and the General Public?**

Mould is at least as ubiquitous in the home as in the workplace and public buildings, if not more so. Some housing (particularly specialist or low cost tenanted housing) can be both home and workplace at the same time. Responding to mould contamination can be very costly, often more so than fixing the water problem that caused the damage. Advice on mould abatement and prevention is available to homeowners through a number of excellent publications produced by the Canada Mortgage and Housing Corporation (CMHC). Links to the CMHC and other mould resources can be found on PHH Environmental's website. For more information contact Jim Bagley on 250-499-0090 or on [jbagley@phhenv.com](mailto:jbagley@phhenv.com) ♦

### **APPEAL BOARD DECISION STATES ENVIRONMENTAL ISSUES REDUCE ASSESSMENT AND PROPERTY TAXES** By Paul Sullivan

*This article has been prepared by Paul Sullivan and Peter Austin of Burgess Austin Sullivan Property Consultants Ltd., a subsidiary of Burgess, Austin, Cawley & Associates, one of the largest commercial appraisal companies in Vancouver. The company specialises*

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*in the review of property tax assessments, preparation of material for the Assessor and appearances at the Assessment Appeal Board.*



*Possible contamination*

British Columbia Assessment utilises the Mass Appraisal System (MAS), which is intended to produce high quality property valuations quickly, accurately, with uniformity and a low cost. Environmentally challenged sites are relatively unique and do not reflect the typical market values. The traditional techniques for evaluating a property in the MAS are thus not as appropriate for contaminated properties. A large number of similarly contaminated properties would be required in order that an accurate value could be derived by this approach. Alternate forms of assessment are required for sites to which traditional methods can not effectively apply. The cost to cure has evolved as a reasonably well accepted allowance in the assessment process.

A contaminated site is land in which the soil or water contains particularly hazardous substances known as special waste or a concentration of other substances that exceed the detailed standards in the regulations. This definition comes from Bill 26. Contamination can result from surrounding properties, hence, if an owner is adjacent to a gas station or an industrial site where activities with contaminants are prevalent, there may be grounds for appeal if potential contamination exists. Contamination may exist that an owner is unaware of due to the fact that his

current use does not concern contaminants, however, a check into the historical background may reveal potential problems.

Under the MAS method of valuation, B.C. Assessment will attempt to value your property based upon a selection of comparable properties similar to the subject. Locational, physical and economical considerations are applied to the comparable sales in deriving an appropriate value. In considering the cost to cure to make an adjustment for contaminated sites, B.C. Assessment is not in the environmental business and do not proclaim to be experts on the topics.

In order to obtain a reduction, it will be necessary to obtain a professional third party opinion as to the cost of remediating any environmental concerns. Without a report with a professional estimate, reductions could be difficult to attain. There does not appear to be a clear policy at B.C. Assessment in terms of allowing for a reduction based upon the cost to remediate.



*Bio-waste pile  
Contaminated soil*

#### **Decision from Assessment Appeal Board**

Appeal No. 2000-09-00117 is an appeal of Chinatown Plaza, a mixed use commercial development with retail, office, restaurant and parking. This site had been used as a coal gasification plant and quantities of waste were spilled or disposed of at this site. The remediation of the site through removal of contaminants was considered to be either too costly or not feasible and an assessment/management approach was implemented. The Board found that there is an additional risk for an investor in Chinatown Plaza compared to uncontaminated real estate in the Chinatown neighbourhood. The Board added

1.5% to the capitalization rate to reflect the risk.

The decision is significant as B.C. Assessment has not generally recognized *stigma* as it relates to properties with environmental issues. The decision from the Board left some question as to whether stigma affects the value for industrial properties to the same extent it may for a residential or commercial property. We have reviewed sales transaction which support that there is significant consideration, given for industrial style properties, as indicated by a recent transaction in the Vancouver South industrial area. In this instance, the remediation costs were not known to the vendor or the purchaser, and a price adjustment of 25% was accepted by the vendor. At the end of the day, the actual costs were only 10% of the 25% negotiated between vendor and purchaser. In essence, it appears that purchasers are not willing to accept the risk without a significant lift in the yield to reflect the potential environmental concerns.

#### **How Does One Reduce the Assessed Value**

In order to request a reduction in your assessed value, the following steps must be undertaken:

1. A third party report should be available, detailing the cost to cure the contamination issues and the time for total remediation.
2. A qualified appraisal valuation from an appraiser familiar with the assessment process would be required to determine whether the Assessor's base value is reasonable.
3. A report prepared for B.C. Assessment prior to December 10<sup>th</sup>.

If you miss this "pre-roll" deadline, the same process can be adopted in January when the Assessment Notice is received – Filing deadline: January 31<sup>st</sup>.

#### **Conclusion**

In conclusion, there are no firm rules relating  
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to contaminated sites and assessed values. Reliable third party documentation, an understanding of the assessment system and how their values are derived are essential in order to be successful in an appeal of this nature.

At the beginning of January each year, the owner of the property is sent a Property Tax Notice. In many cases, tenants do not receive this notice and are often, therefore, unaware of the assessed value upon which their taxes will be based. Tenants are recommended to contact their landlord in January in order to obtain a copy of the notice or, alternatively, they can obtain assessed values from the local B.C. Assessment Office. In the event that an owner of a property feels that his value is reduced due to the presence of any form of contamination, he must appeal to the Property Assessment Review Panel by January 31<sup>st</sup> of any year. For more information contact Paul Sullivan on 604-689-1233 or on [gen@bcaopr.com](mailto:gen@bcaopr.com) ◆

## wasteweb.ca

### A CANADIAN ONE STOP DIRECTORY FOR GENERATORS OF REGULATED WASTE

By John Holland

A Canadian waste generator is faced with a perplexing range of waste disposal options. Is the facility licenced or permitted to receive your material? Do they have adequate insurance? Do they have a monitoring program? What orders have been written? Do they have an emergency response plan? Have they ever been audited?

#### Who can take my waste?

Until now the onus to establish the legitimacy of the landfill or recycling operation was placed on the generator. The need to verify the processes that indicate diligence by the generator are more profound than ever. wasteweb.ca is a solution to this dilemma. Receivers of waste can list on our site with the stipulation that compliance history, insurance, site specific issues and waste processes are listed. With the wasteweb database, generators will finally be able to make informed expeditious decisions on where their

waste goes. Receivers can be contacted directly and confidentially on line.



wasteweb.ca is due to launch on September 24, 2001. Prospective receivers or generators can obtain more information by contacting Scott Cooper on 604-244-8101 ext. 232 or on [scooper@phenv.com](mailto:scooper@phenv.com) ◆

## STAFF IN THE NEWS

**John Holland** presented:

- *Removal of Hazardous Materials During Building Deconstruction*, 2001 Recycling Council of BC Conference, Richmond, April 2001.

**Jim Bagley** presented:

- *Mould Assessment and Remediation*, BC Public Schools Employers Association - 1 day, February 2001
- *Mould in Leaking Buildings*, BC Building Envelope Council BC Lower Mainland Chapter plenary session, April 2001
- *Mould in Leaking Buildings*, BC Building Envelope Council Vancouver Island Chapter - plenary session, May 2001
- *Airborne Contaminants in Forestry*, BC Forest Industry safety conference, Kelowna, April 2001
- *Mould in Portables*, Modular Buildings Institute Annual Conference, Sept 2001

**Randy Scott** presented:

- *Emergency Planning in Forestry*, BC Forest Industry safety conference, Kelowna, April 2001
- *Packaging and Shipping of Infectious Substances and Emergency Plans - Why Do They Fail?*, University of Texas, December 5, 2001 & December 7, 2001

**Bruce Stewart** presented:

- *Hazards and Control of Mould Contamination in Buildings*, Treasury Board Occupational Safety and Health Seminar, Chatham, November 16, 2000
- *Hazards and Control of Mould in Buildings*, Ontario Nonprofit Housing Association, Toronto, November 25, 2000
- *Hazards and Control of Mould Growth in Buildings*, PM Expo, Toronto, November 29, 2000
- *Pro-active Management of Mould: Take-home Advice for Building Managers*, Restoration Environmental Fungi & Environmental Conference, Markham, February 22, 2001
- *The Growing Liability for the Insurance and Restoration Industries Posed by Hazardous Mould in Buildings*, Paul Davis Systems Seminar, Mississauga, May 17, 2001
- *Indoor Air Quality and Building HVAC Systems*, Canadian Institute of Public Health Inspectors National Conference, Winnipeg, June 11, 2001
- *Controlling the Hazards and Liability of Mould Growth in Buildings*, NE Regional Meeting of the Modular Building Institute, Toronto, June 22, 2001
- *Hazards and Control of Mould Contamination in Hospitals*, Canadian Healthcare Engineering Society Annual Trade Show & Education Forum, Richmond Hill, September 18, 2001
- *Update on Regulation and Control of Mould in Buildings*, PM Expo, Toronto, November 2001
- *Environmental Risk Management*, part of Risk Management Seminar Series offered by the Toronto Construction Association, Toronto, November 5, 2001 ◆

## STAFF UPDATES & NEWS

### Edmonton Office

**Darlene Dembicki** has joined our Edmonton office as an Office Administrator. Darlene holds a Bachelor of Arts degree from the University of Alberta. **Rhiannon Filip, Michael Rausch**, and

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**Patrick Martin** are our newest technologists. Rhiannon holds a diploma in Occupational Health and Safety from McMaster University and a B.Sc. from the University of Waterloo. Michael is currently enrolled in the Environmental and Conservation Science program at the University of Alberta. Patrick is a summer student who will be entering his 4th year of Education (secondary) at the University of Alberta this Fall. **Jerry Botti** has relocated from our Richmond office to join our Edmonton team.

#### Calgary Office

**Amanda Wilson** has joined our Calgary office as an Office Administrator. She is a graduate of the Office Administration Program at the Southern Alberta Institute of Technology. She has several years office experience working in the environmental lab sector.

#### Prince George Office

**Selena Ross** is our newest Technologist in the Prince George office. Selena is a UNBC Co-op student in the third year of her Geography degree.

#### Victoria Office

**Tana Wood** has joined our Victoria office as a Technologist. Tana is completing a Civil Engineering Technology degree at Camosun College.

#### Richmond Office

We have two new Project Coordinators in the Richmond office. **Paul Embregts** holds a civil engineering degree from McMaster University in Hamilton, Ontario and has conducted numerous Phase I & II Environmental Site Assessments. **Jeremy Rayski** holds a Master of Science in Marine Resource Management and a Bachelor's degree in Construction Management. Jeremy has experience conducting property standard assessments and acting as a liaison with consultant engineers. Also joining us are **Megan Shannon** and **Ian Simpson** – our newest Technologists. Megan is currently completing a diploma in Environmental Protection Technology at Kwantlen. Ian is a recent graduate of

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BCIT Building Technology. New administration staff in the Richmond office include **Denise Skinner, Michelle Graham, Nancy Lam** and **Gloria Hollinger**. Denise is our Senior Office Administrator and has over 10 years office administration and management experience. Michelle is our Receptionist/Office Administrator. Michelle holds a B.F.A. from the University of Victoria and comes to us with a background in retail. Nancy is our Accounting Assistant. She is a co-op student at Langara College where she is completing an Accounting Diploma. Gloria is our Project Administrator and holds a B.Sc. from UBC. ♦

### 2001 TRAINING COURSE SCHEDULE

Course	Date	Location
Emergency First Responder	November 28, 2001	Vancouver
Emergency Planning for Senior Managers	November 29, 2001	Whistler
Hazards and Control of Biological Contaminants in Buildings	September 21, 2001	Calgary
Mould Assessment and Remediation in	October 26, 2001	Vancouver

For more information please contact the appropriate office listed below or [http://www.phhenv.com/training/t\\_frm.html](http://www.phhenv.com/training/t_frm.html).



ENVIRONMENTAL, OCCUPATIONAL  
HEALTH AND SAFETY SERVICES

1-87-REACH-PHH

#### Company Profile

PHH Environmental Limited specialises in providing environmental, health and safety consulting services. PHH offers assurance and peace of mind through its proven emphasis on practical and professional service.

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