

Maine Indoor Air Quality Council

An Interdisciplinary Cooperative for
Indoor Air Quality



Council Formation - 1998

- ▶ **Assessment of Need**
Maine Environmental Priorities Project
- ▶ **Implementation Task Force**
Identification of Need for a “Council”
- ▶ **State Agency or Independent?**
Maine model: Independent, private, nonprofit
501(c)(3) organization

Council Mission: To Promote Quality of Life Through Improved Indoor Environments

- ▶ To identify and promote best practices for maintaining healthy indoor environments. The Council shall recommend credible and science-based (peer reviewed whenever possible) resources
- ▶ Determine and report on the status of indoor air quality efforts and coordinate indoor environmental improvement efforts between state agencies and the private sector.
- ▶ Raise public awareness of indoor air quality as it impacts quality of life and productivity.
- ▶ Promote educational activities in accordance with its mission.

Our Mission – shortened!

- ▶ **Best Practice Guidance Development & Identification**
- ▶ **Education**
- ▶ **Communications**
- ▶ **Policy**

Mission Achieved By...

Attention to Building Science:

- ▶ Design of Buildings
- ▶ Construction of Buildings
- ▶ Operations & Maintenance of Buildings
- ▶ Occupant Health: "Solving a health problem sometimes requires a technical fix"

Mission Achieved By...

Interdisciplinary Approach:

- ▶ Health/medical
- ▶ Design/Construction
- ▶ Operations/Maintenance
- ▶ Investigations
- ▶ Policy

Mission Achieved By...

Foundational Policy:

- ▶ Energy Efficiency & IAQ
- ▶ General Statement on Indoor Air Quality
- ▶ Health Basis for Best Practice Recommendations
- ▶ Mold Exposure
- ▶ Radon
- ▶ Source Control
- ▶ Whole Building Approach to IAQ
- ▶ Environmental Tobacco Smoke
- ▶ Interdisciplinary Approach to IAQ
- ▶ Motor Vehicles as Indoor Environments

Mission Achieved By...

Understanding Specific Contaminants:

- ▶ Mold/Moisture
- ▶ Radon
- ▶ Lead
- ▶ Pesticides
- ▶ Asbestos
- ▶ PCBs
- ▶ VOCs
- ▶ Health Risks Associated with specific products and practices

What we are not...

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- ▶ A state agency

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- ▶ Direct Services Provider

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- ▶ Large

What we are not...

- ▶ A state agency
- ▶ Direct Services Provider
- ▶ Large
- ▶ Like anyone else

What Defines Healthy IAQ?

Goal:

- ▶ Clean
- ▶ Dry
- ▶ Pollutant and Pest Free
- ▶ Comfortable

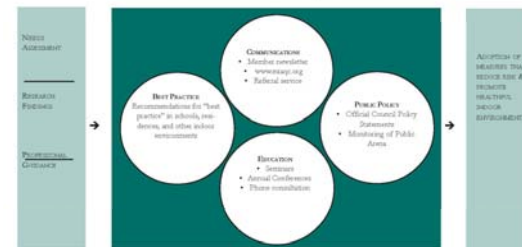
Clean.Dry.Pollutant/Pest Free.Comfortable.

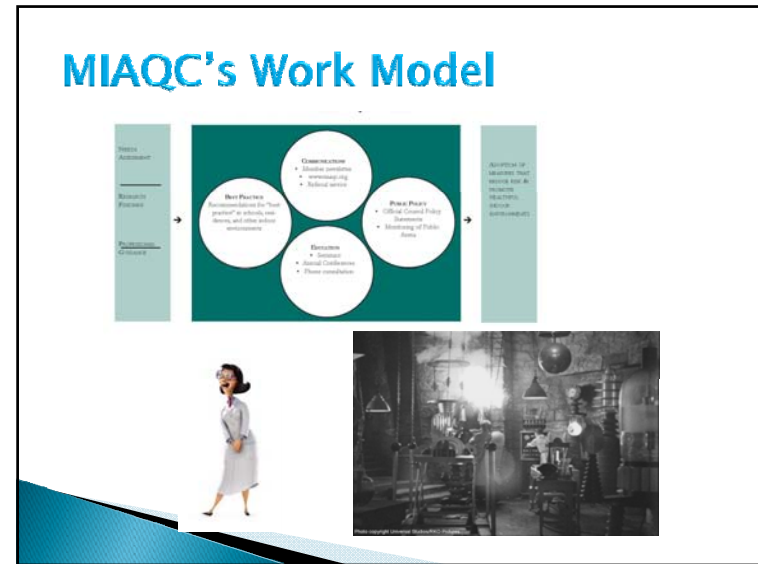
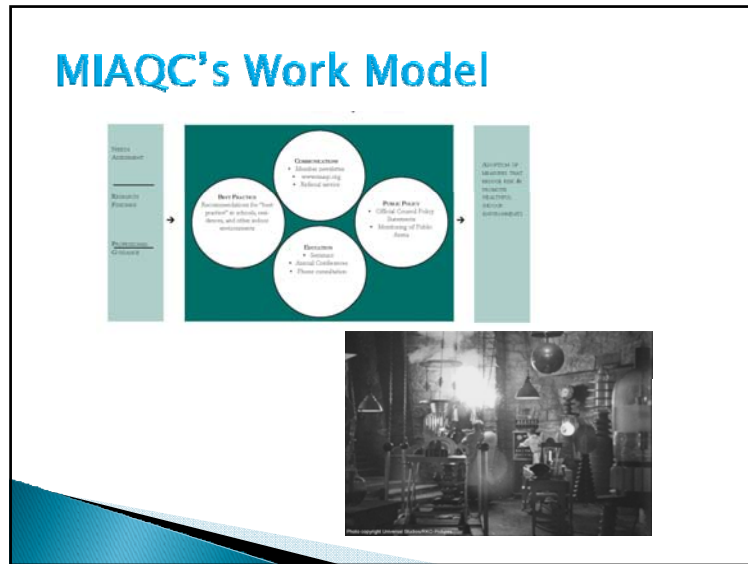
Primary Best Practice Tools to Achieve Goals:

- ▶ Prevent or Eliminate Pollutants (source control)
- ▶ Ventilation
- ▶ Thermal & Humidity Control
- ▶ Proper Operation & Maintenance
- ▶ Proper Use of the Structure

Adherence to these basic principles will significantly reduce the risk of adverse health effects from indoor pollutants. Building owners, operators and occupants should **educate** themselves on and must work together to implement the basic principles and available best practice guidance.

MIAQC's Work Model





- ## Best Practice
- ▶ Review of Available Best Practice Guidance
 - ▶ Development of Own Best Practice Guidance
 - ▶ MIAQC as a Resource for Best Practice Approaches to IAQ Problems

- ## Education
- ▶ Interdisciplinary
 - ▶ Primary Focus: Professionals
Secondary Focus: Public
 - ▶ Critical to MIAQC viability
 - ▶ Critical to safe and healthy homes, schools, workplaces

Communications

- ▶ Website
- ▶ E-mail
- ▶ General Public
- ▶ Service as a Resource

Public Policy

- ▶ Area most critical to effect change
- ▶ Foundational policy/philosophy
- ▶ Internal policy
- ▶ Legislative presence
- ▶ A “player” in the policy arena

A Success Story

1. Developed IAQ Checklist for New Residential Construction
2. Participation in the policy arena around development of the model building code, and subsequently the building code
3. Development of Education Programs
 - Residential Construction Series (trained over 400+)
 - Radon Code Classes
 - Residential Ventilation Classes
4. Web-based Options in Development Now

What Does a “Council” Mean for Maine?

- ▶ Non-contentious source of information and resource direction
- ▶ On-going source for education
- ▶ On-going source for best practice
- ▶ The only IAQ voice in the policy arena

In just over 10 years, the Council has...

- ▶ Established relationships with over 50 organizations and agencies, both in Maine and throughout the country, with identified areas of mutual interest.
- ▶ Established the Maine Indoor Air Quality Conference— (the largest IAQ event in northern New England)
- ▶ Breakfast seminar series
- ▶ Served as an educational and technical resource for other professional organizations in Maine

In just over 10 years, the Council has...

- ▶ Developed foundational IAQ policy statements
- ▶ Established a valued legislative presence
- ▶ Established a website for members and the public
- ▶ Developed a model for a lung-healthy home in conjunction with Habitat for Humanity and the American Lung Association of Maine
- ▶ Served as a legislative task force on school air quality, mold, and building codes
- ▶ Developed numerous best practice recommendations

In just over 10 years, the Council has...

- ▶ Received recognition and media attention for its interdisciplinary approaches to improve indoor environments in the state of Maine
- ▶ Increased membership by more than 600%
- ▶ Served as the convener of state and NGO organizations on IAQ issues of mutual interest

In just over 10 years, the Council has...

- ▶ Received state contracts from Efficiency Maine, DHHS, Radon Section, Asthma Program, DEP for projects of mutual interest
- ▶ Received three EPA Healthy Communities Grants for IAQ in Homes (current project on Weatherization & IAQ)
- ▶ Received numerous CRCPD Radon Mini-Grants to promote radon projects in Maine
- ▶ Received Federal Contract with NIOSH to promote Mold & Dampness Assessment Tool

Current Activity

- ▶ EPA Grant on Weatherization & IAQ
- ▶ NIOSH Contract for Mold & Dampness Assessment Tool
- ▶ Web-based Trainings
- ▶ Adopting a Checklist for Residential Renovations (out of which significant workplan activity will flow)
- ▶ Seeking Financial Sustainability

MIAQC on the Web

- ▶ www.maineindoorair.org
- ▶ Fact sheets for public
- ▶ Web resources
- ▶ IAQ notices of interest to professionals
- ▶ Membership tools: membership listings, resources, audio archives

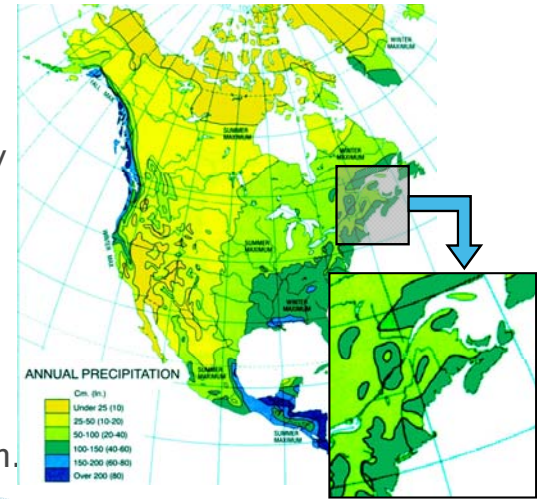
Questions?

Mold

- ▶ The only in-state resource for guidance around mold & dampness issues
- ▶ MIAQC receives on average 10–15 calls per week from Maine residents with questions about mold in their homes
- ▶ 90% of these are from tenants

Why is Mold Such a Big Problem for Maine?

Maine is definitely not a Dry Climate (40–60 in. a year)

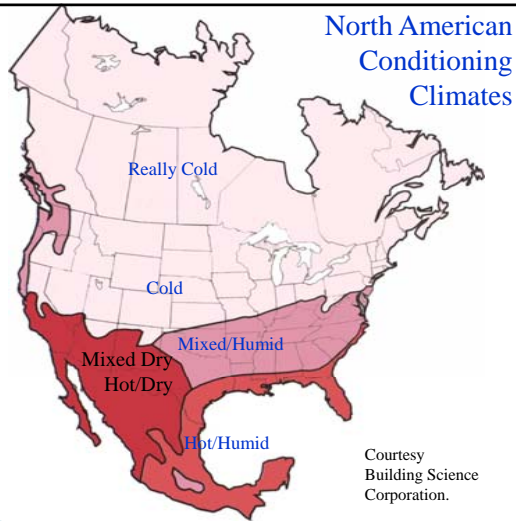


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The average year round earth temp in Maine: “Cold”

IRC N1102



Courtesy Building Science Corporation.

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Wet Climate + Cold Earth =



MIAQC Response to Mold Issues

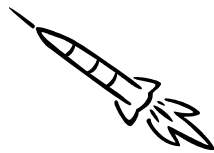
- ▶ Fact Sheet on Mold (available at www.maineindoorair.org)
- ▶ Policy on Mold & Health
- ▶ Convener of Legislative Task force on Mold (twice)
- ▶ Best Practice Guidance on Mold (includes how to interpret mold results)
- ▶ Best Practice on IAQ Testing
- ▶ Mold & Dampness a key part of our training and education programs
- ▶ Checklists to manage mold/moisture in rental properties
- ▶ Resource to homeowners via telephone

Mold: True or False?! (and some other IAQ stuff, too)

Adapted from a presentation by
Jonathan Klane, KEITH Inc.

True or False?...

- ▶ Mold as an indoor environmental issue is growing rapidly and making things very “problematic” (just like mold can).



TRUE

- ▶ Fear of mold has increased dramatically.
- ▶ Much of this fear is based on misinformation and ignorance.
- ▶ Now ‘everyone’ is afraid they have a mold problem.
- ▶ Lawsuits!
- ▶ Fleeing insurance companies
- ▶ Knee-jerk legislation

True or False?...

- ▶ There is such a thing as “toxic mold” technically speaking.



FALSE

- ▶ Molds by themselves are not toxic.
- ▶ Molds produce mycotoxins, which are by-products of metabolism.
- ▶ Different mycotoxins are produced depending on what substrate the mold is growing on

True or False?...

- ▶ All mold species produce “toxic mycotoxins” (as a byproduct or metabolite).



FALSE

- ▶ Not all molds produce toxins.
- ▶ Not all molds that produce toxins do so all the time
- ▶ Example: the mold used to make bleu (or blue) cheese, when grown on sheetrock instead of in milk, produces a toxin.

True or False?...

- ▶ Molds can produce chemicals called “volatile organic compounds” or “VOCs”.



TRUE

- ▶ VOC's are a by-product of fungal metabolism.
- ▶ There are few or no exposure limits.
- ▶ VOC's often cause odors and some are thought to cause some health effects.

True or False?...

- ▶ Mold causes mostly allergic reactions, triggers asthma, sinus congestion, runny noses, eye irritation, nausea, and fatigue.



TRUE

- ▶ The news stories about dire health problems caused by inhaled molds are based on incomplete or faulty investigations.
- ▶ Every instance where a full investigation was done to confirm a suspected health problem due to inhaled mold, the result was inconclusive at best.

True or False?...

- ▶ Dead mold spores are harmless.

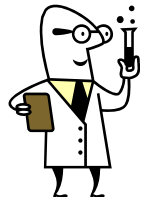


FALSE

- ▶ The reaction people have due to mold is often due to the spores.
- ▶ The irritation caused by live mold spores can be caused by dead ones, too.
- ▶ The mold spores that cause allergic reactions do so if the mold is alive or dead.

True or False?...

- ▶ There are known safe and unsafe levels of mold and/or mold spores (similar to OSHA's limits for chemicals).



FALSE

- ▶ There are no known safe levels of mold.
- ▶ Everyone reacts differently, so the level of mold that is acceptable to one person is not acceptable to another.
- ▶ The only 'safe' level of mold in a residence is when it's not growing indoors.
- ▶ That means keep the water outside!
- ▶ Laws requiring standards won't work.

True or False?...

- ▶ Only a space with no mold spores present is healthy.

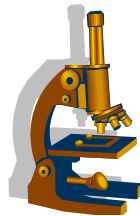


FALSE

- ▶ There are mold spores everywhere, all the time. Even in winter.
- ▶ The goal is to eliminate the excess moisture that allows the mold spores to grow.
- ▶ So – fix leaks in the building envelope and plumbing QUICKLY, and provide adequate ventilation to remove moisture due to normal occupancy.

True or False?...

- ▶ There is one definitive air test to determine if mold is present.



FALSE

- ▶ There are many mold tests.
- ▶ There is no standard guidance on when to use any of them.
- ▶ There are good and bad aspects to every type of mold test.
- ▶ There is no real agreement on what the results of any mold test means.

True or False?...

- ▶ Air tests are a good first step to evaluate my living space.



FALSE

- ▶ A thorough walk-through of a residence is more informative than a battery of air tests.
- ▶ There are no guidelines as to which test to use, or what the results mean.
- ▶ Locating possible sources and removing them is better.

A Note on IAQ Testing

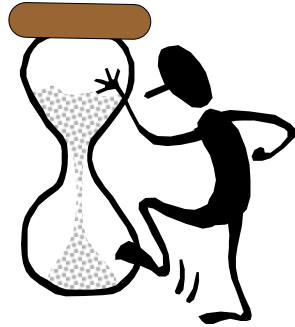
- ▶ Except for radon, most indoor air contaminants are the direct result of something you can see/smell/identify without testing.
- ▶ “Air quality testing” is a useless term because there are so many things that can be checked for in indoor air.
- ▶ There is no single “screening test”

IAQ testing– continued...

- ▶ The only “IAQ test” that you should ever consider (unless you’ve been advised to do so by an IH after an investigation) is...
 - ▶ **A RADON TEST.**
- ▶ Radon is a problem state wide.
- ▶ Radon is a proven cause of lung cancer.
- ▶ Each year, radon causes about 165 lung cancer cases in Maine.

True or False?...

- ▶ If left alone, mold (on building materials) will go away over time.



FALSE

- ▶ Mold will not go away by itself.
- ▶ It will go dormant for a long time, then die, but the filaments will last a long time after that. The spores last even longer.
- ▶ Get rid of the moisture problem that let mold grow first, then get rid of the mold.

True or False?...

- ▶ Mold growth (or amplification) is related directly to moisture, humidity, or water presence.

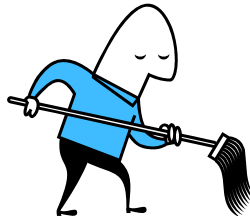


TRUE

- ▶ Mold spores are everywhere. The only reason mold doesn't take over is lack of moisture.
- ▶ Control the moisture, and you control the mold.
- ▶ MOLD IS A SYMPTOM OF AN UNCORRECTED WATER PROBLEM!
- ▶ Water+building materials=MOLD

True or False?...

- ▶ Water must be dried up within 24–48 hours to prevent or limit mold growth.



TRUE

- ▶ Dry up water QUICKLY
- ▶ Take extra care to thoroughly dry porous materials (like carpeting)
- ▶ If you don't, the mold will make you wish you had!
- ▶ He who hesitates is lost.

True or False?...

- ▶ Ripping out the mold using standard construction and demolition practices will remove the mold and the problem.



FALSE

- ▶ Standard construction and demolition methods will usually cause mold/spores to become airborne and spread more quickly.
- ▶ Clean up first, then remove contaminated, porous materials
- ▶ Could require a restoration company. Any clean up must be done in a controlled manner.

True or False?...

- ▶ Mold remediation and cleanup always requires professional abatement personnel.



FALSE

- ▶ However...small to moderate mold clean up must be done carefully, those involved must have protective equipment (N95 respirator, goggles, gloves, clothes that can be laundered or disposed of).
- ▶ Big clean ups should be left to the guys in the moon suits.

True or False?...

- ▶ I know enough about mold to deal with it in a prudent and reasonable manner.



You Decide.

Mold Resources

- ▶ www.maineindoorair.org:
 - *Fact sheet on mold*
 - *Policy on mold & health*
 - *Best Practice Recommendation for Mold*
 - *Best Practice Guidance for IAQ Testing*
 - *Construction Guidance*
 - *Landlord/Tenant Checklists*
- ▶ www.cdc.gov
- ▶ www.epa.gov/iaq

Contact

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