Proactive Mold Management 101:

What to Do (and NOT do Do) In Your Facility

NJ State Approved Co-op #65-MCESCCPS
Bid #: MRESC 12/13-26
Bid Term: 11/16/12-11/15/15

Presented to:

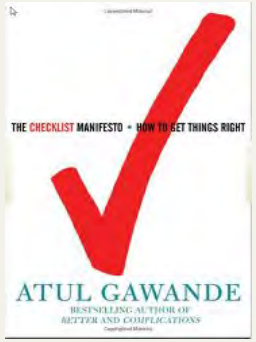
allRisk Property Damage Experts

Since 1985 TTI Environmental, Inc.

Arthur J. Gallagher & Co.

OBJECTIVE:

Shift the perception (and perhaps the reality) of the topic of mold from *chaos* to **control**.



Our Method to Get You There:

Inspire a new strategy that is ***actionable***. Provide tools and guidance for a **TEAM** approach committed to **communication**, back-to-basics (ie. **check lists**), and sound solutions.

Today's Topics

- The IAQ Tools for Schools Way
- Mold & Schools: "Perfect Together"
  - Attunement to LESS Obvious Factors
  - Summer Procedures
- Who Can Remediate & How
- Case Histories
- Q & A

The IAQ Tools for Schools Progam…

The Wheel is Invented
and it's **FREE** !

IAQ Tools for Schools – 6 Key Drivers

1. Organize
2. Communicate
3. Assess
4. Plan
5. Act
6. Evaluate

A Framework for SUCCESS!

The *IAQ Tools for Schools* Approach

Step 1: TEAM

Initiate a diverse TEAM approach:

- Principal
- Fac. Dir. and/or “Designated Person”
- Teacher
- Head of Maintenance
- Kitchen Supervisor, School Nurse
- Professional Services

  Contractor, HVAC,

  Env. consultant

IAQ problems may occur even in schools where a conscientious effort is being made to avoid such problems.

Schools that can demonstrate ongoing efforts to provide a safe indoor environment, however, are in a strong legal and ethical position if problems do arise.

- Quick, cost-effective response if problems occur.
- Peace of mind for parents, students, and staff.
- Occupant comfort, efficiency, and durability of the physical plant and equipment.
- Reduced need for crisis intervention involving upper-level management.

Low Cost – BIG BENEFITS!

- **Save money** – The expense and effort to prevent most IAQ problems are typically much less than the expense and effort to resolve problems after they develop.

- **Utilize in-house staff** – prevent many IAQ problems by educating staff and students about the factors that create them. When IAQ problems do arise, they can often be resolved using skills available in-house.

- **Work effectively with outside professionals** – If you need outside assistance to solve an IAQ problem, being an informed customer will achieve the best results.

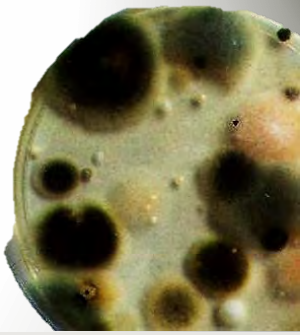
- **Improved IAQ** – Some of the suggested practices and policies will not only help prevent problems but will also result in improved air quality around the school.

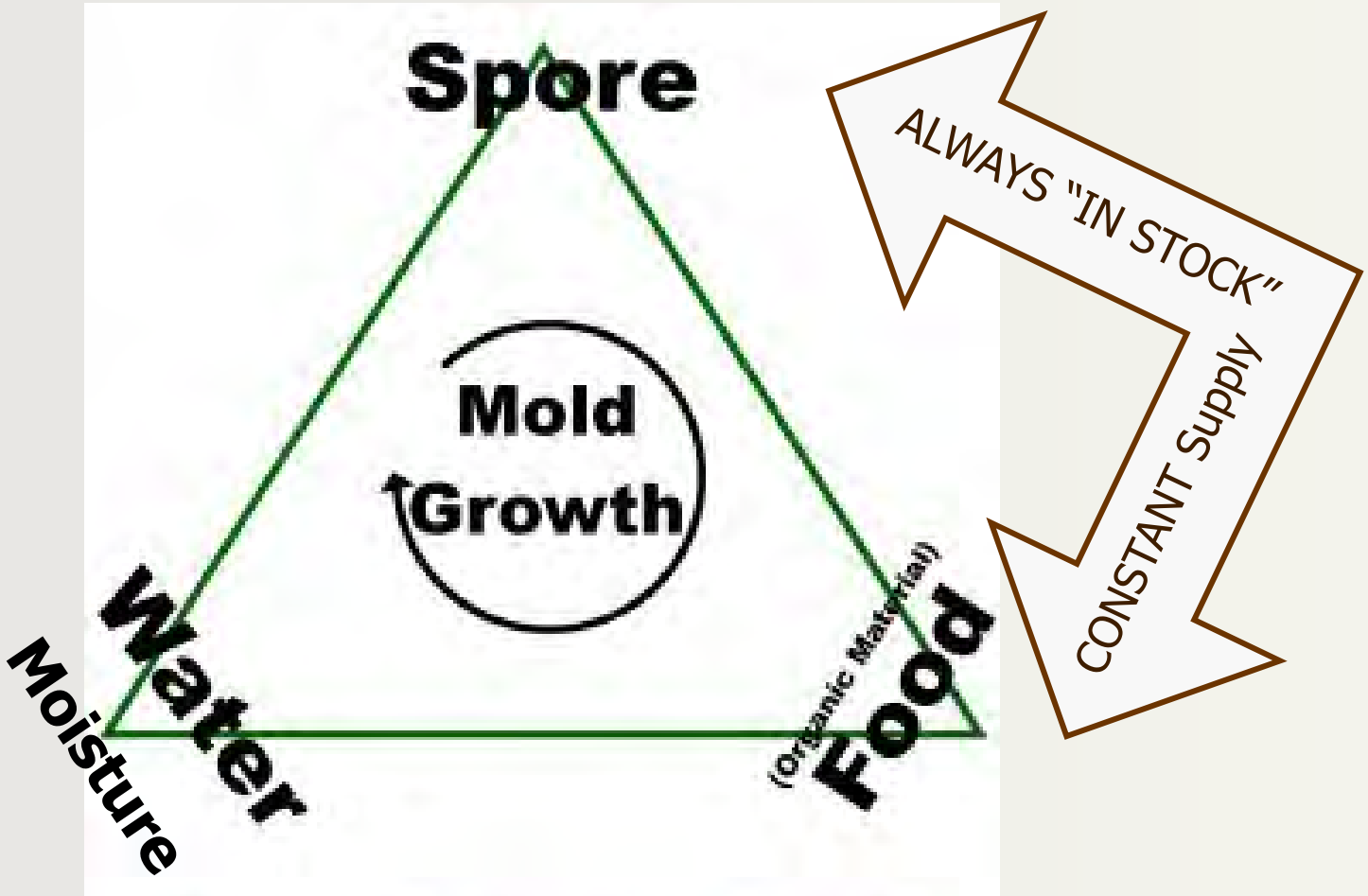
Mold & Schools: "Perfect Together" (?!)

A MELTING POT for Higher Risk Groups

- Infants and Children
- Immune Compromised Patients
- People with Asthma
- Pregnant Women
- Elderly

“3 Ingredient” Recipe





Obvious Triggers

Water Events

- Storm Flooding
- Burst Pipe
- Roof renovation and heavy rain
- Plumbing / Sink Leaks
- Visible Water Intrusion

Tune Your Alarm to the NOT SO Obvious…

- **HUMIDITY – ENEMY # 1 !!!**
- Unbalanced HVAC
- Sweating Pipes
- Locker Rooms & Gym Mats
- Base Cove
- Bathrooms
- CARPETS – “the re-open cleaning”

Summer Procedures and Action Items

- Better understand your building in off season
- Inspection, identify, water intrusion, musty odors
- Clean to reduce dust and mold
- HVAC filters

Summer Procedures and Action Items (cont.)

- ❑ Clean air supply diffusers, return registers and outside air intakes
- ❑ Unit ventilators clear
- ❑ Adjustment of HVAC

- ❑ Consent steady HVAC air condition balance

Summer Procedures and Action Items (cont.)

- Adjustment of fresh air intake
- Any major cleaning and/or moving should include the use of an air scrubber to reduce the dust and mold in the air while this disturbance occurs
- IAQ check list

Summer / Prevention

RENOVATION - CONSTRUCTION

Prior to beginning any renovation/construction activity ***Indoor Air Quality*** ***must be discussed and planned.***

Summer / Prevention

RENOVATION - CONSTRUCTION ITEMS

- Isolation of area (install barriers)
- Air scrubbers
- Isolation of HVAC/Air Handlers
- Cleaning
- Conduct & Record Barriers inspections
- Keep building materials dry, before and after delivery to site
- Enclose structure ASAP – get the roof siding and windows, including basement windows, in quickly.
- Use mold inhibiting building materials

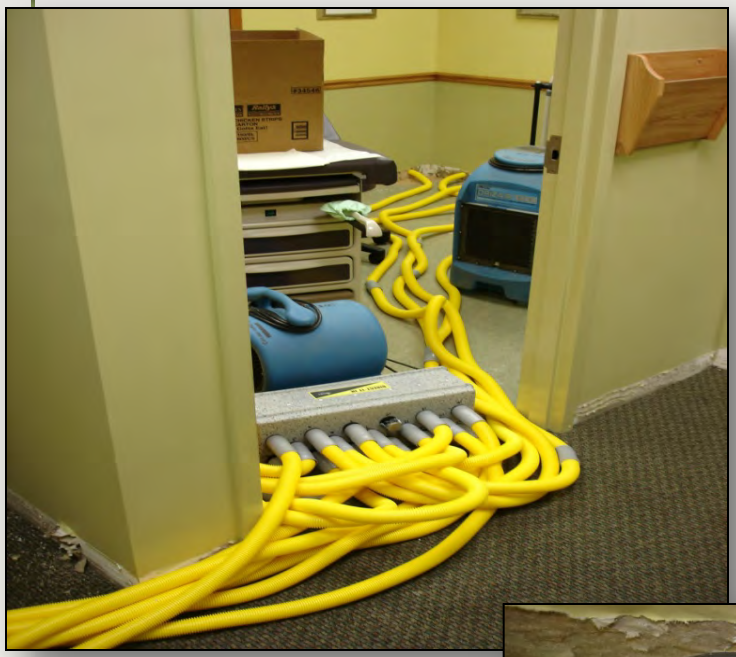
WHO CAN REMEDIATE and HOW ?

REMEDIATION

CAUTION: Improper Cleaning & Drying Transforms Sewage…into Mold

REMEDIATION

Prevent Mold: Dry Immediately



REMEDIATION

Prevent Mold: Dry Immediately

REMEDIATION

Who can Remediate and How?

SIZE (and CONDITIONS) Matter

UNDER 10 SF: Minimal PPE / No Containment

10 to 100 SF: Limited to Full PPE / Limited Containment, may require Professional Contractor

OVER 100 SF: Full PPE / Full Containment Professional Contractor Recommended

Cleaning & Remediation Steps

Under 10 SF

Building Owner / Staff may perform with Training, Containment & PPE, but may also require Professional Contractor.

- Address water source, dry all items completely
- Hard surfaces: Scrub mold with a mild detergent and water, dry completely
- Porous materials: Use judgment to determine what can be cleaned, and what must be discarded (i.e.. ceiling tiles and carpet)

REMEDIATION

Who can Remediate and How?

SIZE (and CONDITIONS) Matter

A PROFESSIONAL CONTRACTOR is RECOMMENDED IF:

1) Visible mold covers OVER 100 SF
2) Hidden mold is a concern
3) Mold is in HVAC system
4) Water source is contaminated (sewage or flood)

LIMITATIONS OF VISUAL INSPECTION

- Cannot identify microscopic airborne and surface contamination.
- Locating mold growth may require remote imaging equipment.
- The use of moisture detection devices is often necessary to identify hidden water damage or mold amplifications sources.
- Destructive techniques may be needed to inspect enclosed spaces where mold and moisture are hidden, such as wall cavities.

REMEDIATION

Cleaning & Remediation Steps

1. Containment
2. Negative Air
3. Protection of Contents as Necessary
4. Demolition

CONTAINMENT

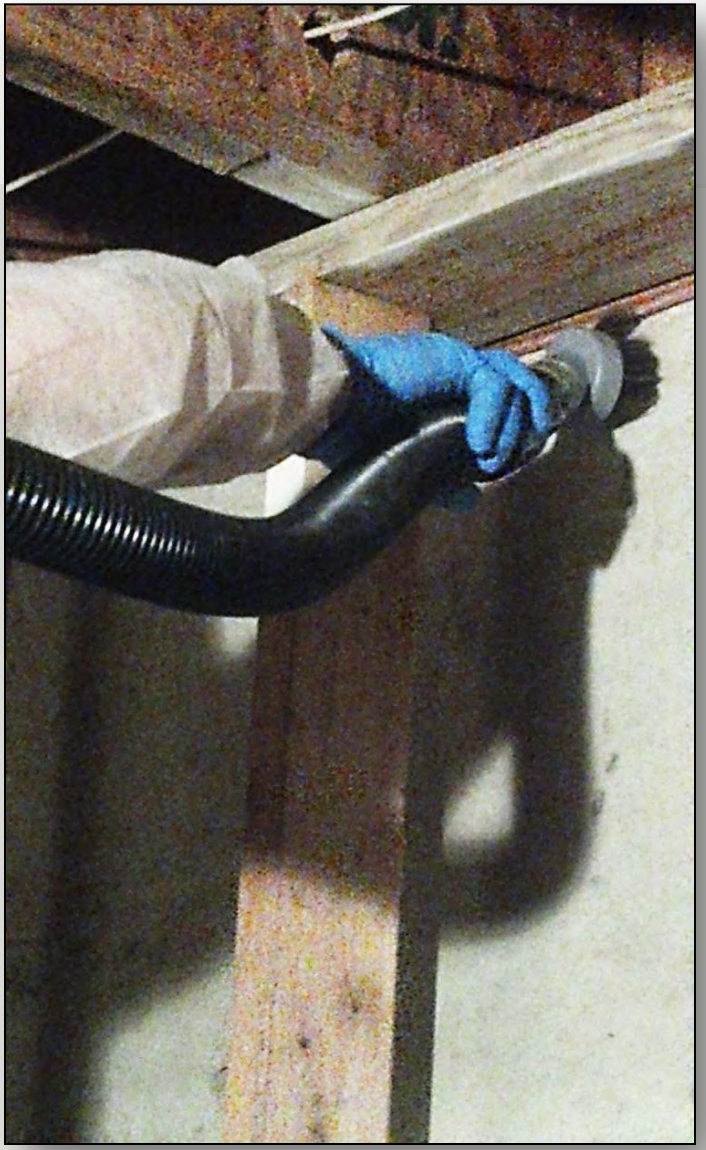
NEGATIVE AIR

REMEDIATION

Cleaning & Remediation Steps

5. Initial Clean / Prep for Remediation
6. HEPA Vacuum
7. Wash
8. Second HEPA Vacuum

HEPA (High Efficiency Particulate Air) VAC



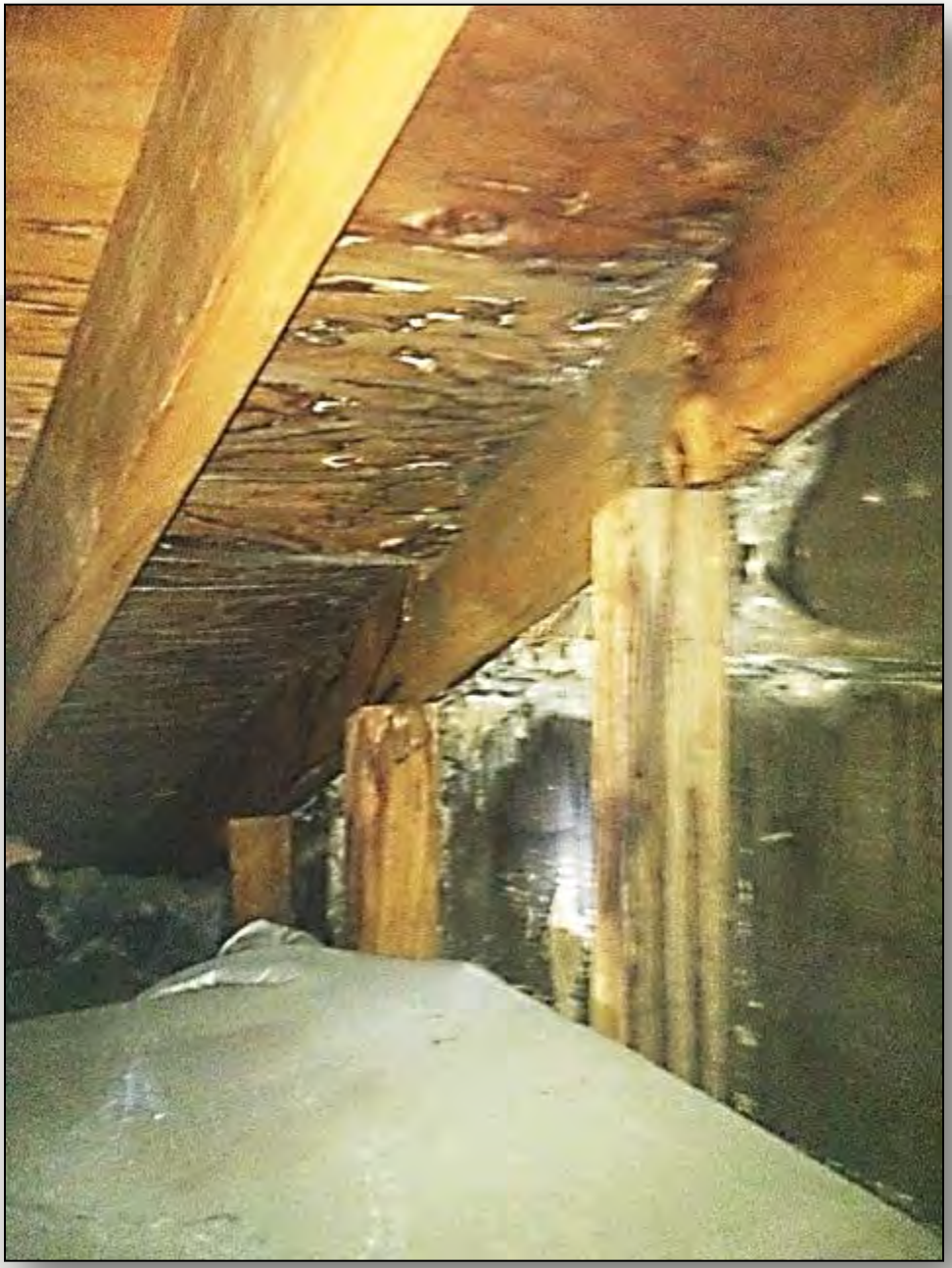
REMEDIATION

Cleaning & Remediation Steps

9. Encapsulation (if necessary)
10. Air Scrubbing
11. Testing & Clearance


ACSI


ACSI



Case Histories
Q & A

KEY Questions:

- "Use Bleach to Clean Mold?"
- "To Test or Not to Test"
- "What can my staff do in-house"?
- "Is my protocol the proper scope not too much (or not too light)"?


Little Anne
THE ANATOMY OF
YOUR
MOUTH

DEVELOP

TRAINING

Provide training and resources.

Indoor Air Quality Issues are here to stay and your district will need qualified people to address multiple issues.

www.epa.gov/mold/moldcourse/siteinstruction.html

DEVELOP

CONTRACTORS

- Environmental Consultant

  IAQ, Asbestos, Lead, Mold

  NJDCA and NJDHSS Certifications

- Remediation Contractor

  DPMC Classification

- HVAC Contractor (*NADCA Certified*)
- Building Engineer
- Architect

IDENTIFY

CONDITIONS THAT SUPPORT MOLD GROWTH

- Many building materials provide suitable nutrients that encourage mold to grow.
- Cellulose materials (paper products, cardboard), ceiling tiles, wood and wood products. Other material such as dust, paints, wallpaper, insulation materials, drywall, carpet, fabric and upholstery commonly support mold growth.

IDENTIFY

VISUAL INSPECTION

- Looking for visible mold growth will be difficult but can be done.
- Humidity related mold amplification ,mold can occur anywhere in the structure.
- Water intrusion related mold amplification, mold can also occur anywhere, but emphasis on the location of intrusion.
- Visible mold is often an indicator of concealed mold.

IDENTIFY

VISUAL INSPECTION

- Look for signs of excess moisture or water damage
- Search behind and underneath materials (carpet/pad, wallpaper, sink cabinets, under desks, books, cabinets).
- Check around air handling units (air conditioners, furnaces) for stagnant water.
- Search areas with noticeable musty odors.

IDENTIFY

THE INFLUENCE OF TEMPERATURE & RELATIVE HUMIDITY

- Humidity itself does not cause mold growth. It can cause surfaces to reach an equilibrium moisture condition that supports mold.
- If the Relative Humidity (RH) in a space is greater than 60% for an extended period of time, the equilibrium moisture condition of surfaces can be high enough to support mold growth.
- Dew point (cold surface with high humidity will cause sweating) Example: cold coke can on summer day.

PROACTIVE MISSION:

"The best 'insurance policy' against mold, is not one we buy, but one we create as a **TEAM**. Let's build a knowledgeable team that commits to 1) **prevention** whenever possible, and 2) the next best case, the **early discovery** of issues to mitigate negative impacts through the proper coordinated actions."