

## Part 4 – Preliminary Assessment #2

Thursday, August 30

2:15 – 2:45 p.m.

# Assessments and Inspections

- Must be thorough.
- Tools: Flashlight, ruler, mechanical / structural plans, moisture meter, RH and temperature meter, etc.
- Provides basis for sampling plan, if sampling is important.

## The Building Inspection – The Most Important Aspect of the Project

- Measure or document the location/extent of water-damaged and visually moldy materials including hidden mold.

**EVERY BUILDING IS DIFFERENT:  
EVERY INSPECTION IS UNIQUE!**

# Wallboard behind vinyl wall covering saturated with water



Photo Courtesy of Philip Morey

## Inspection: Water damage; Small scale mold?





## Small scale mold? Follow the water!!



Photo Courtesy of Philip Morey

# Historic Water Damage



Photo Courtesy of Philip Morey



# Condensation on cool surfaces; Consequential large scale mold growth



Photo Courtesy of Philip Morey

# Cellulosic Spray-On Fire Proofing Applied Wet During Construction



Photo Courtesy of Philip Morey

Fireproofing that is applied wet to structural surfaces must be allowed to dry within the time frame recommended by the manufacturer.



Photo Courtesy of Tom Rand and Philip Morey



Photo Courtesy of Tom Rand and Philip Morey

Abundant Stachybotrys spores and conidiophores are present in the wet-applied cellulosic fireproofing sprayed on ceilings and beams in a new building. The moldy fireproofing was removed and replaced with a fireproofing containing a minimal amount of biodegradable components.





Photo Courtesy of Philip Morey

The fine dust and oily film on the metal surface of the fan motor in this under maintained air-handling unit provide nutrients for the growth of mold which is visible on the fan housing.

## The Multi-Million Dollar House: Foundation Problem Shortly After Completion of Construction



Note absence of water proofing on outside foundation wall;  
also, water in yard runs toward building; MVOC Sampling;  
Basement under containment

# Design Failure in Air Handling Unit in Cooling Coil Area



Photo Courtesy of Philip Morey

Access to drain pan too small for entry by even the smallest human



## Maintenance Difficulty in Large Building With Hundreds of Perimeter Fan Coil Units (FCUs)



Photo Courtesy of Philip Morey

Maintenance is infrequent because of budget limitations and because of the many FCUs involved. An HVAC design with a few large air handling units may have been a better fit for a limited budget.

## Maintenance Problem After Construction



Standing water is present in the drain pan; the air velocity over the pan is elevated so that downstream surfaces are being wetted

## Moisture Failure In Crawl Space During Construction



Photo Courtesy of Philip Marey

RH in crawl space 75 to 95%;  
Note mold growth on OSB



## Moisture Failure in New Building; Why Is It Important?



Photo Courtesy of Philip Morey

Rusted metal framing and sill plate in a new building; What else is deteriorated?

## Moisture Intrusion in New Building: Why Is It Important?



Photo Courtesy of Philip Morey

Framing mold in a window assembly:  
EIFS; Window leaks



This plant is growing in a well-lighted room along a envelope wall. Moisture infiltrating through the wall and nutrients in the baseboard and carpet provide favorable conditions for plant and microbial growth.



## Design Failure in Air Handling Unit Return Air Plenum in Hospital HVAC



Photo Courtesy of Philip Morey

Porous Liner; Dust Accumulation; Skin Scale Accumulation;  
Is This Important in a Hospital?

Hidden Mold; American Industrial Hygiene  
Association Report of Microbial Growth Task  
Force, 2001

“In-Wall Sampling of Mold Spores Has  
Been Suggested, Using A Small Hole and  
Tubing Attached to a Vacuum Pump”

(AIHA, 2001, pp. 19)

Does a positive finding from  
in-wall sampling mean that you  
have to destructively open-up the  
wall?

# If There Are Serious Concerns About Hidden Mold Growth and Biodeterioration in a Wall

- Open-up Walls In Representative Areas To See If Visible Mold Growth Occurs
- Characterize The Amount ( $M^2$ ) Of Mold Growth; The Materials Affected By Mold Growth; The Nature Of The Water Problem



Photo Courtesy of Philip Morey





Photo Courtesy of Philip Morey





Photo Courtesy of Philip Morey