

# H2H

*Indoor Air Solutions<sup>sm</sup>*

INDOOR AIR QUALITY  
INVESTIGATIVE SERVICES

Mold Assessment-Protocol Report

For Bunnell Courthouse  
200 East Moody Blvd.  
Bunnell FL.

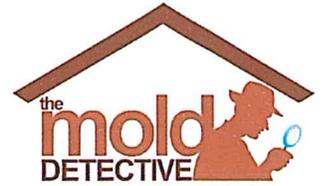
Date: January 12, 2014

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Note: This report is not a protocol report for remediation. A separate protocol report can be obtained on request once it is determined that it is required.

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License No. MRSA420, Florida Department of Business &  
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Licensed Commercial & Home Inspector, HI-213  
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## H2H Assurance Services, LLC

Date: January 12, 2014

Richard J Van Dort  
President-H2H Assurance Services, LLC

Dear Mr. Williams,

Thank you for placing your confidence in H2H Assurance Services. Please note your job number and the accompanying services we have provided in this report.

Job #: 13-235-2

Property Inspected/Tested: Bunnell Courthouse

### Site Condition & Test Results:

Condition 1:	 <b>Acceptable</b>
Condition 2:	 <b>Not Acceptable, Remediation Required</b>
Condition 3:	 <b>Not Acceptable, Remediation Required</b>
Facility Code:	F-5 (Unoccupied)

### IICRC S520 Definitions

Condition 1: Normal fungal ecology, spore count with acceptable range

Condition 2: Settled spores, spore count above normal range,

Condition 3: Active growth, visual confirmation, spore count above normal, protocol and remediation required

### Facility Code:

F1: Empty residential dwelling

F2: Occupied residential dwelling

F3: Occupied residential dwelling- Elderly or children

- F4: Occupied residential dwelling-Immune deficient occupant
- F5: Commercial Public dwelling
- F6: Office dwelling



## **Mold Assessment Report**

### **Scope:**

H2H Assurance Services, hereby called H2H, is pleased to submit this Mold Assessment Report for the above referenced location. The objective was to determine if significant mold contamination was present at the property. Based on our visual observations, measurements conducted, test samples taken (if deemed necessary), and the report from an accredited lab this report will identify the necessity for H2H to recommend remediation by a licensed remediation company or not.

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- **New Building First Floor**
  - Main Hallway
  - Men's Room
  - Woman's Room
  - Room 104
  - Room 107
  - Room 125
  - Room 127

Room 135

Room 137

- **New Building 2<sup>nd</sup> Floor**

Main Hallway

Men's Room

Woman's Room

Courtroom 3

Left Holding Cell

Right Holding Cell

Court Reporter-Room

Courtroom 218

Courtroom 218-Jury Room

Room 206-Front

Room 206-Left

Room 206 Right

Room 222

Room 238

- **New Building 3<sup>rd</sup> Floor**

Main Hallway

Men's Room

Woman's Room

Room 312

Room 318

Room 329

Room 330

- **Old Building 1<sup>st</sup> Floor**

Main Hallway

Room 101

Room 107

Room 111

Room 115

Room 117

- **Old Building 2<sup>nd</sup> Floor**

Main Hallway

Bathroom-Northeast Corner  
Bathroom-Northwest Corner  
Courtroom 1  
Judges Room of Courtroom 1  
Bathrooms off Courtroom 1  
Room 219  
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Room 223  
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## Chapter 1

### I. Site Observations:

- a. Understanding mold spores: The IICRC S520 (Standard and reference guide for professional mold remediation) "states that mold is developed from unique, microscopic seed like structures called spores, which are not viable to the unaided eye. When spores settle on a surface under appropriate moisture and temperature conditions, they absorb water and swell to 2-3 times their original size and begin to form thread like structures known as hyphae. As the hyphae grow, they interweave to form a tangled mass known as mycelium. With continued growth, a mycelium, unlike a spore becomes visible to the naked eye. When the fungus matures, spores form within specialized structures or individually on aerial hyphae. These spores can then be carried away by air currents, moisture droplets or insects to new environments to start the reproductive cycle over again."

Mycelium is vital for their role in decomposition of plant material. They contribute to increasing the ability of the fungi to absorb water thus exasperating the growth of the mold.

The aforementioned condition 2 is an example of the spores before they start to develop into hyphae. As noted you cannot see these spores however they can affect immune deficient individuals just like pollen (see VIII Your Health, later in this document) Condition 3 which is visible (the mycelium) is what the layman identifies as "mold". Depending on the species of mold some molds produce mycotoxins. Mycotoxins in some species can be toxic which in some cases can be harmful to humans that have an immune deficiency. These molds are what the layman identifies as "Black Mold". The mycotoxins greatly resist decomposition so they can remain robust if not remediated correctly. Molds that have a higher level of Mycotoxins are Alternaria Aspergillus, Penicillium, S Chartarum and the highest for indoor environments is Stachybotrys.

## **b. Specific Site Observations**

The building consists of 2 floors in the older facility and 3 floors in the newer facility. The building has been vacant for several years and is in a state of disrepair in many rooms. Each room presents its own challenge for repair and potential remediation.

Because of the complexity of the building and the testing we have developed for the purpose of this report only a rating scale for each area tested from 1-5. Level 1 having a very low potential for Condition 2 or 3 Mold (explained in aforementioned paragraph) through to level 5 which shows the presence of condition 2 or 3 mold. Remediation for this mold would need to be coordinated with a licensed mold remediator after demolition and before the renovation of each area.

## **II. Equipment Specifications and use on job:**

-  Thermal Imaging camera. Flir T360 Thermal Imaging Infrared Camera High-Temperature (320 x 240 IR Resolution) with Thermal Fusion
-  Extech MO297: Pinless Moisture Psychrometer with IR Thermometer and Bluetooth
-  Delmhorst Navigator Pro Moisture Mapping Meter
-  MeterLink™, 8-in-1 Meter with Memory, Built-in IR Thermometer with Wireless
-  Zeflon Z-Lite advanced pump with bioisolation filter w/ Allergenco-D Posi-Tack Full Slide for 100% collection efficiency.
-  Anemometer for air flow
-  8:1 Infrared Thermometer with laser guide
-  ATP Bio-Contamination Testing Meter with biological contamination swap
-  Kanomax Model 3887 Laser Particle Counter

## **III. General Testing & Measurement:**

### **a. Water & Moisture (Identified per room)**

- i. Definition: Moisture readings were taken on the surface as well as below the surface with a pin adapter to the meter described above. Normal readings for sheetrock range (Extech internal and external meter) from a

low of less than 1% up to 14%. Normally when readings are higher than 14% the sheetrock has been compromised and is saturated with moisture. For the Navigator Pro (uses a deep pin system) levels that exceed .9 % are consider wet. Mold lives and sustains on moisture therefore if the readings are in excess of 14% it means that the sheet rock has enough moisture to sustain mold until it dries out. That is why it is important to identify the source of moisture and remediate it so the mold cannot sustain life. Mold can go dormant therefore once the source of the problem is contained then the mold can be remediated.

b. Temperature/Humidity (Identified per room)

- i. Definition: Humidity levels are recommended to be below 60% on the inside of the house. Per the EPA the maximum humidity should be no more 60%. The Grams per pound (how dew Point is measured) should be no more than 90.
- ii. Dew Point: The dew point temperature is the temperature at which the air can no longer hold all of its water vapor, and some of the water vapor must condense into liquid water. The dew point is always lower than (or equal to) the air temperature. If the air temperature cools to the dew point, or if the dew point rises to equal the air temperature, then dew, fog or clouds begin to form. At this point where the dew point temperature equals the air temperature, the relative humidity is 100%. If there is then further cooling of the air, more water vapor must condense out as even more dew, fog, or cloud, so that the dew point temperature then falls along with the air temperature.

While relative humidity is (as its name suggests) a *relative* measure of how humid the air is, the dew point temperature is an *absolute* measure of how much water vapor is in the air. In very warm, humid conditions, the dew point temperature often reaches 75 to 77 degrees F, and sometimes exceeds 80 degrees. No matter how hot the temperature gets, a dew point temperature of (say) 75 deg. F always represents the same amount of water vapor in the air.

Per the EPA the maximum humidity should be no more 60%. The Grams per pound (how Dew Point is measured) should be no more than 90.

c. HVAC (Heating & Air Condition) (Identified per room)

- i. Air Handler: The air handler is inspected as to whether it operates within the normal manufacturers specifications, whether the cabin, blower

wheel and coil is free of dirt and or mold. A swab test was taken to see if the surfaces are clean.

- ii. Supply & Return Ducts: The supply ducts were visually inspected and if there appears to be any substance on them they were swabbed. The used was an ATP swab or a swab/tape lift that can be sent to the lab for further review.
- iii. Supply Registers: The supply registers are checked for the proper temperature and the proper air flow. They are also inspected for how clean they are.
- iv. Return Registers: The return registers are inspected for the proper temperature in comparison to the supply as well as their cleanliness.

d. Testing Performed (Identified per room)

i. Air sampling: Outdoor/Indoor

1. Definition: Currently there are no generally accepted guidelines for fungi levels therefore utilizing a comparison to the outdoor samples, the current condition of the affected area and previous experiences are used to draw an educated conclusion as to whether the area will be deemed necessary for remediation. Concentrations higher than the outdoors suggest a fungal excess exists indoor therefore is contributing to exasperate the problem. Bio-Aerosols samples are procured by the use a sampling pump and a slit impactor cassette (**Allergenco-D**) which contains a sticky material which traps the particulates in the air. All samples are taken at 15 L of air for 5 minutes. They are immediately bagged and sent with a specific "chain of custody" for the lab to evaluate. The lab reads 100% of the slide. If spores counts on the slide are high the lab may have to estimate the spore count. Please read section IV, Interpreting Mold levels as a guide to understanding the spore counts in the lab result in Section VII. Air tests are used so a comparison clearance test can be taken to evaluate the success of the remediation. They are also used when there is no visual mold seen.
2. Short Sampling: The normal time for samples is between 5-10 minutes. In that time either 75 liters of air is collected or 150 liters of air is collected. The lab adjusts accordingly to provide the correct data.

ii. Swab with Lab Test (Identified per room)

1. Definition: Swab tests are taken with a device that resembles a "Q-Tip". The swab test is to identify the type of mold in a very small area. It usually is taken when a unidentified substance is visually identified. However swab tests are not effective in measuring a remediated area as any visual substances should have been removed. More specific information can be obtained with a swab test if a cultural is grown in a Petri dish. Unfortunately next day results cannot be obtained. It normally takes 1-2 weeks to obtain results.

iii. Tape Lift (Identified per room)

1. Definition: Tape lifts are identical to swab tests however than are more exact as the testing area is more defined on the tape.

iv. ATP Swab (Identified per room)

1. Definition: ATP Testing is a state of the art, real time, biological detection system designed to provide instant results for bio-contamination testing on surfaces. The ATP system uses bioluminescence to detect the presence of the ATP molecule. The ATP molecule is the chemical compound in which energy is stored in all living cells. In the ATP-luminometric test, the enzyme Luciferase in the presence of its sampled substrate, luciferin, oxygen and magnesium ions catalyzes the conversion of the ATP into light through an oxidation-reduction reaction. The light generated in the biochemical reaction which is directly proportional the amount of ATP present, thus the light units can be used to generate a relatively accurate estimate of the total biomass of a cell in a sample.

v. Lead Testing for lead in the paint (Identified per room) Acceptable levels



**EMSL Analytical, Inc.**

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EMSL Order: 041400003  
 CustomerID: HHAS25  
 CustomerPO#: 00125403  
 ProjectID:

Attn: <b>Rich Van Dort</b> <b>H2H Assurance Services</b> 123 Heron Drive Palm Coast, FL 32137	Phone: (386) 566-0037 Fax: Received: 01/06/14 9:22 AM Collected: 1/2/2014
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**Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B\*/7000B)**

Client Sample Description	Lab ID	Collected	Analyzed	Lead Concentration
1	0001	1/2/2014	1/7/2014	<0.010 % wt
Site: N Building, 1st Floor, Rm 137				
2	0002	1/2/2014	1/7/2014	0.067 % wt
Site: Old Building, 22B				

vi. Asbestos Testing (Identified per room)

Not in yet

## **V: Interpreting Mold Levels:**

### **ACTION BY STATE AND FEDERAL AGENCIES**

There are no mandated actions specific to molds and indoor air quality required by any state or federal agencies. The U.S. EPA Indoor Air Quality website states, "Standards or Threshold Limit Values (TLVs) for airborne concentrations of mold, or mold spores, have not been set. Currently, there are no EPA regulations or standards for airborne mold contaminants."

However, some environmental companies, industrial hygienists, and other IAQ professionals use the following arbitrary numbers for guidance in interpreting microbial survey results.

The final mold interpretation should not be based solely on numbers! Information gathered from the walk-through investigation of the area is very significant, including sources of moisture or high humidity, and signs of visible mold growth.

In air samples, it is important to consider the type and concentration of fungi indoors, as compared to outdoors or a non-complaint area. One should consider the indoor: outdoor fungal count ratio, the presence/absence of certain fungi indoors versus outdoors, the genus/species of predominant fungi indoors versus outdoors, and whether the fungi detected indoors are allergenic and/or toxicogenic.

### **Examples of such Companies or States:**

#### **1: *EMSL Laboratory (Accredited Florida Laboratory)***

##### **Bioaerosol**

<250 CFU/m<sup>3</sup> Low/Normal  
250-1,000 CFU/m<sup>3</sup> Moderate/Borderline  
>1,000 CFU/m<sup>3</sup> Active Growth/Sporulation  
>5,000 CFU/m<sup>3</sup> Very Active Growth/Sporulation

##### **Swab/Wipe**

<100 CFU/in<sup>2</sup> No Growth/Background  
<10,000 CFU/in<sup>2</sup> Low/Normal Growth  
10,000-100,000 CFU/in<sup>2</sup> Moderate Growth  
100,000-1,000,000 CFU/in<sup>2</sup> Active Growth/Sporulation  
>1,000,000 CFU/in<sup>2</sup> Very Active Growth/Sporulation

##### **Definitions**

CFU = Colony Forming Units  
Colony = A group of hyphae with or without spores, generally of one species and potentially from one spore, cell, or propagule.

**2. Texas Department of Health**

Acceptable total spores: < 2,000 spores per cubic meter: If “the area has been adequately remediated, provided 1/3 of the spores are Cladosporium spores, 1/3 are Aspergillus/Penicillium and 1/3 are other spores.

**3. American Academy of Allergy, Asthma and Immunology/National Allergy Bureau: For Outdoor Environments**

- |                                   |  |
|-----------------------------------|--|
| > 1-6,499 spores per cubic meter: | “Only individuals with sensitivities will experience symptoms”   |
| 6,500-12,999 Spores/m3:           | “Many individuals with any sensitivity will experience symptoms”   |
| 13,000-49,999 Spores/m3:          | “Almost all individuals with any sensitivity at all will experience symptoms. Extremely sensitive people could have severe symptoms. |

**5. Fungal Contamination: A Manual for Investigation, Remediation and Control;**

Hollace S Bailey, PE, CIAQP, CIE, CMR; Copyright 2005.

“Fungal bioaerosols concentrations of 1,000 CFU/m<sup>3</sup> have been reported as tolerable for indoor environments (Morey et al, 1984; Brief & Bernath, 1988); however, more recent data suggests that the health effects of inhaling such quantities of spores may be severe enough to recommend considerably lower tolerance limits. (Etkin, 1994)”

“Indoor bioaerosols levels samples should contain less than 300 CFU/m<sup>3</sup> of common fungi and less than 150 CFU/m<sup>3</sup> of all other mixed species, other than pathogens or toxigenic species (Miller et al., 1988).

- 6.** At a recent IAQ conference, Orlando 2/28/2013, Dr Joe Spurgeon PhD, past EPA Residential Initiative on Indoor Air Quality and consultant for the US Public Health Service, states that after extensive research by him, Rimkus consulting and Baxter that it appears after 1,000 spores per cubic meter mold distribution changes. Observations made were with Asp-Pen and with visual vs. no visual mold events. He also stated that the condition of the occupant needs to be factored in.

## VI Conclusion:

The overall building has a humidity issue resulting in excessive moisture. This is due to the lack of insulation on the outer walls and ceilings exposed to the outer deck. Moisture mapping in both the new and old building reveal sweating walls and windows. (See individual room reports). In all fairness only some of CAV HVAC units were running. Once all HVAC units are up and running the humidity levels should stabilize some. They will not however overcome the lack of insulation.

Many of the windows sill show excessive moisture. Although many of the windows need sealing from both the inside and outside the moisture droplets were coming from the vertical blinds due to very high humidity levels. This was observed when it was raining outside.

There is one major roof leak (identified in room and on the roof). This needs to be addressed immediately before any remediation work can begin.

Wood lathe material needs to be removed where it is present in the older building. This is identified in the protocol section (Chapter 6). This wood and plaster are harbingers of moisture retention.

Each room is identified where we tested and the type of mold remediation is required. This identification will also include specific about the room as well. We have also identified the remediation work into three (3) levels. See **Chapter 4, Section VI, VII and VIII** for specifics on each remediation.

**Remediation "A":** This is for rooms that have tested low for the presence of mold (condition 2 or 3) and are in an adequate condition. There will be no need for negative air containment in these rooms.

**Remediation "B":** This is for rooms that have tested high for the presence of mold (condition 2 or 3). These rooms will require negative air containment. These rooms have newer construction therefore will not required major demolition work.

**Remediation "C":** This is for rooms that have tested high for the presence of mold (condition 2 or 3). These rooms will require negative air containment. These rooms have older construction and therefore required major demolition work along with the remediation work.

- **A. Investigation:** The investigate procedures are limited both to a specific time frame and to considering the conditions apparent while the investigation is going on. Since fungi are growing, living organisms that go through growth cycles, the findings of an investigation may not detect or locate all sites of microbial growth. Rather, the purpose of the investigation is to develop picture of the situation and

the conditions within the building with regard to moisture control, moisture content of the materials and the potential for fungal growth to develop, while simultaneously identify any growth that has already developed.” (Fungal Contamination, by Hollace S. Bailey, PE,CIAQP,CIE,CMR, ©2005)

- **B. Limitations:** This assessment was conducted following standard practices and guidelines. Regardless of the thoroughness, it is possible that some areas containing mold growth, water damage, and/or elevated moisture content or other indicators of poor indoor air quality were inaccessible or not evident during the assessment. The findings and recommendations included represent conditions evident at the time of the assessment. Building conditions related to indoor air quality, microbial growth and moisture intrusion may be subject to change on a daily basis, particularly after water event. Therefore, the conditions observed and reported herein may not be evident in the future.
- **C. Immediacy & Occupancy of Property:** If the box for remediation has been filled in then H2H recommends that the affected areas be remediated as soon as possible. If health problems are being experienced, a medical doctor should be consulted concerning occupancy of the premises. **During and after remediation, until testing confirms complete remediation, the impacted areas should not be occupied or entered by anyone, except the remediation firm’s representatives. This includes cleaning staff and others who may periodically enter the impacted areas. After remediation is completed and testing shows the impacted areas are safe these areas may be entered and occupied.**

## VII. Standard Mold Spores & the effect they may produce



Standard Spore List	
Alternaria	Common allergen causing hay fever or hypersensitivity reactions that sometimes lead to asthma, serious infections are rare, except in people with compromised immune systems. Normal agents from the decomposition of plants
Arthrinium	No reported infections associated with this fungus. Normally not found indoors.
Ascospores	Very common outdoor spore, associated with rain and moisture.
Aspergillus/Penicillium-Like	Possible allergen. Common cause of respiratory irritation and infection. Found on water damaged wallpaper, carpet and organic materials.
Basidiospores	Possible allergen to sensitive individuals, no known serious health effects associated with this fungus. Mushrooms and dry rot are examples of basidiospore producing fungi.
Bipolaris/Dreschlera	Allergen that can affect nose, skin, eye and upper respiratory track. Found on grasses, grains and decaying food.
Botrytis	Potential allergen, hay fever and asthma effects. Parasite commonly found growing on indoor plants.
Chaetomium	Not well studied but possible allergen with hay fever and asthma effects. Rare cases of nail infections. Found on a variety of cellulose, paper and plant compost
Cladosporium	Potential allergen, hay fever and asthma effects. Grows well in damp environments, on textiles and window sills.
Curvularia	Hay fever, asthma and allergic fungal sinusitis are some of the potential allergens associated with this fungi. Possible human health risk. Has been known to cause onychomycosis, ocular keratitis, sinusitis, mycetoma, pneumonia, endocarditis, cerebral abscess, and disseminated infection. Most cases are from immunocompromised patients. Grows on various indoor building materials.
Epicoccum	Potential allergen, effects are hay fever, asthma and skin allergies. Found in soil, air and rotting vegetation.
Fusarium	Potential allergen, hay fever and asthma effects. Commonly found on fruit rot, requires very wet conditions
Ganoderma	Commonly found in the atmosphere, grows on wood products. Possible allergen at high concentrations.
Memnoniella	Mycotoxin producing spore related to and often found in conjunction with Stachybotrys
Nigrospora	Potential allergen, hay fever and asthma effects. Usually not found growing indoors. Found on decaying plant material and soil.
Oidium/Peronospora	Common obligate parasites on leaves, stems, flowers, and fruits of living higher plants
Pithomyces	Possible allergen. Grows well on paper indoors given the right conditions.
Rust	Potential allergen, hay fever and asthma effects. Rarely found growing indoors
Smut/Myxomyces/Periconia	Potential allergen, hay fever and asthma effects. Rarely found growing indoors.
Stachybotrys	Often referred to as "toxic black mold". It has the ability to produce mycotoxins which may cause a burning sensation in the mouth, throat and nasal passages. Chronic exposure has been known to cause headaches, diarrhea, memory loss and brain damage. Found growing on water damaged cellulose, paper and ceiling tiles.
Torula	Potential allergen, hay fever and asthma effects. Potential allergen, hay fever and asthma effects. Found growing on water damaged cellulose, paper, wicker, straw baskets and ceiling tiles.
Ulocladium	Grows well on cellulose containing materials like paper, straw, wallboard. Requires very wet conditions.
Unidentified Spores	N/A
Hyphal Fragments	Branched structures with cell walls. Hyphae are somewhat analogous to stems or roots in plants whereas the spores would be analogous to the seeds.
Pollen	Allergen that causes hay fever. Pollen is microscopic round or oval grains produced by plants.

AEML, Inc. assumes no liability or warranty on the use of, or interpretation of the data provided within this report. Responsibility lies solely on the client for the use and interpretation of the results provide herein. Results of the analysis cannot be interpreted without physical inspection of the area tested or without consideration for the structure's characteristics. Generally, if indoor readings are greater than 90% of outdoor readings, further investigation or testing may be warranted. More information on Indoor Air Quality and mold can be found on the EPA website "[www.epa.gov/iaq/mold/moldresources.html](http://www.epa.gov/iaq/mold/moldresources.html)" and the Center for Disease Control website "[www.cdc.gov/mold/](http://www.cdc.gov/mold/)".

## VIII: You're Health:

### **PROPERTIES OF MOLDS WHICH POTENTIALLY POSE A THREAT TO HUMAN HEALTH** (California Department of Health)

Molds can elicit a variety of health responses in humans. The severity of the impact depends upon the type and amount of mold present as well as the susceptibility and sensitivity of the individual experiencing mold exposure.<sup>13</sup> Humans are exposed to molds via ingestion, inhalation, and skin contact with mold or mold infested material.<sup>14</sup> Although molds are living, multiplying organisms, they do not have to be alive to cause adverse health effects.

**Allergens.** Due to the presence of allergens on spores, all molds studied to date have the potential to cause an allergic reaction in susceptible humans.<sup>19</sup> Allergic reactions are believed to be the most common exposure reaction to molds. These reactions can range from mild, transitory responses, like runny eyes, runny nose, throat irritation, coughing, and sneezing; to severe, chronic illnesses such as sinusitis and asthma.<sup>20</sup>

**Mycotoxins.** Some molds are capable of producing *mycotoxins*, natural organic compounds that are capable of initiating a toxic response in vertebrates.<sup>21</sup> Molds known to potentially produce mycotoxins and which have been isolated in infestations causing adverse health effects include certain species of *Acremonium*, *Alternaria*, *Aspergillus*, California Research Bureau, California State Library 4 *Chaetomium*, *Cladosporium*, *Fusarium*, *Paecilomyces*, *Penicillium*, *Stachybotrys*, and *Trichoderma*.<sup>22</sup> This list is not all-inclusive.\*

While a certain type of mold or mold strain type may have the genetic *potential* for producing mycotoxins, *specific environmental conditions* are believed to be needed for the mycotoxins to be produced. In other words, although a given mold might have the potential to produce mycotoxins, it will not produce them if the appropriate environmental conditions are not present. Currently, the specific conditions that cause mycotoxin production are not fully understood. The United States Environmental Protection Agency (U.S. EPA) recognizes that mycotoxins have a tendency to concentrate in fungal spores and that there is limited information currently available regarding the processes involved in fungal spore release. As a result, the agency is currently conducting research on *Stachybotrys chartarum* in an effort to determine "the environmental conditions required for sporulation, emission, aerosolization, dissemination and transport of [*Stachybotrys*] into the air."<sup>23</sup>

Molds are usually not a problem indoors, unless mold spores land on a wet or damp spot and begin growing. Molds have the potential to cause health problems. Molds produce allergens (substances that can cause allergic reactions), irritants, and in some cases, potentially toxic substances (mycotoxins). Inhaling or touching mold or mold spores may cause allergic reactions in sensitive individuals.

Allergic responses include hay fever-type symptoms, such as sneezing, runny nose, red eyes, and skin rash (dermatitis). Allergic reactions to mold are common. They can be immediate or delayed. Molds can also cause asthma attacks in people with asthma who are allergic to mold. In addition, mold exposure can irritate the eyes, skin, nose, throat, and lungs of both mold-allergic and non-allergic people. Symptoms other than the allergic and irritant types are not commonly reported as a result of inhaling mold. Research on mold and health effects is ongoing.

## New York City Department of Health and Mental Hygiene November 2008

### Appendix A

#### Health Effects

Several comprehensive reviews of the scientific literature on the health effects of mold in indoor spaces have been published in recent years.<sup>1-3</sup> This appendix reflects these reviews but has also considered more recently published articles.

#### Potential for Exposure and Health Effects

Fungi are common in both indoor and outdoor environments and play a vital role in the earth's ecology by decomposing organic matter such as dead trees and leaves. As a result, all people have routine exposure to fungi, which may occur through inhalation, ingestion, and touching moldy surfaces. The main route of exposure to mold for people living or working in moldy indoor environments is inhalation of airborne fungal spores, fragments, or metabolites.<sup>2</sup> Ingestion and dermal exposures are less understood in these scenarios and can easily be minimized or prevented by workers through proper hygiene and work practices. Therefore, the remaining discussion will focus on the adverse health effects of mold due to inhalational exposure.

Adverse health effects may include: allergic reactions; toxic effects and irritation; and infections.<sup>1-3</sup> The mere presence of mold growth does not necessarily indicate that people present in the area will exhibit adverse health effects. However, as the amount of mold-impacted materials increases, so do potential exposures. Certain exposures may represent a significant risk such as occupational exposures to high concentrations of fungi and chronic (long-term) exposures, especially of individuals with underlying health conditions such as asthma, compromised immune systems, or allergies.

Evidence linking mold exposures to severe human health effects is documented in reports of occupational disease, particularly in forestry and agricultural settings where inhalation exposures were typically high and/or chronic.<sup>2,6-11</sup> The intensity of mold exposure and associated health effects experienced in undisturbed indoor environments is usually much less severe than that experienced by agricultural or forestry workers.<sup>2,7,12-14</sup> With the possible exception of exposures from mold remediation work, such high-level exposures are not expected indoors.<sup>15-16</sup> Although high-level exposures are unlikely to occur in undisturbed indoor settings, chronic exposures to lower levels may still raise health concerns.

Several factors influence the likelihood that individuals might experience health effects following exposure to mold in indoor environments. These include: the nature of the fungal material (e.g., allergenic, toxic/irritant, or infectious); the degree of exposure (amount and duration); and the susceptibility of exposed people. Susceptibility varies with genetic predisposition, age, state of health, concurrent exposures, and previous sensitization. It is not possible to determine "safe" or "unsafe" levels of exposure for the general public because of variation of individual susceptibility, lack of standardized and validated environmental exposure sampling methods, and lack of reliable biological markers.<sup>17</sup>

In addition to the adverse health effects associated with exposure to mold, in 2004, the Institute

*Stachybotrys* toxins indoors is plausible, it is not well-supported, and the issue remains controversial.<sup>2,3,5,27,49,50</sup>

Organic dust toxic syndrome (ODTS) describes the abrupt onset of fever, flu-like symptoms, and respiratory symptoms in the hours following a single, heavy exposure to dust-containing fungi and other microorganisms. Unlike HP, ODTS does not require repeated exposures to bioaerosols and can occur after the first exposure. ODTS has been documented in farm workers handling contaminated material, but may also affect workers performing remediation of building materials with widespread mold growth.<sup>2,11,27</sup> ODTS is a self-limited illness, which usually improves within 24 hours after the discontinuation of exposure. It may be underreported among workers exposed to fungi, but would not be expected in occupants of buildings with mold growth.<sup>11,27</sup>

#### Infectious Disease

Only a small number of fungi have been associated with infectious disease. Few of these fungi are typically found in the indoor environment.<sup>51,52</sup> Several species of *Aspergillus* are known to cause aspergillosis, most commonly *A. fumigatus*, *A. flavus*, and rarely, other species. Aspergillosis is a disease that generally affects severely immunosuppressed persons. Exposure to these molds, even in high concentrations, is unlikely to cause infection in healthy individuals.<sup>21,53</sup> Heavy exposure to fungi associated with bird and bat droppings (e.g., *Histoplasma capsulatum* and *Cryptococcus neoformans*) can lead to health effects, usually transient flu-like illnesses, in healthy individuals. More severe health effects are primarily encountered in immunocompromised persons.<sup>18,54</sup>

### Appendix A References

1. Health Canada, Fungal Contamination in Public Buildings: Health Effects and Investigation Methods, 2004
2. Institute of Medicine. Damp indoor spaces and health. Washington, DC: National Academies Press, 2004.
3. Mazur L, Kim J. Spectrum of noninfectious health effects from molds. Committee on Environmental Health, American Academy of Pediatrics. *Pediatrics*, 2006; **118**(6): e1909-26.
4. Seltzer JM, Fedoruk MJ. Health effects of mold in children. *Pediatr Clin N Am*, 2007; **54**: 309-333.
5. Storey E, Dangman KH, Schenck P, et al. Guidance for clinicians on the recognition and management of health effects related to mold exposure and moisture indoors. Farmington, CT: University of Connecticut Health Center, Division of Occupational and Environmental Medicine, Center for Indoor Environments and Health, 2004.  
<http://oehc.uhc.edu/clinser/MOLD%20GUIDE.pdf>
6. do Pico G, Hazardous Exposure and Lung Disease Among Farm Workers. *Clinics in Chest Medicine* 1992; **13**(2): 311-28.

Though available, allergy testing for molds is limited, subject to high rates of error, and can be difficult to interpret. Preparations for skin testing or the specific antigen in blood tests may be different from the mold to which an individual is sensitive. A positive test indicates an allergic response but does not definitively link a specific mold exposure to an individual's current health condition.<sup>5</sup>

## **Irritant and Toxic Effects**

### *Irritant Effects*

Indoor growth of mold can lead to the production of volatile organic compounds (VOCs), also referred to as microbial VOCs (MVOCs), and the presence of fungal glucans.<sup>13,35-38</sup> Glucans are components of many fungal cell walls. Some studies have reported an association with the inhalation of glucans and airway irritation and inflammation, but results have been mixed and may not be applicable to expected indoor concentrations. Observed effects may also be the result of exposure to or contact with other fungal components, metabolites, or synergistic effects with other microbial agents.<sup>17,36,39</sup> Resolution of irritant symptoms upon removal from the source can help distinguish irritant effects from allergic symptoms.<sup>5</sup>

MVOCs are responsible for the musty odor often associated with mold growth, which may be noticeable at very low concentrations. Many of the MVOCs are common to other sources in the home.<sup>40</sup> The very low levels usually found indoors have not been shown to cause health effects.<sup>35,37</sup>

### *Toxic Effects*

Some symptoms and maladies have been attributed to the toxic effects of fungi in indoor environments. Certain fungi can produce toxins (mycotoxins) at varying levels that are dependent on many complex environmental and biological factors.<sup>41</sup> The reported symptoms from exposure to mycotoxins indoors include headaches, irritation, and nausea/loss of appetite, but are often non-specific (*e.g.* fatigue, inability to concentrate/remember), and may be caused by other environmental and non-environmental agents.<sup>2,42-46</sup> Although health effects from exposures to mycotoxins have been associated with certain occupational exposures or ingestion of mold-contaminated food, scientific support for the reported effects in indoor environments has not been established. This may be due to the lower levels of exposure and different routes of exposure.<sup>2,5,13,21,27,46-49</sup>

*Stachybotrys* is colloquially referred to as "black mold" or "toxic mold." It has been suggested that toxins produced by this mold are associated with specific health effects. Acute Idiopathic Pulmonary Hemorrhage (AIPH) in infants has been described in several reports suggesting a relationship with *Stachybotrys*. AIPH is an uncommon condition that results in bleeding in the lungs. The IOM reviewed the existing studies and concluded that there was insufficient evidence to determine if mold exposure was associated with AIPH.<sup>2,3</sup> The evidence is also insufficient for an association between inhalation of *Stachybotrys* toxins indoors and neurological damage.<sup>2,26,49</sup> Although severe health effects from the inhalation exposures to

*Stachybotrys* toxins indoors is plausible, it is not well-supported, and the issue remains controversial.<sup>2,3,5,27,49,50</sup>

Organic dust toxic syndrome (ODTS) describes the abrupt onset of fever, flu-like symptoms, and respiratory symptoms in the hours following a single, heavy exposure to dust-containing fungi and other microorganisms. Unlike HP, ODTS does not require repeated exposures to bioaerosols and can occur after the first exposure. ODTS has been documented in farm workers handling contaminated material, but may also affect workers performing remediation of building materials with widespread mold growth.<sup>2,11,27</sup> ODTS is a self-limited illness, which usually improves within 24 hours after the discontinuation of exposure. It may be underreported among workers exposed to fungi, but would not be expected in occupants of buildings with mold growth.<sup>11,27</sup>

### Infectious Disease

Only a small number of fungi have been associated with infectious disease. Few of these fungi are typically found in the indoor environment.<sup>51,52</sup> Several species of *Aspergillus* are known to cause aspergillosis, most commonly *A. fumigatus*, *A. flavus*, and rarely, other species. Aspergillosis is a disease that generally affects severely immunosuppressed persons. Exposure to these molds, even in high concentrations, is unlikely to cause infection in healthy individuals.<sup>21,53</sup> Heavy exposure to fungi associated with bird and bat droppings (e.g., *Histoplasma capsulatum* and *Cryptococcus neoformans*) can lead to health effects, usually transient flu-like illnesses, in healthy individuals. More severe health effects are primarily encountered in immunocompromised persons.<sup>18,54</sup>

## Appendix A References

1. Health Canada, Fungal Contamination in Public Buildings: Health Effects and Investigation Methods, 2004
2. Institute of Medicine. Damp indoor spaces and health. Washington, DC: National Academies Press, 2004.
3. Mazur L, Kim J. Spectrum of noninfectious health effects from molds. Committee on Environmental Health, American Academy of Pediatrics. *Pediatrics*, 2006; **118**(6): e1909-26.
4. Seltzer JM, Fedoruk MJ. Health effects of mold in children. *Pediatr Clin N Am*, 2007; **54**: 309-333.
5. Storey E, Dangman KH, Schenck P, et al. Guidance for clinicians on the recognition and management of health effects related to mold exposure and moisture indoors. Farmington, CT: University of Connecticut Health Center, Division of Occupational and Environmental Medicine, Center for Indoor Environments and Health, 2004.  
<http://oehc.uhc.edu/clinser/MOLD%20GUIDE.pdf>
6. do Pico G, Hazardous Exposure and Lung Disease Among Farm Workers. *Clinics in Chest Medicine* 1992; **13**(2): 311-28.

## **IX: Inspection Agreement**

By receipt of services the following agreement is in force if the services have been performed and paid for.

H2H Assurance services evaluation and test results do not guarantee that the indoor environment is free of contaminants, gases organisms or any analytes sampled for. The customer understands that there are limitations associated with the instrumentation used associated with accuracy, precision and uncertainty. Additionally, further limitations are present as a result of sampling and measurement methods/procedures utilized in testing and measuring as well as any or all factors such as environmental and climatic conditions. The customer is aware that no destructive testing was performed and that the evaluation can only assess for conditions that are visible at the time of the evaluation.

H2H's opinions as noted in the report are based on the findings and upon our professional experience with no warranty or guarantee implied. H2H accepts no responsibility for interpretations or actions based on this report by others. The findings, results and conclusions as part of our assessment are only representative of conditions at the time of the H2H visit and do not represent conditions at other times. This report is intended for your use and your assigned representatives. Its data and content shall not be used or relied upon by other parties without prior written authorization of H2H and the client.

Notice of Claims. You understand and agree that any claim(s) or complaint(s) arising out of or related to any alleged act or omission in connection with the Inspection shall be reported to us, in writing, within ten (10) business days of discovery. Unless there is an emergency condition, you agree to allow us a reasonable period of time to investigate the claim(s) or complaint(s) by, among other things, re-inspection before you, or anyone acting on your behalf, repairs, replaces, alters or modifies the system or component that is the subject matter of the claim. You understand and agree that any failure to timely notify us and allow adequate time to investigate as stated above shall constitute a complete bar and waiver of any and all claims you may have against us related to the alleged act or omission unless otherwise prohibited by law.

Arbitration: Any dispute concerning the interpretation of this Agreement or arising from the Inspection and Report (unless based on payment of fee) shall be resolved by binding, non-appealable arbitration conducted in accordance with the rules of the American Arbitration Association, except that the parties shall mutually agree upon an Arbitrator who is familiar with the home inspection industry.

**Limitations Period.**

Any legal action arising from this Agreement or from the Inspection and Report, including (but not limited to) the arbitration proceeding more specifically described above, must be commenced within six (6) months from the date of the Inspection. Failure to bring such an action within this time period shall be a complete bar to any such action and a full and complete waiver of any rights or claims based thereon. This time limitation period may be shorter than provided by state law.

UNCONDITIONAL RELEASE AND LIMITATION OF LIABILITY. IT IS UNDERSTOOD AND AGREED THAT WE AND THE LAB ARE NOT INSURERS AND, THAT THE INSPECTION AND REPORT TO BE PROVIDED UNDER THIS AGREEMENT SHALL NOT BE CONSTRUED AS A GUARANTEE OR WARRANTY OF THE ADEQUACY, PERFORMANCE OR CONDITION OF ANY STRUCTURE, ITEM, OR SYSTEM AT THE SUBJECT PROPERTY. YOU HEREBY RELEASE AND EXEMPT US, THE LAB AND OUR RESPECTIVE AGENTS AND EMPLOYEES OF AND FROM ALL LIABILITY AND RESPONSIBILITY FOR THE COST OF REPAIRING OR REPLACING ANY UNREPORTED DEFECT OR DEFICIENCY AND FOR ANY CONSEQUENTIAL DAMAGE, PROPERTY DAMAGE OR PERSONAL INJURY OF ANY NATURE. IN THE EVENT THAT WE, THE LAB OR OUR RESPECTIVE AGENTS OR EMPLOYEES ARE FOUND LIABLE DUE TO BREACH OF CONTRACT, BREACH OF WARRANTY, NEGLIGENT MISREPRESENTATION, NEGLIGENT HIRING OR ANY OTHER THEORY OF LIABILITY, THEN THE CUMULATIVE AGGREGATE TOTAL LIABILITY OF US, THE LAB AND OUR RESPECTIVE AGENTS AND EMPLOYEES SHALL BE LIMITED TO A SUM EQUAL TO THE AMOUNT OF THE FEE PAID BY YOU FOR THE INSPECTION AND REPORT.

Confidentiality: You understand that the Inspection is being performed (and the Report is being prepared) for your sole, confidential and exclusive benefit and use. The Report, or any portion thereof, is not intended to benefit any person not a party to this Agreement, including (but not limited to) the seller or the real estate agent(s) involved in the real estate transaction ("third party"). If you directly or indirectly allow or cause the Report or any portion thereof to be disclosed or distributed to any third party, you agree to indemnify, defend, and hold us harmless for any claims or actions based on the Inspection or the Report brought by the third party.

The undersigned Client(s), acknowledge that Client(s) have been advised and encouraged to have the subject property tested for allergens, and that client(s) understand that the presence of certain types of allergens prevalent in construction can pose health hazards. Client(s) decline that the Inspector conducts the services recommended above. Client(s) agree to hold harmless the Inspector for any damages or responsibility for building conditions which remain

undiscovered regarding the discovery of allergens and allergen agents. Also, clients understand that cleaning specifications cannot be produced unless the above mentioned samples are collected and analyzed.

THIS INSPECTION, INSPECTION AGREEMENT AND REPORT DO NOT CONSTITUTE A WARRANTY, AN INSURANCE POLICY, OR A GUARANTEE OF ANY KIND; NOR DO THEY SUBSTITUTE FOR ANY DISCLOSURE STATEMENT AS MAY BE REQUIRED BY LAW. By signing below, You acknowledge that You have read, understand, and agree to the terms and conditions of this agreement, including (but not limited to) the limitation of liability, arbitration clause and limitation period, and agree to pay the fee listed in the shaded box above. In addition, You acknowledge and agree that the Inspector may notify the homeowner or occupants of the Subject Property (if other than You), as well as any appropriate public agency, of any condition(s) discovered that may pose a safety or health concern.

“The investigate procedures are limited both to a specific time frame and to considering the conditions apparent while the investigation is going on. Since fungi are growing, living organisms that go through growth cycles, the findings of an investigation may not detect or locate all sites of microbial growth. Rather, the purpose of the investigation is to develop picture of the situation and the conditions within the building with regard to moisture control, moisture content of the materials and the potential for fungal growth to develop, while simultaneously identify any growth that has already developed.” (Fungal Contamination, by Hollace S. Bailey, PE, CIAQP, CIE, CMR, ©2005)

## Chapter 2: Specific Rooms Information

Each room identified in the table of contents was evaluated. Methods used were different in each room based on the visual evidence found.

Methods used:

- Humidity and temperature study
- Thermal Imaging
- Moisture mapping
- Air Sample
- Swab or tape sampling

Room information:

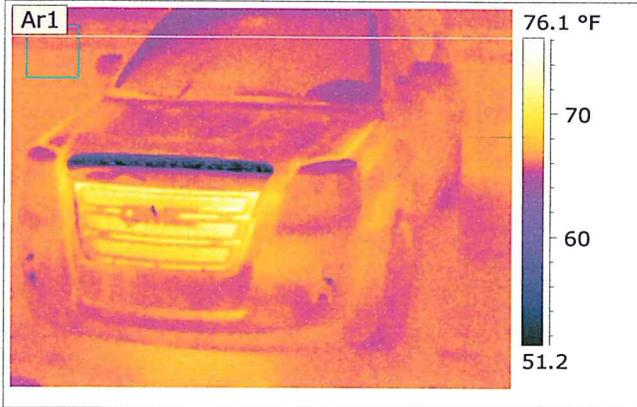
Each room has its own study. They are categorized by building and level in the location box.

The chart below the thermal image is directly tied to the thermal image by use of special radiometric software. The rectangular box shows the max. temperature along with the min. and average temperature. The location and the image palette can be changed at any time through the use of the software. The scale on the right shows the temperature range of the image from the warmest to coldest parts of the image. In addition when the picture was taken the Bluetooth feature of the camera connected with the **Moisture Psychrometer**. Therefore, the room temperature and the humidity were recorded at the same time. In some cases when tested the internal moisture of the test area was also recorded. This will be identified by "INT"

In some cases the digital picture will not be clear due to available light. The digital picture is taken simultaneously with the infrared picture. The intent was to record the information in the chart in some cases. Ex. Picture of the room number really was to record the conditions inside the room (the Psychrometer was inside the room transmitting the information to the camera)

The intent of the individual room information was to give room conditions along with visual observations, lab information and to provide a remediation protocol plan suggestion. Specific plan information is in chapter 6. Each room protocol plan is different based on the information provided.





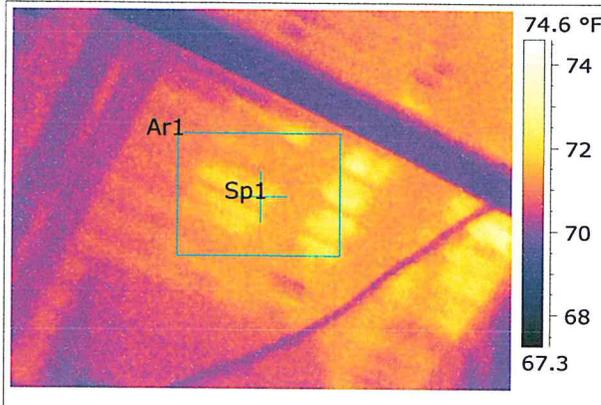
Date	1/2/2014	Location:	Outside
Image Time	3:30:59 PM	<b>Other remarks:</b>	
		Lab Results:	Total spores 3,147 c/m3
		Mold Rating:	Normal readings
Air Temperature 1	68.9 °F	Used as a baseline	
Relative Humidity 1	80.8 %		





# H2H

Indoor Air Solutions<sup>SM</sup>



Date	12/30/2013	<table border="1"> <tr> <td>Location:</td> <td>New building-First Floor-Main Hallway</td> </tr> </table> <p><b>Other remarks:</b></p> <p>Wall &amp; Ceilings: Do not have condition 3 mold. Vents were tested for by the use of a swab to see if they contained condition 2 or 3 mold.</p>	Location:	New building-First Floor-Main Hallway
Location:	New building-First Floor-Main Hallway			
Image Time	2:08:32 PM			
Ar1 Max. Temperature	72.6 °F			
Ar1 Min. Temperature	70.6 °F			
Ar1 Average Temperature	71.5 °F			
Sp1 Temperature	72.0 °F			
Air Temperature 1	70.2 °F			
Relative Humidity 1	53.1 %			

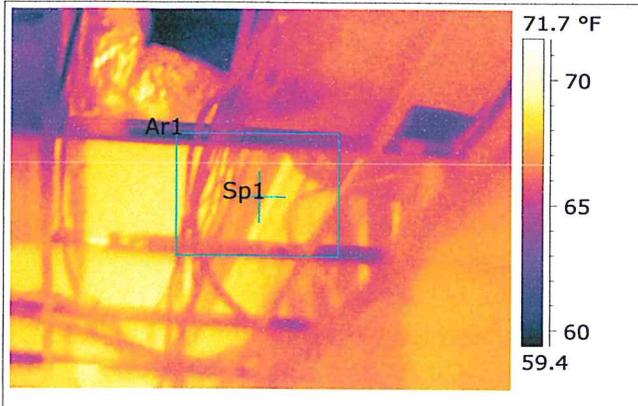
**Comment:** There were no leaks detected thermally. All decking and trusses visually look acceptable. Please note the average temperatures and relative humidity on the chart on the left. All within acceptable ranges.

**Recommendation:** Generally cleaning needs to take place in the 1<sup>st</sup> floor hallways

**Remediation Protocol:** Plan " A "

# H2H

Indoor Air Solutions<sup>SM</sup>



Date	12/30/2013	Location:	Main Hallway
Image Time	2:43:06 PM	<b>Other remarks:</b>	
Ar1 Max. Temperature	69.2 °F	Lab Results:	416,870 c/m3, Swab of duct
Ar1 Min. Temperature	60.9 °F	Mold Rating:	5
Ar1 Average Temperature	66.6 °F	Mold Rating:	1-5 (5 being worst)
Sp1 Temperature	66.8 °F		
Air Temperature 1	68.7 °F		
Relative Humidity 1	55.9 %		

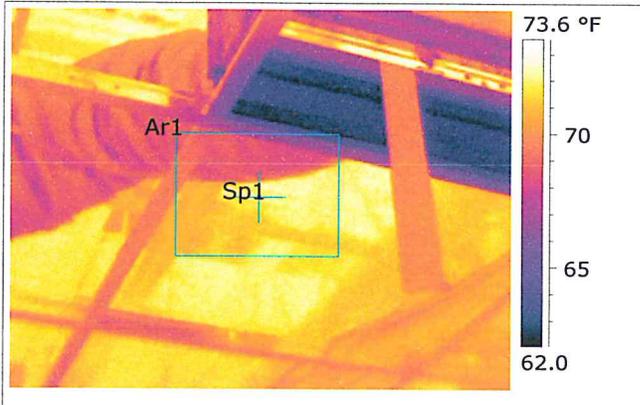
**Comment:** Very high readings suggest that the ductwork is compromised. The video taken of a section of the duct suggest condition 3 mold evident.

**Recommendation:** Full cleaning needs to take place of the first floor ductwork. See protocol for recommended cleaning.

**Remediation Protocol:** Plan "B "

# H2H

Indoor Air Solutions<sup>SM</sup>



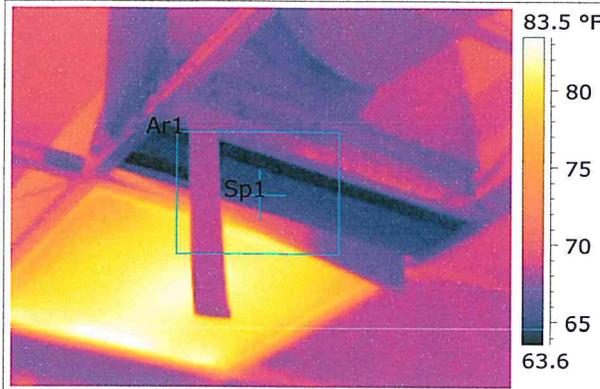
Date	12/30/2013	Location:	Main Hallway
Image Time	2:43:31 PM	<b>Other remarks:</b>	
Ar1 Max. Temperature	72.6 °F	Wall:	
Ar1 Min. Temperature	62.6 °F	Ceilings:	
Ar1 Average Temperature	70.4 °F	Lab Results:	<b>1,550,509 c/m3</b>
Sp1 Temperature	72.1 °F	Mold Rating:	<b>5</b>
Air Temperature 1	68.9 °F	Mold Rating:	1-5 (5 being worst)
Relative Humidity 1	55.0 %		

**Comment: See previous comments**

**Remediation Protocol: Plan " B "**

# H2H

Indoor Air Solutions<sup>SM</sup>



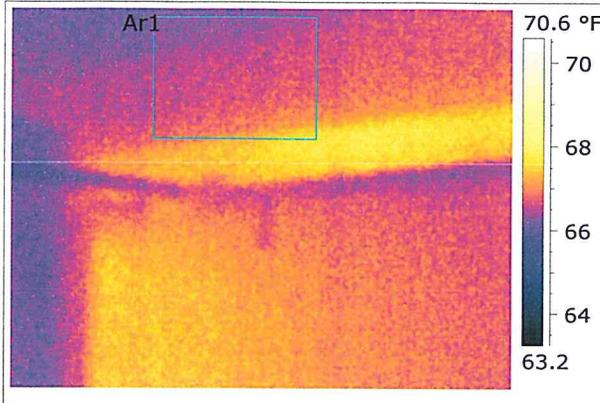
Date	12/30/2013	Location:	Main Hallway
Image Time	2:44:12 PM	<b>Other remarks:</b>	
Ar1 Max. Temperature	81.6 °F	Lab Results:	<b>3,180 c/m3</b>
Ar1 Min. Temperature	63.6 °F	Mold Rating:	<b>4</b>
Ar1 Average Temperature	68.5 °F	Mold Rating:	1-5 ( <b>5 being worst</b> )
Sp1 Temperature	64.9 °F		
Air Temperature 1	68.4 °F		
Relative Humidity 1	55.4 %		

**Comment: See previous comments**

**Remediation Protocol: Plan "B"**

# H2H

Indoor Air Solutions<sup>SM</sup>

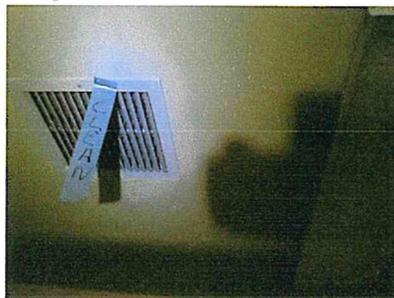


Date	12/30/2013	Location:	New Building-First Floor- Men's Room
Image Time	1:13:17 PM	<b>Other remarks:</b>	
Ar1 Max. Temperature	68.0 °F	Lab Results: <b>Room Air Test: 2,240 c/m3</b>	
Ar1 Min. Temperature	65.9 °F	Mold Rating: 3	
Ar1 Average Temperature	66.6 °F	Mold Rating: 1-5 (5 being worst)	
Air Temperature 1	72.1 °F		
Relative Humidity 1	51.6 %		

**Comment:** All external readings in the chart to the upper left are within acceptable ranges. The air test is an acceptable range

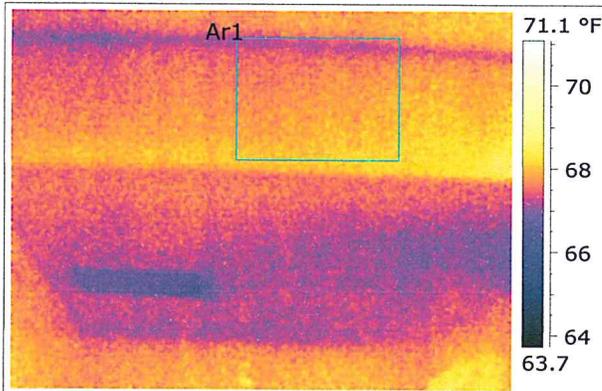
**Recommendation:** The room needs cleaning per protocol "B" The supply duct needs cleaning per NADCA standards. (part of remediation "A")

**Remediation Protocol:** "A"



# H2H

Indoor Air Solutions<sup>SM</sup>



Date	12/30/2013	Location:	New Building-First Floor-Woman's Room
Image Time	1:15:27 PM	<b>Other remarks:</b>	
Ar1 Max. Temperature	68.5 °F	Wall:	
Ar1 Min. Temperature	66.9 °F	Ceilings:	
Ar1 Average Temperature	67.7 °F	Lab Results: <b>Room Air Test- 360c/m3</b>	
Air Temperature 1	71.8 °F	Mold Rating: <b>1</b>	
Relative Humidity 1	52.0 %	Mold Rating: 1- <b>5</b> ( <b>5</b> being worst)	

**Comment: All readings are within acceptable range**

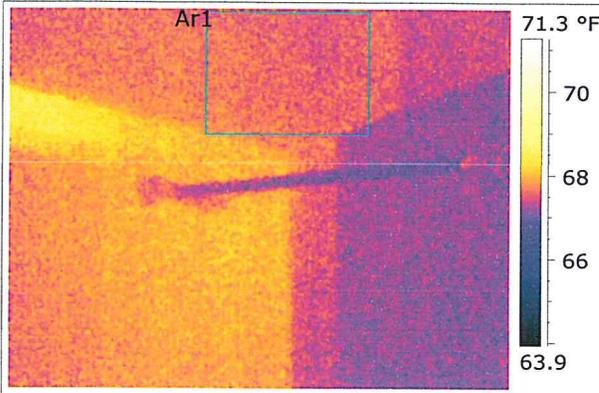
**Recommendation: General cleaning per remediation "A" The duct supply needs cleaning**

**Remediation Protocol: Plan "A "**



# H2H

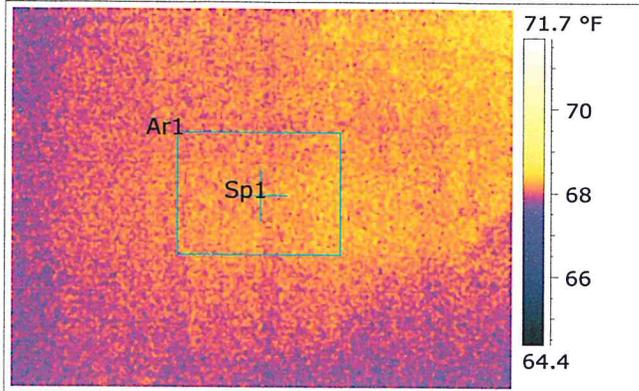
Indoor Air Solutions<sup>SM</sup>



Date	12/30/2013	Location: Woman's room
Image Time	1:16:18 PM	
Ar1 Max. Temperature	68.2 °F	
Ar1 Min. Temperature	67.0 °F	
Ar1 Average Temperature	67.6 °F	
Air Temperature 1	70.3 °F	
Relative Humidity 1	52.8 %	

# H2H

Indoor Air Solutions<sup>SM</sup>

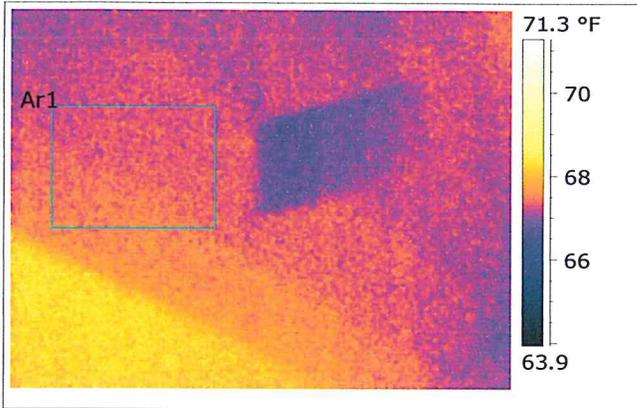


Date	12/30/2013	Location:	Woman's Room
Image Time	1:16:53 PM	<b>Other remarks:</b>	
Ar1 Max. Temperature	68.7 °F	Wall:	
Ar1 Min. Temperature	67.7 °F	Ceilings:	
Ar1 Average Temperature	68.2 °F	Lab Results:	
Sp1 Temperature	68.2 °F	Mold Rating:	
Air Temperature 1	70.5 °F		
Relative Humidity 1	52.5 %		
			Mold Rating: 1-5 (5 being worst)

**Comment:**

**Recommendation:**

**Remediation Protocol: Plan "A"**

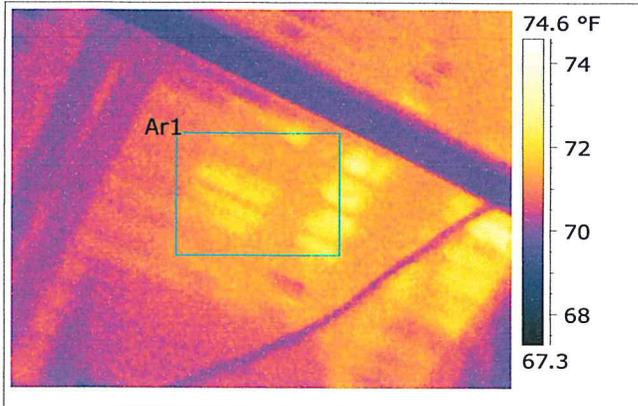


Date	12/30/2013	Location:	<b>New Building- First Floor- Room 104</b>
Image Time	2:06:48 PM	<b>Other remarks:</b>	
Ar1 Max. Temperature	68.0 °F	Wall:	Acceptable
Ar1 Min. Temperature	66.9 °F	Ceilings:	Acceptable
Ar1 Average Temperature	67.4 °F	Lab Results:	<b>Room Air Test-52,560 c/m3</b>
Air Temperature 1	69.8 °F		<b>Supply Vent- 0</b>
Relative Humidity 1	53.9 %	Mold Rating:	<b>5</b>
		Mold Rating:	1-5 (5 being worst)

**Comment: Condition 2 Mold level is high. No visual condition 3. All readings within normal ranges for humidity. No signs of moisture activity in deck or walls.**

**Recommendation: Clean needs to follow plan "B" because of high count.**

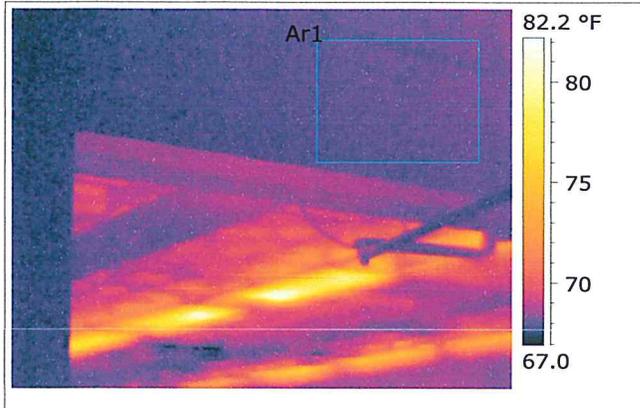
**Remediation Protocol: "B"**



Date	12/30/2013	Location: Room104  <b>Other remarks: See previous comments</b>
Image Time	2:08:32 PM	
Ar1 Max. Temperature	72.6 °F	
Ar1 Min. Temperature	70.6 °F	
Ar1 Average Temperature	71.5 °F	
Air Temperature 1	70.2 °F	
Relative Humidity 1	53.1 %	

# H2H

Indoor Air Solutions<sup>SM</sup>



Date	12/30/2013	<b>Location:</b> New Building-First Floor-Room 107 <b>Courtroom</b>
Image Time	3:06:07 PM	
Ar1 Max. Temperature	68.7 °F	
Ar1 Min. Temperature	67.5 °F	
Ar1 Average Temperature	68.1 °F	
Air Temperature 1	70.7 °F	
Relative Humidity 1	52.0 %	
<b>Other remarks:</b> Wall: Acceptable Ceilings: Waste Drain-Leak was visable Lab Results: <b>Room Air Test- 54.960 c/m3</b>  Mold Rating: <b>5</b>  Mold Rating: 1- <b>5</b> ( <b>5</b> being worst)		

**Comment:** The air test taken was very elevated with condition 2 mold spores.

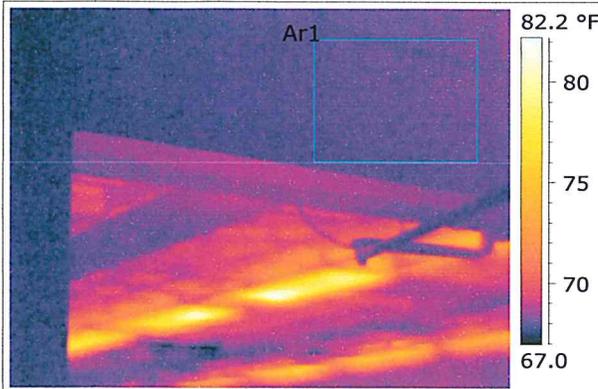
**Recommendation:** Seats needs to be removed as well as carpet. All ceiling tiles need to come out. Seats should be cleaned off site in staging area if they are to be reused. Roof deck does not reveal excessive moisture. Trusses and deck need surface cleaning.

**Remediation Protocol:** Plan "B"



# H2H

Indoor Air Solutions<sup>SM</sup>



Date	12/30/2013	Location:	New Building-First Floor-Room 107 Courtroom
Image Time	3:06:07 PM	<b>Other remarks:</b>	
Ar1 Max. Temperature	68.7 °F	Wall: Acceptable	
Ar1 Min. Temperature	67.5 °F	Ceilings: Waste Drain-Leak was visible	
Ar1 Average Temperature	68.1 °F	Lab Results: <b>Room Air Test- 54.960 c/m3</b>	
Air Temperature 1	70.7 °F	Mold Rating: <b>5</b>	
Relative Humidity 1	52.0 %	Mold Rating: 1- <b>5</b> ( <b>5</b> being worst)	

**Comment:** The air test taken was very elevated with condition 2 mold spores.

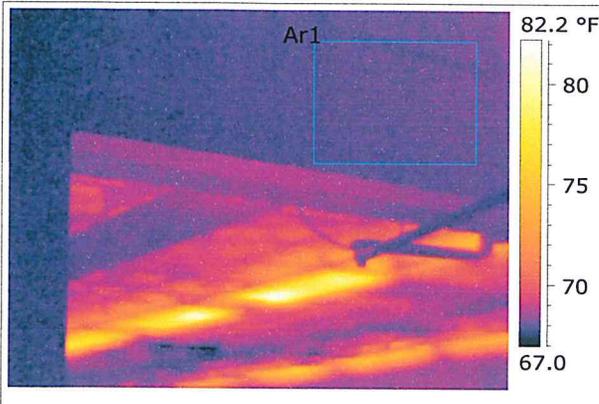
**Recommendation:** Seats needs to be removed as well as carpet. All ceiling tiles need to come out. Seats should be cleaned off site in staging area if they are to be reused. Roof deck does not reveal excessive moisture. Trusses and deck need surface cleaning.

**Remediation Protocol: Plan "B"**



# H2H

Indoor Air Solutions<sup>SM</sup>



Date	12/30/2013	Location:	New Building-First Floor-Room 107 Courtroom
Image Time	3:06:07 PM	<b>Other remarks:</b>	
Ar1 Max. Temperature	68.7 °F	Wall: Acceptable	
Ar1 Min. Temperature	67.5 °F	Ceilings: Waste Drain-Leak was visable	
Ar1 Average Temperature	68.1 °F	Lab Results: <b>Room Air Test- 54.960 c/m3</b>	
Air Temperature 1	70.7 °F	Mold Rating: <b>5</b>	
Relative Humidity 1	52.0 %	Mold Rating: 1- <b>5</b> ( <b>5</b> being worst)	

**Comment:** The air test taken was very elevated with condition 2 mold spores.

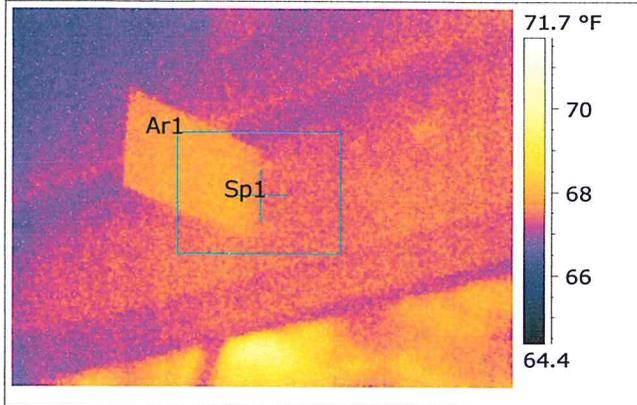
**Recommendation:** Seats needs to be removed as well as carpet. All ceiling tiles need to come out. Seats should be cleaned off site in staging area if they are to be reused. Roof deck does not reveal excessive moisture. Trusses and deck need surface cleaning.

**Remediation Protocol:** Plan "B"



**H2H INDOOR AIR SOLUTIONS**

386-439-7432-904-438-7432



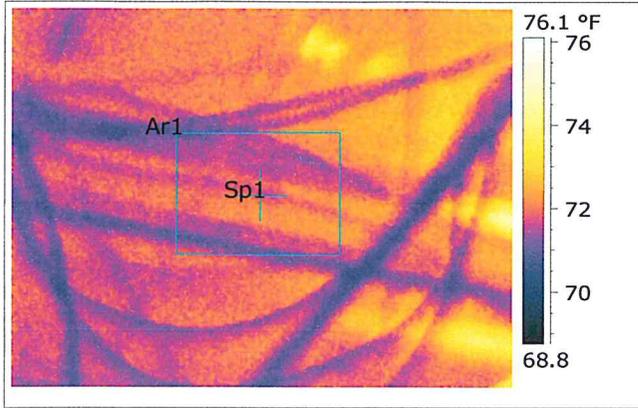
Date	12/30/2013	Location:	<b>New Building-First Floor-Room 125</b>
Image Time	4:54:02 PM	<b>Other remarks:</b>	
Ar1 Max. Temperature	68.3 °F	Wall:	See below
Ar1 Min. Temperature	66.9 °F	Ceilings:	Acceptable
Ar1 Average Temperature	67.6 °F	Lab Results:	<b>Room Air Test- 19,267 c/m3</b>
Sp1 Temperature	67.5 °F	Mold Rating:	<b>5</b>
Air Temperature 1	71.4 °F	Mold Rating:	1- <b>5 (5 being worst)</b>
Relative Humidity 1	55.5 %		

**Comment: condition 2 level mold is elevated**

**Recommendation: Walls need to treated with moisture lock and insulated.**

**Remediation Protocol: "B"**





Date	12/30/2013	Location: Room 125  <b>Other remarks:</b>
Image Time	5:07:45 PM	
Ar1 Max. Temperature	72.7 °F	
Ar1 Min. Temperature	70.6 °F	
Ar1 Average Temperature	71.7 °F	
Sp1 Temperature	71.9 °F	

**Comment:**

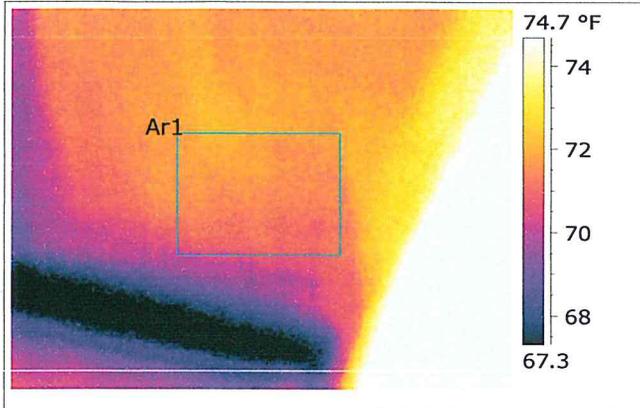
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**Recommendation:**

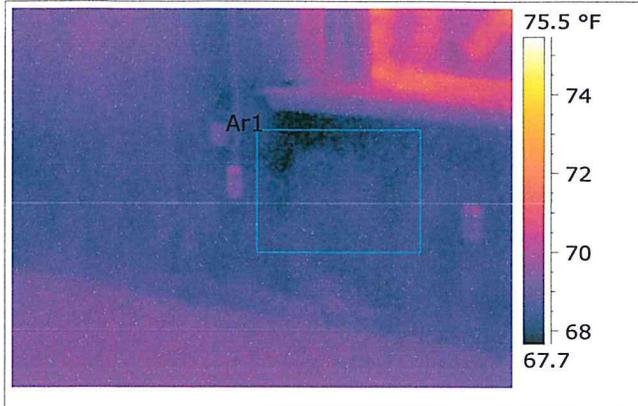
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**Remediation Protocol:**

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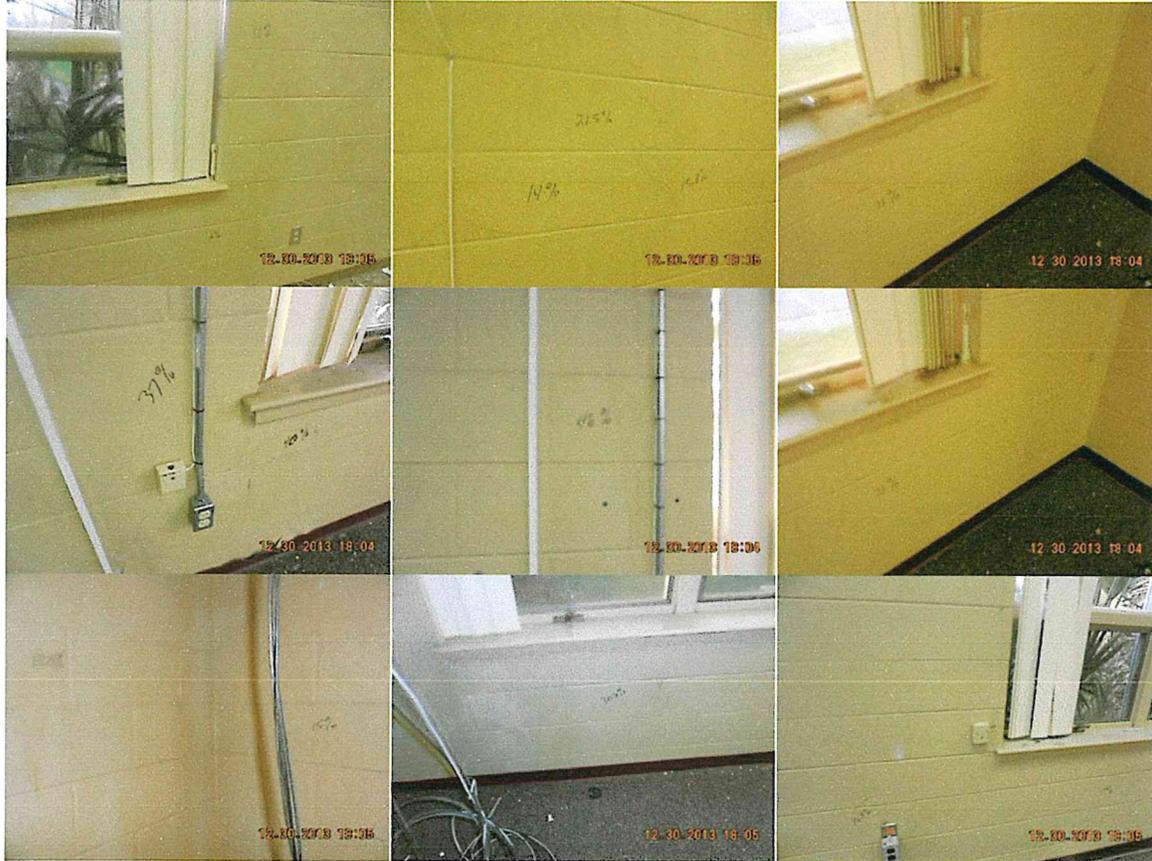


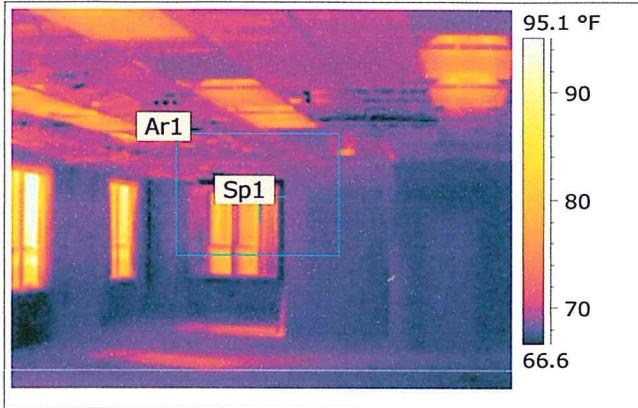
Date	12/30/2013	Location:	Room 125
Image Time	5:08:10 PM	<b>Other remarks:</b>	
Ar1 Max. Temperature	72.3 °F		
Ar1 Min. Temperature	69.8 °F		
Ar1 Average Temperature	71.4 °F		



Date	12/30/2013	Location:	Room 125
Image Time	5:09:29 PM	<b>Other remarks: Excessive moisture on block wall. RH in first picture show 55 % RH. Walls are sweating due to no insulation. See protocol for recommendation</b>	
Ar1 Max. Temperature	69.0 °F		
Ar1 Min. Temperature	67.4 °F		
Ar1 Average Temperature	68.3 °F		

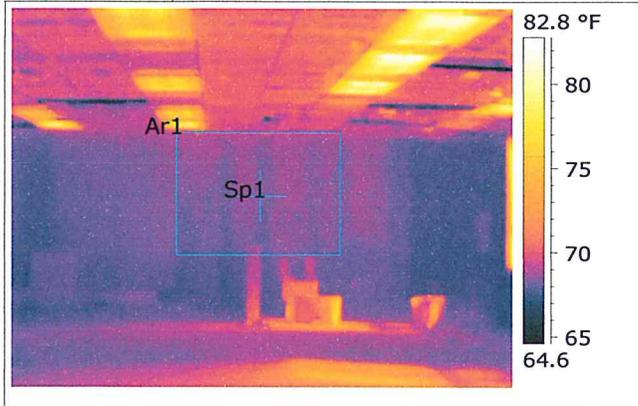
## Wall readings:





Date	12/30/2013	Location: <b>New Building-First Floor-Room 135</b>
Image Time	10:58:50 AM	
Ar1 Max. Temperature	83.5 °F	<b>Other remarks: Drain in bathroom show previous leaking, noted by orange arrow.</b>  <b>Ceiling in room does not show any evidence of water intrusion.</b>
Ar1 Min. Temperature	66.0 °F	
Ar1 Average Temperature	70.4 °F	
Sp1 Temperature	73.2 °F	
Air Temperature 1	72.1 °F	
Relative Humidity 1	52.7 %	





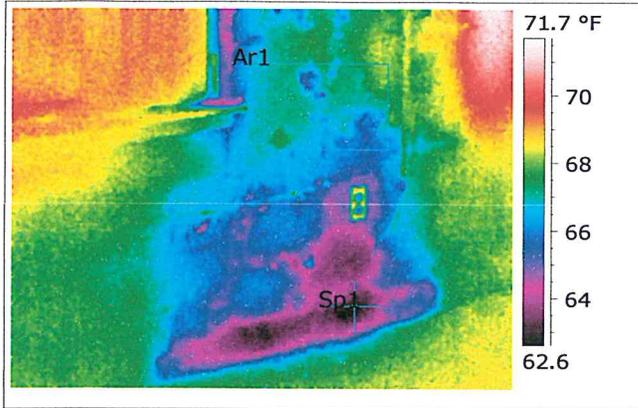
Date	12/30/2013	Location:	<b>Room 135</b>
Image Time	10:59:19 AM	Wall:	Acceptable
Ar1 Max. Temperature	70.5 °F	Ceilings:	Acceptable
Ar1 Min. Temperature	67.7 °F	Lab Results:	<b>Room Air Test: 253 c/m3</b>
Ar1 Average Temperature	68.5 °F		<b>Left Duct Swab: 348 c/m2</b>
Sp1 Temperature	68.4 °F		<b>Right Duct Swab: 59,106 c/m2</b>
Air Temperature 1	72.3 °F		<b>Vent Swab: 0 c/m2</b>
Relative Humidity 1	51.9 %	Mold Rating:	<b>4</b>
		Mold Rating:	<b>1-5 (5 being worst)</b>

**Comment: Room needs general cleaning. Mold air test acceptable**

**Recommendation: The duct show high readings on the exterior. Ducts need full remediation**

**Room Remediation Protocol: "A"**





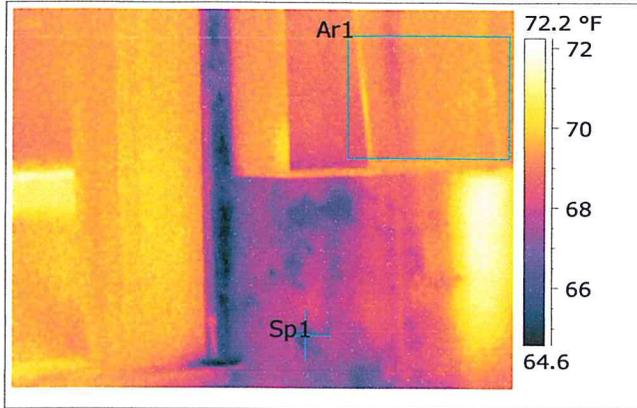
Date	12/30/2013	<b>Location: New building-First Floor-Room 137</b>  Wall: Water intrusion by window, walls high in moisture content Ceilings: Acceptable Lab Results: <b>Room Air Test- 253 c/m3</b>  Mold Rating: 2  Mold Rating: 1-5 (5 being worst)
Image Time	4:06:52 PM	
Ar1 Max. Temperature	68.4 °F	
Ar1 Min. Temperature	64.9 °F	
Ar1 Average Temperature	66.8 °F	
Sp1 Temperature	62.7 °F	
Air Temperature 1	71.6 °F	
Relative Humidity 1	53.8 %	

**Comment:** Although the air test came back low the area around the last window on the south side has a major leaking issue. The window also show high moisture build up.

**Recommendation:** The outside brick needs tuck pointing. The window needs replacement. The walls need moisture sealing and insulation per specific protocol.

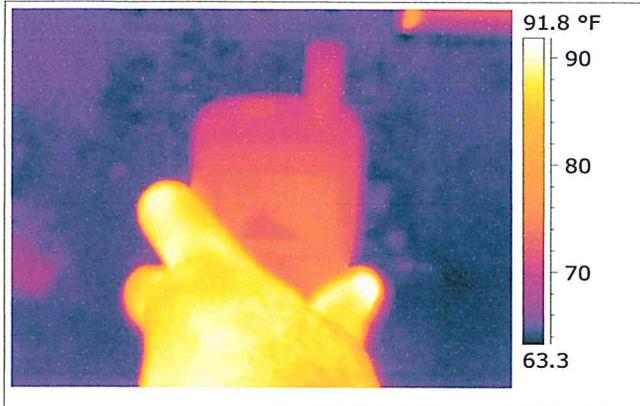
**Remediation Protocol:** Plan "B "





Date	12/30/2013	Location:	Room 137
Image Time	4:07:19 PM	<b>Other remarks:</b>	
Ar1 Max. Temperature	70.4 °F	Wall: Very high moisture readings on outer walls	
Ar1 Min. Temperature	68.0 °F	Lab Results: <b>Wall Swab Test- 2,037 c/m2</b>	
Ar1 Average Temperature	69.3 °F	<b>ATP Test confirmation: 450</b>	
Sp1 Temperature	66.5 °F	Mold Rating: <b>4</b>	
Air Temperature 1	71.6 °F	Mold Rating: 1- <b>5</b> ( <b>5 being worst</b> )	
Relative Humidity 1	53.8 %		

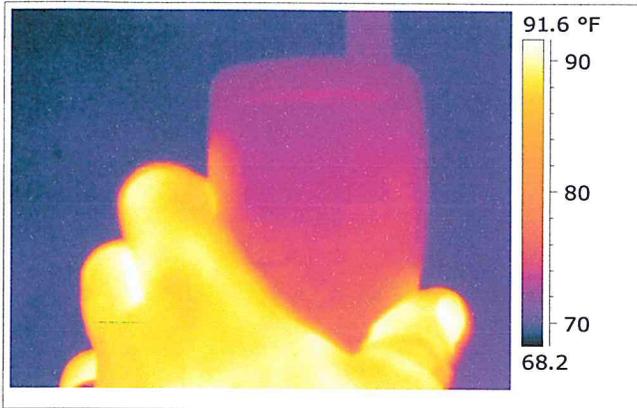




Date	12/30/2013	Location:	Room 137
Image Time	4:12:02 PM	<b>Other remarks:</b>	
Air Temperature 1	70.9 °F	Wall: Internal moisture is high at 37 %	
Internal Moisture 1	33.7 %		

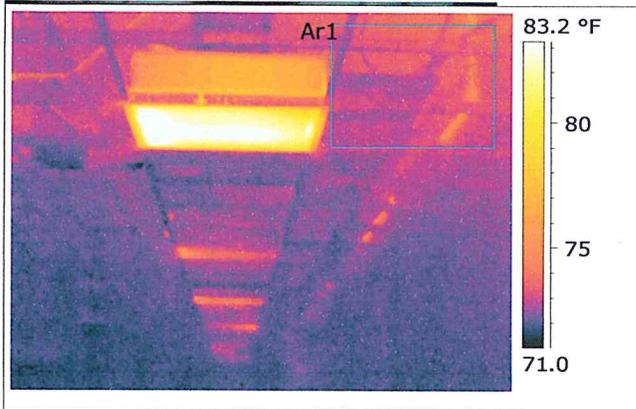


ATP on site meter. Showing bacterial or fungal substance



Date	12/30/2013	Location:	Room 137
Image Time	4:12:40 PM	<b>Other remarks:</b>	
Air Temperature 1	71.1 °F	Wall: The meter is showing highest possible reading for moisture	
Internal Moisture 1	99.9 %		





Date	12/31/2013
Image Time	11:03:17 AM
Ar1 Max. Temperature	75.5 °F
Ar1 Min. Temperature	72.1 °F
Ar1 Average Temperature	73.2 °F
Air Temperature 1	72.9 °F
Relative Humidity 1	51.6 %

Location: **New Building-2<sup>nd</sup> Floor-Main Hallway**

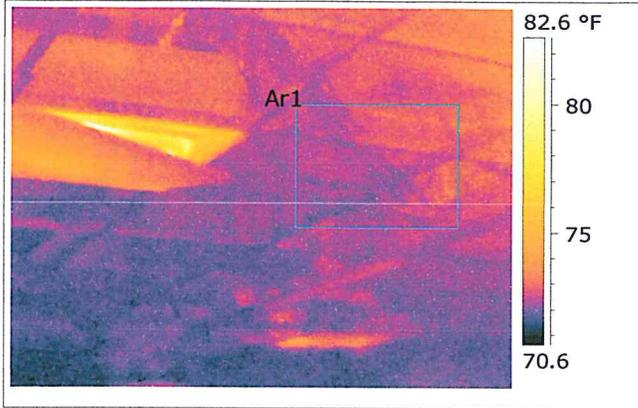
**Other remarks: Ductwork testing**

Lab Results: **Swab Test- 42,708 c/m<sup>2</sup>**

Mold Rating: **5**

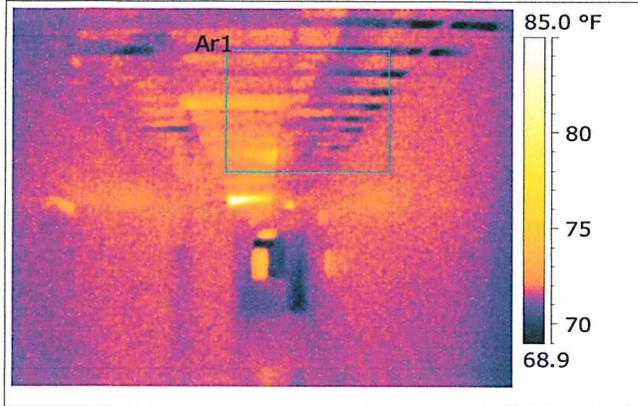
Mold Rating: 1-5 (**5** being worst)





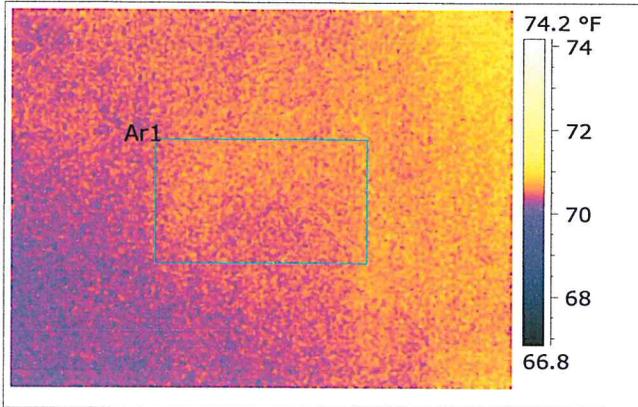
Date	12/31/2013	Location:	New Building-Second Floor-Main Hallways
Image Time	11:04:07 AM	<b>Other remarks:</b>	
Ar1 Max. Temperature	73.6 °F	Wall: Acceptable	
Ar1 Min. Temperature	71.6 °F	Ceilings: Evidence of previous water intrusion around the conduit by the elevators.	
Ar1 Average Temperature	72.5 °F	Lab Results: <b>Swab Test of ductwork- 532,149 c/m3</b>	
		Mold Rating: <b>5</b>	
		Mold Rating: 1- <b>5</b> ( <b>5</b> being worst)	

<b>Comment: All tiles need to be removed to gain full access to the ceiling</b>
<b>Recommendation: The ceilings need general cleaning</b>
<b>Remediation Protocol: Plan "A" of the walls and ceilings. All ductwork needs for remediation per NADCA. High readings were found on in all ducts tested.</b>



Date	12/31/2013	Location:	Main Hallway
Image Time	11:05:46 AM	Lab Results:	<b>Swab Test- 39,503 c/m3</b>
Ar1 Max. Temperature	76.7 °F	Mold Rating:	<b>5</b>
Ar1 Min. Temperature	69.5 °F	Mold Rating:	1- <b>5</b> ( <b>5</b> being worst)
Ar1 Average Temperature	71.8 °F		
Air Temperature 1	72.0 °F		
Relative Humidity 1	53.2 %		

**Comment: See previous comment**



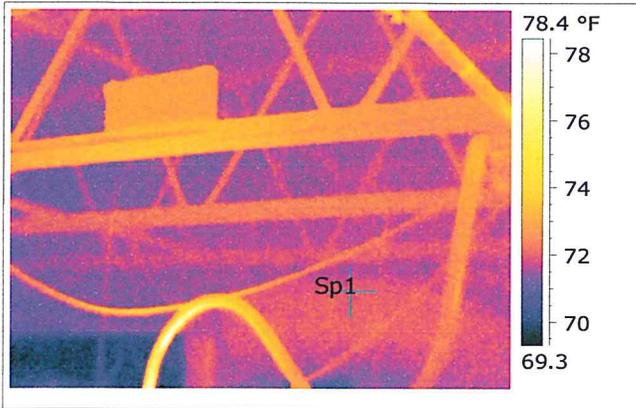
Date	12/31/2013	Location: <b>New Building-1<sup>st</sup>. Floor-Courtroom 3</b>  <b>Other remarks:</b>  <b>Room Air Test: 19,307 c/m3</b>
Image Time	9:59:38 AM	
Ar1 Max. Temperature	71.1 °F	
Ar1 Min. Temperature	70.0 °F	
Ar1 Average Temperature	70.5 °F	
Air Temperature 1	72.3 °F	
Relative Humidity 1	53.8 %	

**Comment: An air test revealed a elevated condition 2 spore count. The room humidity is normal. However the otter walls show high moisture (se below)**

**Recommendation: Because of the elevated count the ceiling tiles need to be removed. The carpet is in good condition therefore if it is to be kept it needs to be steam cleaned.**

**Remediation Protocol: Plan " B "**



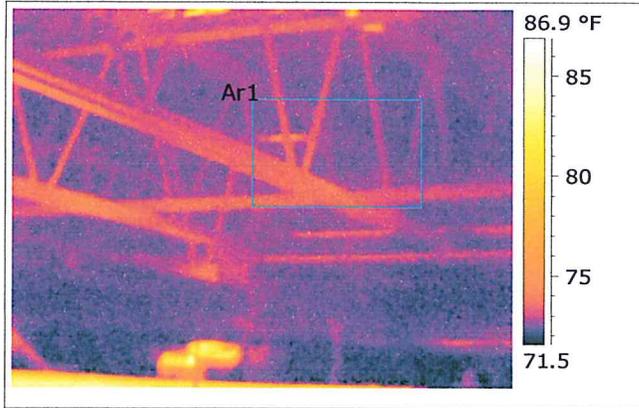


Date	12/31/2013
Image Time	10:01:41 AM
Sp1 Temperature	72.0 °F

Location: (Where)

**Other remarks:**

Wall:  
Ceilings: Acceptable

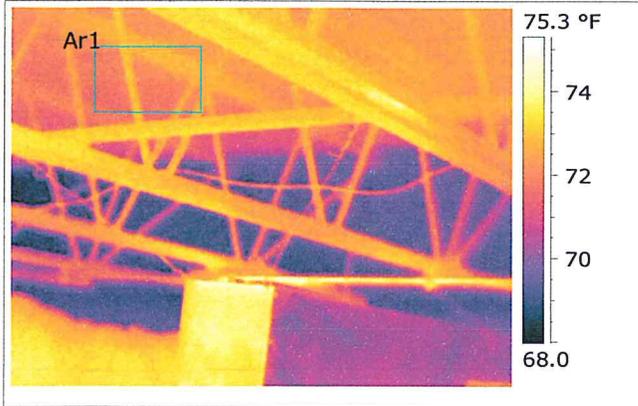


Date	12/31/2013
Image Time	10:02:06 AM
Ar1 Max. Temperature	74.8 °F
Ar1 Min. Temperature	72.0 °F
Ar1 Average Temperature	72.9 °F

Location: (Where)

**Other remarks:**

Ceilings: Acceptable

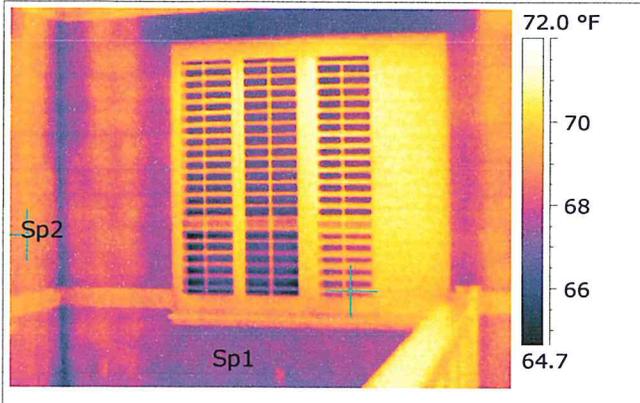


Date	12/31/2013
Image Time	10:02:35 AM
Ar1 Max. Temperature	73.3 °F
Ar1 Min. Temperature	71.2 °F
Ar1 Average Temperature	72.2 °F

Location: (Where)

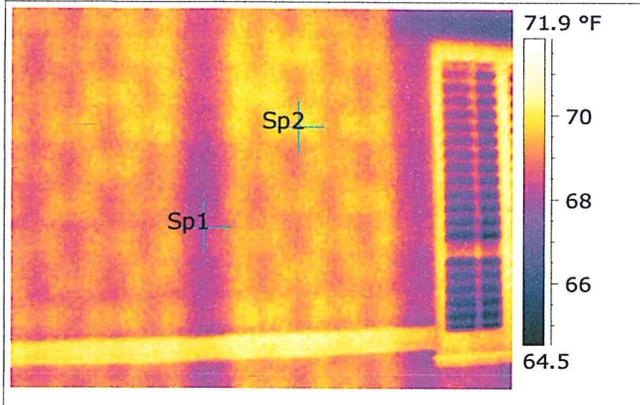
**Other remarks:**

Ceilings: Acceptable. Purple color is reflective imaging.

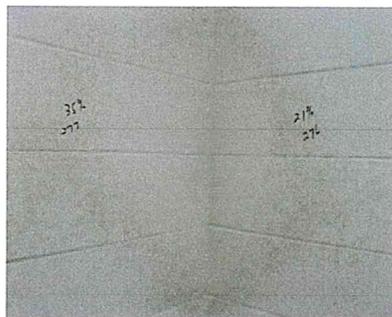


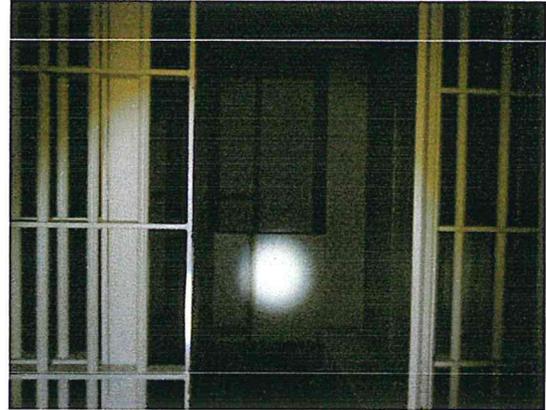
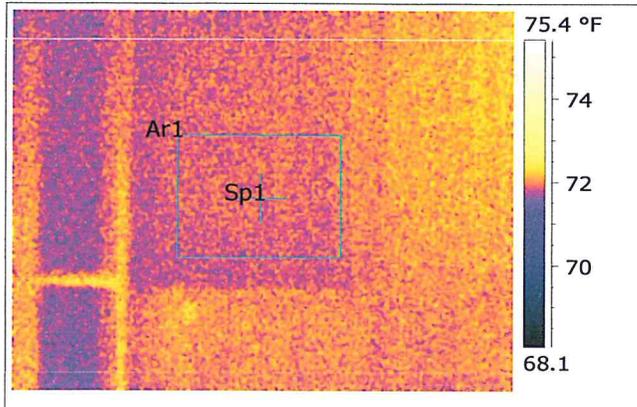
Date	12/31/2013	Location: (Where)
Image Time	10:03:26 AM	
Sp1 Temperature	68.5 °F	
Sp2 Temperature	69.1 °F	
		<b>Other remarks:</b>
		Wall: The thermal image shows cold spots in block wall which is contributing to high moisture.

**Recommendation: Walls need to be contained by applying moisture resistant coating and applying insulation.**



Date	12/31/2013	Location: (Where)
Image Time	10:04:03 AM	
Sp1 Temperature	68.4 °F	
Sp2 Temperature	69.6 °F	
		<b>Other remarks:</b> Wall: High moisture readings on the outer walls. Interior walls are acceptable.



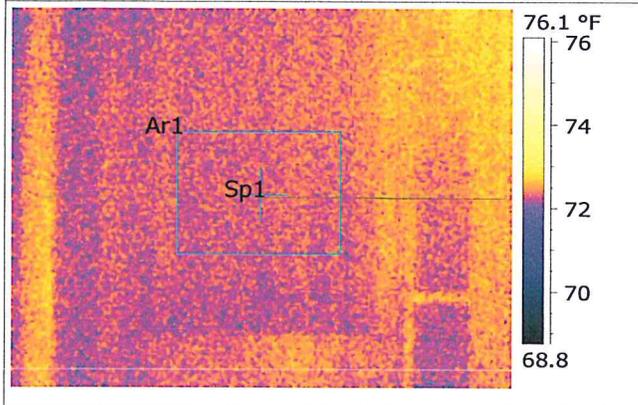


Date	12/31/2013	Location:	<b>Holding Cell 231- Left side</b>
Image Time	1:36:05 PM	Wall:	Metal
Ar1 Max. Temperature	72.4 °F	Ceilings:	Metal
Ar1 Min. Temperature	71.4 °F	Lab Results:	<b>Room Air Test- 6,587 c/m3</b>
Ar1 Average Temperature	71.9 °F	Mold Rating:	<b>5</b>
Sp1 Temperature	71.9 °F	Mold Rating:	1-5 ( <b>5 being worst</b> )
Air Temperature 1	74.5 °F		
Relative Humidity 1	48.0 %		

**Comment: The cells are all metal walls. The air sample is elevated suggesting Plan "B"**

**Recommendation: The only option for these rooms is cleaning due to the construction**

**Remediation Protocol: Plan "B"**

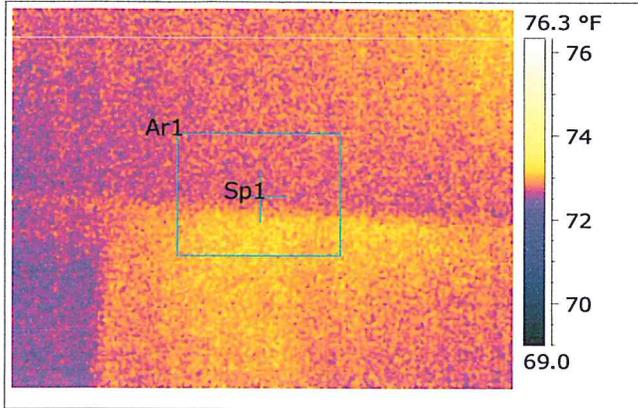


Date	12/31/2013	Location:	New Building-2 <sup>nd</sup> Floor-Holding Cell 228-Right
Image Time	1:36:35 PM	<b>Other remarks:</b>	
Ar1 Max. Temperature	72.8 °F	Wall: Metal	
Ar1 Min. Temperature	71.8 °F	Ceilings: Metal	
Ar1 Average Temperature	72.3 °F	Lab Results: <b>Room Air Test- 43,267 c/m3</b>	
Sp1 Temperature	72.4 °F	Mold Rating: <b>5</b>	
Air Temperature 1	74.5 °F	Mold Rating: 1-5 (5 being worst)	
Relative Humidity 1	47.7 %		

**Comment: All walls and ceiling are metal.**

**Recommendation: Because of high readings the cell area need negative containment**

**Remediation Protocol: Plan "B "**



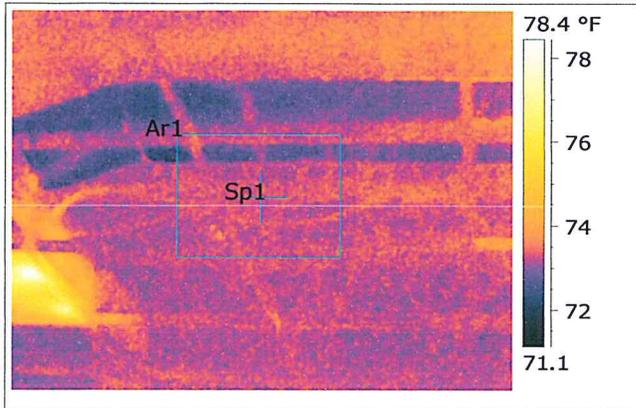
Date	12/31/2013	<table border="1"> <tr> <td>Location:</td> <td><b>New Building-2<sup>nd</sup> Floor- Courtroom 218</b></td> </tr> </table> <p><b>Other remarks:</b></p> <p>Wall: Acceptable Ceilings: Acceptable</p> <p>Lab Results: <b>Room Air Test- 36,387 c/m3</b></p> <p>Mold Rating: <b>5</b></p> <p>Mold Rating: 1-<b>5</b> (<b>5</b> being worst)</p>	Location:	<b>New Building-2<sup>nd</sup> Floor- Courtroom 218</b>
Location:	<b>New Building-2<sup>nd</sup> Floor- Courtroom 218</b>			
Image Time	1:37:28 PM			
Ar1 Max. Temperature	73.5 °F			
Ar1 Min. Temperature	72.3 °F			
Ar1 Average Temperature	72.9 °F			
Sp1 Temperature	72.7 °F			
Air Temperature 1	74.3 °F			
Relative Humidity 1	48.4 %			

**Comment: The room's humidity is at an acceptable level. However elevated condition spore count**

**Recommendation: Full cleaning required. Recommend removing carpet& ceiling tiles**

**Remediation Protocol: Plan "B "**



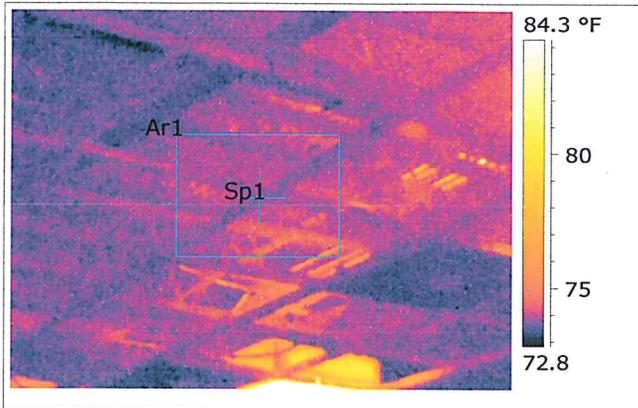


Date	12/31/2013
Image Time	1:38:25 PM
Ar1 Max. Temperature	74.1 °F
Ar1 Min. Temperature	72.1 °F
Ar1 Average Temperature	73.2 °F
Sp1 Temperature	73.2 °F
Air Temperature 1	74.5 °F
Relative Humidity 1	48.0 %

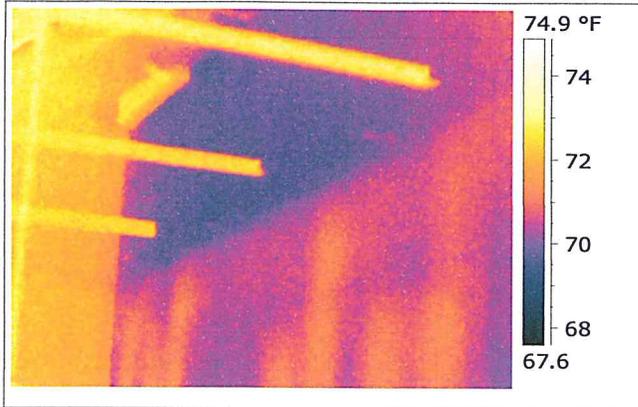
Location: (Where)

**Other remarks:**

Wall: Acceptable. No moisture detected  
Ceilings: Acceptable. No moisture detected



Date	12/31/2013	Location: (Where)  <b>Other remarks:</b>
Image Time	1:39:37 PM	
Ar1 Max. Temperature	77.3 °F	
Ar1 Min. Temperature	73.3 °F	
Ar1 Average Temperature	74.0 °F	
Sp1 Temperature	73.8 °F	
Air Temperature 1	74.3 °F	
Relative Humidity 1	47.9 %	



Date	12/31/2013	Location:	(Where)
Image Time	1:45:32 PM	<b>Other remarks:</b>	
Air Temperature 1	74.3 °F	Wall: Paneling	
Relative Humidity 1	48.1 %	Ceilings: Acceptable	
		Lab Results: <b>Room Air Test- 23,547 c/m3</b>	
		Mold Rating: <b>5</b>	
		Mold Rating: 1-5 (5 being worst)	

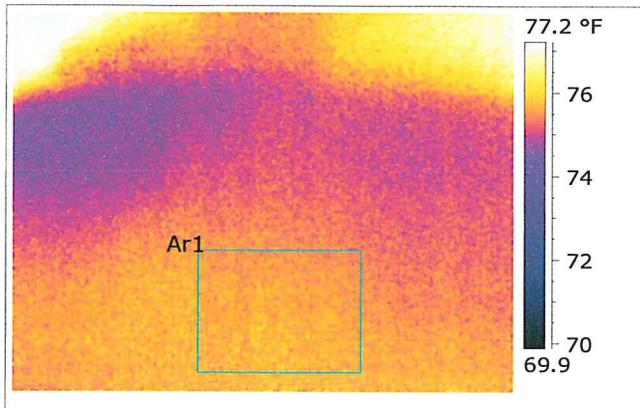
**Comment: The mold count is elevated.**

**Recommendation: The paneling, ceiling tiles and the carpet need to be removed before remediation. Evaluate the outer walls once paneling is removed.**

**Remediation Protocol: Plan " B "**



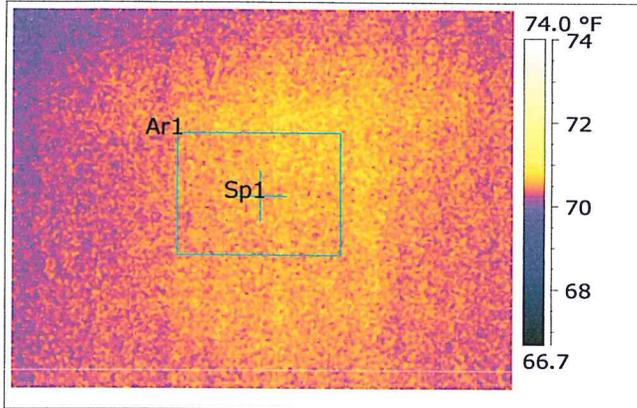
H2H INDOOR AIR SOLUTIONS  
386-439-7432-904-438-7432



Date	12/31/2013
Image Time	1:46:06 PM
Ar1 Max. Temperature	76.2 °F
Ar1 Min. Temperature	75.1 °F
Ar1 Average Temperature	75.6 °F
Air Temperature 1	74.3 °F
Relative Humidity 1	48.1 %

Location: Jury room

**Other remarks: The outer walls above the drop ceiling show moisture**

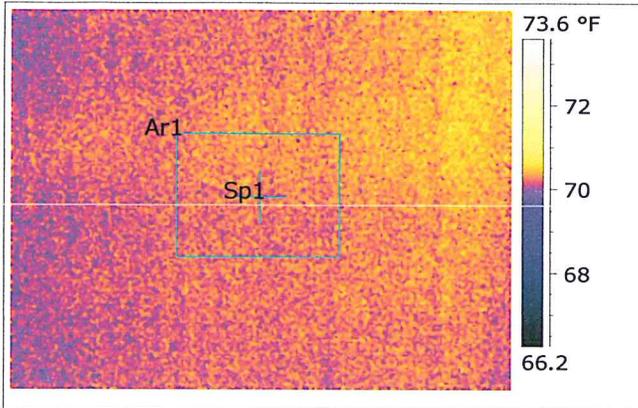


Date	12/31/2013	Location:	New Building-2 <sup>nd</sup> Floor- Men's Room
Image Time	1:09:10 PM	<b>Other remarks:</b>	
Ar1 Max. Temperature	71.1 °F	Wall:	Acceptable
Ar1 Min. Temperature	70.0 °F	Ceilings:	Acceptable
Ar1 Average Temperature	70.6 °F	Lab Results:	<b>Room Air Test- 270,893 c/m3</b>
Sp1 Temperature	70.5 °F	Mold Rating:	<b>5</b>
Air Temperature 1	72.9 °F	Mold Rating:	1- <b>5 (5 being worst)</b>
Relative Humidity 1	53.5 %		

**Comment: Mold spore count is very elevated in this room.**

**Recommendation: Clean duct system and provide full "B" remediation**

**Remediation Protocol: Plan "B" "**



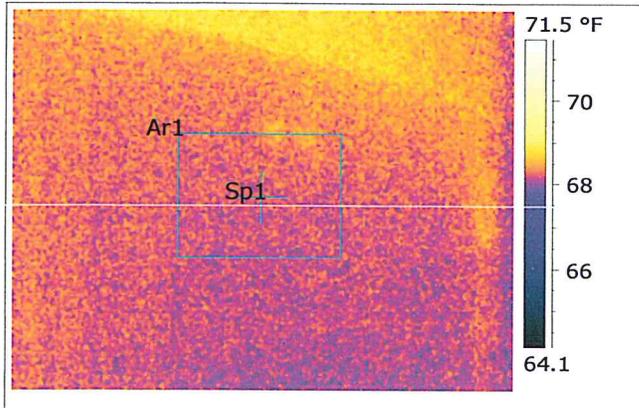
Date	12/31/2013	Location: <b>New Building- 2<sup>nd</sup> Floor-Court Reporter room</b>
Image Time	1:17:26 PM	
Ar1 Max. Temperature	70.8 °F	
Ar1 Min. Temperature	68.5 °F	
Ar1 Average Temperature	70.2 °F	
Sp1 Temperature	70.1 °F	
Air Temperature 1	71.8 °F	
Relative Humidity 1	52.8 %	
<b>Other remarks:</b>		
Wall: Excessive moisture on outer block wall. Readings well exceed normal. RH% is normal		
Ceilings: Acceptable		
Lab Results: <b>Room Air Test- 37,240 c/m3</b>		
Mold Rating: <b>5</b>		
Mold Rating: 1- <b>5</b> ( <b>5</b> being worst)		

**Comment: The RH % is within normal range however the walls are showing high moisture readings. The spore count is elevated.**

**Recommendation: The outer walls need to be sealed and insulated**

**Remediation Protocol: Plan "B "**





Date	12/31/2013
Image Time	1:06:35 PM
Ar1 Max. Temperature	68.9 °F
Ar1 Min. Temperature	67.8 °F
Ar1 Average Temperature	68.2 °F
Sp1 Temperature	68.1 °F
Air Temperature 1	73.2 °F
Relative Humidity 1	50.3 %

Location: **New Building-2<sup>nd</sup> Floor-Woman's Room**

**Other remarks:**

Wall: Acceptable  
Ceilings: Acceptable  
Lab Results: **Room Air Test- 25,707 c/m3**

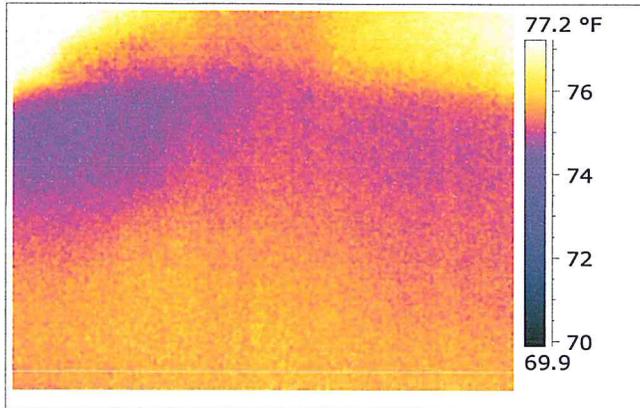
Mold Rating: **5**

Mold Rating: 1-5 (**5** being worst)

**Comment: Condition 2 mold spores are elevated in this room.**

**Recommendation: Full cleaning of room and duct system**

**Remediation Protocol: Plan " B "**

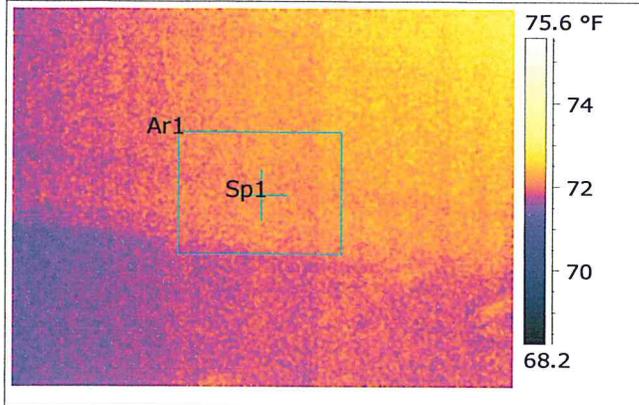


Date	12/31/2013	Location:	New Building-2 <sup>nd</sup> Floor- 206-Front Room
Image Time	1:46:06 PM	<b>Other remarks:</b>	
Air Temperature 1	74.3 °F	Lab Results:	<b>Room Air Test- 2,667 c/m3</b>
Relative Humidity 1	48.1 %	Mold Rating:	2
		Mold Rating:	1-5 (5 being worst)

**Comment:** Air test is in an acceptable range, however back two offices that a adjacent to it. Those rooms have elevated counts. The ceiling above the tile appears to be dry at the time of this inspection.

**Recommendation:** Remove all paneling, carpets and ceiling tiles. Remediate the 3 spaces as one.

**Remediation Protocol:** Plan "B "



Date	12/31/2013	Location: (Where)  <b>Other remarks:</b>  Wall: Ceilings: Lab Results: Mold Rating:  Mold Rating: 1-5 (5 being worst)
Image Time	2:06:36 PM	
Ar1 Max. Temperature	72.8 °F	
Ar1 Min. Temperature	71.5 °F	
Ar1 Average Temperature	72.1 °F	
Sp1 Temperature	72.3 °F	
Air Temperature 1	74.5 °F	
Relative Humidity 1	48.6 %	

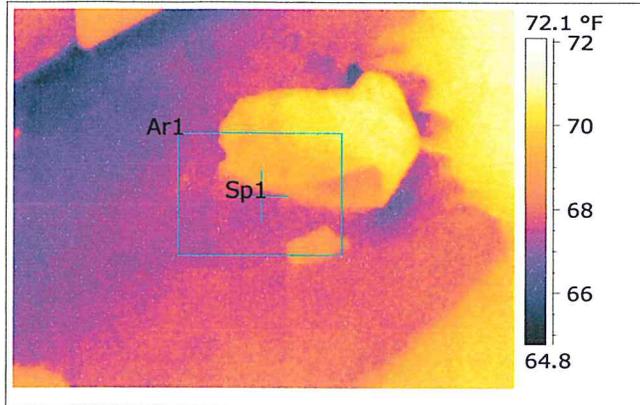
**Comment:**

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**Recommendation:**

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**Remediation Protocol: Plan "B"**

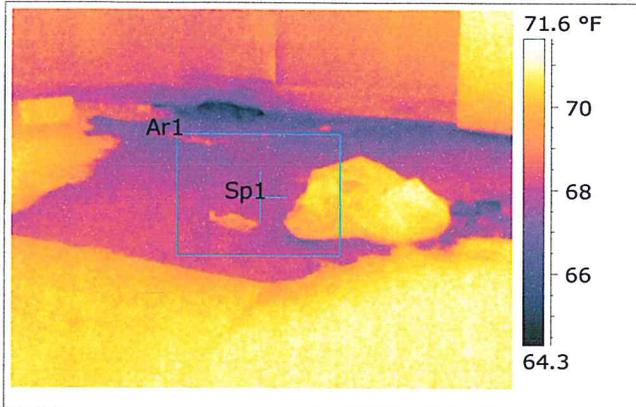


Date	12/31/2013	Location:	New Building-2 <sup>nd</sup> Floor-Left office of 206
Image Time	2:08:14 PM	Wall:	Excessive moisture
Ar1 Max. Temperature	70.7 °F	Floor:	Wet Carpet
Ar1 Min. Temperature	66.8 °F	Ceilings:	No leaks evident
Ar1 Average Temperature	68.3 °F	Lab Results:	<b>Room Air Test- 5,067 c/m3</b>
Sp1 Temperature	67.6 °F	Mold Rating:	<b>4</b>
Air Temperature 1	74.3 °F	Mold Rating:	1-5 ( <b>5</b> being worst)
Relative Humidity 1	48.6 %		

**Comment:** The spore count is elevated. The wet carpet suggests wall leak as the ceiling did not show evidence of leak. Humidity was in acceptable range.

**Recommendation:** All paneling, ceiling tiles and carpet to be removed in conjunction with the front room and the right office. Once paneling is off the outer wall needs to be evaluated.

**Remediation Protocol:** Plan " B "

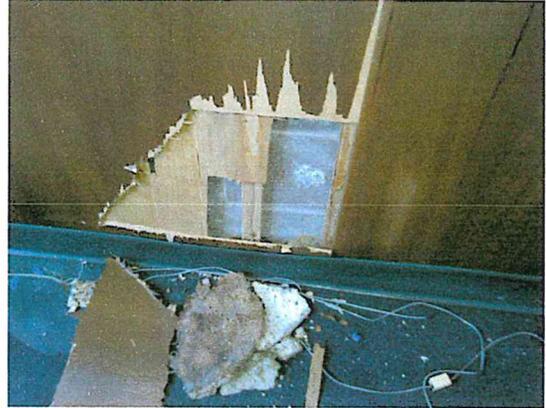
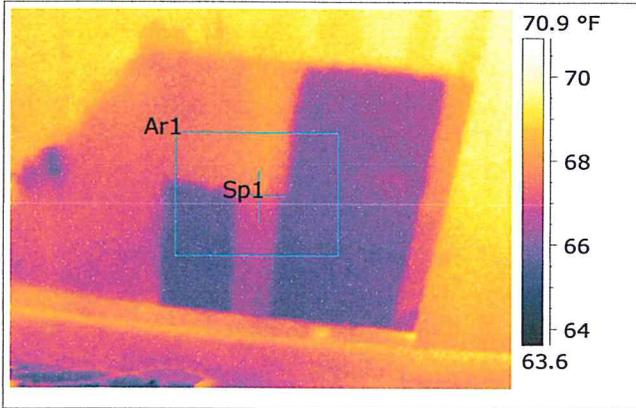


Date	12/31/2013
Image Time	2:08:45 PM
Ar1 Max. Temperature	70.9 °F
Ar1 Min. Temperature	66.7 °F
Ar1 Average Temperature	68.1 °F
Sp1 Temperature	67.8 °F
Air Temperature 1	74.1 °F
Relative Humidity 1	48.6 %

Location: Left Office-206

**Other remarks:**

Floor: Actively wet at the time of inspection

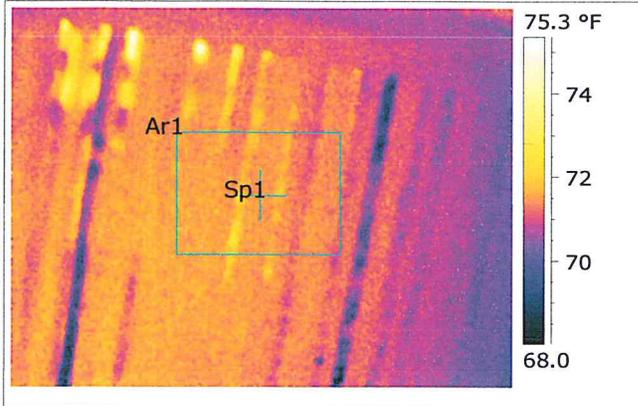


Date	12/31/2013
Image Time	2:09:36 PM
Ar1 Max. Temperature	68.5 °F
Ar1 Min. Temperature	65.0 °F
Ar1 Average Temperature	66.5 °F
Sp1 Temperature	67.4 °F
Air Temperature 1	74.1 °F
Relative Humidity 1	48.8 %

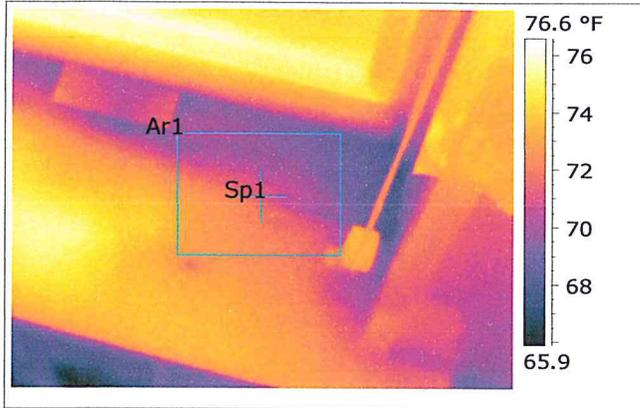
Location: 206 Left Office

**Other remarks:**

Wall: Space behind paneling has excessive moisture.



Date	12/31/2013	Location: 206 Left Office  <b>Other remarks:</b>  Ceilings: No signs of active leak
Image Time	2:21:11 PM	
Ar1 Max. Temperature	72.7 °F	
Ar1 Min. Temperature	70.6 °F	
Ar1 Average Temperature	71.5 °F	
Sp1 Temperature	71.5 °F	



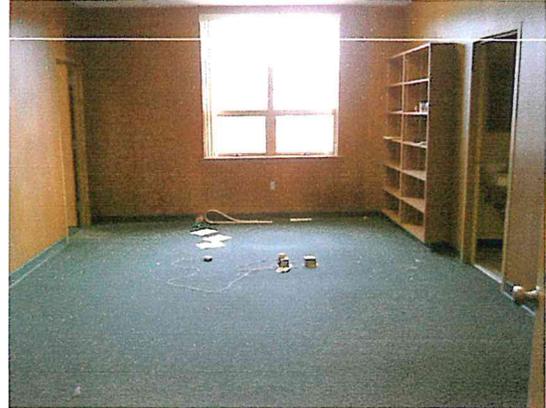
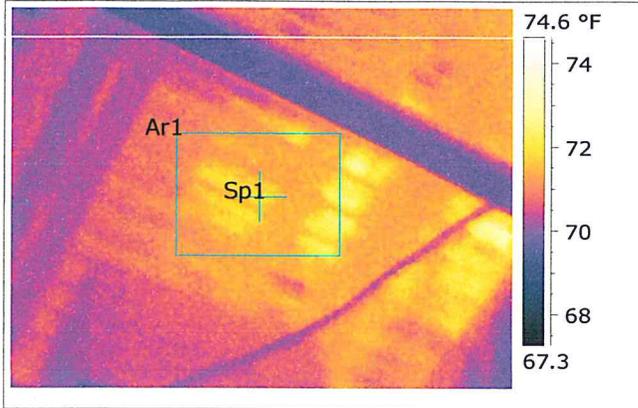
Date	12/31/2013
Image Time	2:21:58 PM
Ar1 Max. Temperature	73.5 °F
Ar1 Min. Temperature	68.5 °F
Ar1 Average Temperature	71.0 °F
Sp1 Temperature	71.1 °F

Location: 206 Left Office

**Other remarks:**

Wall: Wet around windows. Paneling is high on the surface by the window-30%  
Window: Sill has high moisture count of 62%

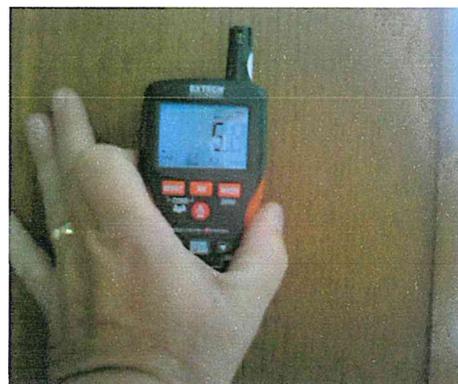


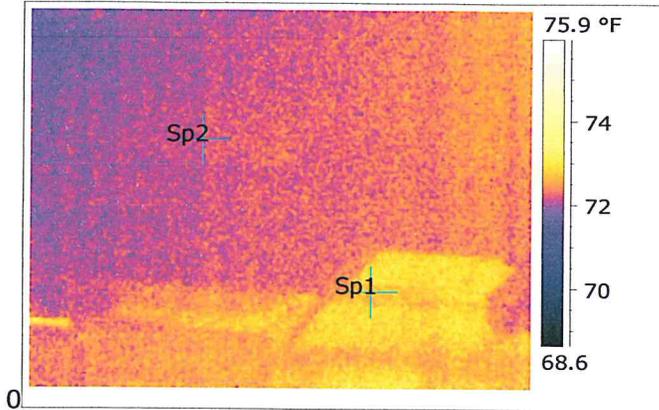


Date	12/30/2013	Location:	<b>New Building-2<sup>nd</sup> Floor-206 Right Office</b>
Image Time	2:08:32 PM	<b>Other remarks:</b>	
Ar1 Max. Temperature	72.6 °F	Wall: Paneling was acceptable	
Ar1 Min. Temperature	70.6 °F	Ceilings: Acceptable	
Ar1 Average Temperature	71.5 °F	Lab Results: No test taken	
Sp1 Temperature	72.0 °F		
Air Temperature 1	70.2 °F		
Relative Humidity 1	53.1 %		

**Comment: No tests were taken in this room. This room should be remediated like the other two rooms of 206 even though excessive moisture did not appear.**

**Remediation Protocol: Plan "B"**





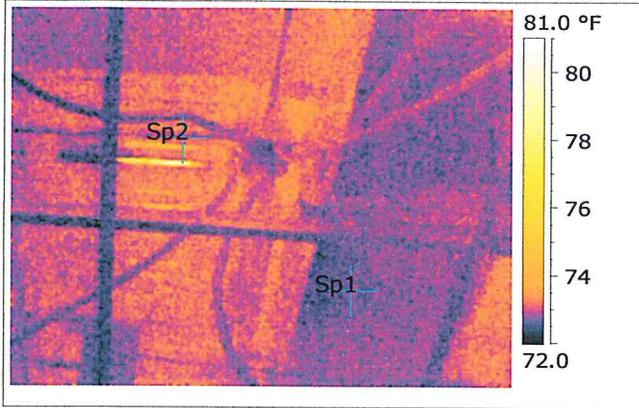
Date	12/31/2013	Location:	New building-2 <sup>nd</sup> Floor-Room 222
Image Time	10:32:43 AM	<b>Other remarks:</b>	
Sp1 Temperature	72.8 °F	Wall: Surface readings are dry	
Sp2 Temperature	72.2 °F	Ceilings: Acceptable	
Air Temperature 1	72.7 °F	Lab Results: <b>Room Air Test- 34,333 c/m3</b>	
Relative Humidity 1	59.3 %	Mold Rating: <b>5</b>	
		Mold Rating: 1-5 (5 being worst)	

**Comment: The mold spore count is elevated**

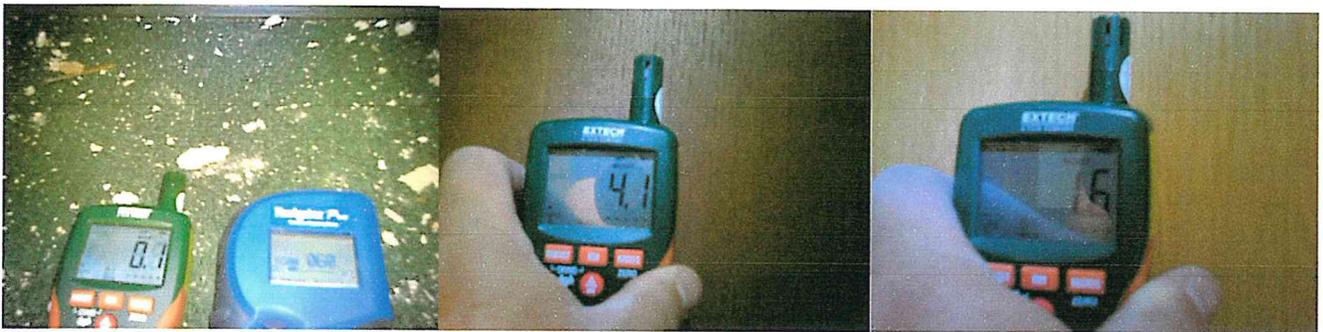
**Recommendation: Remove paneling, carpet and ceiling tiles**

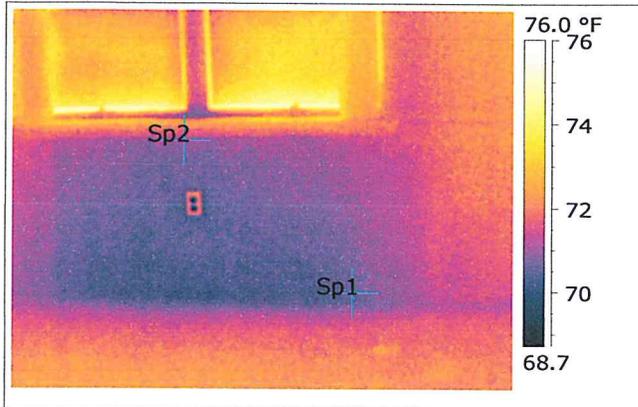
**Remediation Protocol: Plan "B "**





Date	12/31/2013	Location:	Room 222
Image Time	10:34:29 AM	<b>Other remarks:</b>	
Sp1 Temperature	72.9 °F	Wall: Surface of paneling is within normal range.	
Sp2 Temperature	73.1 °F	Flooring: Dry	
Air Temperature 1	73.2 °F		
Relative Humidity 1	52.4 %		



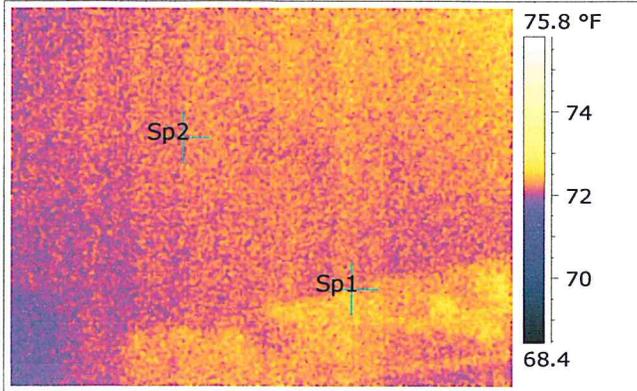


Date	12/31/2013
Image Time	10:35:12 AM
Sp1 Temperature	70.5 °F
Sp2 Temperature	71.0 °F
Air Temperature 1	73.2 °F
Relative Humidity 1	52.3 %

Location: Room 222

**Other remarks:**

Wall: Thermal revealing possible wall issue behind the paneling  
Ceilings:



Date	12/31/2013
Image Time	10:18:36 AM
Sp1 Temperature	72.3 °F
Sp2 Temperature	72.2 °F
Air Temperature 1	73.4 °F
Relative Humidity 1	52.5 %

Location: **New building-2<sup>nd</sup> Floor-Room 238**

**Other remarks:**

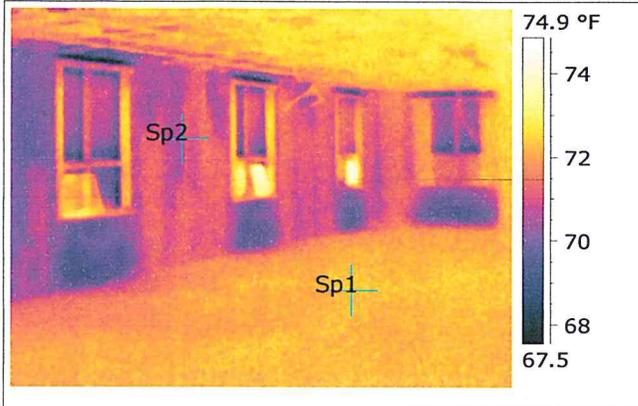
Wall: Elevated moisture readings on outer block walls  
 Ceilings: Acceptable  
 Lab Results: **Room Air Test- 36,067 c/m3**  
 Mold Rating: 5  
 Mold Rating: 1-5 (5 being worst)

**Comment: The outer wall readings noted in pictures below were excessive in areas. These readings are mark on the block walls. The ceiling deck was dry. Elevated mold spores in the room**

**Recommendation: All outer walls need to have moisture block and insulation installed. All windows need sealing.**

**Remediation Protocol: Plan " B "**

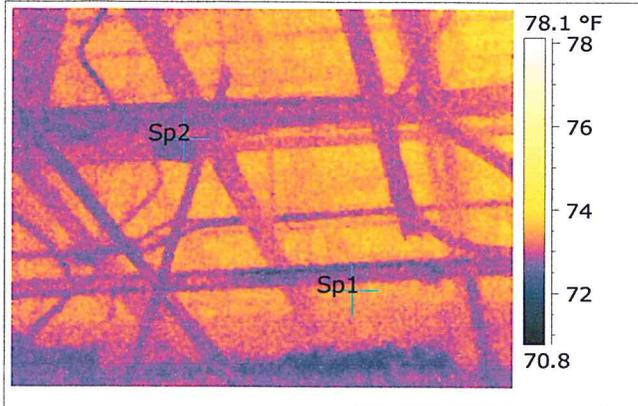




Date	12/31/2013	Location: Room 238  <b>Other remarks:</b>  Wall: Thermal shows cold areas around and below windows. Ceilings:
Image Time	10:19:21 AM	
Sp1 Temperature	72.3 °F	
Sp2 Temperature	70.8 °F	
Air Temperature 1	73.4 °F	
Relative Humidity 1	51.9 %	

**Wall readings below show high moisture content.**



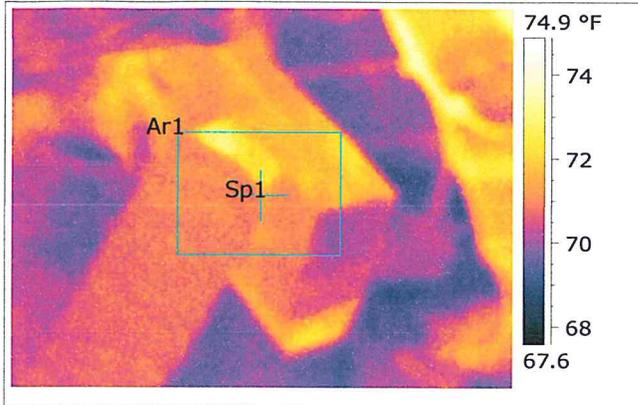


Date	12/31/2013	Location: Room 238  <b>Other remarks:</b>  Ceilings: Acceptable
Image Time	10:22:29 AM	
Sp1 Temperature	73.4 °F	
Sp2 Temperature	72.7 °F	
Air Temperature 1	73.4 °F	
Air Temperature 2	73.4 °F	
Air Temperature 3	73.2 °F	
Relative Humidity 1	52.1 %	
Relative Humidity 2	51.9 %	
Relative Humidity 3	51.9 %	

**Additional wall readings below**





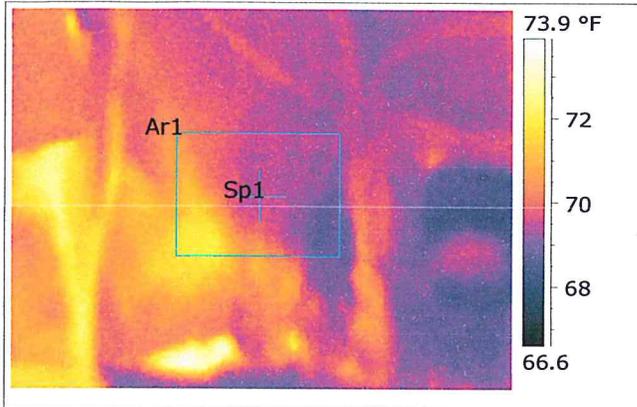


Date	1/10/2014	Location:	<b>New Building-3<sup>rd</sup> Floor-Main Hallway</b>
Image Time	11:57:56 AM	<b>Other remarks:</b>	
Ar1 Max. Temperature	73.4 °F	Wall:	Acceptable
Ar1 Min. Temperature	69.5 °F	Ceilings:	Acceptable
Ar1 Average Temperature	71.3 °F	Lab Results:	Swab of duct in hallway
Sp1 Temperature	71.3 °F	Mold Rating:	119,000 c/m2
Air Temperature 1	71.2 °F	Mold Rating:	1-5 (5 being worst)
Relative Humidity 1	72.6 %		

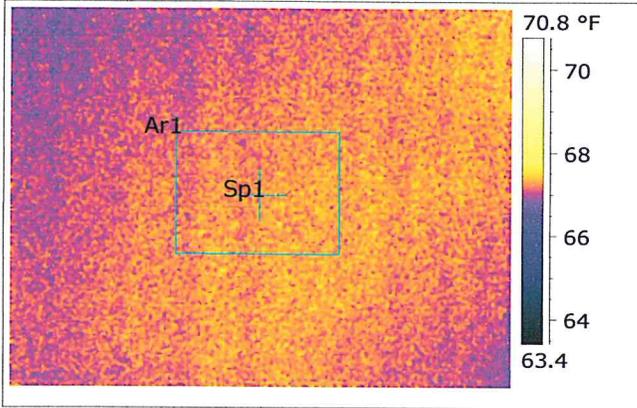
**Comment: The 3<sup>rd</sup> floor hallway needs to have ductwork removed in areas.**

**Recommendation: All ductwork needs to be cleaned per NADCA. Ceiling and wall need general cleaning**

**Remediation Protocol: Plan "A "**



Date	1/10/2014	Location: New Building 3 <sup>rd</sup> floor hallway  <b>Other remarks:</b>
Image Time	11:58:08 AM	
Ar1 Max. Temperature	72.3 °F	
Ar1 Min. Temperature	68.4 °F	
Ar1 Average Temperature	69.9 °F	
Sp1 Temperature	69.4 °F	
Air Temperature 1	71.1 °F	
Relative Humidity 1	71.7 %	



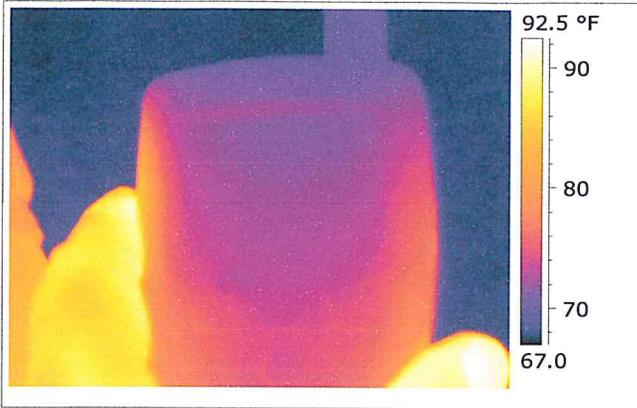
Date	1/10/2014	Location: <b>New building-3<sup>rd</sup> Floor-Men's Room</b>  <b>Other remarks:</b>  Wall: Acceptable Ceilings: Acceptable Lab Results: Air Test: 2,827 c/m3 Mold Rating: 2  Mold Rating: 1-5 (5 being worst)
Image Time	11:40:19 AM	
Ar1 Max. Temperature	67.8 °F	
Ar1 Min. Temperature	66.7 °F	
Ar1 Average Temperature	67.3 °F	
Sp1 Temperature	67.3 °F	
Air Temperature 1	70.2 °F	
Relative Humidity 1	69.6 %	

**Comment: Bathroom has acceptable mold spore level.**

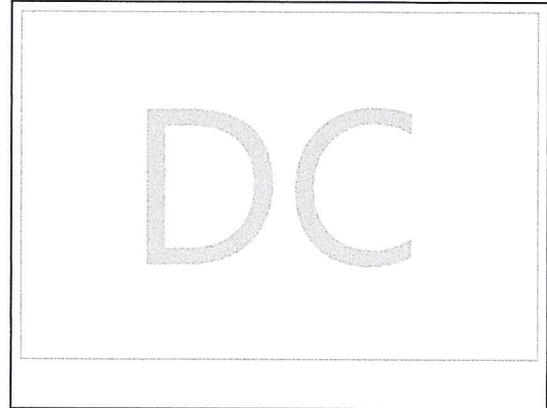
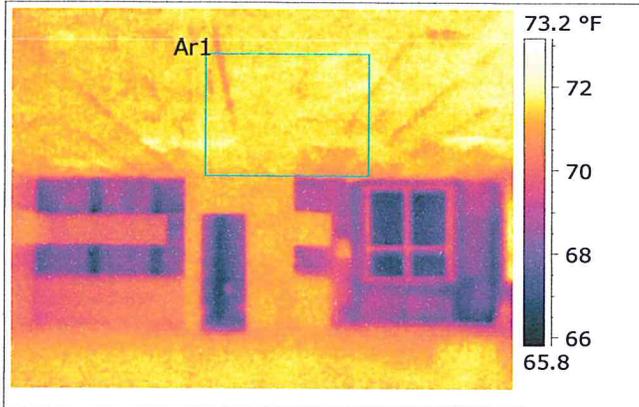
**Recommendation: Clean duct system**

**Remediation Protocol: Plan " A "**





Date	1/10/2014	Location: (Where)
Image Time	11:40:48 AM	
Air Temperature 1	-0.0 °F	
Internal Moisture 1	14.0 %	
		<b>Other remarks:</b>



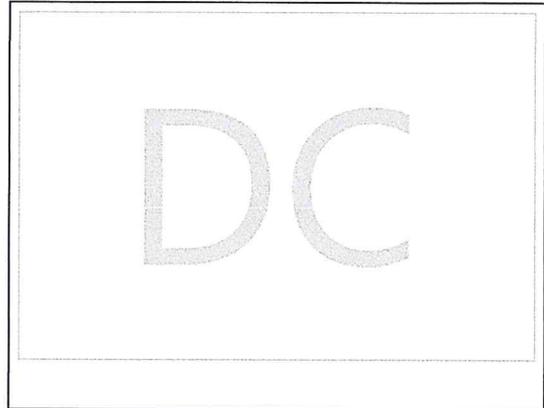
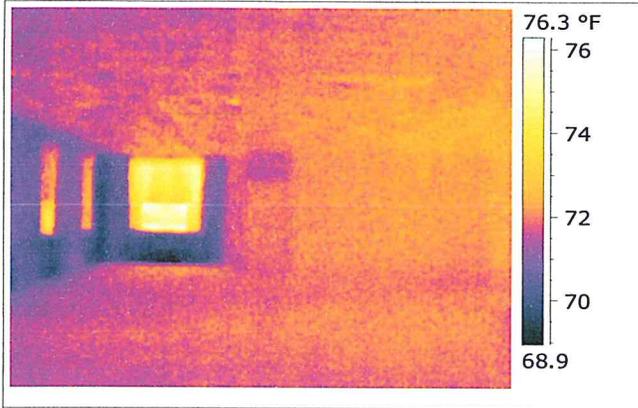
Date	12/31/2013	<b>Location:</b> <b>New building-3<sup>rd</sup> Floor-Room 312</b>  <b>Other remarks:</b>  Wall: Wall shows excessive moisture on the outer block walls Ceilings: Lab Results: 733 spores per c/m3 Mold Rating: 1  Mold Rating: 1-5 (5 being worst)
Image Time	3:11:52 PM	
Ar1 Max. Temperature	72.3 °F	
Ar1 Min. Temperature	69.5 °F	
Ar1 Average Temperature	71.5 °F	
Air Temperature 1	75.6 °F	
Relative Humidity 1	46.6 %	

**Comment: RH % is within range**

**Recommendation: Seal all outer walls and provide internal insulation. Bricks surface needs to be tuck pointed.**

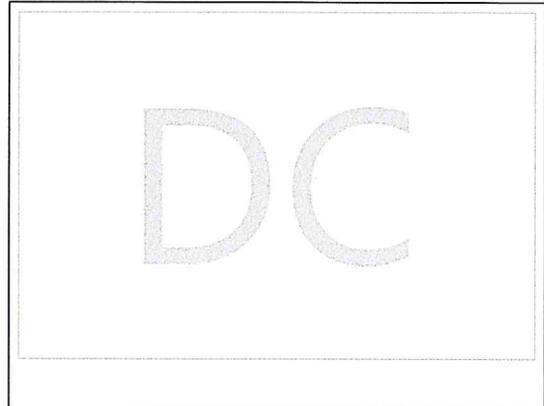
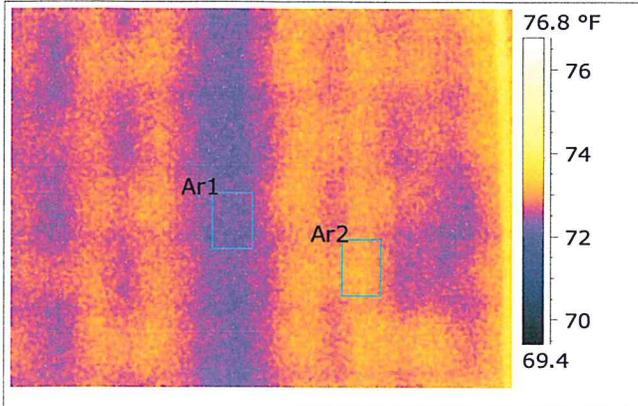
**Remediation Protocol: Plan "A "**





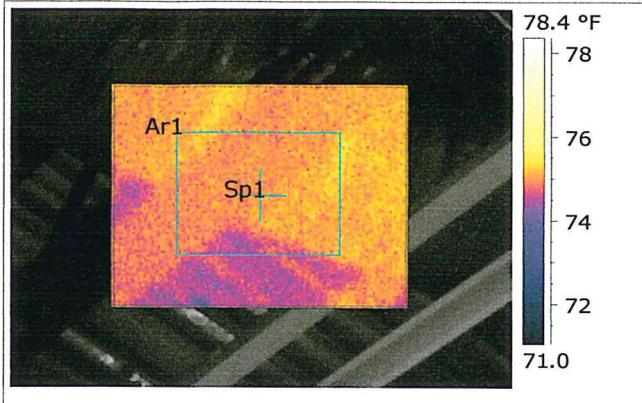
Date	12/31/2013	Location:	(Where)
Image Time	3:12:05 PM	<b>Other remarks:</b>	
Air Temperature 1	75.7 °F	Wall: Excessive wall moisture	
Relative Humidity 1	46.6 %		



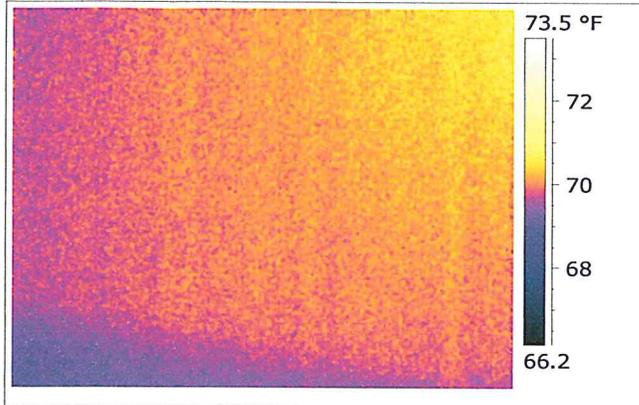


Date	12/31/2013	Location: (Where)  <b>Other remarks:</b>  Wall: Excessive moisture
Image Time	3:25:20 PM	
Ar1 Max. Temperature	72.7 °F	
Ar2 Max. Temperature	73.4 °F	
Ar1 Min. Temperature	71.8 °F	
Ar2 Min. Temperature	72.6 °F	
Ar1 Average Temperature	72.3 °F	
Ar2 Average Temperature	73.0 °F	



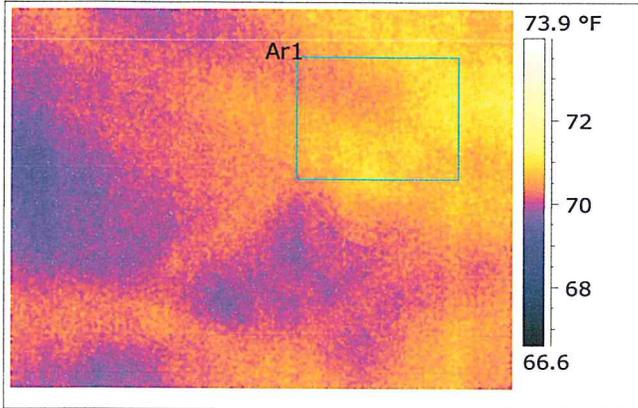


Date	12/31/2013	Location: (Where)  <b>Other remarks:</b>  Ceilings: Acceptable
Image Time	3:26:30 PM	
Ar1 Max. Temperature	75.6 °F	
Ar1 Min. Temperature	74.1 °F	
Ar1 Average Temperature	75.0 °F	
Sp1 Temperature	75.0 °F	

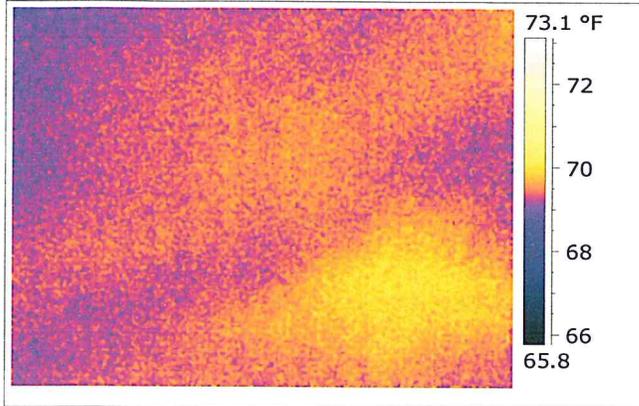


Date	1/10/2014	Location:	New Building-3 <sup>rd</sup> Floor- Room 318
Image Time	11:51:28 AM	<b>Other remarks:</b>	
Air Temperature 1	72.7 °F	Wall:	Outer walls have excessive moisture
Relative Humidity 1	68.8 %	Ceilings:	Acceptable
		Lab Results:	1,667 spores c/m3
		Mold Rating:	1
		Mold Rating:	1-5 (5 being worst)

<b>Comment: Mold spore count is low.</b>
<b>Recommendation: Seal and insulate outer walls</b>
<b>Remediation Protocol: Plan " A "</b>

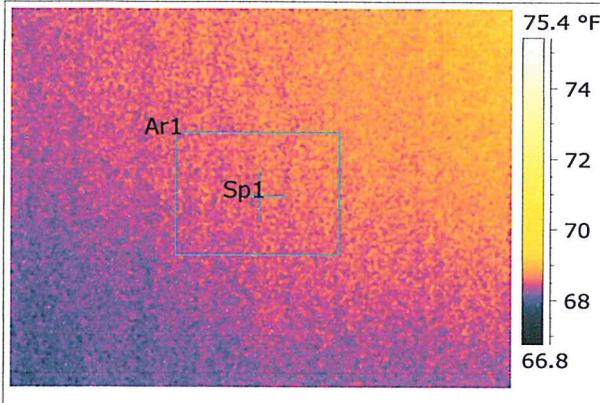


Date	1/10/2014	Location: (Where)  <b>Other remarks:</b>
Image Time	11:51:50 AM	
Ar1 Max. Temperature	71.4 °F	
Ar1 Min. Temperature	70.0 °F	
Ar1 Average Temperature	70.7 °F	
Air Temperature 1	72.5 °F	
Relative Humidity 1	68.7 %	



Date	1/10/2014	Location:	
Image Time	11:46:50 AM	<b>Other remarks:</b>	
Air Temperature 1	70.9 °F	Wall: Outer walls have moisture	
Relative Humidity 1	72.6 %	Ceilings: Acceptable	
		Lab Results: 1,880 spores per c/m3	
		Mold Rating: 1	
		Mold Rating: 1-5 (5 being worst)	

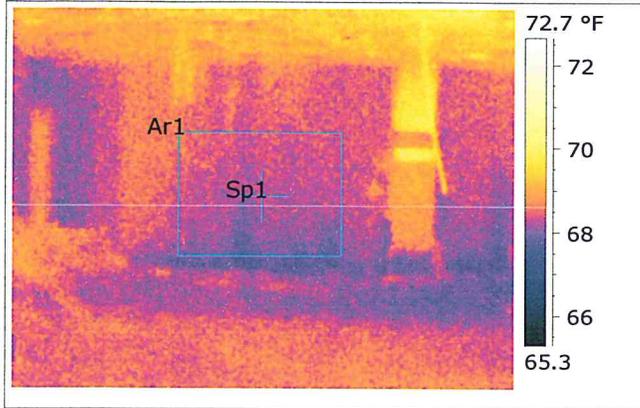
<b>Comment: All readings within normal range other than outer walls.</b>
<b>Recommendation: Seal outer block walls and insulate</b>
<b>Remediation Protocol: Plan "A "</b>



Date	1/10/2014	Location:	New Building-3 <sup>rd</sup> Floor-Room 330
Image Time	11:54:01 AM	<b>Other remarks:</b>	
Ar1 Max. Temperature	69.1 °F	Wall: Se pictures below	
Ar1 Min. Temperature	67.9 °F	Ceilings: Acceptable	
Ar1 Average Temperature	68.6 °F	Lab Results: 1,213	
Sp1 Temperature	68.6 °F	Mold Rating: 1	
Air Temperature 1	72.7 °F	Mold Rating: 1-5 (5 being worst)	
Relative Humidity 1	69.9 %		

**Comment: All readings within normal ranges**

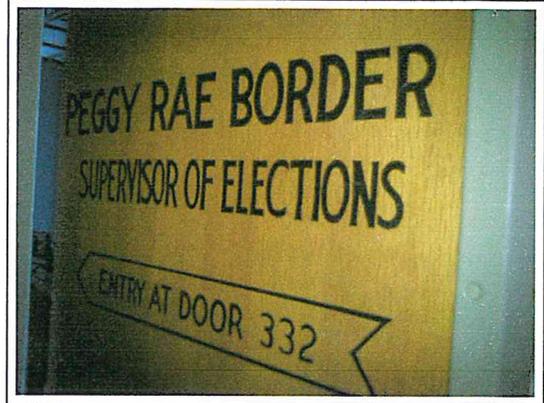
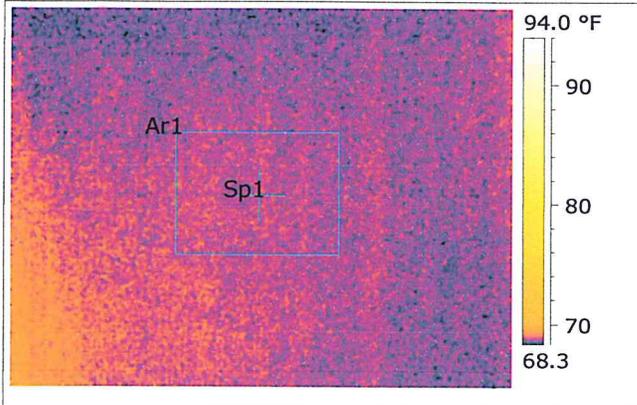
**Remediation Protocol: Plan " A "**



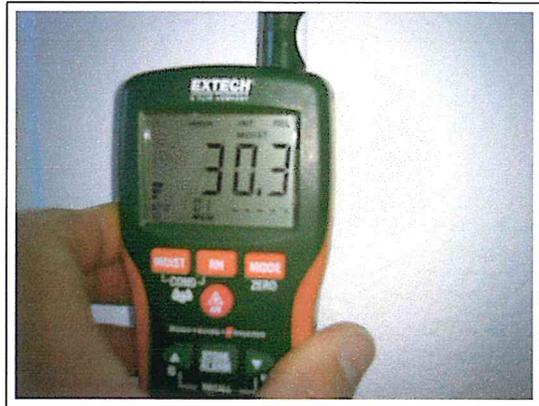
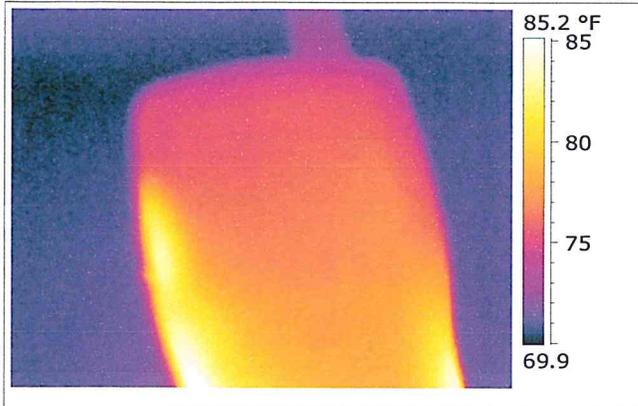
Date	1/10/2014
Image Time	11:54:17 AM
Ar1 Max. Temperature	69.0 °F
Ar1 Min. Temperature	67.3 °F
Ar1 Average Temperature	68.2 °F
Sp1 Temperature	68.2 °F
Air Temperature 1	71.6 °F
Relative Humidity 1	69.6 %

Location: (Where)

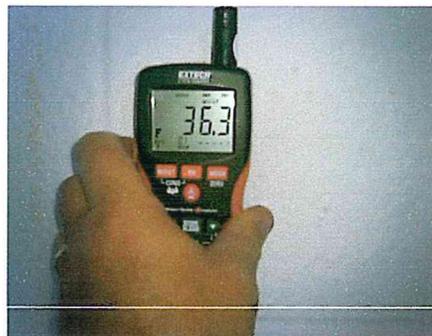
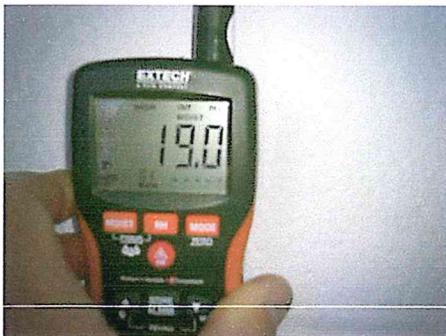
Walls: Have excessive moisture



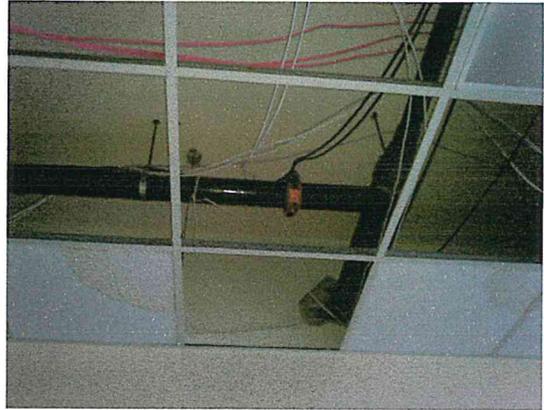
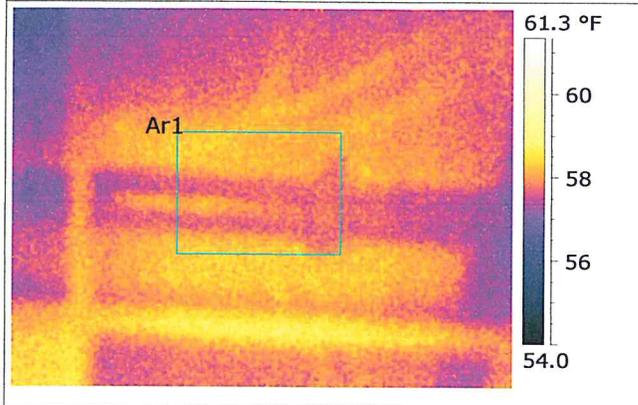
Date	1/10/2014	Location:	Room 332 (off of 330)
Image Time	11:54:52 AM	<b>Other remarks:</b>	
Ar1 Max. Temperature	69.3 °F	Wall:	Interior walls acceptable
Ar1 Min. Temperature	68.3 °F	Ceilings:	Acceptable
Ar1 Average Temperature	68.8 °F		
Sp1 Temperature	68.9 °F		
Air Temperature 1	-0.0 °F		
Internal Moisture 1	17.7 %		



Date	1/10/2014	Location: Outer walls of 330
Image Time	11:55:08 AM	
Air Temperature 1	-0.0 °F	<b>Other remarks:</b>  Wall: Excessive moisture
Air Temperature 2	-0.0 °F	
Air Temperature 3	-0.0 °F	





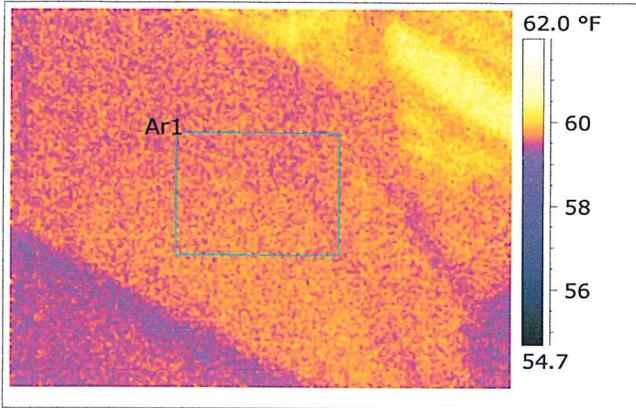


Date	1/10/2014	Location: <b>Old building-1<sup>st</sup>. floor-Main Hallway</b>  <b>Other remarks:</b>
Image Time	11:08:52 AM	
Ar1 Max. Temperature	58.8 °F	
Ar1 Min. Temperature	57.3 °F	
Ar1 Average Temperature	58.0 °F	
Air Temperature 1	65.1 °F	
Relative Humidity 1	76.5 %	

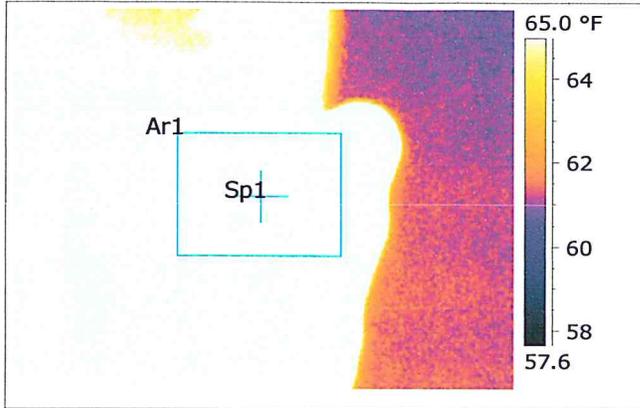
**Comment: The hallway was not tested for spores counts. However due to the lathe in the ceilings full remediation is recommended..**

**Recommendation:**

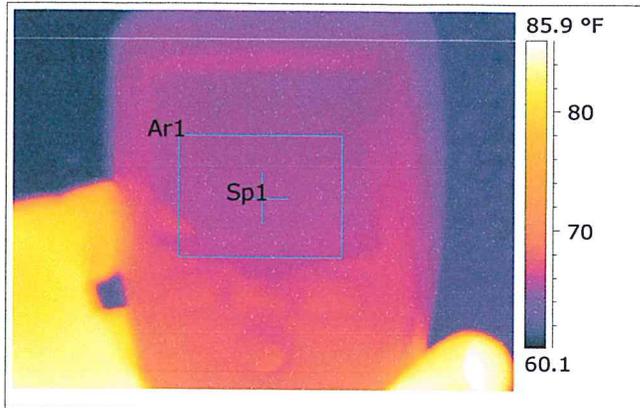
**Remediation Protocol: Plan "C "**



Date	1/10/2014	Location: Hallway)
Image Time	11:09:26 AM	
Ar1 Max. Temperature	60.2 °F	
Ar1 Min. Temperature	59.1 °F	
Ar1 Average Temperature	59.7 °F	
Air Temperature 1	64.4 °F	
Relative Humidity 1	78.1 %	



Date	1/10/2014	Location: (Where)  <b>Other remarks:</b>  Wall: Acceptable Ceilings: Acceptable
Image Time	11:12:57 AM	
Ar1 Max. Temperature	89.1 °F	
Ar1 Min. Temperature	65.8 °F	
Ar1 Average Temperature	77.3 °F	
Sp1 Temperature	73.3 °F	
Air Temperature 1	64.9 °F	
Air Temperature 2	64.9 °F	
Internal Moisture 1	12.5 %	
Internal Moisture 2	12.7 %	

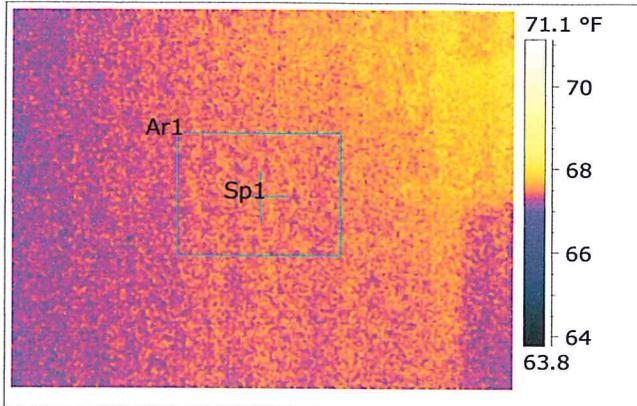


Date	1/10/2014
Image Time	11:13:34 AM
Ar1 Max. Temperature	67.0 °F
Ar1 Min. Temperature	64.8 °F
Ar1 Average Temperature	65.5 °F
Sp1 Temperature	65.4 °F
Air Temperature 1	64.8 °F
Internal Moisture 1	13.9 %

Location: (Where)

**Other remarks:**

Wall: Acceptable

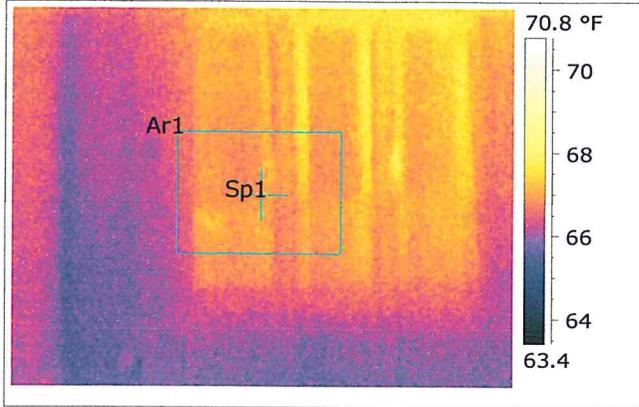


Date	1/2/2014	Location:	Old Building-1 <sup>st</sup> Floor-Room 101
Image Time	3:53:47 PM	<b>Other remarks:</b>	
Ar1 Max. Temperature	67.9 °F	Wall: Paneling	
Ar1 Min. Temperature	66.9 °F	Ceilings: Acceptable	
Ar1 Average Temperature	67.4 °F	Lab Results: 667	
Sp1 Temperature	67.5 °F	Mold Rating: 1	
Air Temperature 1	68.4 °F		
Air Temperature 2	68.7 °F		
Relative Humidity 1	73.2 %		
Relative Humidity 2	72.3 %		
			Mold Rating: 1-5 (5 being worst)

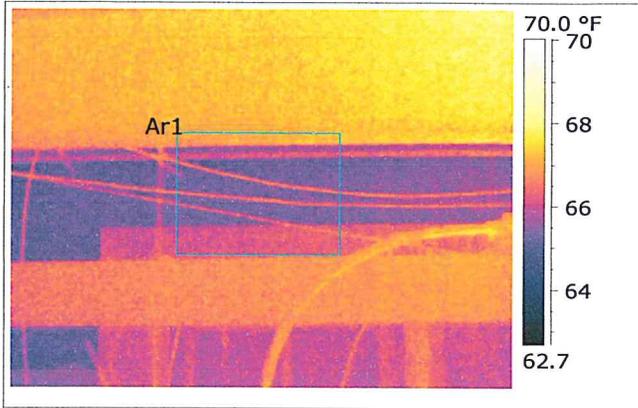
**Comment: This room has a low mold rating.**

**Recommendation: It still would be prudent to remove the paneling to see the condition of the outer wall.**

**Remediation Protocol: Plan " A "**

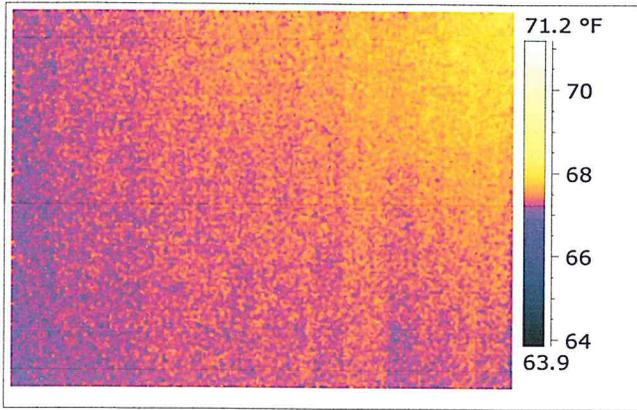


Date	1/2/2014	Location: (Where)
Image Time	3:54:15 PM	
Ar1 Max. Temperature	67.8 °F	
Ar1 Min. Temperature	66.0 °F	
Ar1 Average Temperature	66.9 °F	
Sp1 Temperature	66.8 °F	
Air Temperature 1	68.7 °F	
Relative Humidity 1	71.7 %	



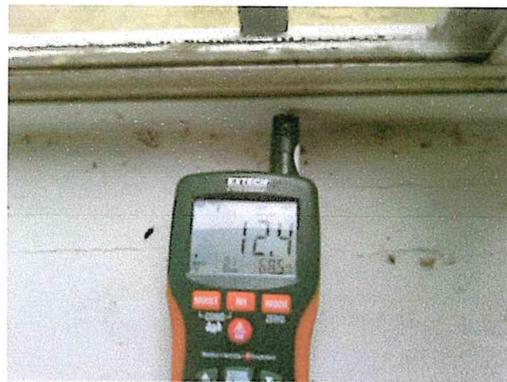
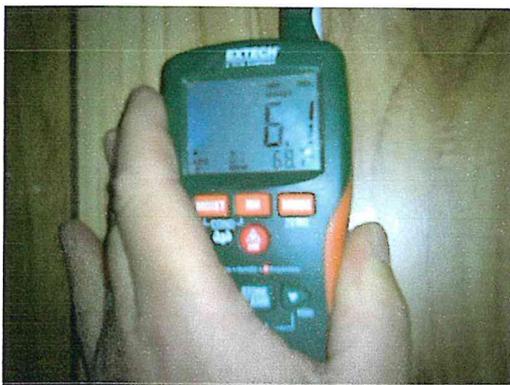
Date	1/2/2014	Location:	Old Building-Room 111
Image Time	3:32:03 PM	<b>Other remarks:</b>	
Ar1 Max. Temperature	67.7 °F	Wall:	
Ar1 Min. Temperature	64.6 °F	Ceilings:	
Ar1 Average Temperature	65.9 °F	Lab Results:	1,907 c/m3
Air Temperature 1	68.4 °F	Mold Rating:	1
Relative Humidity 1	73.1 %	Mold Rating:	1-5 (5 being worst)

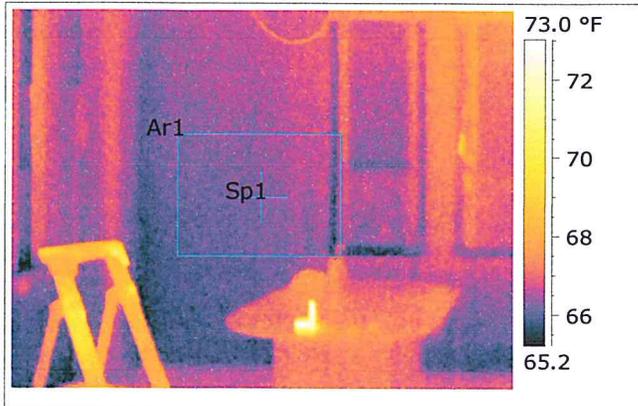
**Comment: Spore count is low but RH% is very high**



Date	1/2/2014	Location:	Room 11
Image Time	3:33:53 PM		
Air Temperature 1	68.7 °F		
Relative Humidity 1	70.7 %		

**Comment: Window sill dry at the time of inspection except water droplets shown in next picture.**





Date	1/2/2014
Image Time	3:34:24 PM
Ar1 Max. Temperature	67.3 °F
Ar1 Min. Temperature	65.4 °F
Ar1 Average Temperature	66.3 °F
Sp1 Temperature	66.4 °F
Air Temperature 1	68.7 °F
Relative Humidity 1	70.5 %

Location: (Where)

**Other remarks:**

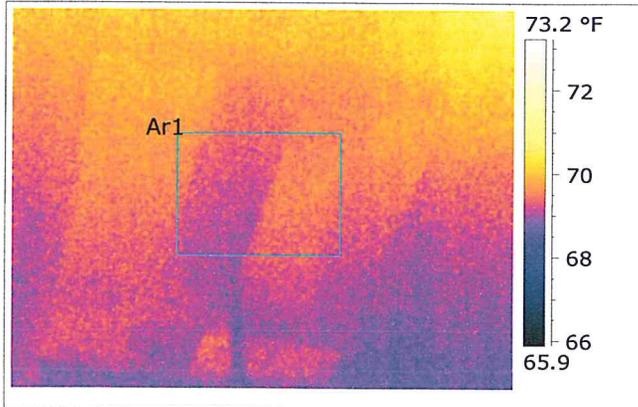
Wall:

**Comment:** There is water on the window sills in a form of a droplet. This droplet was from the vertical blinds. It was formed due to the very high RH% in the room.

**Recommendation:** All outer walls need to be exposed, sealed and insulated.

**Remediation Protocol:** Plan " C "



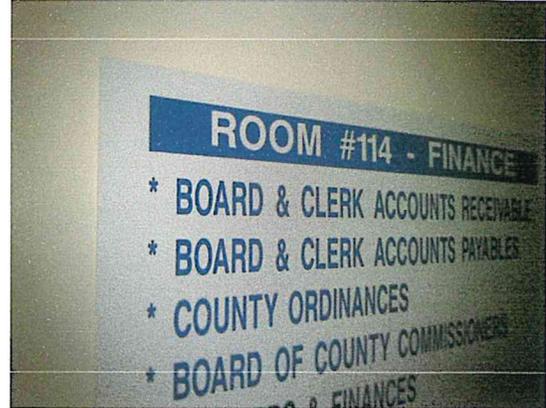
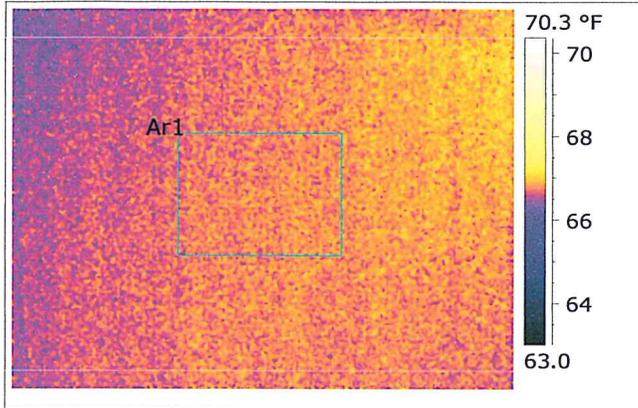


Date	1/2/2014	<table border="1"> <tr> <td>Location:</td> <td>Room 111</td> </tr> </table> <p><b>Other remarks:</b></p> <p>Ceilings: Previous water damaged noted. Appears to be fixed.</p>	Location:	Room 111
Location:	Room 111			
Image Time	3:36:23 PM			
Ar1 Max. Temperature	70.0 °F			
Ar1 Min. Temperature	68.7 °F			
Ar1 Average Temperature	69.3 °F			
Air Temperature 1	68.9 °F			
Relative Humidity 1	70.0 %			

**Comment:**

**Recommendation: Although the mold readings are low the potential for future problems due to the high RH% are probable. Recommend full remediation. Remove all lathe and previous ceiling materials.**

**Remediation Protocol: Plan " C "**

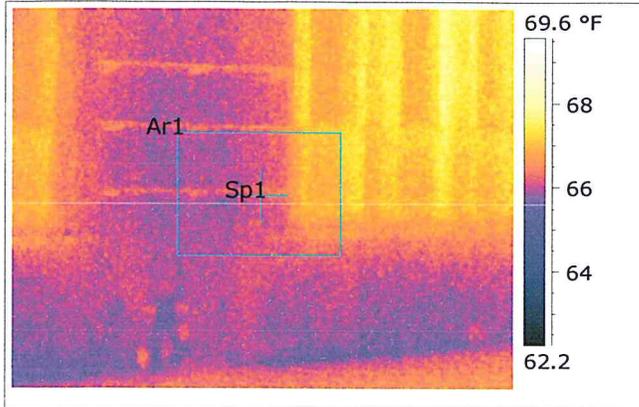


Date	1/2/2014	Location:	Old Building-Room 114
Image Time	3:56:09 PM	<b>Other remarks:</b>	
Ar1 Max. Temperature	67.3 °F	Lab Results: 2,760	
Ar1 Min. Temperature	66.2 °F	Mold Rating: 1	
Ar1 Average Temperature	66.8 °F	Mold Rating: 1-5 (5 being worst)	
Air Temperature 1	68.2 °F		
Relative Humidity 1	72.1 %		

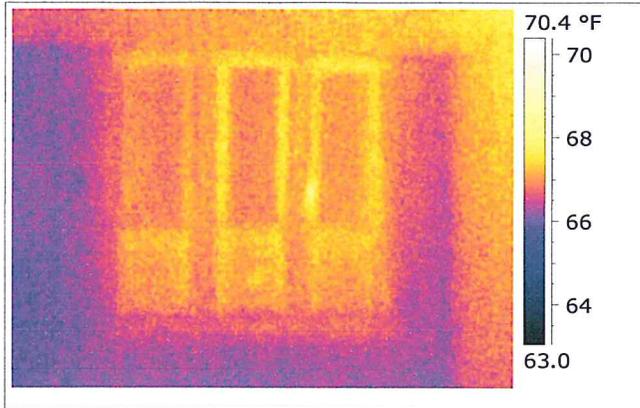
**Comment: Spore Count is low. However the room conditions will lend itself to additional growth based on the humidity levels.**

**Recommendation: Full removal of paneling, ceiling tiles, and all lathe material is suggested. Sealing & insulation is required for exterior walls.**

**Remediation Protocol: Plan " C "**



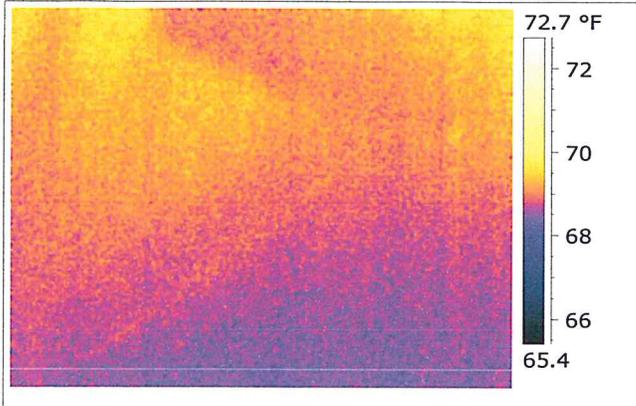
Date	1/2/2014	Location: (Where)  <b>Other remarks:</b>
Image Time	3:56:44 PM	
Ar1 Max. Temperature	67.4 °F	
Ar1 Min. Temperature	65.3 °F	
Ar1 Average Temperature	66.3 °F	
Sp1 Temperature	66.1 °F	
Air Temperature 1	68.4 °F	
Relative Humidity 1	72.6 %	



Date	1/2/2014	Location: <b>Room 115</b>  <b>Other remarks:</b>  Wall: Metal walls Ceilings: Acceptable Lab Results: <b>19,640 c/m3</b> Mold Rating: <b>5</b>  Mold Rating: 1-5 ( <b>5</b> being worst)
Image Time	3:24:58 PM	
Air Temperature 1	69.3 °F	
Air Temperature 2	69.1 °F	
Relative Humidity 1	70.1 %	
Relative Humidity 2	70.1 %	

**Recommendation: This room needs to have the carpet removed and receive through cleaning. Windows need sealing or replacing.**

**Remediation Protocol: Plan "B"**

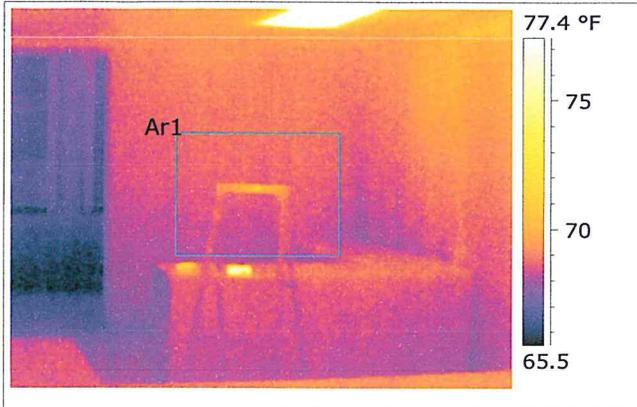


Date	1/2/2014	Location:	Old building-1 <sup>st</sup> Floor-Front and back Rooms of 117
Image Time	4:19:16 PM	Other remarks:	
Air Temperature 1	69.8 °F	Lab Results:	30,267 c/m3
Relative Humidity 1	69.9 %	Mold Rating:	5
		Mold Rating:	1-5 (5 being worst)

**Comment: Elevated spore count due to excessive moisture and humidity.**

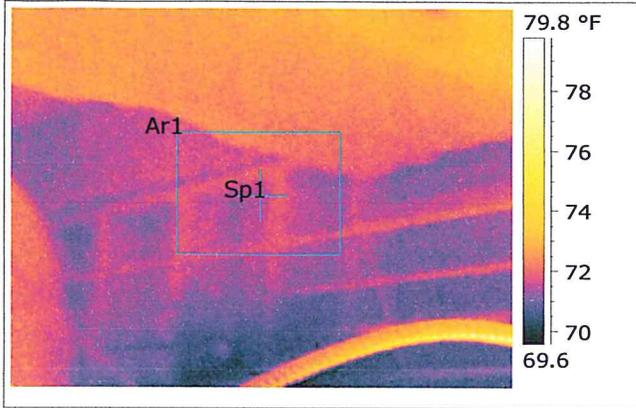
**Recommendation: The ceiling plenum is shared with the break room. All ceiling tiles should be removed, carpet, lathe removed, plaster and metal reinforcement (above drop ceiling) & paneling removed. RH% is very high due to a lack of insulation. Plenum and outer walls need insulation and sealing.**

**Remediation Protocol: Plan " C "**

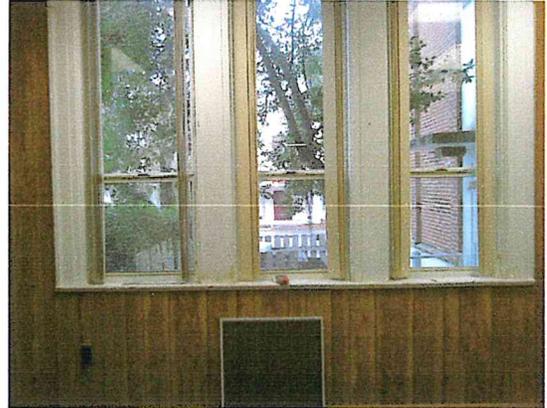
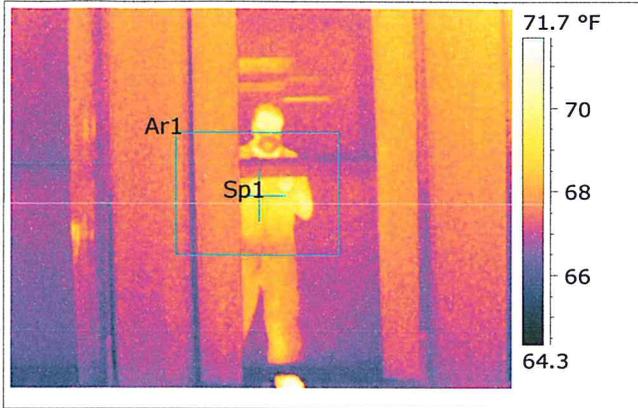


Date	1/2/2014	Location: <input type="text" value="(Where)"/>  <b>Other remarks:</b>
Image Time	4:19:43 PM	
Ar1 Max. Temperature	72.3 °F	
Ar1 Min. Temperature	67.7 °F	
Ar1 Average Temperature	68.6 °F	
Air Temperature 1	69.8 °F	
Relative Humidity 1	70.0 %	

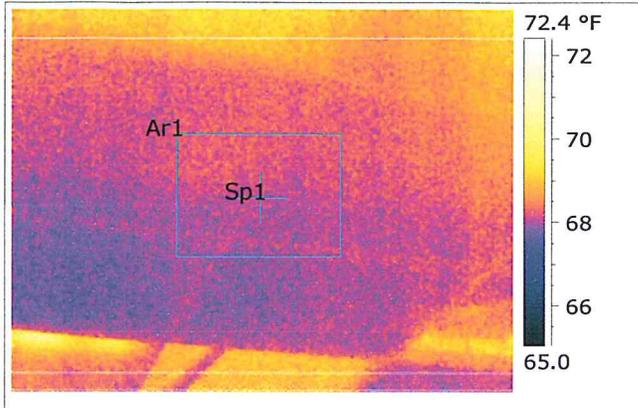
**Comment: RH % very high**



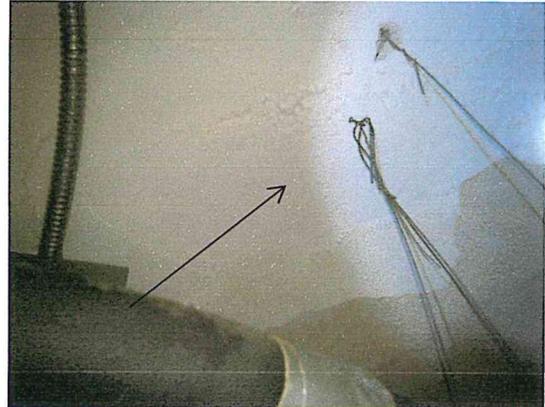
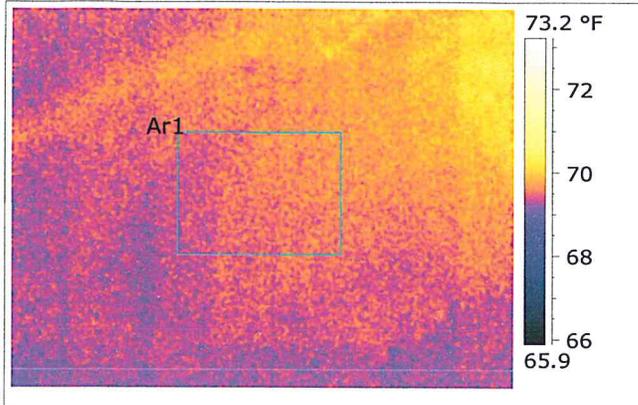
Date	1/2/2014	Location: (Plenum above dropped ceiling- Room 117)  <b>Other remarks:</b>
Image Time	4:21:09 PM	
Ar1 Max. Temperature	72.7 °F	
Ar1 Min. Temperature	70.9 °F	
Ar1 Average Temperature	71.7 °F	
Sp1 Temperature	71.5 °F	
Air Temperature 1	69.8 °F	
Relative Humidity 1	70.0 %	



Date	1/2/2014	Location: (Room 117)
Image Time	4:23:15 PM	
Ar1 Max. Temperature	70.5 °F	
Ar1 Min. Temperature	66.1 °F	
Ar1 Average Temperature	67.8 °F	
Sp1 Temperature	69.0 °F	
Air Temperature 1	70.2 °F	
Relative Humidity 1	69.8 %	



Date	1/2/2014	Location:	Room 117
Image Time	4:23:49 PM	<b>Other remarks:</b>	
Ar1 Max. Temperature	68.7 °F		
Ar1 Min. Temperature	67.5 °F		
Ar1 Average Temperature	68.1 °F		
Sp1 Temperature	68.0 °F		
Air Temperature 1	69.8 °F		
Relative Humidity 1	70.2 %		



Date	1/2/2014
Image Time	4:24:35 PM
Ar1 Max. Temperature	70.0 °F
Ar1 Min. Temperature	68.9 °F
Ar1 Average Temperature	69.5 °F
Air Temperature 1	69.4 °F
Relative Humidity 1	70.8 %

Location: (Where)

**Other remarks:**

Ceilings: White crystalline substance (seen with black arrow) formed as a result of excessive moisture

Lab Results: **30,267**

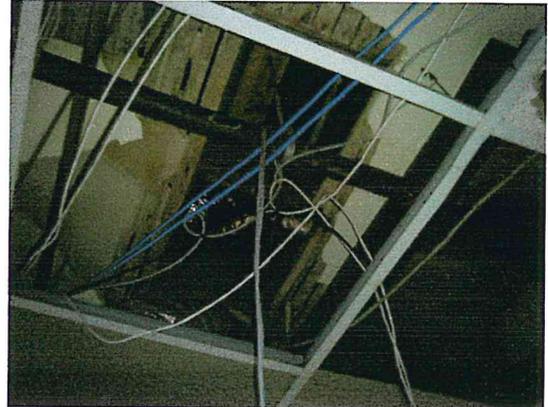
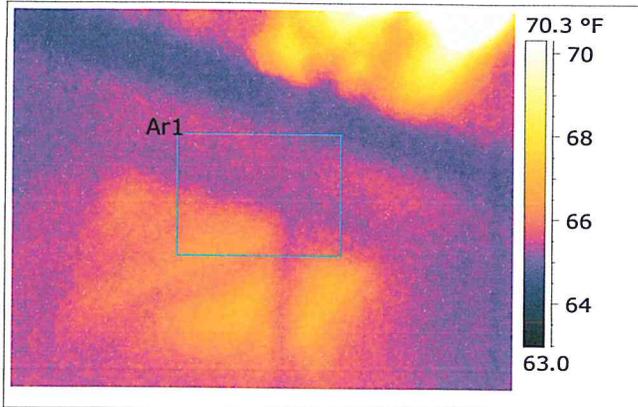
Mold Rating: **5**

Mold Rating: 1-5 (5 being worst)

**Comment: Both rooms have an elevated mold spore count.**

**Remediation Protocol: Plan "C"**

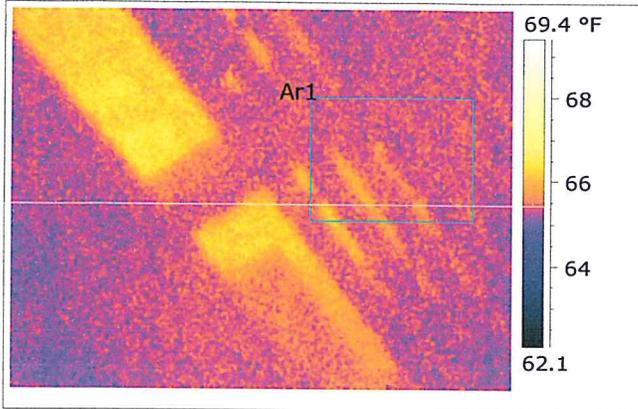




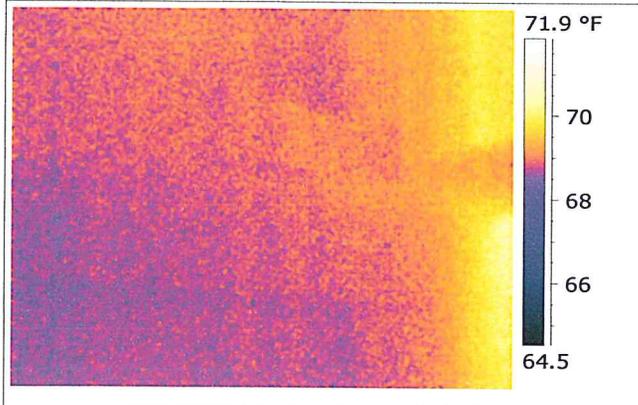
Date	1/10/2014	Location:	Old Building-2 <sup>nd</sup> floor-Main Hallway
Image Time	11:19:01 AM	<b>Other remarks:</b>	
Ar1 Max. Temperature	66.9 °F	Wall:	Acceptable
Ar1 Min. Temperature	64.8 °F	Ceilings:	See comment
Ar1 Average Temperature	65.6 °F	Lab Results:	
Air Temperature 1	64.4 °F	Mold Rating:	
Relative Humidity 1	80.8 %	Mold Rating:	1-5 (5 being worst)

**Comment: Very high humidity in this portion of the building. All ceilings need to be removed. Plaster and lathe of old ceiling needs to come down. The underside of the decking needs to be sealed and spray insulated.**

**Remediation Protocol: Plan " C "**



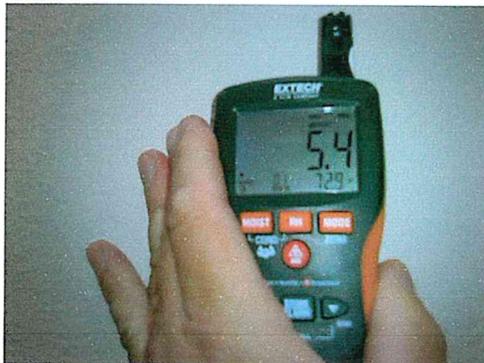
Date	1/10/2014	Location: (Where)  <b>Other remarks:</b>
Image Time	11:19:36 AM	
Ar1 Max. Temperature	66.4 °F	
Ar1 Min. Temperature	64.9 °F	
Ar1 Average Temperature	65.4 °F	
Air Temperature 1	64.9 °F	
Air Temperature 2	64.9 °F	
Relative Humidity 1	80.6 %	
Relative Humidity 2	80.1 %	

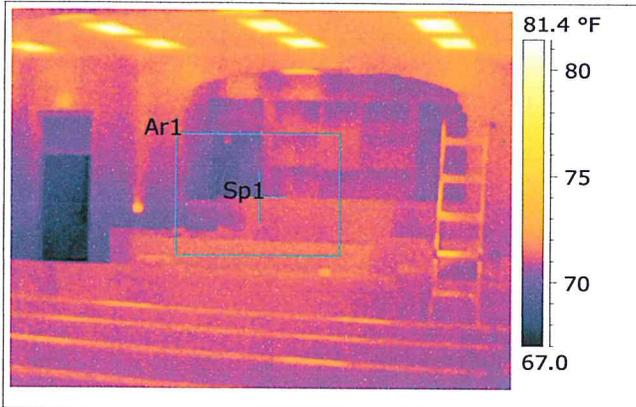


Date	1/2/2014	Location: (Where)
Image Time	9:24:39 AM	
Air Temperature 1	73.6 °F	
Relative Humidity 1	61.0 %	
		<b>Other remarks:</b>
		Wall: Walls are acceptaable
		Lab Results: 3,293 (Stachybotrus was found)
		Mold Rating: 2
		Mold Rating: 1-5 (5 being worst)

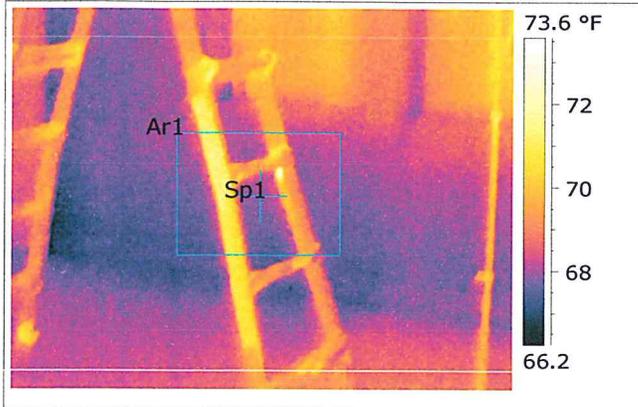
**Comment: This room is an interior room and appears to be in good condition.**

**Remediation Protocol: Plan " A "**





Date	1/2/2014	Location: (Where)  <b>Other remarks:</b>
Image Time	9:25:11 AM	
Ar1 Max. Temperature	72.0 °F	
Ar1 Min. Temperature	68.5 °F	
Ar1 Average Temperature	70.8 °F	
Sp1 Temperature	71.1 °F	
Air Temperature 1	73.6 °F	
Relative Humidity 1	61.0 %	

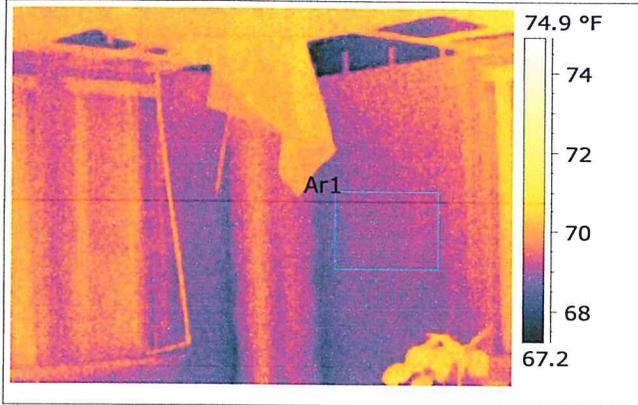


Date	1/2/2014	Location:	Judges room off of courtroom
Image Time	9:55:42 AM	<b>Other remarks:</b>	
Ar1 Max. Temperature	73.3 °F	Wall:	
Ar1 Min. Temperature	67.0 °F	Ceilings:	
Ar1 Average Temperature	68.6 °F	Lab Results:	1,560 spores c/m3
Sp1 Temperature	68.0 °F	Mold Rating:	1
		Mold Rating:	1-5 (5 being worst)

**Comment: Although spore count is low the room is subject to issues due to the lack of insulation.**

**Recommendation: Remove lathe, seal with fog and seal (see specific protocol) and isnyualte ceiling and outer wall**

**Remediation Protocol: Plan " C "**

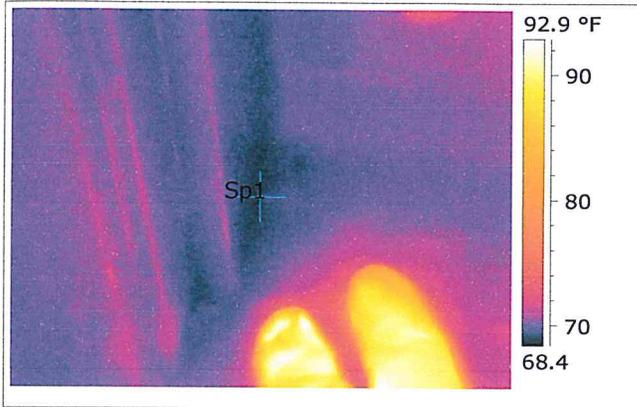


Date	1/2/2014	Location:	Old Building-2 <sup>nd</sup> Floor-Room 219 & side room
Image Time	10:53:02 AM	<b>Other remarks:</b>	
Ar1 Max. Temperature	69.6 °F	Wall: Wet	
Ar1 Min. Temperature	68.4 °F	Ceilings: Wet, Current water leak	
Ar1 Average Temperature	69.0 °F	Lab Results: 6,627	
Air Temperature 1	70.5 °F	Mold Rating: 4	
Relative Humidity 1	76.3 %	Mold Rating: 1-5 (5 being worst)	

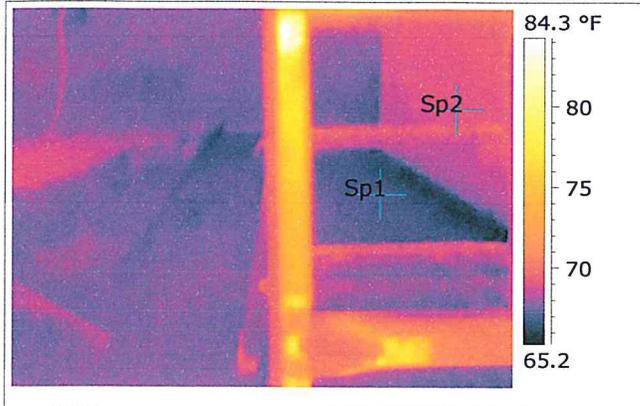
**Comment:** The outer room had a previous leak from the drain pipe in the northwest corner of the building. It appears this has been fixed. The small side room has an active leak from the middle drain on the roof (see roof). The wall and floor is wet.

**Recommendation:** Remove all paneling, ceiling tiles and grid, plaster and lathe and carpet. Fix water leak. Full clean up is required with deck sealing and spray foam insulation.

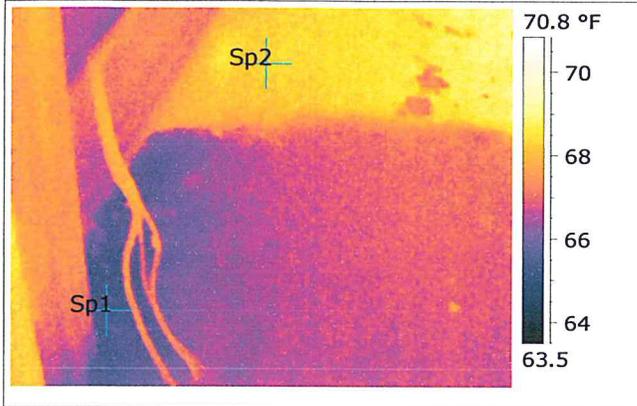
**Remediation Protocol:** Plan " C "



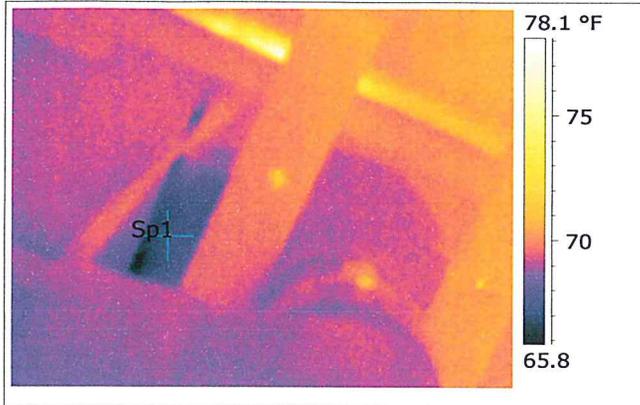
Date	1/2/2014	Location:	Small Room
Image Time	10:54:20 AM	<b>Other remarks:</b>	
Sp1 Temperature	69.1 °F	Window Frame: Needs replacing and sealing	
Air Temperature 1	70.5 °F		
Relative Humidity 1	76.1 %		



Date	1/2/2014	Location:	Small Room
Image Time	10:55:01 AM	<b>Other remarks:</b>	
Sp1 Temperature	66.9 °F	Ceilings:	Room where leak is occurring
Sp2 Temperature	69.1 °F	Lab Results:	
Air Temperature 1	70.5 °F	Mold Rating:	
Relative Humidity 1	75.9 %	Mold Rating:	1-5 (5 being worst)

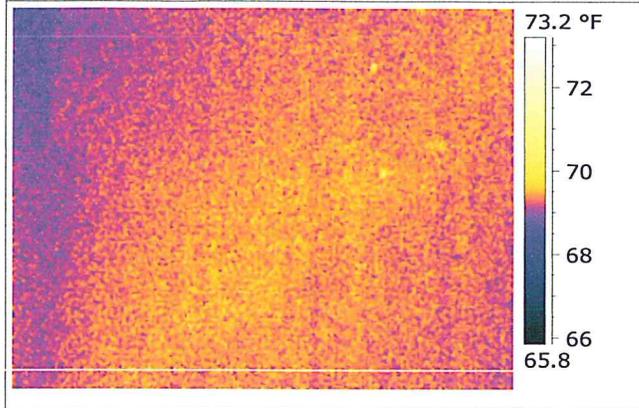


Date	1/2/2014	Location: (Where)  <b>Other remarks:</b>  Floor: Carpet needs to be removed in both rooms
Image Time	10:55:56 AM	
Sp1 Temperature	65.5 °F	
Sp2 Temperature	68.5 °F	
Air Temperature 1	70.5 °F	
Relative Humidity 1	75.9 %	



Date	1/2/2014	Location:	Small room
Image Time	10:58:12 AM	<b>Other remarks:</b>	
Sp1 Temperature	67.3 °F	Ceilings: Source of leak at blue arrow	
Air Temperature 1	70.3 °F		
Relative Humidity 1	76.4 %		

**Comment: See roof info. This needs to be fixed before any remediation can take place.**

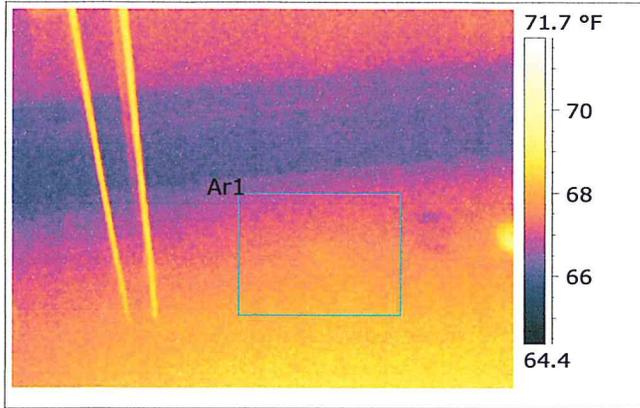


Date	1/2/2014	Location:	Old Building-2 <sup>nd</sup> Floor-Room 221
Image Time	2:01:56 PM	<b>Other remarks:</b>	
Air Temperature 1	70.5 °F	Wall:	Panel is dry on surface
Relative Humidity 1	71.3 %	Ceilings:	Acceptable
		Lab Results:	6,627
		Mold Rating:	4
		Mold Rating:	1-5 (5 being worst)

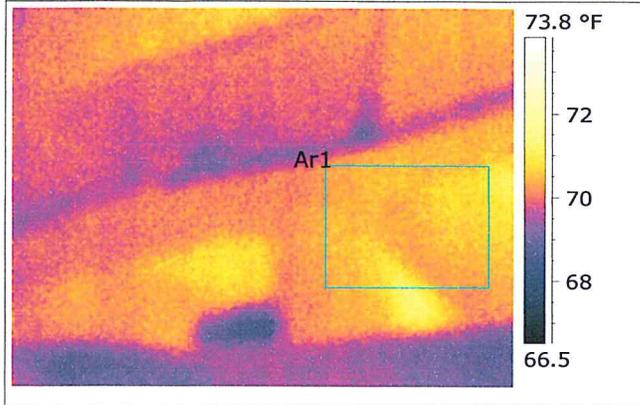
**Comment:** Although this room show dry it is still recommended because of the high humidity to fully remediate

**Recommendation:** Remove all paneling, carpet ceiling tiles, lathe and plaster, insdie window trim and sill. Reseal windows. Moisture lock walls and s-pray foam insulation above ceiling gris. Insulate below with foam board and sheet rock.

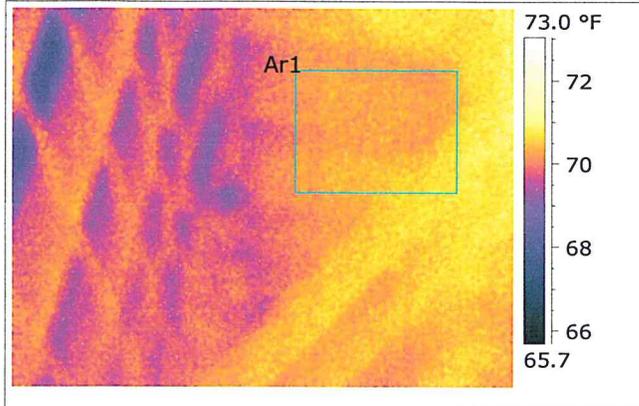
**Remediation Protocol:** Plan " C "



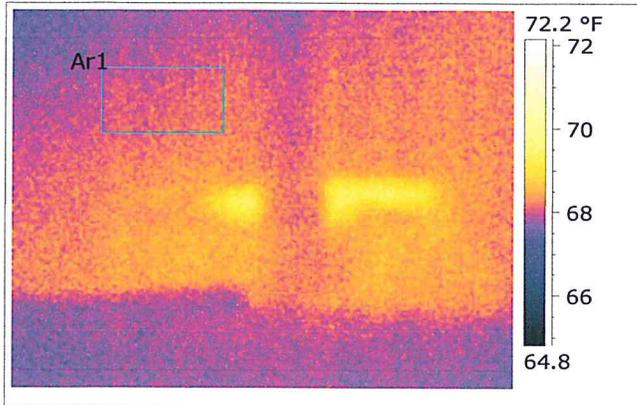
Date	1/2/2014	Location:	Room 221
Image Time	2:03:19 PM	<b>Other remarks: Sills are becoming wet due to high RH%</b>	
Ar1 Max. Temperature	68.6 °F		
Ar1 Min. Temperature	66.4 °F		
Ar1 Average Temperature	67.6 °F		
Air Temperature 1	70.7 °F		
Relative Humidity 1	70.1 %		



Date	1/2/2014	Location: Room 221  <b>Other remarks:</b>  Ceilings: Acceptable moisture
Image Time	2:05:04 PM	
Ar1 Max. Temperature	71.4 °F	
Ar1 Min. Temperature	69.9 °F	
Ar1 Average Temperature	70.5 °F	
Air Temperature 1	70.9 °F	
Relative Humidity 1	69.9 %	



Date	1/2/2014	Location:	Room 221
Image Time	2:05:54 PM	<b>Other remarks:</b>	
Ar1 Max. Temperature	71.1 °F	Ceilings: Acceptable	
Ar1 Min. Temperature	69.7 °F		
Ar1 Average Temperature	70.3 °F		
Air Temperature 1	70.9 °F		
Relative Humidity 1	69.9 %		



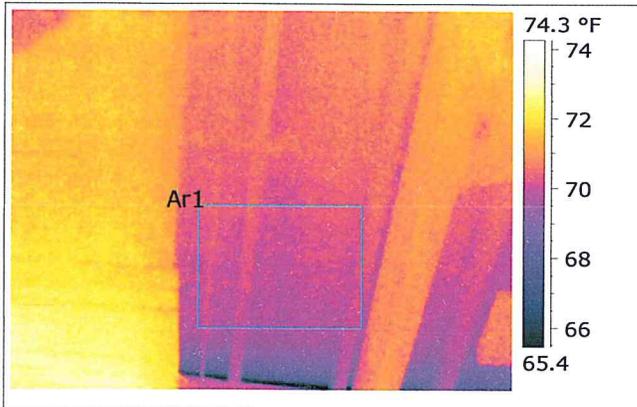
Date	1/2/2014	Location:	Old Building-Room 223
Image Time	11:27:31 AM	<b>Other remarks:</b>	
Ar1 Max. Temperature	68.6 °F	Wall: Surface dry at inspection	
Ar1 Min. Temperature	67.5 °F	Ceilings: Surface dry at inspection	
Ar1 Average Temperature	68.1 °F	Lab Results: 3,213	
		Mold Rating: 2	
		Mold Rating: 1-5 (5 being worst)	

**Comment: all outer room walls need to be reveled and remediated along with ceilings**

**Recommendation: Remove all paneling, carpet ceiling tiles, lathe and plaster, insdie window trim and sill. Reseal windows. Moisture lock walls and spray foam insulation above ceiling gris. Insulate below with foam board and sheet rock.**

**Remediation Protocol: Plan " C "**



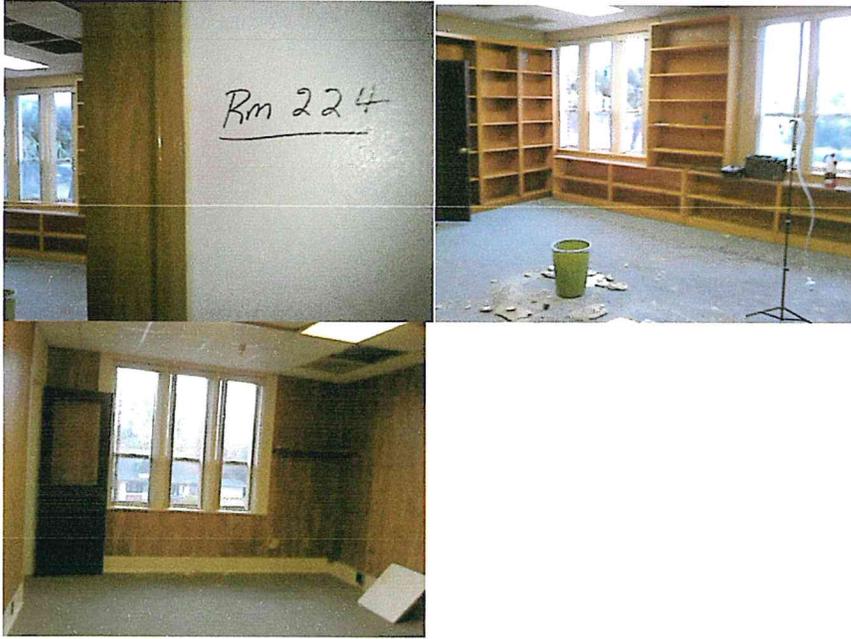


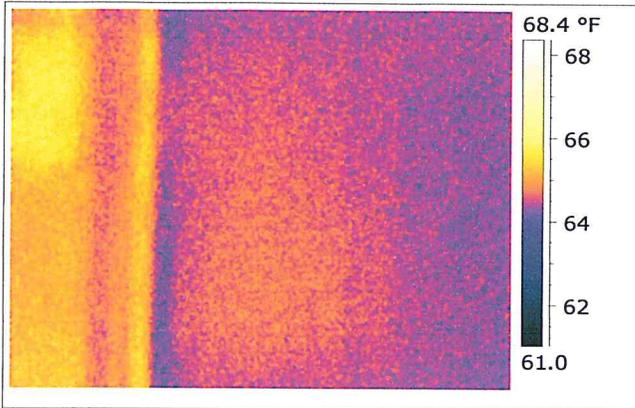
Date	1/2/2014	Location:	Old building-2 <sup>nd</sup> floor-Room 224
Image Time	10:34:28 AM	<b>Other remarks:</b>	
Ar1 Max. Temperature	70.8 °F	Wall:	Surface dry
Ar1 Min. Temperature	69.3 °F	Ceilings:	Dry at inspection
Ar1 Average Temperature	70.0 °F	Lab Results:	9,080 spores c/m <sup>3</sup>
		Mold Rating:	4
		Mold Rating:	1-5 (5 being worst)

**Comment:** All shelves need to be removed to reveal outer wall. High RH% and condition 2 mold count.

**Recommendation:** All paneling, ceiling tiles and grid, lathe and plaster, shelves, carpet and window trim need to be removed. Full remiation require. Seal and insulate to bring RH% bck to under 60%

**Remediation Protocol:** Plan " C "



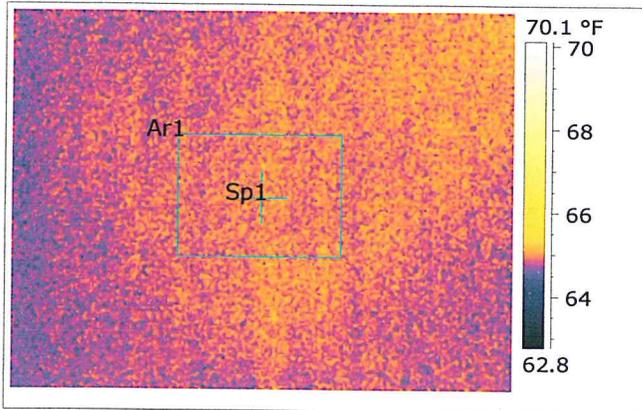


Date	1/10/2014	Location:	Old Building-Room 225
Image Time	11:23:56 AM	<b>Other remarks:</b>	
Air Temperature 1	65.8 °F	Wall: Surface dry at inspection	
Relative Humidity 1	79.7 %	Ceilings: Surface dry at inspection	
		Lab Results: 3,613 w/ Stachy	
		Mold Rating: 3	
		Mold Rating: 1-5 (5 being worst)	

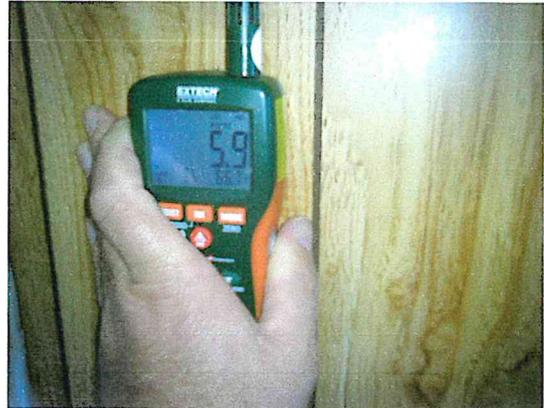
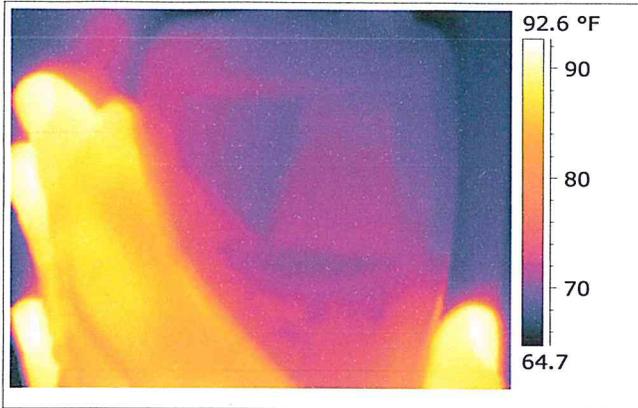
**Comment:** Very high humidity readings. Dry dry except moisture drops on window sill.

**Recommendation:** Full removal of paneling, ceiling tiles, carpet, inside window framing, plaster and lathe. Seal walls and insulate as before.

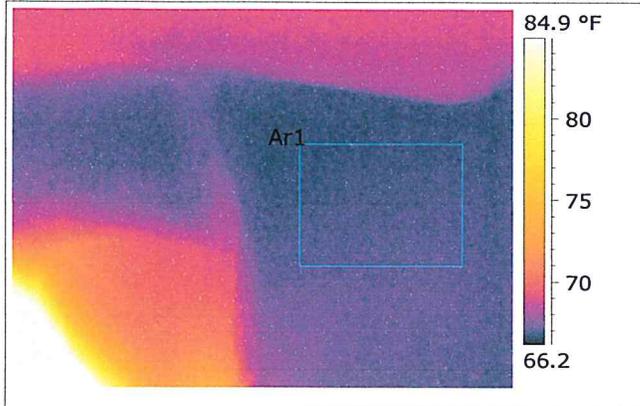
**Remediation Protocol:** Plan " C "



Date	1/10/2014	Location:	Room 225
Image Time	11:24:52 AM	<b>Other remarks:</b>	
Ar1 Max. Temperature	65.5 °F	Floor: Dry	
Ar1 Min. Temperature	64.5 °F		
Ar1 Average Temperature	64.9 °F		
Sp1 Temperature	65.0 °F		
Air Temperature 1	66.4 °F		
Relative Humidity 1	78.6 %		



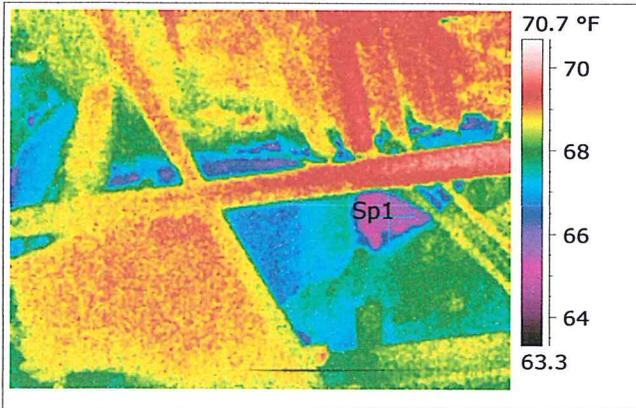
Date	1/10/2014	Location:	Room 225
Image Time	11:25:29 AM	<b>Other remarks:</b>	
Air Temperature 1	66.7 °F	Wall: Surface dry	
Internal Moisture 1	5.9 %		



Date	1/10/2014	Location:	Room 225
Image Time	11:26:01 AM	<b>Other remarks:</b>	
Ar1 Max. Temperature	67.6 °F	Window sill, condensate drops, From high humidity	
Ar1 Min. Temperature	66.3 °F		
Ar1 Average Temperature	67.0 °F		
Air Temperature 1	66.6 °F		
Air Temperature 2	66.4 °F		
Relative Humidity 2	78.0 %		
Internal Moisture 1	18.0 %		

**Recommendation:**

**Remediation Protocol: Plan " "**



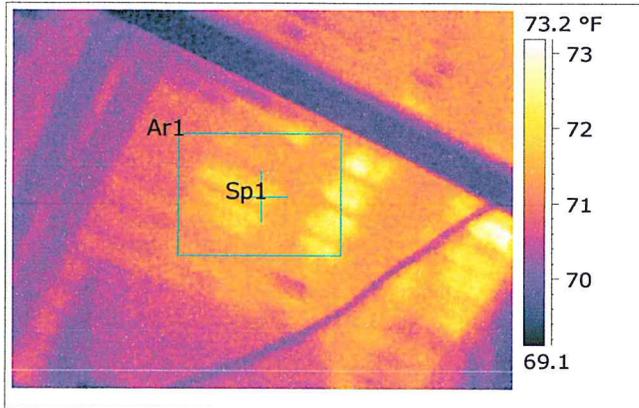
Date	1/2/2014	Location:	Old Building-Room 226
Image Time	10:18:24 AM	<b>Other remarks: Tested insulation here for asbestos. Paint sample also taken here</b>	
Sp1 Temperature	65.6 °F	Wall: Dry at inspection Ceilings: Dry at inspection Lab Results: <b>13,587</b> Mold Rating: <b>5</b>	
		Mold Rating: 1-5 (5 being worst)	

**Comment: This room also had previous issues with the northeast drain. It appears to be fixed at this time.**

**Recommendation: Full removal of carpet, paneling, ceiling tiles, plaster & lathe and window trim required. Seal and insulate like beofre**

**Remediation Protocol: Plan "C"**

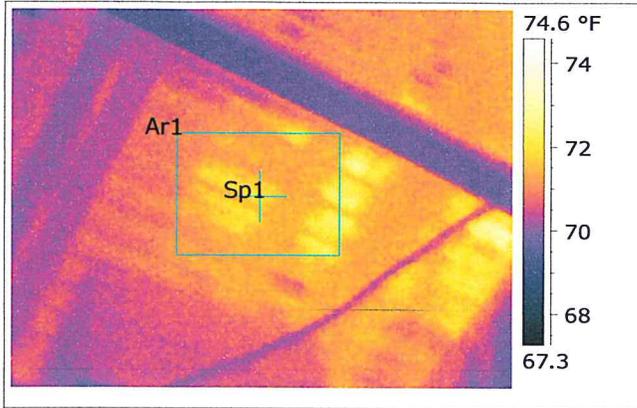




Date	12/30/2013	Location:	<b>Bathrooms of courtroom</b>
Image Time	2:08:32 PM	<b>Other remarks:</b>	
Ar1 Max. Temperature	72.6 °F	Lab Results:	No testing taken
Ar1 Min. Temperature	70.6 °F		
Ar1 Average Temperature	71.5 °F		
Sp1 Temperature	72.0 °F		
Air Temperature 1	70.2 °F		
Relative Humidity 1	53.1 %		

**Recommendation: "A" cleaning required**

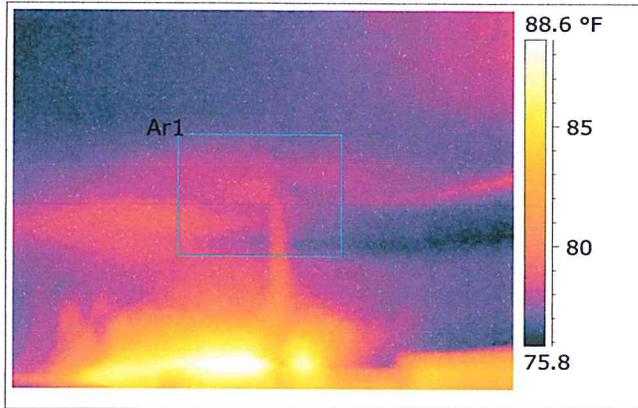
**Remediation Protocol: Plan " A "**



Date	12/30/2013	Location: Bathroom off of courtroom  <b>Other remarks:</b>  Lab Results: No testing taken
Image Time	2:08:32 PM	
Ar1 Max. Temperature	72.6 °F	
Ar1 Min. Temperature	70.6 °F	
Ar1 Average Temperature	71.5 °F	
Sp1 Temperature	72.0 °F	
Air Temperature 1	70.2 °F	
Relative Humidity 1	53.1 %	

**Recommendation: "A" cleaning required**

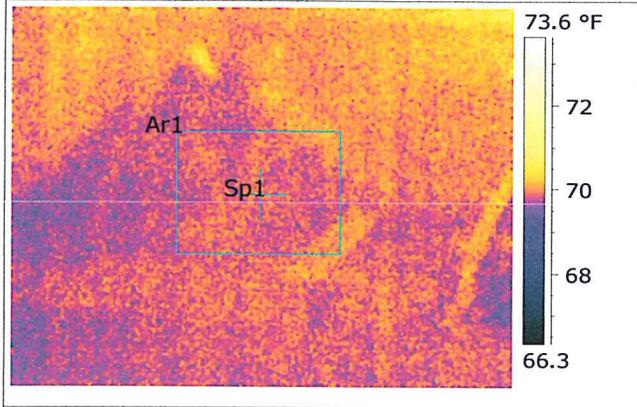
**Remediation Protocol: Plan " A "**



Date	1/2/2014	Location: (Where)  <b>Other remarks:</b>  Ceilings: It appears that the plaster is in good condition under the drop ceiling.
Image Time	9:28:49 AM	
Ar1 Max. Temperature	79.5 °F	
Ar1 Min. Temperature	76.6 °F	
Ar1 Average Temperature	77.9 °F	
Air Temperature 1	73.2 °F	
Relative Humidity 1	62.0 %	

**Recommendation: Remove ceiling tiles to evaluate the plaster ceiling. If the plaster is in good condition fog and seal the old plaster.**

**Remediation Protocol: Plan " A "**

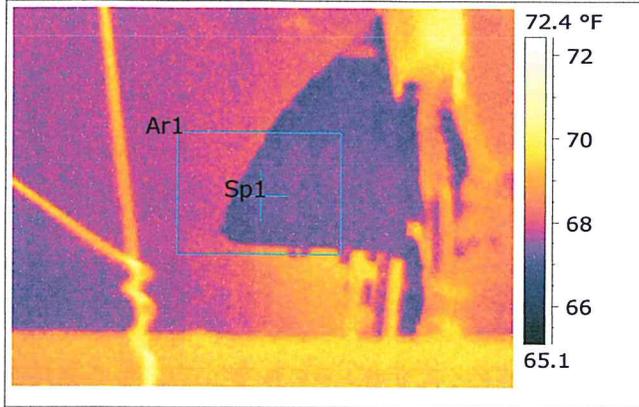


Date	1/2/2014	Location: (Judges Room)  <b>Other remarks:</b>  Ceilings: Remove all lathe
Image Time	10:00:29 AM	
Ar1 Max. Temperature	70.4 °F	
Ar1 Min. Temperature	69.3 °F	
Ar1 Average Temperature	69.9 °F	
Sp1 Temperature	70.0 °F	
Air Temperature 1	71.6 °F	
Relative Humidity 1	65.4 %	

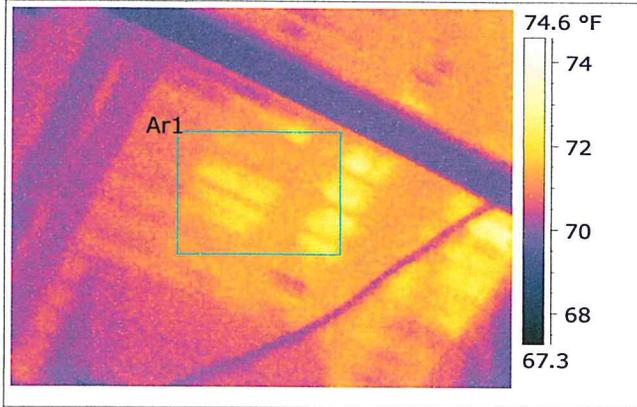
**Comment: All lathe and plaster needs to be removed.**

**Recommendation: Seal and use spray foam insulation on deck and outer wall**

**Remediation Protocol: Plan " C "**



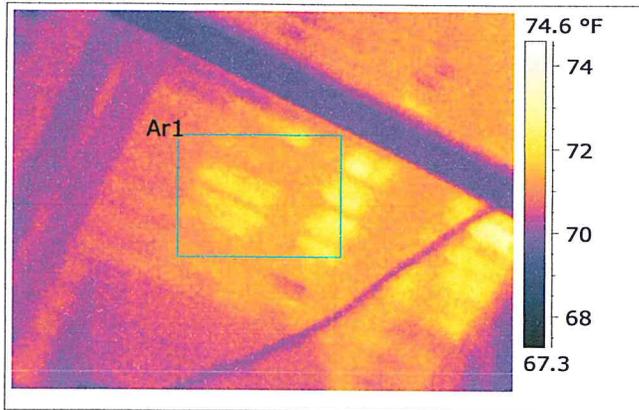
Date	1/2/2014	Location: Judges Room  <b>Other remarks:</b>
Image Time	10:01:21 AM	
Ar1 Max. Temperature	69.6 °F	
Ar1 Min. Temperature	66.8 °F	
Ar1 Average Temperature	67.6 °F	
Sp1 Temperature	67.4 °F	
Air Temperature 1	71.6 °F	
Relative Humidity 1	65.5 %	



Date	12/30/2013	Location:	Old Building-Northeast Bathroom
Image Time	2:08:32 PM	<b>Other remarks:</b>	
Ar1 Max. Temperature	72.6 °F	Wall: All dry at inspection	
Ar1 Min. Temperature	70.6 °F	Ceilings: All dry at inspection	
Ar1 Average Temperature	71.5 °F	Lab Results: Not required	
Air Temperature 1	70.2 °F		
Relative Humidity 1	53.1 %		

**Recommendation: Remove ceiling tiles and remove lathe and plaster from above.**

**Remediation Protocol: Plan "C"**



Date	12/30/2013	Location:	Old Building-Northwest Bathroom
Image Time	2:08:32 PM	<b>Other remarks:</b>	
Ar1 Max. Temperature	72.6 °F	Wall:	Dry at time of inspection
Ar1 Min. Temperature	70.6 °F	Ceilings:	Dry at time of inspection
Ar1 Average Temperature	71.5 °F	Lab Results:	Not required
Air Temperature 1	70.2 °F		
Relative Humidity 1	53.1 %		

**Recommendation: Remove ceiling tiles and remove plaster and lathe from above. Seal and insulate**

**Remediation Protocol: Plan " C "**

## Chapter 3: Roof

The roof was observed twice during the inspection.

1. The first time was at night. The purpose of this inspection was to see if there were pockets of water below the surface from the rain from the previous day. This can be seen by the use of the thermal camera. Generally when a pocket of water is present the thermal picture reveals differently than expected. It actually shows the trapped water as a warmer thermal evident rather than a cooler one that you would normally see during the day. This is because the roof covering cools down first and the water beneath (if there is any) stay warmer. These pictures are on separate sheets as they are radiometric in nature and contain the actual time taken, temperatures of the spot and average temperatures of the space. The photos can be modified to show different a fusion palette.
2. The second inspection was during a light rain on January 2<sup>nd</sup> at 2:30 in the afternoon. This was done with a digital camera and observations from the roof and the level below on the inside. It was determined that there is a leak from the drain on the old building on the northwest corner.

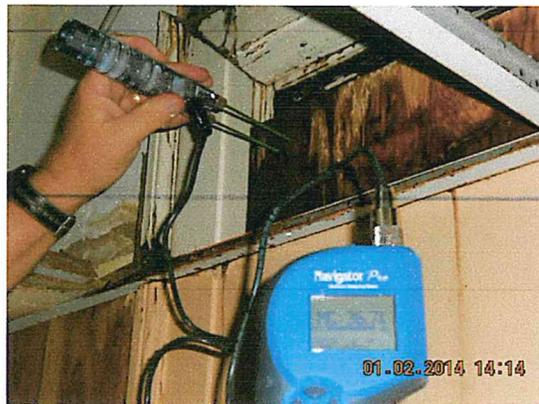
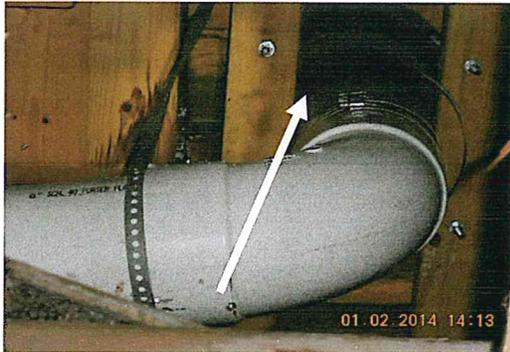




Leak appears to be between drain cover and TPO material

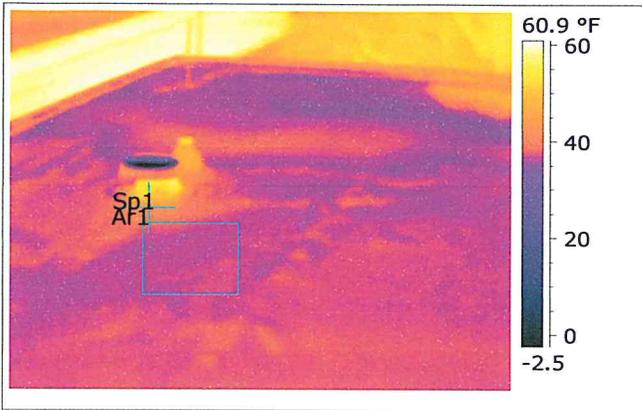
**Old Building -2<sup>nd</sup> Floor- Room 219**

Leak evident at white arrow. Meter confirms wet condition.



**Bunnell Historic Courthouse  
Indoor Air Study**

Building: Both  
Roof at night, Note: Digital pictures on right are dark because thermal camera does not have adequate flash.

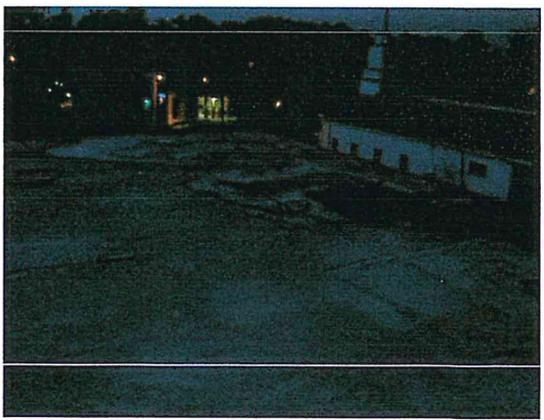
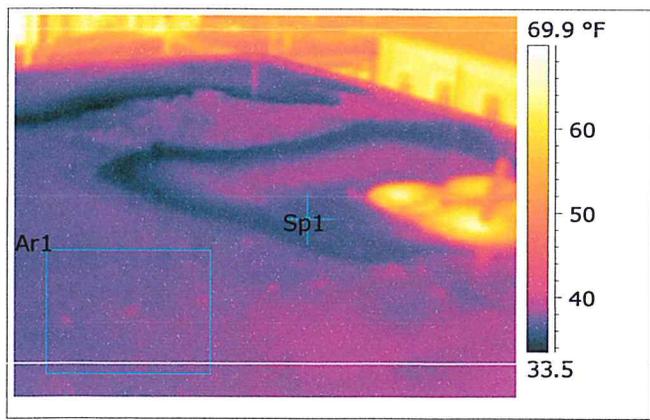


Date	12/30/2013
Image Time	5:59:47 PM
Ar1 Max. Temperature	38.7 °F
Ar1 Min. Temperature	35.8 °F
Ar1 Average Temperature	36.8 °F
Sp1 Temperature	42.6 °F

Location: New Building roof

**Other remarks: The purple areas are surface water puddles. The temperatures are an average of 36.8 degrees in these areas. The spot (sp1) temperature is in a dry area which is 42.6 degrees.**

**Conclusion: Just surface water**



**Bunnell Historic  
Courthouse  
Indoor Air Study**

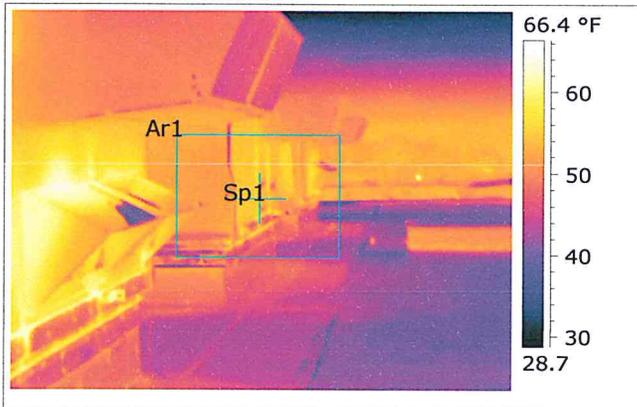
Building: Both  
Roof at night, Note: Digital  
picu5tes on right are dark  
because thermal camera  
does not have adequate  
flash.

Date	12/30/2013
Image Time	6:00:11 PM
Ar1 Max. Temperature	38.7 °F
Ar1 Min. Temperature	36.6 °F
Ar1 Average Temperature	37.6 °F
Sp1 Temperature	36.1 °F

Location:

**Other remarks: The water is deeper  
therefore cooler at 37.6 and 36 degrees**

**Conclusion: Just surface water**



Date	12/30/2013
Image Time	6:00:53 PM
Ar1 Max. Temperature	59.7 °F
Ar1 Min. Temperature	37.5 °F
Ar1 Average Temperature	50.9 °F
Sp1 Temperature	53.3 °F

Location:

**Other remarks:**

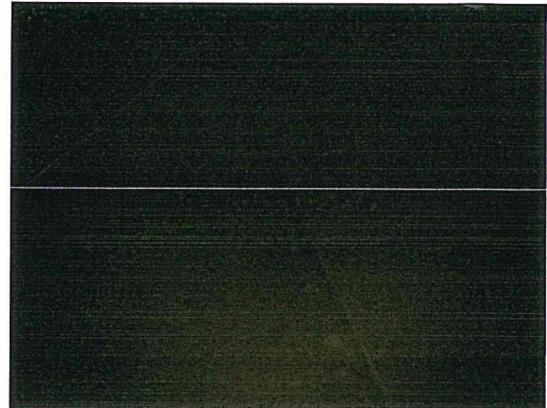
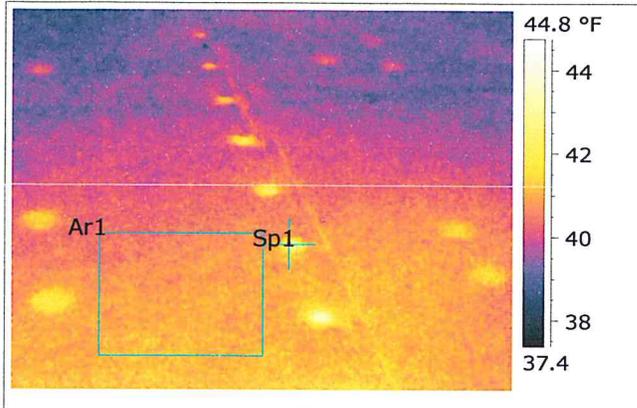
No issues noted. Area was visually dry

**Bunnell Historic  
Courthouse  
Indoor Air Study**

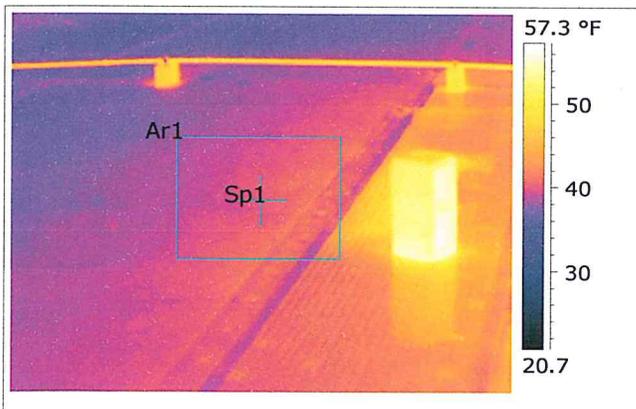
# H2H

Indoor Air Solutions<sup>SM</sup>

Building: Both  
Roof at night, Note: Digital  
picu5tes on right are dark  
because thermal camera  
does not have adequate  
flash.



Date	12/30/2013	Location: New building
Image Time	6:01:59 PM	
Ar1 Max. Temperature	41.7 °F	<b>Other remarks:</b> No issues noted. Area was visually dry. Round orange spots are patches. They hold heat under them therefore show at 43.1 degrees
Ar1 Min. Temperature	39.8 °F	
Ar1 Average Temperature	40.9 °F	
Sp1 Temperature	43.1 °F	



**Bunnell Historic  
Courthouse  
Indoor Air Study**

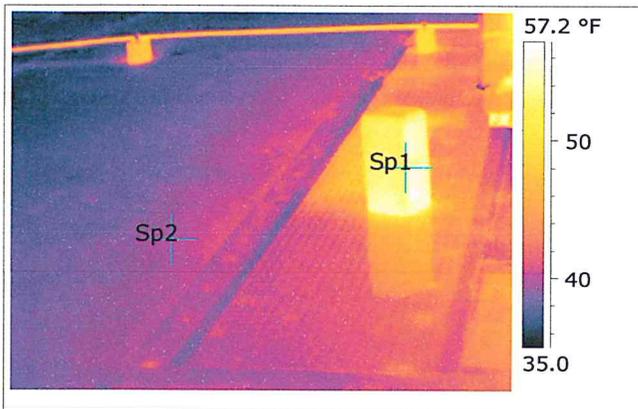
Building: Both  
Roof at night, Note: Digital  
pictures on right are dark  
because thermal camera  
does not have adequate  
flash.

Date	12/30/2013
Image Time	6:02:52 PM
Ar1 Max. Temperature	45.3 °F
Ar1 Min. Temperature	37.9 °F
Ar1 Average Temperature	40.1 °F
Sp1 Temperature	40.0 °F

Location: (Where)

**Other remarks:**

No issues noted



Date	12/30/2013
Image Time	6:04:11 PM
Sp1 Temperature	54.0 °F
Sp2 Temperature	39.9 °F

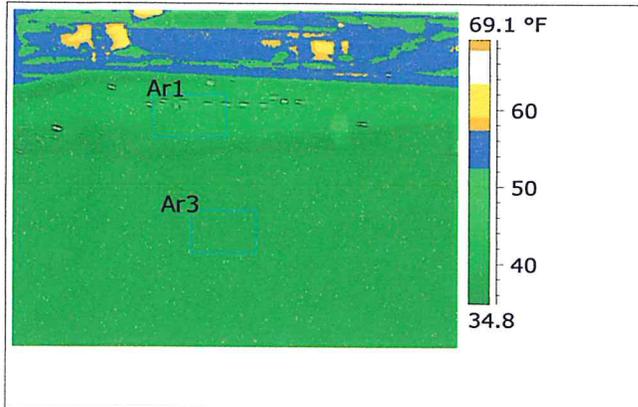
Location: New building

**Other remarks:**

No issues noted

**Bunnell Historic  
Courthouse  
Indoor Air Study**

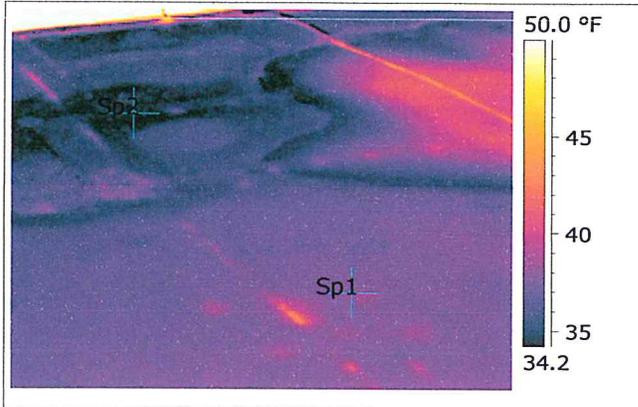
Building: Both  
Roof at night, Note: Digital  
picu5tes on right are dark  
because thermal camera  
does not have adequate  
flash.



Date	12/30/2013	Location: (Where)  <b>Other remarks: Palette changed to see any differential. None observed</b>
Image Time	6:05:44 PM	
Ar1 Max. Temperature	43.7 °F	
Ar3 Max. Temperature	38.8 °F	
Ar1 Min. Temperature	37.9 °F	
Ar3 Min. Temperature	37.1 °F	
Ar1 Average Temperature	41.3 °F	
Ar3 Average Temperature	37.7 °F	

**Bunnell Historic  
Courthouse  
Indoor Air Study**

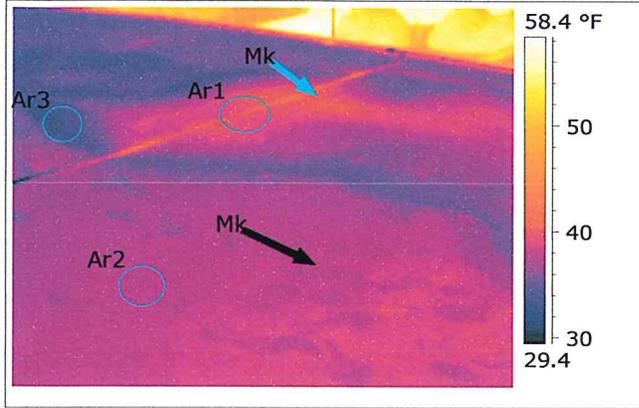
Building: Both  
Roof at night, Note: Digital  
picu5tes on right are dark  
because thermal camera  
does not have adequate  
flash.



Date	12/30/2013	Location:	New Building
Image Time	6:06:50 PM	<b>Other remarks:</b>	
Sp1 Temperature	38.3 °F	<b>Other remarks: The water is deeper therefore cooler at 38.3 and 34.4 degrees</b>	
Sp2 Temperature	34.4 °F	<b>Conclusion: Just surface water</b>	

**Bunnell Historic  
Courthouse  
Indoor Air Study**

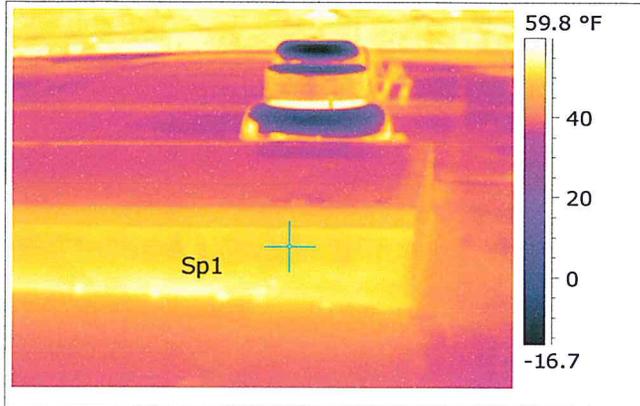
Building: Both  
Roof at night, Note: Digital  
picu5tes on right are dark  
because thermal camera  
does not have adequate  
flash.



Date	12/30/2013
Image Time	6:08:26 PM
Ar1 Max. Temperature	41.4 °F
Ar2 Max. Temperature	38.2 °F
Ar3 Max. Temperature	35.1 °F
Ar1 Min. Temperature	38.3 °F
Ar2 Min. Temperature	37.2 °F
Ar3 Min. Temperature	32.7 °F
Ar1 Average Temperature	39.3 °F
Ar2 Average Temperature	37.6 °F
Ar3 Average Temperature	33.6 °F

Location: New Building West side

**Other remarks: The spot area at AR1 average may be an issue. AR 3 which is surface water is averaging at 33.6 degrees which is consistent with the other wet areas. The area at AR 2 which is dry is consistent at 37.6 degrees. The area at AR1 however which is at a seam is showing a delta T of 1.7 degrees over the other dry area and a delta T of 5.6 degrees. The area noted by the blue arrow should be check by a professional roofer. The black arrow shows my foot prints.**



Date	12/30/2013
Image Time	6:09:26 PM
Sp1 Temperature	50.2 °F

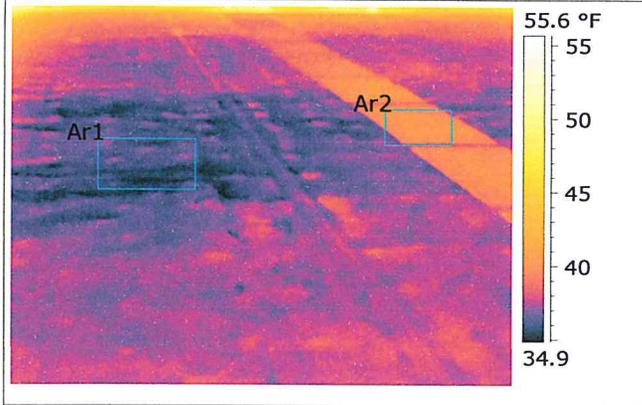
Location: New Building

**Other remarks:**

The spot at sp1 is showing the roof curb.  
Because this unit raised and has mass it is  
warmer than the roof surface.

**Bunnell Historic  
Courthouse  
Indoor Air Study**

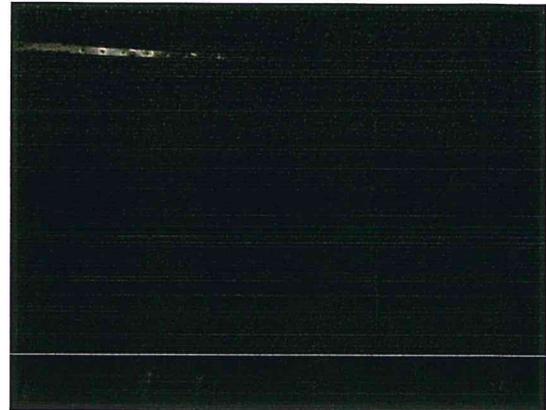
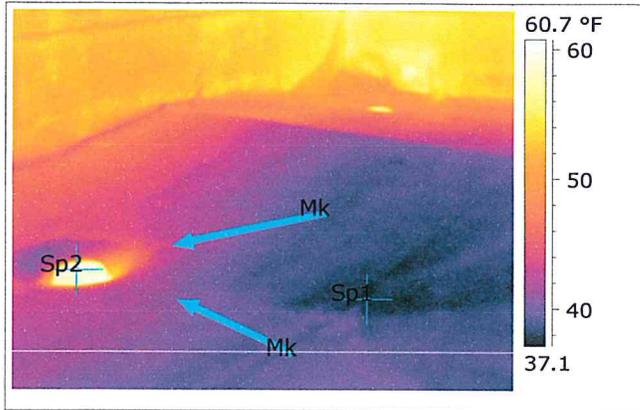
Building: Both  
Roof at night, Note: Digital  
picu5tes on right are dark  
because thermal camera  
does not have adequate  
flash.



Date	12/30/2013	Location: Old Building roof  <b>Other remarks: The rectangle in AR1 is show surface moisture. The AR2 is showing the surface path way.</b>  <b>No issues noted.</b>
Image Time	6:10:18 PM	
Ar1 Max. Temperature	37.9 °F	
Ar2 Max. Temperature	40.7 °F	
Ar1 Min. Temperature	34.9 °F	
Ar2 Min. Temperature	36.4 °F	
Ar1 Average Temperature	36.1 °F	
Ar2 Average Temperature	39.7 °F	

**Bunnell Historic  
Courthouse  
Indoor Air Study**

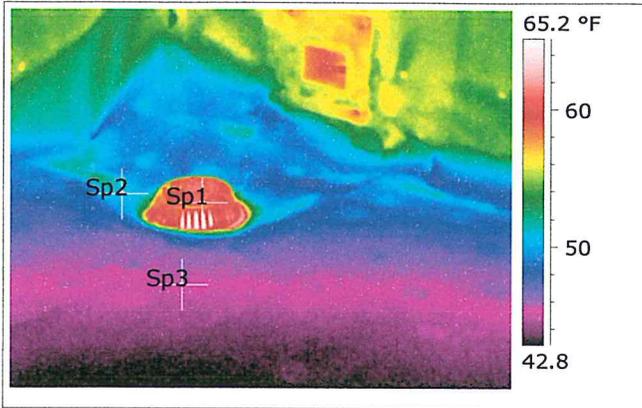
Building: Both  
Roof at night, Note: Digital pictures on right are dark because thermal camera does not have adequate flash.



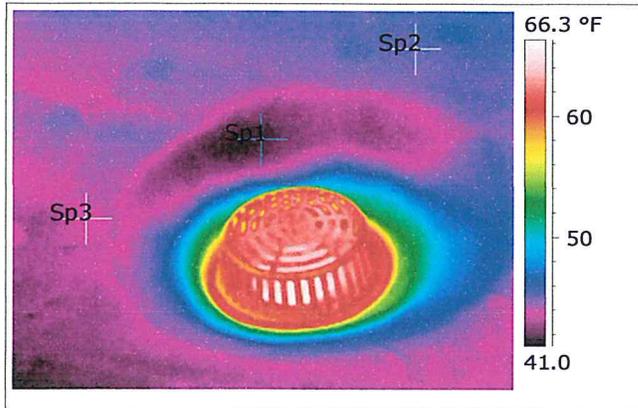
Date	12/30/2013	Location: Old Building Northeast corner
Image Time	6:12:38 PM	
Sp1 Temperature	37.7 °F	
Sp2 Temperature	59.4 °F	
		<p><b>Other remarks:</b> The picture shows the drain pocket in the corner. The blue arrows show the drainage of the water. Sp2 is surface water. Sp1 is showing the heat from the pipe and the cover of the drain. No issues noted.</p>

**Bunnell Historic  
Courthouse  
Indoor Air Study**

Building: Both  
Roof at night, Note: Digital pictures on right are dark because thermal camera does not have adequate flash.



Date	12/30/2013	Location: Old Building-Northwest corner  <b>Other remarks:</b> This drain pocket shows good slope. The palette has been changed to rainbow to show the temperature differences. The colder the sp is noted in the lighter blue colors.  No issues here.
Image Time	6:13:15 PM	
Sp1 Temperature	59.8 °F	
Sp2 Temperature	50.5 °F	
Sp3 Temperature	45.2 °F	



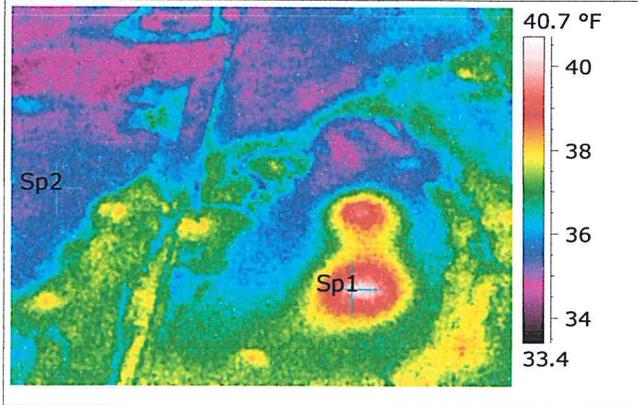
Date	12/30/2013
Image Time	6:14:28 PM
Sp1 Temperature	41.8 °F
Sp2 Temperature	45.1 °F
Sp3 Temperature	43.7 °F

Location: Old building-Middle drain-North side

**Other remarks:** SP1 is showing an anomaly not seen in the other drains. A later inspection during the day confirmed a problem with this drain.

**Bunnell Historic  
Courthouse  
Indoor Air Study**

Building: Both  
Roof at night, Note: Digital  
picu5tes on right are dark  
because thermal camera  
does not have adequate  
flash.



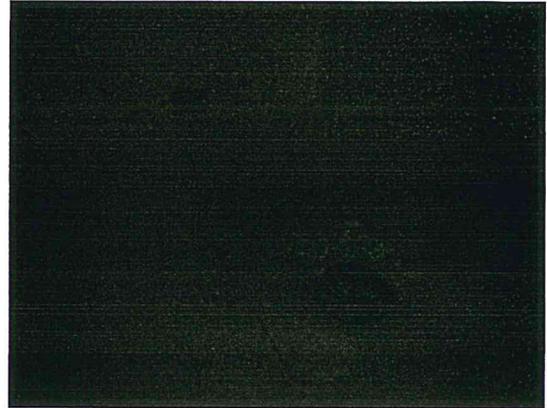
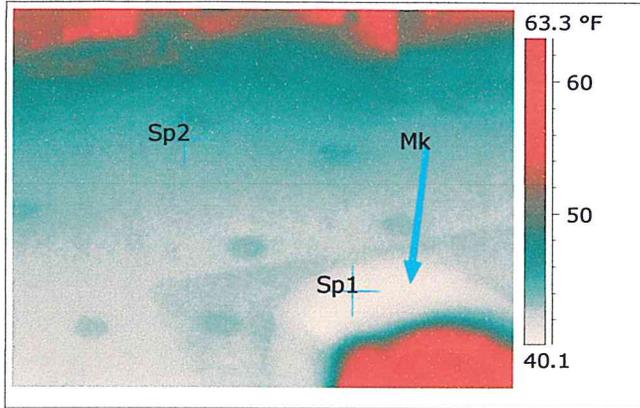
Date	12/30/2013
Image Time	6:15:43 PM
Sp1 Temperature	40.0 °F
Sp2 Temperature	35.5 °F

Location: Old roof by the drain in middle

**Other remarks: This area by drain is showing a hot anomaly at sp1. This could be collected water under the TPO covering.**

**Bunnell Historic  
Courthouse  
Indoor Air Study**

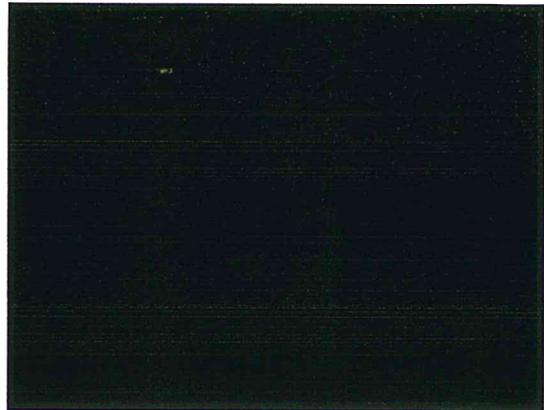
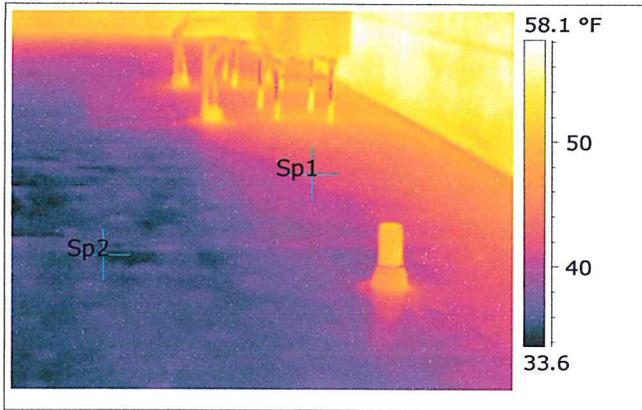
Building: Both  
Roof at night, Note: Digital  
picu5tes on right are dark  
because thermal camera  
does not have adequate  
flash.



Date	12/30/2013	Location:	Middle drain shown before
Image Time	6:17:53 PM	<b>Other remarks: Anomaly is seen again with a different palette.</b>	
Sp1 Temperature	40.8 °F		
Sp2 Temperature	44.4 °F		

**Bunnell Historic  
Courthouse  
Indoor Air Study**

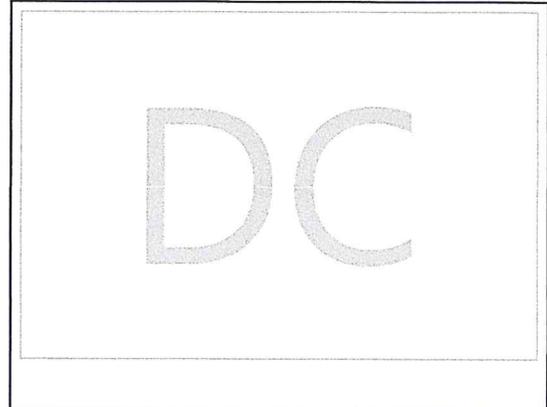
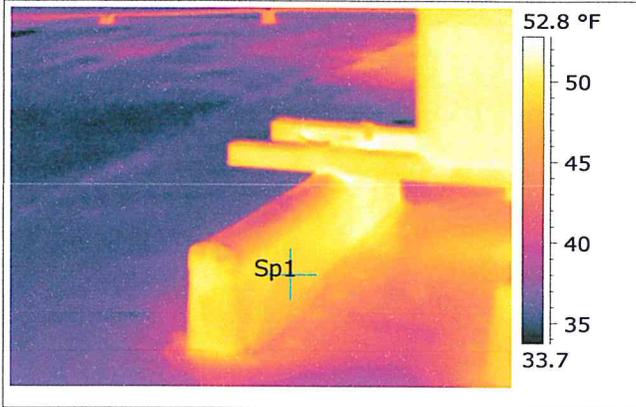
Building: Both  
Roof at night, Note: Digital  
pictures on right are dark  
because thermal camera  
does not have adequate  
flash.



Date	12/30/2013	Location: Old Roof by air handlers on west side
Image Time	6:18:32 PM	
Sp1 Temperature	41.3 °F	
Sp2 Temperature	34.8 °F	
		<b>Other remarks:</b>
		No issues noted. Sp2 are wet puddles

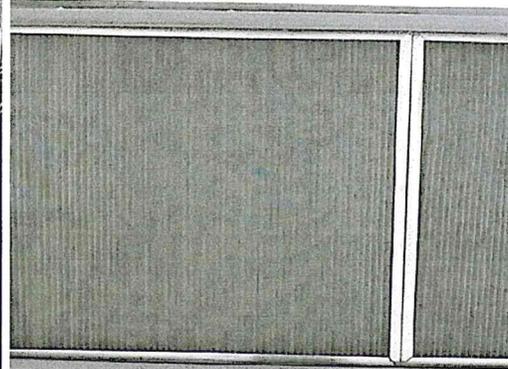
**Bunnell Historic  
Courthouse  
Indoor Air Study**

Building: Both  
Roof at night, Note: Digital  
pictures on right are dark  
because thermal camera  
does not have adequate  
flash.



Date	12/30/2013	Location:	Old Building
Image Time	5:59:20 PM	<b>Other remarks: Just for reference</b>	
Sp1 Temperature	48.4 °F	Wood skid for the air handler	





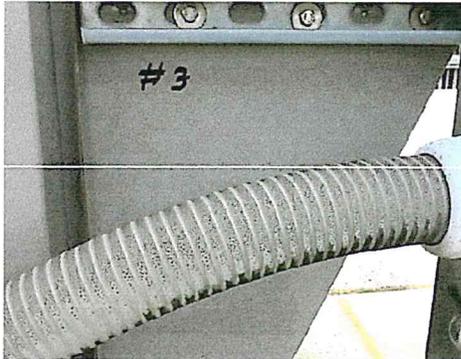
**RTU-2**



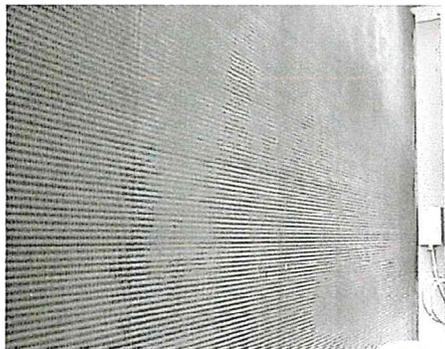
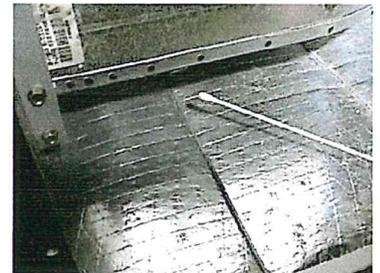
Observations: Filter & Coil and blower wheel needs cleaning. Fan in good condition.

Lab Results: Blower wheel Tested: Total Spores 436,832 cm/2. This level is un-acceptable based on location. This unit needs to be thoroughly cleaned and fogged with microbial cleaner.

**RTU 3**



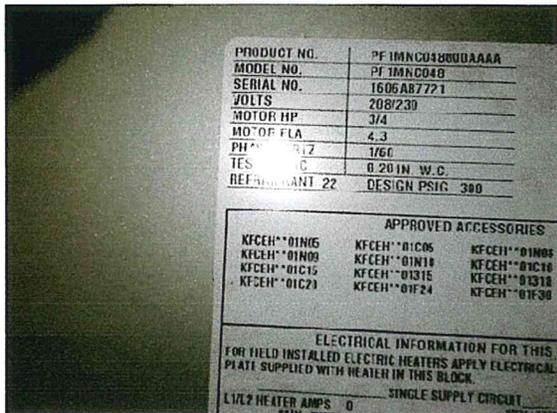
<b>30 TONS</b>																																															
<b>Carrier</b> <small>&amp; United Technologies Company</small>			MODEL 50A3-030B2T511FZ Work Order 059C001639 SERIAL 5109U27760																																												
Compressors <small>(Factory Cramped)</small>				Refrigerant System				Test Pressure Gauge																																							
Qty	Volts AC	Ph	Hr	FLA	HP	Ch1	Ch2	Ch3	Ch4	Ch5	Ch6																																				
4	208/230	3	60	43.2	104	30.5	13.4	R-410A	1.0	1.0	1.0																																				
								1 low 477 PSI (3289 kPa)																																							
Fan Motors																																															
Qty	Volts	Ph	Hr	FLA	HP	kW	W.D.	MODEL	SERIAL																																						
Indoor Fan	1	208/230	3	68	41.2/42.0	15	11.79																																								
Outdoor Fan	2	208/230	3	69	9.3/9.8	1	0.72																																								
Outlet	1	115	1	63	7																																										
<table border="0"> <tr> <td>Power Supply</td> <td>Volts</td> <td>208/230</td> <td>3</td> <td>60</td> <td>275</td> <td>147</td> <td>131/118</td> <td>200/200</td> <td colspan="3"></td> </tr> <tr> <td>Ch1</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td colspan="3"></td> </tr> <tr> <td>Ch2</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td colspan="3"></td> </tr> </table>												Power Supply	Volts	208/230	3	60	275	147	131/118	200/200				Ch1												Ch2											
Power Supply	Volts	208/230	3	60	275	147	131/118	200/200																																							
Ch1																																															
Ch2																																															
<small>*MCA - Min Circuit Amps *MCCP - Min Over Current Protective Device Amps Min Clearance to Combustible Materials: 1 in (25.4 mm) For the Unit, 24 in (610 mm) if used with Electric Heater is installed. Test with External Static: Suitable for Outdoor Use ONLY R-410A is used</small>																																															



Observations: Filter & Coil needs cleaning. Overall blower and fan in good condition.

Lab Results: Blower wheel tested: Total Spores 5,082 cm/2. This level is marginal based on location. This unit needs to be thoroughly cleaned and fogged with microbial cleaner.

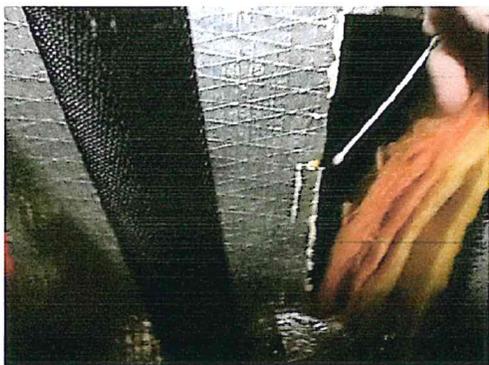
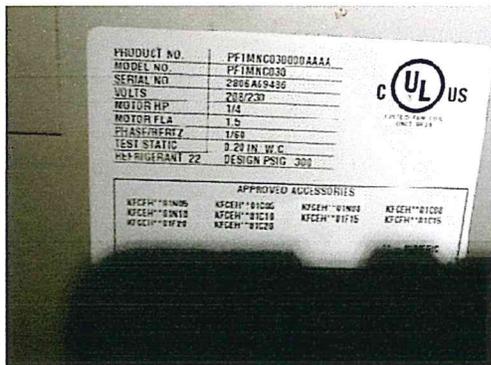
**Old Bldg. East Room 111C:**



Observations: Filter needs cleaning. Overall blower in good condition.

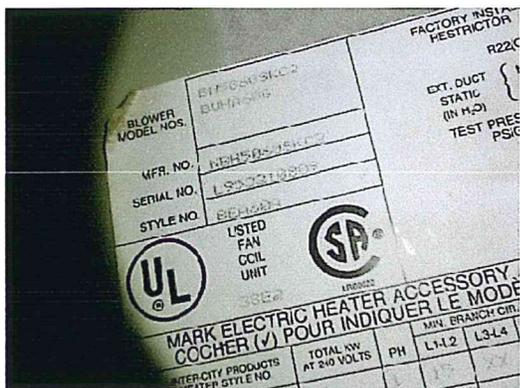
Lab Results: Cabin tested: Total Spores 497 cm/2. This level is acceptable based on location.

**Attic Unit 1 East:**



Lab Results: Discharge Duct tested: Total Spores 10,683 cm/2. This level is marginal based on location. This unit needs to be thoroughly cleaned and fogged with microbial cleaner.

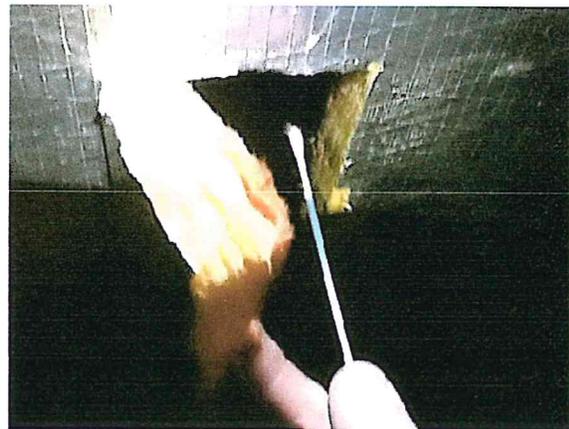
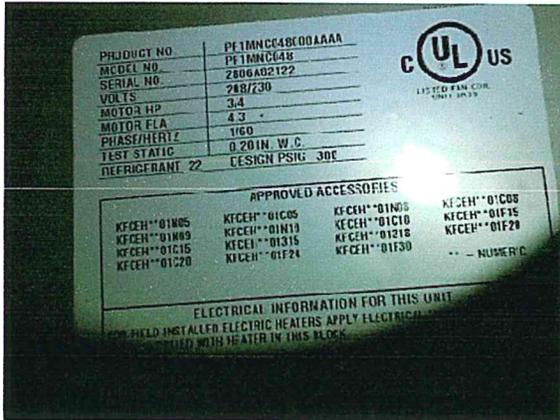
**1<sup>st</sup> Floor Old Building-Unit D**



Lab Results:  
Discharge duct tested:

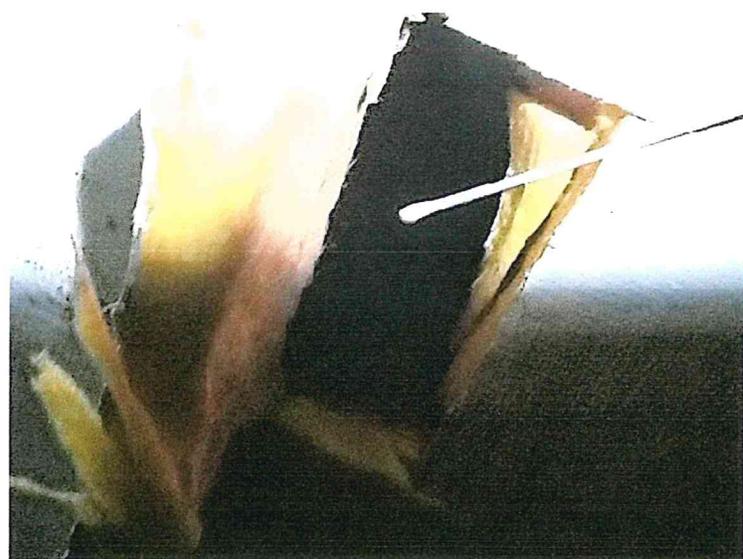
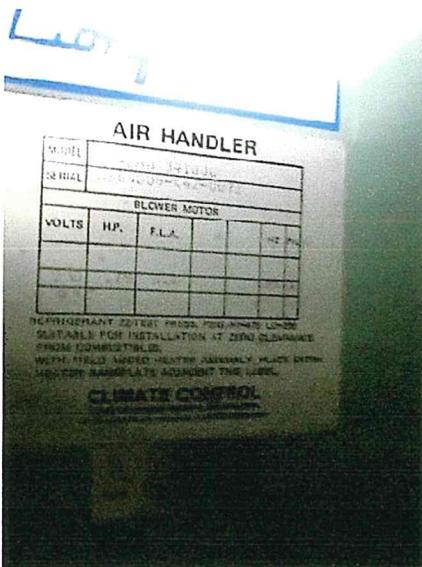
Lab Results: Discharge duct tested: Total Spores 10,186 cm/2. This level is marginal based on location. This unit needs to be thoroughly cleaned and fogged with microbial cleaner

**1<sup>st</sup> floor Old Building-Unit A**



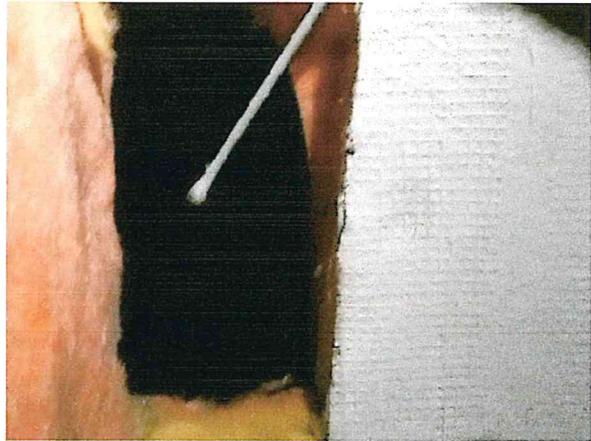
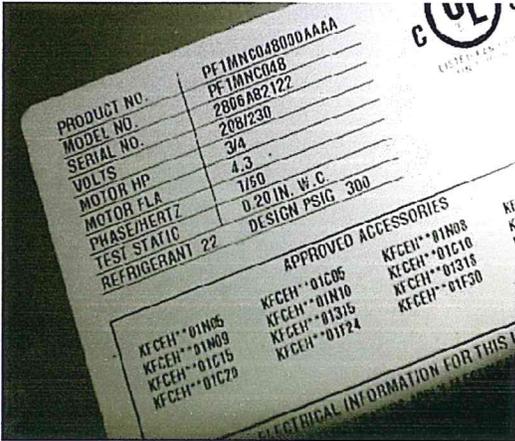
Lab Results: Discharge duct tested: Total Spores 10,549 cm/2. This level is marginal based on location. This unit needs to be thoroughly cleaned and fogged with microbial cleaner.

**1<sup>st</sup>, Floor Old Building-Unit 3**



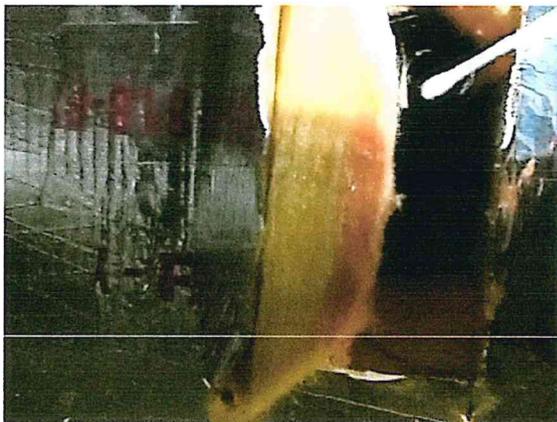
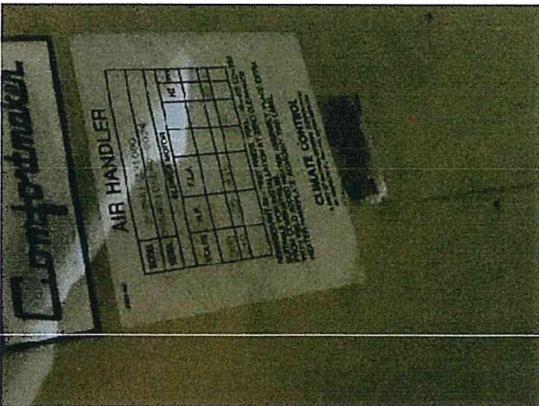
Lab Results: Total Spores 51,205 cm/2. This level is un-acceptable based on location. This unit needs to be thoroughly cleaned and fogged with microbial cleaner.

**Old Building- North Unit 7**



Lab Results: Total Spores 42,708 cm/2. This level is un-acceptable based on location. This unit needs to be thoroughly cleaned and fogged with microbial cleaner.

**Old Building North-Unit 6**



Lab Results: Total Spores 819,130 cm/2. This level is un-acceptable based on location. This unit needs to be thoroughly cleaned and fogged with microbial cleaner.

**New Building 2<sup>nd</sup> floor-Rm 318**

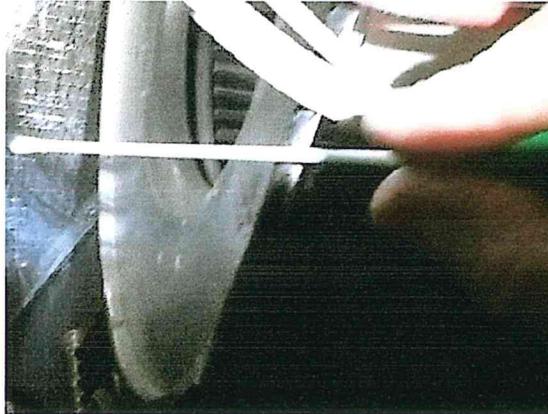
American Standard Inc.  
The Trane Company  
Tyler, TX 75711-9010

Assembled in USA

MODEL NO. TWEO36C14FB0 P3644561V 1/2 3.30 200-230 1/4

240V, 30Hz, 17W OPR 37W  
ELECTRIC HEATER-208 04  
REFRIGERANT 22 ONLY TEST PRESSURE 300 PSI  
UNLESS INDICATED "NA" ANY ONE OF THE FOLLOWING HEATERS MAY BE INSTALLED IN THIS UNIT. INSTALLER MUST MARK ONE APPROPRIATE BLOCK IN COLUMN A

TRANE HEATER MODEL	SUPPLY VOLT	PHASE	HP	HEATER AMPS	MIN BRANCH CIRCUIT AMPLACITY	HEATING PLS OR FUEL TYPE	HEATING SYSTEM	WITH HEAT PUMP
NONE	USE ACCESSORY PLATE BA79X123							
BAYHT1405	208	1	1.80	17.3	28	30	LOW	LOW
BAYHT1408	240	1	1.74	27.7	38	40	LOW	LOW
BAYHT1410	208	1	2.20	34.1	47	50	LOW	LOW
BAYHT1410	240	1	2.00	30	37	40	LOW	LOW
BAYHT1412	208	3	11.84	33.1	45	45	LOW	NA
BAYHT1412	240	3	11.36	38.3	51	50	LOW	NA
BAYHT1415	208	1	2.20	34.0	47	50	LOW	LOW
BAYHT1415	240	1	2.00	30	37	40	LOW	LOW
BAYHT1418	208	1	4.10	33.8	38	38	LOW	LOW
BAYHT1418	240	1	4.10	34	38	38	LOW	LOW
BAYHT1420	208	1	2.20	34.0	47	50	LOW	LOW
BAYHT1420	240	1	2.00	30	37	40	LOW	LOW



Lab Results: Blower wheel tested: Total Spores 119,354 cm/2. This level is unacceptable based on location. This unit needs to be thoroughly cleaned and fogged with microbial cleaner.

**New building-Room 330**

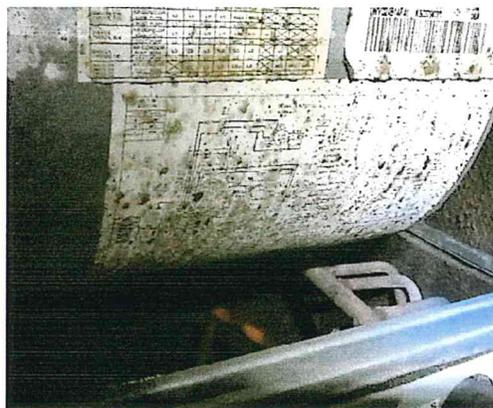
American Standard Inc.  
The Trane Company  
Tyler, TX 75711-9010

Assembled in USA

MODEL NO. TWV024B14FA1 K50379037 1/8 1.7 200-230 1/4

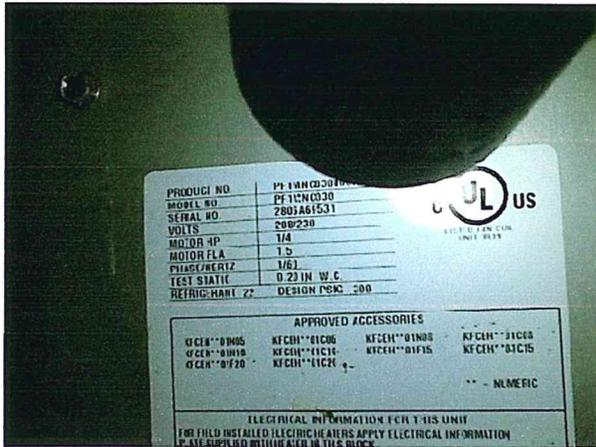
240V, 30Hz, 17W OPR 37W  
ELECTRIC HEATER-208 04  
REFRIGERANT 22 ONLY TEST PRESSURE 300 PSI  
UNLESS INDICATED "NA" ANY ONE OF THE FOLLOWING HEATERS MAY BE INSTALLED IN THIS UNIT. INSTALLER MUST MARK ONE APPROPRIATE BLOCK IN COLUMN A

TRANE HEATER MODEL	SUPPLY VOLT	PHASE	HP	HEATER AMPS	MIN BRANCH CIRCUIT AMPLACITY	HEATING PLS OR FUEL TYPE	HEATING SYSTEM	WITH HEAT PUMP
NONE	USE ACCESSORY PLATE BA79X123							
BAYTR1404	208	1	2.08	11.8	20	20	LOW	LOW
BAYTR1405	240	1	1.98	11.3	24	25	LOW	LOW
BAYTR1406	208	1	2.32	30.8	39	40	LOW	LOW
BAYTR1406	240	1	2.12	24	32	35	LOW	LOW
BAYTR1408	208	1	2.21	21.7	31	30	LOW	LOW
BAYTR1410	208	1	2.21	21.7	31	30	LOW	LOW
BAYTR1410	240	1	2.02	20	32	30	LOW	LOW
BAYTR1411	208	1	2.20	20.1	30	30	LOW	LOW
BAYTR1411	240	1	2.00	18	32	30	LOW	LOW



Lab Results: Blower wheel tested: Total Spores 2.932 cm/2. This level is marginal based on location. This unit needs to be thoroughly cleaned and fogged with microbial cleaner.

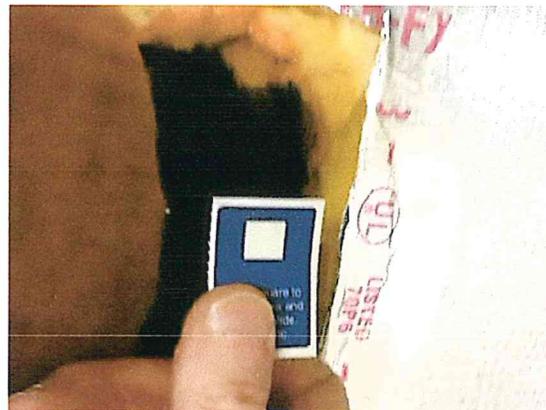
1<sup>st</sup> floor Old Building –Unit C



Observations: Discharge duct test with tape lift.

Lab Results: Total Spores 1,371 cm/2. This level is acceptable based on location

1<sup>st</sup> Floor- Old Bldg.- Unit A



Observations: Discharge duct test with tape lift.

Lab Results: Total Spores 10,549 cm/2. . This level is unacceptable based on location. This unit needs to be thoroughly cleaned and fogged with microbial cleaner.



## **Chapter 5**

### **Lab Reports**

The lab reports for the air, swab and tape testing are attached to this chapter. They show several things:

- Location of test
- The fact they were tested at a accredited lab for mold testing
- The column reported in the rest of the report is the Count/m<sup>3</sup>. This stands for the number of spores in a cubic meter of air. The different types of mold are listed for each test. This spore type is the genus mold type not the specific species. To obtain a specific species a PCR (DNA test) or a viable culture needs to be grown. This was determined by the assessor not to be necessary for this facility.
- Debris rating: If there is too much dirt or dust in that area of the test than the accuracy of the spore count goes down. The average number is 3.
- Hyphal Fragments: This represents the pieces of the stem that have broken apart from the hyphae.
- Standard Spore List: This gives a description of the type of mold genus and where they are normally found and the possible effect they have on an individual. Keep in mind as explained earlier it is different for each person based on their immune system.





Richard Van Dort  
H2H Services  
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Palm Coast, FL 32137



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1301 E. Atlantic Blvd., Suite 5  
Pompano Beach, FL 33060  
Phone: (954) 333-8149  
Fax: (954) 333-8151  
email: customerservice@aemlinc.com

Project: Courthouse 1st Floor 13-235  
Sampled: 12/2/2013  
Received: 12/4/2013  
Analysis Date: 12/4/2013  
Report Date: 12/4/2013  
Batch: 38371

**AEML Test: A001 Spore Trap Analysis**

Sample ID:	131204L043	131204L044	131204L045						
Client Sample ID:	Room 115 476	Rooms 137-139 216	1st Floor Rm 107 478						
Volume Sampled (L):	75	75	75						
Media:	Allergenco D	Allergenco D	Allergenco D						
Percent of Trace Analyzed:	100% at 600X Magnification	100% at 600X Magnification	100% at 600X Magnification						
Spore Types	Raw Count	Count/m <sup>3</sup>	%	Raw Count	Count/m <sup>3</sup>	%	Raw Count	Count/m <sup>3</sup>	%
Alternaria	-	-	-	-	-	-	-	-	-
Arthrinium	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium-Like	1,458*	19,440	99	16	213	84	4,080*	54,400	99
Basidiospores	3	40	<1	1	13	5	3	40	<1
Bipolaris/Dreschlera	-	-	-	-	-	-	-	-	-
Botrytis	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	2	27	<1	-	-	-	10	133	<1
Curvularia	1	13	<1	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	1	13	5	-	-	-
Memnoniella	-	-	-	-	-	-	-	-	-
Nigrospora	-	-	-	-	-	-	-	-	-
Oidium/Peronospora	-	-	-	-	-	-	-	-	-
Pitheomyces	1	13	<1	-	-	-	3	40	<1
Rust	-	-	-	-	-	-	-	-	-
Smut/Myxomyces/Periconia	2	27	<1	1	13	5	10	133	<1
Stachybotrys	5	67	<1	-	-	-	16	213	<1
Torula	-	-	-	-	-	-	-	-	-
Ulocladium	-	-	-	-	-	-	-	-	-
Unidentified Spores	1	13	<1	-	-	-	-	-	-
<b>Total Spores</b>	<b>1,473</b>	<b>19,640</b>		<b>19</b>	<b>253</b>		<b>4,122</b>	<b>54,960</b>	
Hypheal Fragments	3	40		-	-		3	40	
Pollen	-	-		-	-		4	53	
Debris Rating	3			3			4		
Detection Limit	13			13			13		

\* Estimation performed due to high count.

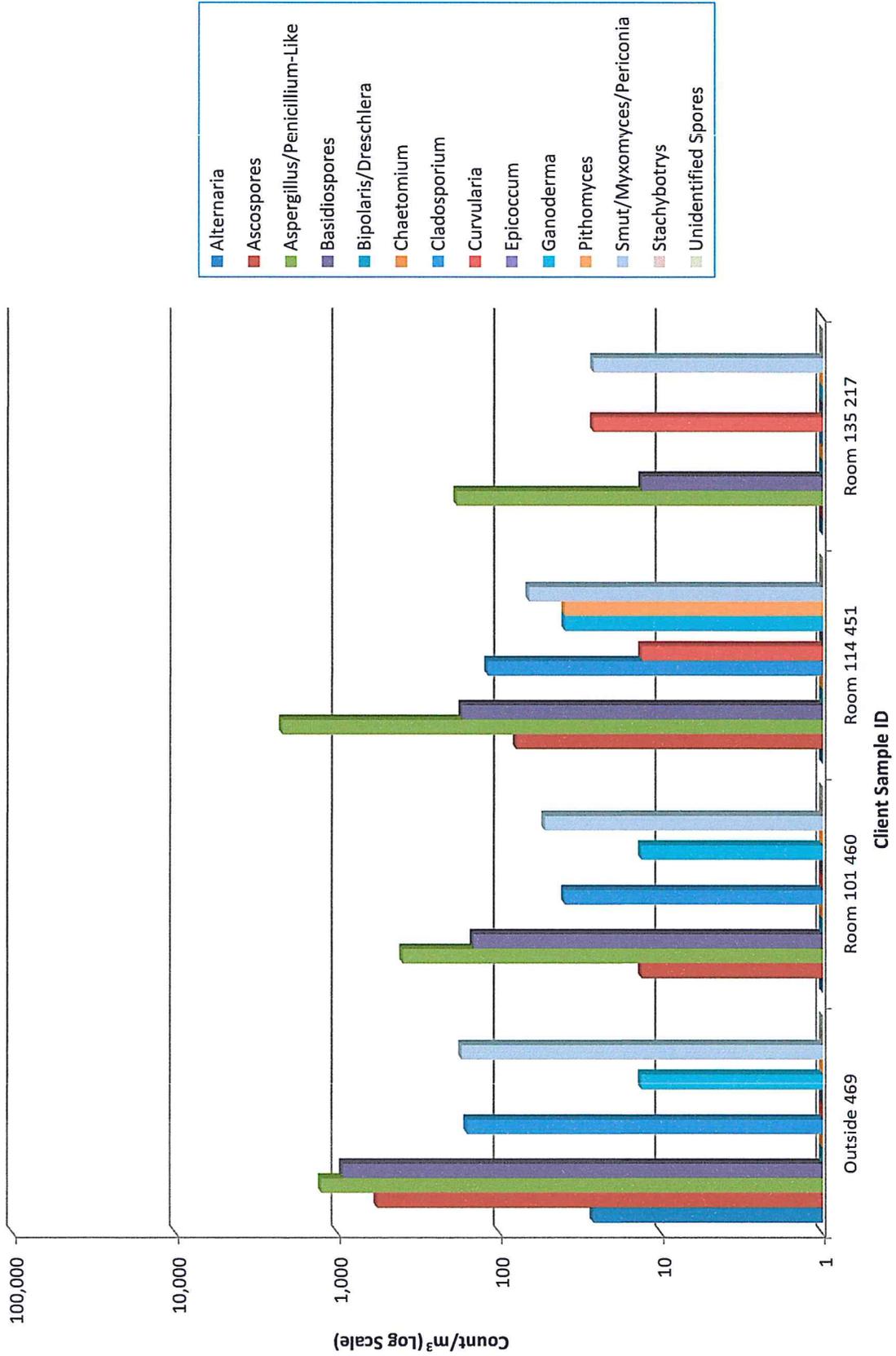
*Joshua Krinsky*

Joshua Krinsky  
Technical Director

Results submitted pertain only to the samples as presented on the accompanying Chain of Custody.  
This report shall not be reproduced, except in its entirety and with the written approval of AEML.

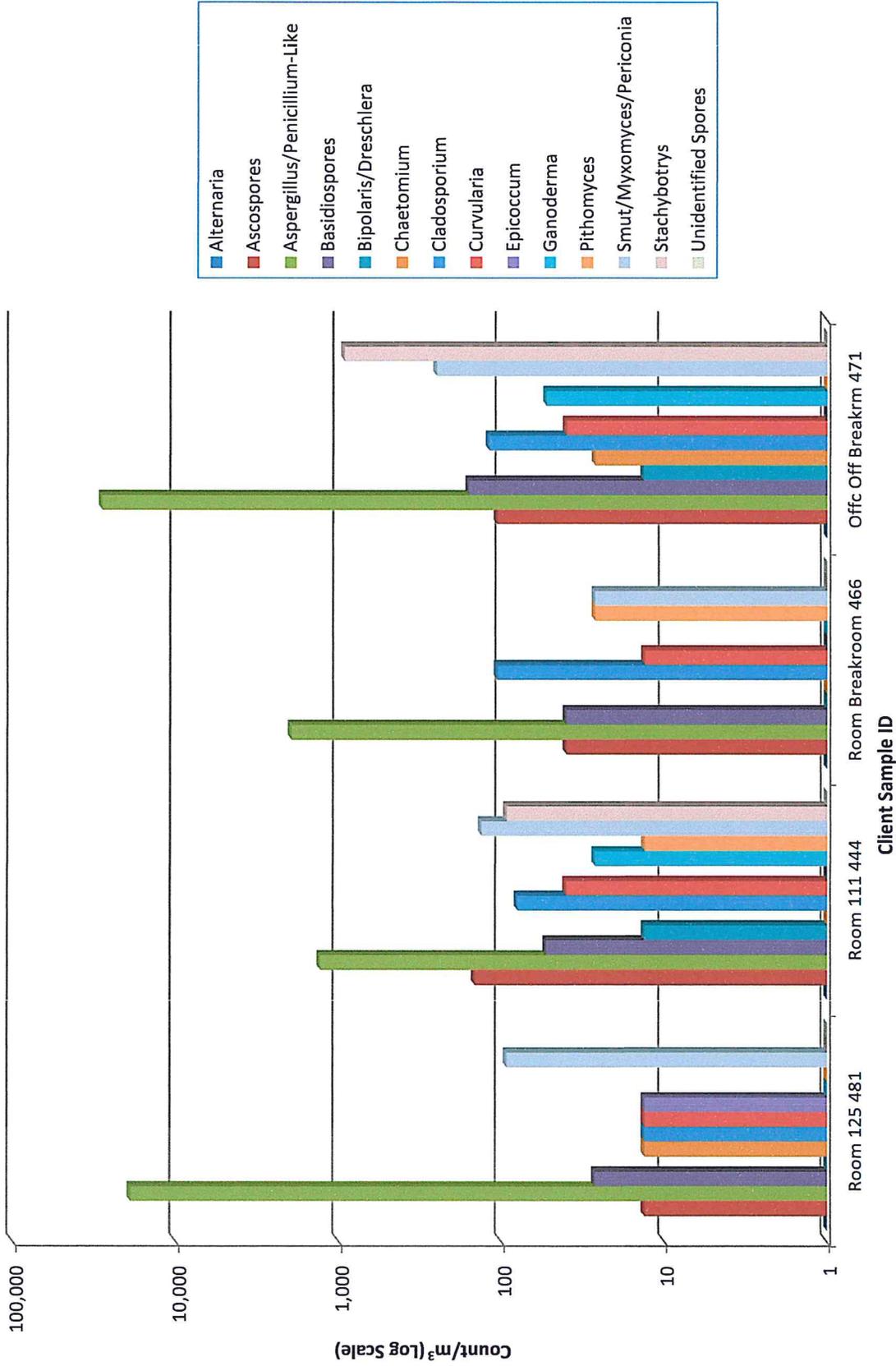


### Project: Courthouse 1st Floor 13-235



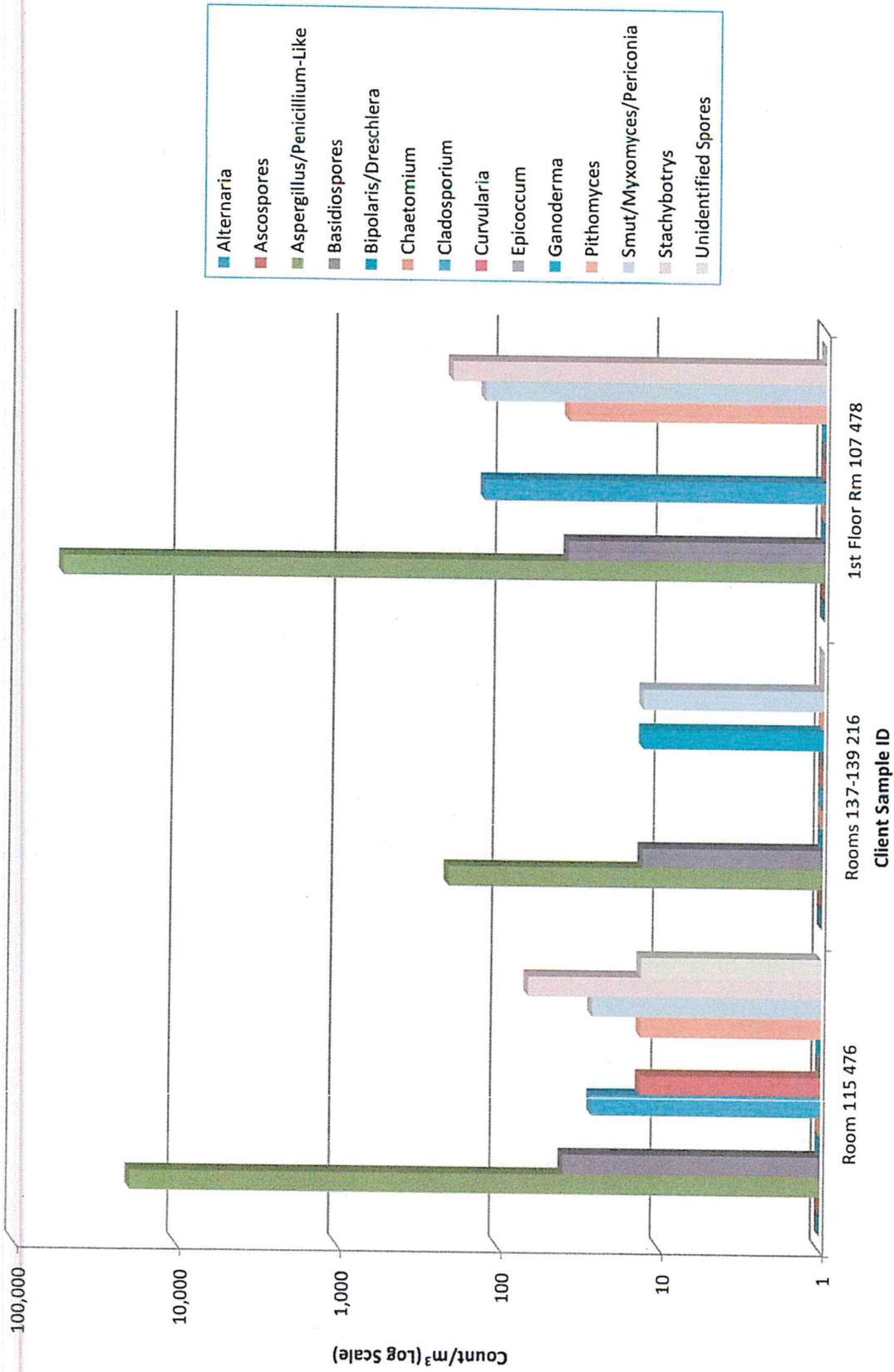
Note: Graph may understate the importance of certain genre of spores.

### Project: Courthouse 1st Floor 13-235



Note: Graph may understate the importance of certain genre of spores.

# Project: Courthouse 1st Floor 13-235



Note: Graph may understate the importance of certain genre of spores.



Standard Spore List	
Alternaria	Common allergen causing hay fever or hypersensitivity reactions that sometimes lead to asthma, serious infections are rare, except in people with compromised immune systems. Normal agents from the decomposition of plants.
Arthrimum	No reported infections associated with this fungus. Normally not found indoors.
Ascospores	Very common outdoor spore, associated with rain and moisture.
Aspergillus/Penicillium-Like	Possible allergen. Common cause of respiratory irritation and infection. Found on water damaged wallpaper, carpet and organic materials.
Basidiospores	Possible allergen to sensitive individuals, no known serious health effects associated with this fungus. Mushrooms and dry rot are examples of basidiospore producing fungi.
Bipolaris/Dreschlera	Allergen that can affect nose, skin, eye and upper respiratory track. Found on grasses, grains and decaying food.
Botrytis	Potential allergen, hay fever and asthma effects. Parasite commonly found growing on indoor plants.
Chaetomium	Not well studied but possible allergen with hay fever and asthma effects. Rare cases of nail infections. Found on a variety of cellulose, paper and plant compost.
Cladosporium	Potential allergen, hay fever and asthma effects. Grows well in damp environments, on textiles and window sills.
Curvularia	Hay fever, asthma and or allergic fungal sinusitis are some of the potential allergens associated with this fungi. Possible human health risk. Has been known to cause onychomycosis, ocular keratitis, sinusitis, mycetoma, pneumonia, endocarditis, cerebral abscess, and disseminated infection. Most cases are from immunocompromised patients. Grows on various indoor building materials.
Epicoccum	Potential allergen, effects are hay fever, asthma and skin allergies. Found in soil, air and rotting vegetation.
Fusarium	Potential allergen, hay fever and asthma effects. Commonly found on fruit rot, requires very wet conditions.
Ganoderma	Commonly found in the atmosphere, grows on wood products. Possible allergen at high concentrations.
Memnoniella	Mycotoxin producing spore related to and often found in conjunction with Stachybotrys.
Nigrospora	Potential allergen, hay fever and asthma effects. Usually not found growing indoors. Found on decaying plant material and soil.
Oidium/Peronospora	Common obligate parasites on leaves, stems, flowers, and fruits of living higher plants.
Pithomyces	Possible allergen. Grows well on paper indoors given the right conditions.
Rust	Potential allergen, hay fever and asthma effects. Rarely found growing indoors.
Smut/Myxomyces/Periconia	Potential allergen, hay fever and asthma effects. Rarely found growing indoors.
Stachybotrys	Often referred to as "toxic black mold." It has the ability to produce mycotoxins which may cause a burning sensation in the mouth, throat and nasal passages. Chronic exposure has been known to cause headaches, diarrhea, memory loss and brain damage. Found growing on water damaged cellulose, paper and ceiling tiles.
Torula	Potential allergen, hay fever and asthma effects. Potential allergen, hay fever and asthma effects. Found growing on water damaged cellulose, paper, wicker, straw baskets and ceiling tiles.
Ulocladium	Grows well on cellulose containing materials like paper, straw, wallboard. Requires very wet conditions.
Unidentified Spores	N/A
Hyphal Fragments	Branched structures with cell walls. Hyphae are somewhat analogous to stems or roots in plants whereas the spores would be analogous to the seeds.
Pollen	Allergen that causes hay fever. Pollen is microscopic round or oval grains produced by plants.

AEML, Inc. assumes no liability or warranty on the use of, or interpretation of the data provided within this report. Responsibility lies solely on the client for the use and interpretation of the results provide herein. Results of the analysis cannot be interpreted without physical inspection of the area tested or without consideration for the structure's characteristics. Generally, if indoor readings are greater than 90% of outdoor readings, further investigation or testing may be warranted. More information on Indoor Air Quality and mold can be found on the EPA website "[www.epa.gov/iaq/mold/moldresources.html](http://www.epa.gov/iaq/mold/moldresources.html)" and the Center for Disease Control website "[www.cdc.gov/mold/](http://www.cdc.gov/mold/)".

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Project: Courthouse 2nd Floor 13-235  
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**AEML Test: A001 Spore Trap Analysis**

Spore Types	131204M001			131204M002			131204M003			131204M004		
	Raw Count	Count/m <sup>3</sup>	%	Raw Count	Count/m <sup>3</sup>	%	Raw Count	Count/m <sup>3</sup>	%	Raw Count	Count/m <sup>3</sup>	%
Alternaria	-	-	-	-	-	-	-	-	-	-	-	-
Arthrinium	-	-	-	-	-	-	-	-	-	-	-	-
Ascospores	1	13	<1	-	-	-	-	-	-	2	27	<1
Aspergillus/Penicillium-Like	2,565*	34,200	100	1,440*	19,200	99	2,700*	36,000	100	207	2,760	82
Basidiospores	1	13	<1	2	27	<1	-	-	-	10	133	4
Bipolaris/Dreschlera	2	27	<1	-	-	-	-	-	-	-	-	-
Botrytis	-	-	-	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-	-	-	-
Cladosporium	2	27	<1	4	53	<1	3	40	<1	7	93	3
Curvularia	1	13	<1	-	-	-	-	-	-	3	40	1
Epicoccum	-	-	-	-	-	-	-	-	-	1	13	<1
Fusarium	-	-	-	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-	1	13	<1
Memnoniella	-	-	-	-	-	-	-	-	-	-	-	-
Nigrospora	2	27	<1	-	-	-	-	-	-	-	-	-
Oidium/Peronospora	-	-	-	-	-	-	-	-	-	-	-	-
Pithomyces	1	13	<1	-	-	-	1	13	<1	-	-	-
Rust	-	-	-	-	-	-	-	-	-	-	-	-
Smut/Myxomycetes/Periconia	-	-	-	2	27	<1	1	13	<1	7	93	3
Stachybotrys	-	-	-	-	-	-	-	-	-	14	187	6
Torula	-	-	-	-	-	-	-	-	-	-	-	-
Ulocladium	-	-	-	-	-	-	-	-	-	-	-	-
Unidentified Spores	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Spores</b>	<b>2,575</b>	<b>34,333</b>		<b>1,448</b>	<b>19,307</b>		<b>2,705</b>	<b>36,067</b>		<b>252</b>	<b>3,360</b>	
Hyphal Fragments	-	-	-	4	53	-	3	40	-	18	240	-
Pollen	-	-	-	-	-	-	1	13	-	3	40	-
Debris Rating	4			3			4			4		
Detection Limit	13			13			13			13		

\* Estimation performed due to high count.

*Joshua Krinsky*

Joshua Krinsky  
Technical Director



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Project: Courthouse 2nd Floor 13-235  
 Sampled: 12/2/2013  
 Received: 12/4/2013  
 Analysis Date: 12/4/2013  
 Report Date: 12/4/2013  
 Batch: 38372

**AEML Test: A001 Spore Trap Analysis**

Sample ID:	131204M005	131204M006	131204M007	131204M008								
Client Sample ID:	Room 228 Courtm 222	Room 219 227	Room 223 461	Room 220 221								
Volume Sampled (L):	75	75	75	75								
Media:	Allergenco D	Allergenco D	Allergenco D	Allergenco D								
Percent of Trace Analyzed:	100% at 600X Magnification											
Spore Types	Raw Count	Count/m <sup>3</sup>	%	Raw Count	Count/m <sup>3</sup>	%	Raw Count	Count/m <sup>3</sup>	%	Raw Count	Count/m <sup>3</sup>	%
Alternaria	1	13	<1	-	-	<1	2	27	<1	-	-	<1
Arhtrium	-	-	-	-	-	-	-	-	-	-	-	-
Ascospores	1	13	<1	5	67	1	2	27	<1	3	40	1
Aspergillus/Penicillium-Like	220	2,933	89	447	5,960	90	214	2,853	89	175	2,333	80
Basidiospores	9	120	4	5	67	1	2	27	<1	12	160	5
Bipolaris/Dreschlera	-	-	-	1	13	<1	-	-	-	-	-	-
Botrytis	-	-	-	-	-	-	-	-	-	-	-	-
Chaetomium	1	13	<1	9	120	2	1	13	<1	1	13	<1
Cladosporium	4	53	2	15	200	3	8	107	3	8	107	4
Curvularia	-	-	-	2	27	<1	1	13	<1	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-	-	-	-
Ganoderma	1	13	<1	1	13	<1	1	13	<1	2	27	<1
Memnoniella	-	-	-	-	-	-	-	-	-	-	-	-
Nigrospora	-	-	-	1	13	<1	-	-	-	-	-	-
Oidium/Peronospora	-	-	-	-	-	-	-	-	-	-	-	-
Pithomyces	-	-	-	-	-	-	-	-	-	-	-	-
Rust	1	13	<1	-	-	-	1	13	<1	1	13	<1
Smut/Myxomyces/Periconia	3	40	1	3	40	<1	3	40	1	5	67	2
Stachybotrys	6	80	2	8	107	2	6	80	2	11	147	5
Torula	-	-	-	-	-	-	-	-	-	1	13	<1
Ulocladium	-	-	-	-	-	-	-	-	-	-	-	-
Unidentified Spores	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Spores</b>	<b>247</b>	<b>3,293</b>		<b>497</b>	<b>6,627</b>		<b>241</b>	<b>3,213</b>		<b>219</b>	<b>2,920</b>	
Hyphal Fragments	3	40		10	133		12	160		20	267	
Pollen	-	-		2	27		-	-		5	67	
Debris Rating	4			4			4			4		
Detection Limit	13			13			13			13		

\* Estimation performed due to high count.

*Joshua Krinsky*  
 Joshua Krinsky  
 Technical Director



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Project: Courthouse 2nd Floor 13-235  
Sampled: 12/2/2013  
Received: 12/4/2013  
Analysis Date: 12/4/2013  
Report Date: 12/4/2013  
Batch: 38372

**AEML Test: A001 Spore Trap Analysis**

Spore Types	Raw Count	Count/m <sup>3</sup>	%
Alternaria	—	—	—
Arthrinium	—	—	—
Ascospores	6	80	2
Aspergillus/Penicillium-Like	194	2,587	72
Basidiospores	12	160	4
Bipolaris/Dreschlera	1	13	<1
Botrytis	—	—	—
Chaetomium	—	—	—
Cladosporium	11	147	4
Curvularia	1	13	<1
Epicoccum	1	13	<1
Fusarium	—	—	—
Ganoderma	1	13	<1
Memnoniella	—	—	—
Nigrospora	—	—	—
Oidium/Peronospora	—	—	—
Pithomyces	—	—	—
Rust	—	—	—
Smut/Myxomycetes/Periconia	7	93	3
Stachybotrys	35	467	13
Torula	2	27	<1
Ulocladium	—	—	—
Unidentified Spores	—	—	—
<b>Total Spores</b>	<b>271</b>	<b>3,613</b>	
Hyphal Fragments	15	200	
Pollen	3	40	
Debris Rating		4	
Detection Limit		13	

\* Estimation performed due to high count.

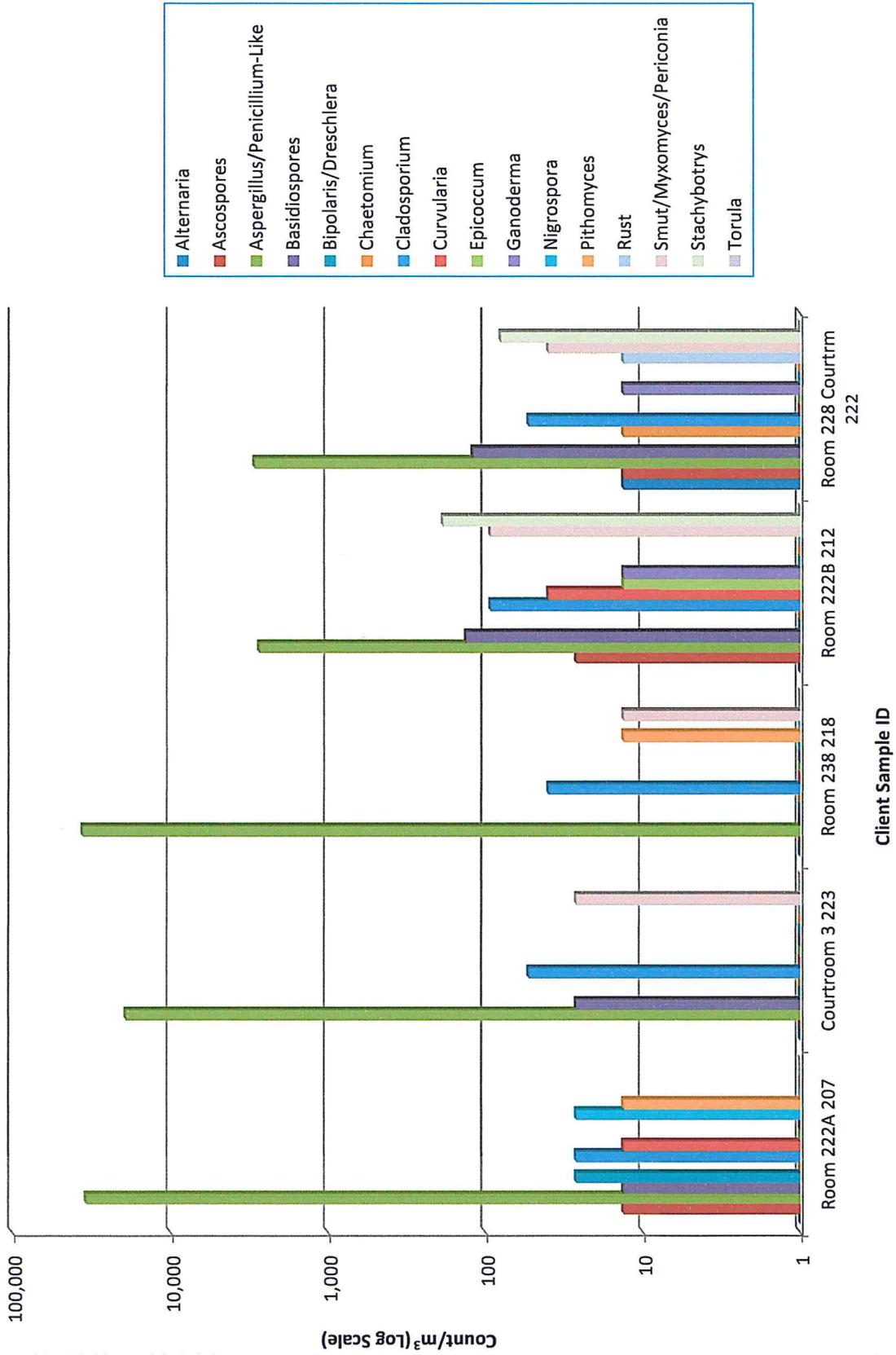
*Joshua Krinsky*

Joshua Krinsky  
Technical Director

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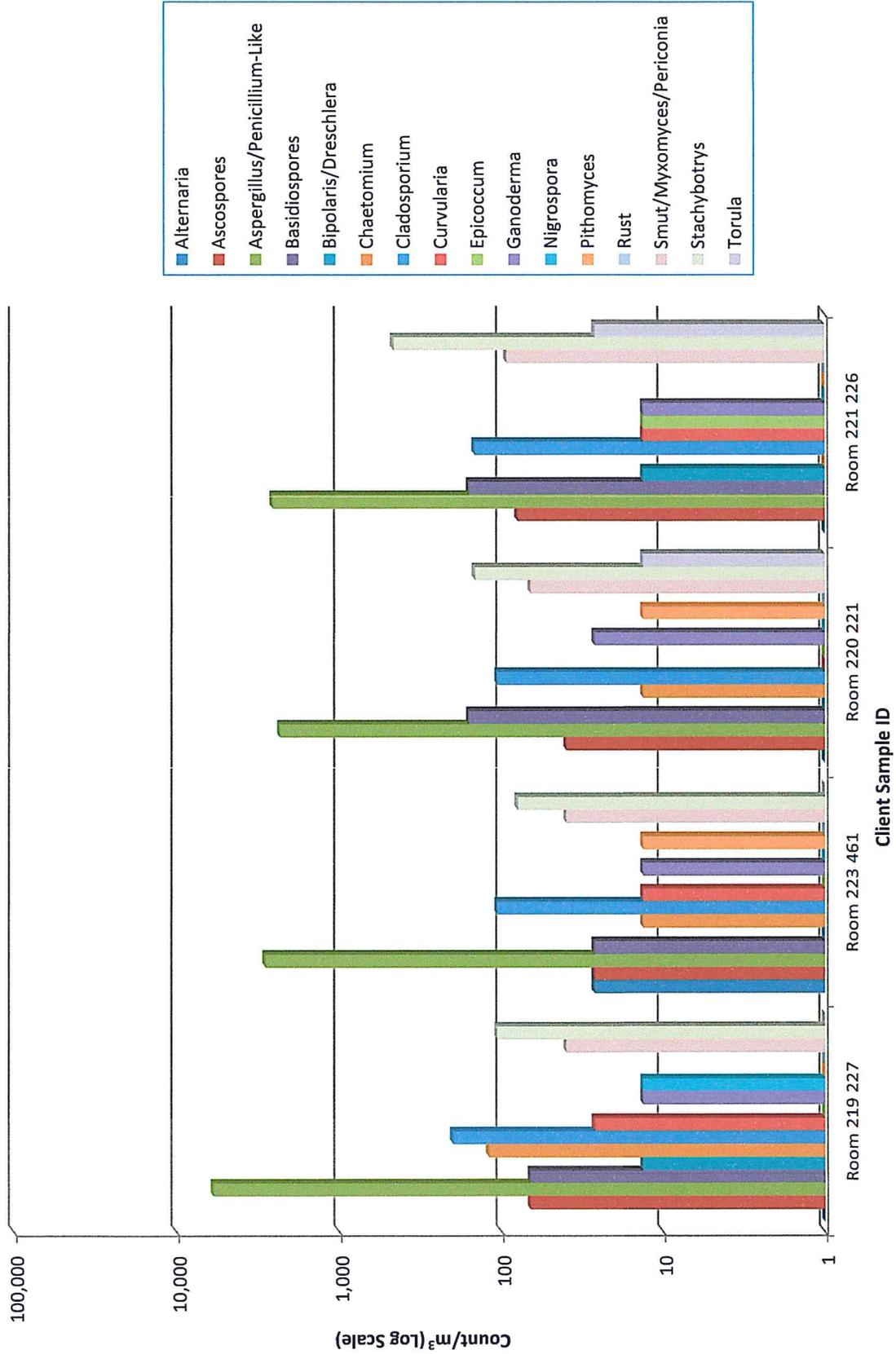


### Project: Courthouse 2nd Floor 13-235



Note: Graph may understate the importance of certain genre of spores.

### Project: Courthouse 2nd Floor 13-235



Note: Graph may understate the importance of certain genre of spores.



Standard Spore List	
Alternaria	Common allergen causing hay fever or hypersensitivity reactions that sometimes lead to asthma, serious infections are rare, except in people with compromised immune systems. Normal agents from the decomposition of plants.
Arthrimum	No reported infections associated with this fungus. Normally not found indoors.
Ascospores	Very common outdoor spore, associated with rain and mositure.
Aspergillus/Penicillium-Like	Possible allergen. Common cause of respiratory irritation and infection. Found on water damaged wallpaper, carpet and organic materials.
Basidiospores	Possible allergen to sensitive individuals, no known serious health effects associated with this fungus. Mushrooms and dry rot are examples of basidiospore producing fungi.
Bipolaris/Dreschlera	Allergen that can affect nose, skin, eye and upper respiratory track. Found on grasses, grains and decaying food.
Botrytis	Potential allergen, hay fever and asthma effects. Parasite commonly found growing on indoor plants.
Chaetomium	Not well studied but possible allergen with hay fever and asthma effects. Rare cases of nail infections. Found on a variety of cellulose, paper and plant compost.
Cladosporium	Potential allergen, hay fever and asthma effects. Grows well in damp environments, on textiles and window sills.
Curvularia	Hay fever, asthma and or allergic fungal sinusitis are some of the potential allergens associated with this fungi. Possible human health risk. Has been known to cause onychomycosis, ocular keratitis, sinusitis, mycetoma, pneumonia, endocarditis, cerebral abscess, and disseminated infection. Most cases are from immunocompromised patients. Grows on various indoor building materials.
Epicoccum	Potential allergen, effects are hay fever, asthma and skin allergies. Found in soil, air and rotting vegetation.
Fusarium	Potential allergen, hay fever and asthma effects. Commonly found on fruit rot, requires very wet conditions.
Ganoderma	Commonly found in the atmosphere, grows on wood products. Possible allergen at high concentrations.
Memnoniella	Mycotoxin producing spore related to and often found in conjunction with Stachybotrys.
Nigrospora	Potential allergen, hay fever and asthma effects. Usually not found growing indoors. Found on decaying plant material and soil.
Oidium/Peronospora	Common obligate parasites on leaves, stems, flowers, and fruits of living higher plants.
Pithomyces	Possible allergen. Grows well on paper indoors given the right conditions.
Rust	Potential allergen, hay fever and asthma effects. Rarely found growing indoors.
Smut/Myxomyces/Periconia	Potential allergen, hay fever and asthma effects. Rarely found growing indoors.
Stachybotrys	Often referred to as "toxic black mold." It has the ability to produce mycotoxins which may cause a burning sensation in the mouth, throat and nasal passages. Chronic exposure has been known to cause headaches, diarrhea, memory loss and brain damage. Found growing on water damaged cellulose, paper and ceiling tiles.
Torula	Potential allergen, hay fever and asthma effects. Potential allergen, hay fever and asthma effects. Found growing on water damaged cellulose, paper, wicker, straw baskets and ceiling tiles.
Ulocladium	Grows well on cellulose containing materials like paper, straw, wallboard. Requires very wet conditions.
Unidentified Spores	N/A
Hyphal Fragments	Branched structures with cell walls. Hyphae are somewhat analogous to stems or roots in plants whereas the spores would be analogous to the seeds.
Pollen	Allergen that causes hay fever. Pollen is microscopic round or oval grains produced by plants.

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Project: Courthouse 3rd Floor 13-235  
Sampled: 12/2/2013  
Received: 12/4/2013  
Analysis Date: 12/4/2013  
Report Date: 12/4/2013  
Batch: 38373

**AEML Test: A001 Spore Trap Analysis**

Spore Types	Sample ID: 131204M010		131204M011		131204M012	
	Raw Count	Count/m <sup>3</sup>	Raw Count	Count/m <sup>3</sup>	Raw Count	Count/m <sup>3</sup>
Alternaria	-	-	-	-	-	-
Arthrinium	-	-	-	-	-	-
Ascospores	-	-	1	13	-	-
Aspergillus/Penicillium-Like	113	1,507	187	2,493	90	1,200
Basidiospores	2	27	2	27	-	-
Bipolaris/Dreschlera	-	-	-	-	-	-
Botrytis	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-
Cladosporium	9	120	6	80	1	13
Curvularia	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-
Ganoderma	1	13	-	-	-	-
Memmoniella	-	-	-	-	-	-
Nigrospora	-	-	-	-	-	-
Oidium/Peronospora	-	-	-	-	-	-
Pithomyces	-	-	-	-	-	-
Rust	-	-	-	-	-	-
Smut/Myxomyces/Periconia	1	13	-	-	-	-
Stachybotrys	-	-	-	-	-	-
Torula	-	-	-	-	-	-
Ulocladium	-	-	-	-	-	-
Unidentified Spores	-	-	-	-	-	-
<b>Total Spores</b>	<b>126</b>	<b>1,680</b>	<b>196</b>	<b>2,613</b>	<b>91</b>	<b>1,213</b>
Hyphal Fragments	1	13	2	27	2	27
Pollen	-	-	-	-	-	-
Debris Rating	4	-	3	-	-	3
Detection Limit	13	-	13	-	-	13

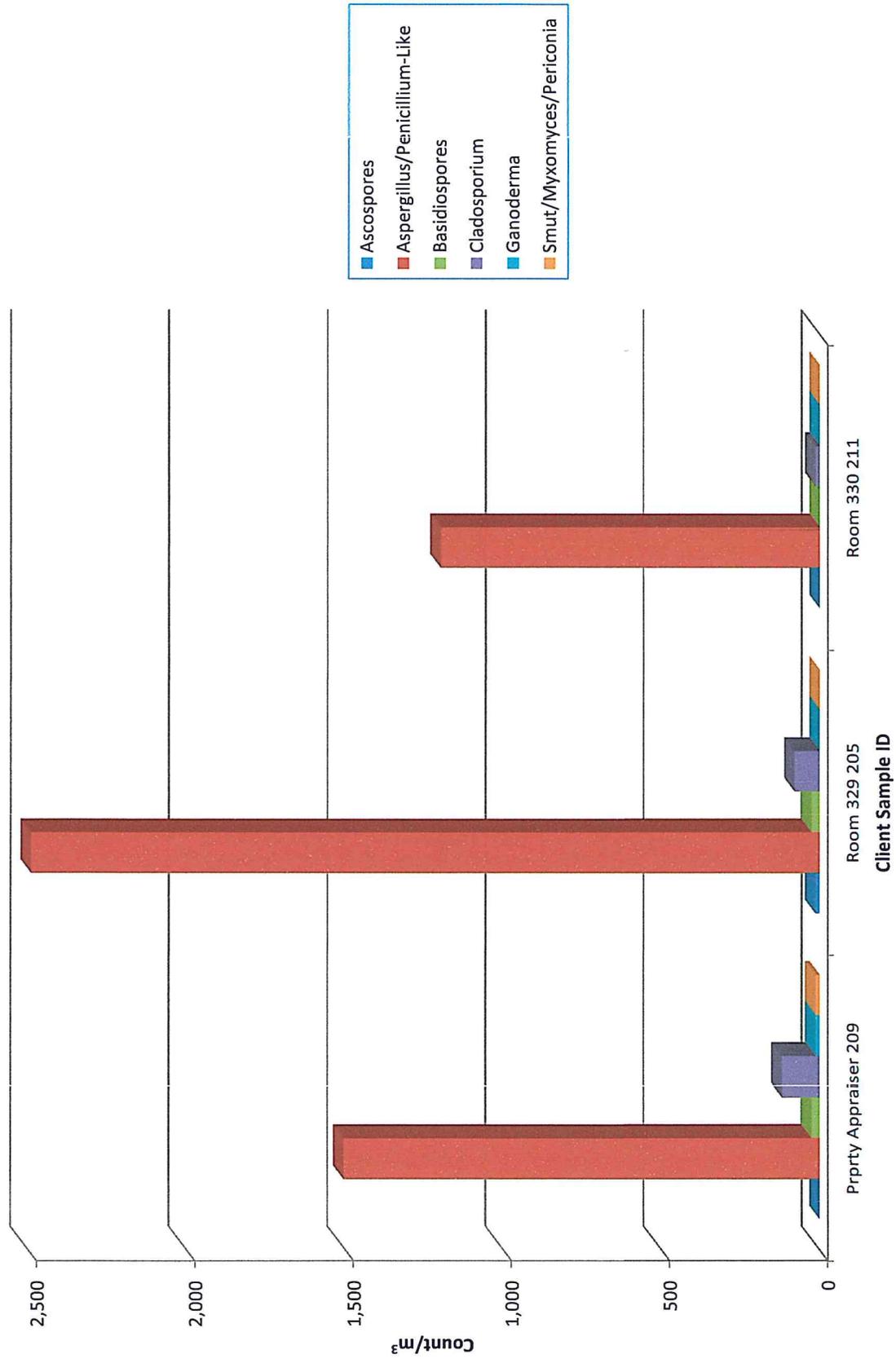
*Joshua Krinsky*

**Joshua Krinsky**  
Technical Director

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### Project: Courthouse 3rd Floor 13-235



Note: Graph may understate the importance of certain genre of spores.



Standard Spore List	
Alternaria	Common allergen causing hay fever or hypersensitivity reactions that sometimes lead to asthma. serious infections are rare, except in people with compromised immune systems. Normal agents from the decomposition of plants.
Arthrinium	No reported infections associated with this fungus. Normally not found indoors.
Ascospores	Very common outdoor spore, associated with rain and moisture.
Aspergillus/Penicillium-Like	Possible allergen. Common cause of respiratory irritation and infection. Found on water damaged wallpaper, carpet and organic materials.
Basidiospores	Possible allergen to sensitive individuals, no known serious health effects associated with this fungus. Mushrooms and dry rot are examples of basidiospore producing fungi.
Bipolaris/Dreschlera	Allergen that can affect nose, skin, eye and upper respiratory track. Found on grasses, grains and decaying food.
Botrytis	Potential allergen, hay fever and asthma effects. Parasite commonly found growing on indoor plants.
Chaetomium	Not well studied but possible allergen with hay fever and asthma effects. Rare cases of nail infections. Found on a variety of cellulose, paper and plant compost.
Cladosporium	Potential allergen, hay fever and asthma effects. Grows well in damp environments, on textiles and window sills.
Curvularia	Hay fever, asthma and or allergic fungal sinusitis are some of the potential allergens associated with this fungi. Possible human health risk. Has been known to cause onychomycosis, ocular keratitis, sinusitis, mycetoma, pneumonia, endocarditis, cerebral abscess, and disseminated infection. Most cases are from immunocompromised patients. Grows on various indoor building materials.
Epicoccum	Potential allergen, effects are hay fever, asthma and skin allergies. Found in soil, air and rotting vegetation.
Fusarium	Potential allergen, hay fever and asthma effects. Commonly found on fruit rot, requires very wet conditions.
Ganoderma	Commonly found in the atmosphere, grows on wood products. Possible allergen at high concentrations.
Memnoniella	Mycotoxin producing spore related to and often found in conjunction with Stachybotrys.
Nigrospora	Potential allergen, hay fever and asthma effects. Usually not found growing indoors.
Oidium/Peronospora	Common obligate parasites on leaves, stems, flowers, and fruits of living higher plants.
Pithomyces	Possible allergen. Grows well on paper indoors given the right conditions.
Rust	Potential allergen, hay fever and asthma effects. Rarely found growing indoors.
Smut/Myxomyces/Periconia	Potential allergen, hay fever and asthma effects. Rarely found growing indoors.
Stachybotrys	Often referred to as "toxic black mold." It has the ability to produce mycotoxins which may cause a burning sensation in the mouth, throat and nasal passages. Chronic exposure has been known to cause headaches, diarrhea, memory loss and brain damage. Found growing on water damaged cellulose, paper and ceiling tiles.
Torula	Potential allergen, hay fever and asthma effects. Potential allergen, hay fever and asthma effects. Found growing on water damaged cellulose, paper, wicker, straw baskets and ceiling tiles.
Ulocladium	Grows well on cellulose containing materials like paper, straw, wallboard. Requires very wet conditions.
Unidentified Spores	N/A
Hyphal Fragments	Branched structures with cell walls. Hyphae are somewhat analogous to stems or roots in plants whereas the spores would be analogous to the seeds.
Pollen	Allergen that causes hay fever. Pollen is microscopic round or oval grains produced by plants.

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Project: Courthouse 13-252-2  
Sampled: 12/31/2013  
Received: 1/6/2014  
Analysis Date: 1/6/2014  
Report Date: 1/6/2014  
Batch: 39414

**AEML Test: S001 Swab Analysis**

Sample ID:	140106K040	140106K041	140106K042	140106K043					
Client Sample ID:	On Roof-Unit 3 Blower	Roof AC Unit #1 Blwr	Roof-Unit 2-Blower	Old Bldg-East 111C					
Area Swabbed (cm <sup>2</sup> ):	1.61	1.61	1.61	1.61					
Media:	Swab	Swab	Swab	Swab					
Sample Analysis:	Analyzed at 600X Magnification								
Spore Types	Raw Count	Count/cm <sup>2</sup>	%	Raw Count	Count/cm <sup>2</sup>	%	Raw Count	Count/cm <sup>2</sup>	%
Alternaria	-	-	-	-	-	-	-	-	-
Aspergillus	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium-Like	122	3,031	60	12	298	16	17,663	438,832	100
Basidiospores	-	-	-	-	-	-	-	-	60
Bipolaris/Dreschlera	-	-	-	-	-	-	-	-	-
Botrytis	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	82	2,037	40	62	1,540	84	-	-	50
Curvularia	-	-	-	-	-	-	-	-	20
Epicoccum	-	-	-	-	-	-	-	-	10
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Memnoniella	-	-	-	-	-	-	-	-	-
Nigrospora	-	-	-	-	-	-	-	-	-
Oidium/Peronospora	-	-	-	-	-	-	-	-	-
Pithomyces	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Smut/Myxomyces/Periconia	-	-	-	-	-	-	-	-	-
Stachybotrys	-	-	-	-	-	-	-	-	-
Torula	-	-	-	-	-	-	-	-	-
Ulocladium	-	-	-	-	-	-	-	-	-
Unidentified Spores	-	-	-	-	-	-	-	-	-
<b>Total Spores</b>	<b>204</b>	<b>5,068</b>		<b>74</b>	<b>1,839</b>		<b>17,663</b>	<b>438,832</b>	<b>497</b>
Hyphal Fragments	2	50		52	1,292		247	6,137	248
Detection Limit		50		50	293				50

*Joshua Krinsky*

**Joshua Krinsky**  
Technical Director

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Project: Courthouse 13-252-2  
 Sampled: 12/31/2013  
 Received: 1/6/2014  
 Analysis Date: 1/6/2014  
 Report Date: 1/6/2014  
 Batch: 39414

**AEML Test: S001 Swab Analysis**

Spore Types	Raw Count	Count/cm <sup>2</sup>	%
Alternaria	-	-	-
Arthrinium	-	-	-
Ascospores	-	-	-
Aspergillus/Penicillium-Like	328	8,149	76
Basidiospores	-	-	-
Bipolaris/Dreschlera	-	-	-
Botrytis	-	-	-
Chaetomium	-	-	-
Cladosporium	102	2,534	24
Curvularia	-	-	-
Epicoccum	-	-	-
Fusarium	-	-	-
Ganoderma	-	-	-
Memmoniella	-	-	-
Nigrospora	-	-	-
Oidium/Peronospora	-	-	-
Pithomyces	-	-	-
Rust	-	-	-
Smut/Myxomycetes/Periconia	-	-	-
Stachybotrys	-	-	-
Torula	-	-	-
Ulocladium	-	-	-
Unidentified Spores	-	-	-
<b>Total Spores</b>	<b>430</b>	<b>10,683</b>	
Hyphal Fragments	76	1,888	
Detection Limit		50	

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Project: 3rd Floor-New Building  
Sampled: 12/31/2013  
Received: 1/6/2014  
Analysis Date: 1/6/2014  
Report Date: 1/6/2014  
Batch: 39419

**AEML Test: A001 Spore Trap Analysis**

Sample ID:	140106K058	140106K059	140106K060	140106K061					
Client Sample ID:	Rm 318-Back Office	Rm 329-Back Office	Ladies Bathroom	Mens Bathroom					
Volume Sampled (L):	75	75	75	75					
Media:	Allergenco D	Allergenco D	Allergenco D	Allergenco D					
Percent of Trace Analyzed:	100% at 600X Magnification								
Spore Types	Raw Count	Count/m <sup>3</sup>	%	Raw Count	Count/m <sup>3</sup>	%	Raw Count	Count/m <sup>3</sup>	%
Alternaria	-	-	-	-	-	-	-	-	-
Arthrinium	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	1	13	<1
Aspergillus/Penicillium-Like	121	1,613	97	137	1,827	97	208	2,773	98
Basidiospores	-	-	-	-	-	-	1	13	<1
Bipolaris/Dreschlera	-	-	-	-	-	-	-	-	-
Botrytis	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	1	13	<1	-	-	-
Cladosporium	-	-	-	1	13	<1	2	27	<1
Curvularia	2	27	2	1	13	<1	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Memmoniella	-	-	-	-	-	-	-	-	-
Nigrospora	-	-	-	-	-	-	-	-	-
Oidium/Peronospora	-	-	-	-	-	-	-	-	-
Pithomyces	1	13	<1	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Smut/Myxomyces/Periconia	-	-	-	1	13	<1	-	-	-
Stachybotrys	1	13	<1	-	-	-	-	-	-
Torula	-	-	-	-	-	-	-	-	-
Ulocladium	-	-	-	-	-	-	-	-	-
Unidentified Spores	-	-	-	-	-	-	-	-	-
<b>Total Spores</b>	<b>125</b>	<b>1,667</b>		<b>141</b>	<b>1,880</b>		<b>321</b>	<b>4,280</b>	
Hyphal Fragments	3	40		2	27		2	27	
Pollen	1	13		1	13		-	-	
Debris Rating	4			4			4		
Detection Limit	13			13			13		

*Joshua Krinsky*

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Technical Director

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Project: 3rd Floor-New Building  
 Sampled: 12/31/2013  
 Received: 1/6/2014  
 Analysis Date: 1/6/2014  
 Report Date: 1/6/2014  
 Batch: 39419

**AEML Test: A001 Spore Trap Analysis**

Spore Types	Raw Count	Count/m <sup>3</sup>	%
Alternaria	-	-	-
Arthrinium	-	-	-
Ascospores	1	13	2
Aspergillus/Penicillium-Like	47	627	85
Basidiospores	1	13	2
Bipolaris/Dreschlera	-	-	-
Botrytis	-	-	-
Chaetomium	3	40	5
Cladosporium	2	27	4
Curvularia	-	-	-
Epicoccum	-	-	-
Fusarium	-	-	-
Ganoderma	-	-	-
Memmoniella	-	-	-
Nigrospora	-	-	-
Oidium/Peronospora	-	-	-
Pithomyces	-	-	-
Rust	-	-	-
Smut/Myxomyces/Periconia	1	13	2
Stachybotrys	-	-	-
Torula	-	-	-
Ulocladium	-	-	-
Unidentified Spores	-	-	-
<b>Total Spores</b>	<b>55</b>	<b>733</b>	
Hyphal Fragments	5	67	
Pollen	-	-	
Debris Rating	-	3	
Detection Limit	-	13	

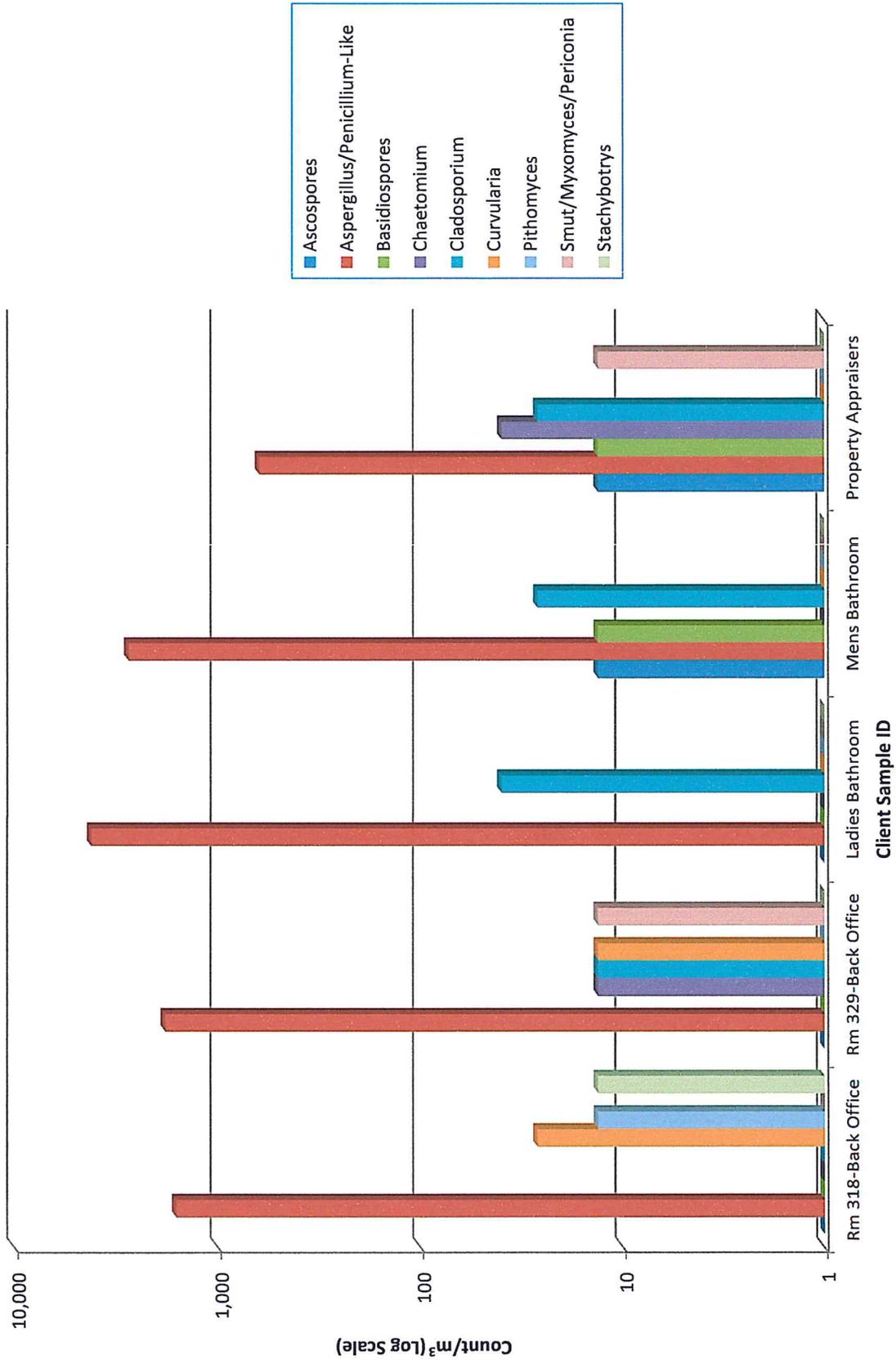
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## Project: 3rd Floor-New Building



Note: Graph may understate the importance of certain genre of spores.



Standard Spore List	
Alternaria	Common allergen causing hay fever or hypersensitivity reactions that sometimes lead to asthma, serious infections are rare, except in people with compromised immune systems. Normal agents from the decomposition of plants.
Arthrinium	No reported infections associated with this fungus. Normally not found indoors.
Ascozporas	Very common outdoor spore, associated with rain and moisture.
Aspergillus/Penicillium-Like	Possible allergen. Common cause of respiratory irritation and infection. Found on water damaged wallpaper, carpet and organic materials.
Basidiospores	Basidiospore producing fungi.
Bipolaris/Dreschlera	Allergen that can affect nose, skin, eye and upper respiratory track. Found on grasses, grains and decaying food.
Botrytis	Potential allergen, hay fever and asthma effects. Parasite commonly found growing on indoor plants.
Chaetomium	Not well studied but possible allergen with hay fever and asthma effects. Rare cases of cellulose, paper and plant compost.
Cladosporium	Potential allergen, hay fever and asthma effects. Grows well in damp environments, on textiles and window sills.
Curvularia	Hay fever, asthma and or allergic fungal sinusitis are some of the potential allergens associated with this fungi. Possible human health risk. Has been known to cause onychomycosis, ocular keratitis, sinusitis, mycetoma, pneumonia, endocarditis, cerebral abscess, and disseminated infection. Most cases are from immunocompromised patients. Grows on various indoor building materials.
Epicoccum	Potential allergen, effects are hay fever, asthma and skin allergies. Found in soil, air and rotting vegetation.
Fusarium	Potential allergen, hay fever and asthma effects. Commonly found on fruit rot, requires very wet conditions.
Ganoderma	Commonly found in the atmosphere, grows on wood products. Possible allergen at high concentrations.
Memnoniella	Mycotoxin producing spore related to and often found in conjunction with Stachybotrys.
Nigrospora	Potential allergen, hay fever and asthma effects. Usually not found growing indoors. Found on decaying plant material and soil.
Oidium/Peronospora	Common obligate parasites on leaves, stems, flowers, and fruits of living higher plants.
Pithomyces	Possible allergen. Grows well on paper indoors given the right conditions.
Rust	Potential allergen, hay fever and asthma effects. Rarely found growing indoors.
Smut/Myxomyces/Periconia	Potential allergen, hay fever and asthma effects. Rarely found growing indoors.
Stachybotrys	Often referred to as "toxic black mold." It has the ability to produce mycotoxins which may cause a burning sensation in the mouth, throat and nasal passages. Chronic exposure has been known to cause headaches, diarrhea, memory loss and brain damage. Found growing on water damaged cellulose, paper and ceiling tiles.
Torula	Potential allergen, hay fever and asthma effects. Potential allergen, hay fever and asthma effects. Found growing on water damaged cellulose, paper, wicker, straw baskets and ceiling tiles.
Ulocladium	Grows well on cellulose containing materials like paper, straw, wallboard. Requires very wet conditions.
Unidentified Spores	N/A
Hyphal Fragments	Branched structures with cell walls. Hyphae are somewhat analogous to stems or roots in plants whereas the spores would be analogous to the seeds.
Pollen	Allergen that causes hay fever. Pollen is microscopic round or oval grains produced by plants.

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Project: 1st Floor New Bldg 13-235-2  
Sampled: 12/30/2013  
Received: 1/6/2014  
Analysis Date: 1/6/2014  
Report Date: 1/6/2014  
Batch: 39411

**AEML Test: S001 Swab Analysis**

Sample ID:	140106K018	140106K019	140106K020	140106K024					
Client Sample ID:	Rm 135-Insulflex Lift	Rm 135-Vent Left	Rm 135-Metal Duct R	Hallway Left Mens Rm					
Area Swabbed (cm <sup>2</sup> ):	1.61	1.61	1.61	1.61					
Media:	Swab	Swab	Swab	Swab					
Sample Analysis:	Analyzed at 600X Magnification								
Spore Types	Raw Count	Count/cm <sup>2</sup>	%	Raw Count	Count/cm <sup>2</sup>	%	Raw Count	Count/cm <sup>2</sup>	%
Alternaria	-	-	-	-	-	-	-	-	-
Arthrinium	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium-Like	14	348	100	989	24,571	42	-	-	-
Basidiospores	-	-	-	-	-	-	-	-	-
Bipolaris/Dreschlera	-	-	-	-	-	-	-	-	-
Botrytis	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	-	-	-	1,389	34,509	58	62,408	1,550,509	100
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Memmoniella	-	-	-	-	-	-	-	-	-
Nigrospora	-	-	-	-	-	-	-	-	-
Oidium/Peronospora	-	-	-	-	-	-	-	-	-
Pithomyces	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Smut/Myxomycetes/Periconia	-	-	-	-	-	-	-	-	-
Stachybotrys	-	-	-	-	-	-	-	-	-
Torula	-	-	-	-	-	-	-	-	-
Ulocladium	-	-	-	-	-	-	-	-	-
Unidentified Spores	-	-	-	-	-	-	-	-	-
<b>Total Spores</b>	<b>14</b>	<b>348</b>	<b>0</b>	<b>2,379</b>	<b>59,106</b>	<b>0</b>	<b>62,408</b>	<b>1,550,509</b>	<b>-</b>
Hyphal Fragments	-	-	-	236	5,863	-	848	21,068	-
Detection Limit	-	50	-	50	293	-	293	293	-

*Joshua Krinsky*  
Joshua Krinsky  
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Sampled: 12/30/2013  
Received: 1/6/2014  
Analysis Date: 1/6/2014  
Report Date: 1/6/2014  
Batch: 39411

**AEML Test: S001 Swab Analysis**

Spore Types	140106K025		140106K026		140106K027		140106K028	
	Raw Count	Count/cm <sup>2</sup>	Raw Count	Count/cm <sup>2</sup>	Raw Count	Count/cm <sup>2</sup>	Raw Count	Count/cm <sup>2</sup>
Alternaria	-	-	-	-	-	-	-	-
Arthrinium	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	-	-
Aspergillus/Penicillium-Like	-	-	-	-	-	-	-	-
Basidiospores	-	-	-	-	-	-	-	-
Bipolaris/Dreschlera	-	-	-	-	-	-	-	-
Botrytis	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-
Cladosporium	124	3,081	16,779	416,870	176	4,373	-	-
Curvularia	2	50	-	-	-	-	-	-
Epicoecum	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-
Memnoniella	-	-	-	-	-	-	-	-
Nigrospora	-	-	-	-	-	-	-	-
Oidium/Peronospora	-	-	-	-	-	-	-	-
Pithomyces	2	50	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-
Smut/Myxomycetes/Periconia	-	-	-	-	-	-	-	-
Stachybotrys	-	-	-	-	-	-	-	-
Torula	-	-	-	-	-	-	-	-
Ulocladium	-	-	-	-	-	-	-	-
Unidentified Spores	-	-	-	-	-	-	-	-
<b>Total Spores</b>	<b>128</b>	<b>3,180</b>	<b>16,779</b>	<b>416,870</b>	<b>176</b>	<b>4,373</b>	<b>0</b>	<b>0</b>
Hyphal Fragments	22	547	518	12,870	36	894	-	-
Detection Limit	50	50	293	50	50	50	50	50

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Joshua Krinsky  
Technical Director

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Project: 1st Floor New Bldg 13-235-2  
Sampled: 12/30/2013  
Received: 1/6/2014  
Analysis Date: 1/6/2014  
Report Date: 1/6/2014  
Batch: 39411

**AEML Test: S001 Swab Analysis**

Spore Types	Raw Count	Count/cm <sup>2</sup>	%
Alternaria	-	-	-
Arthrinium	-	-	-
Ascospores	80	1,988	98
Aspergillus/Penicillium-Like	-	-	-
Basidiospores	-	-	-
Bipolaris/Dreschlera	-	-	-
Botrytis	-	-	-
Chaetomium	-	-	-
Cladosporium	2	50	2
Curvularia	-	-	-
Epicoccum	-	-	-
Fusarium	-	-	-
Ganoderma	-	-	-
Memnoniella	-	-	-
Nigrospora	-	-	-
Oidium/Peronospora	-	-	-
Pithomyces	-	-	-
Rust	-	-	-
Smut/Myxomyces/Periconia	-	-	-
Stachybotrys	-	-	-
Torula	-	-	-
Ulocladium	-	-	-
Unidentified Spores	-	-	-
<b>Total Spores</b>	<b>82</b>	<b>2,037</b>	
Hyphal Fragments	2	50	
Detection Limit		50	

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Project: 1st Floor New Bldg 13-235-2  
Sampled: 12/30/2013  
Received: 1/6/2014  
Analysis Date: 1/6/2014  
Report Date: 1/6/2014  
Batch: 39411

**AEML Test: A001 Spore Trap Analysis**

Sample ID:	140106K021	140106K022	140106K023						
Client Sample ID:	Ladies Rm 1st Fl 465	Mens Rm 1st Fl 072	Rm 104 054						
Volume Sampled (L):	75	75	75						
Media:	Allergenco D	Allergenco D	Allergenco D						
Percent of Trace Analyzed:	100% at 600X Magnification	100% at 600X Magnification	100% at 600X Magnification						
Spore Types	Raw Count	Count/m <sup>3</sup>	%	Raw Count	Count/m <sup>3</sup>	%	Raw Count	Count/m <sup>3</sup>	%
Alternaria	-	-	-	-	-	-	-	-	-
Arthrinium	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	2	27	1	-	-	-
Aspergillus/Penicillium-Like	11	147	41	159	2,120	95	3,938*	52,507	100
Basidiospores	5	67	19	-	-	-	-	-	-
Bipolaris/Dreschlera	-	-	-	-	-	-	-	-	-
Botrytis	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	5	67	19	4	53	2	2	27	<1
Curvularia	2	27	7	1	13	<1	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	1	13	<1	1	13	<1
Memnoniella	-	-	-	-	-	-	-	-	-
Nigrospora	-	-	-	-	-	-	-	-	-
Oidium/Peronospora	-	-	-	-	-	-	-	-	-
Pithomyces	2	27	7	1	13	<1	-	-	-
Rust	1	13	4	-	-	-	-	-	-
Smut/Myxomyces/Periconia	1	13	4	-	-	-	1	13	<1
Stachybotrys	-	-	-	-	-	-	-	-	-
Torula	-	-	-	-	-	-	-	-	-
Ulocladium	-	-	-	-	-	-	-	-	-
Unidentified Spores	-	-	-	-	-	-	-	-	-
<b>Total Spores</b>	<b>27</b>	<b>360</b>		<b>168</b>	<b>2,240</b>		<b>3,942</b>	<b>52,560</b>	
Hyphal Fragments	2	27		2	27		2	27	
Pollen	-	-	-	-	-	-	-	-	-
Debris Rating	3			3			3		
Detection Limit	13			13			13		

\* Estimation performed due to high count.

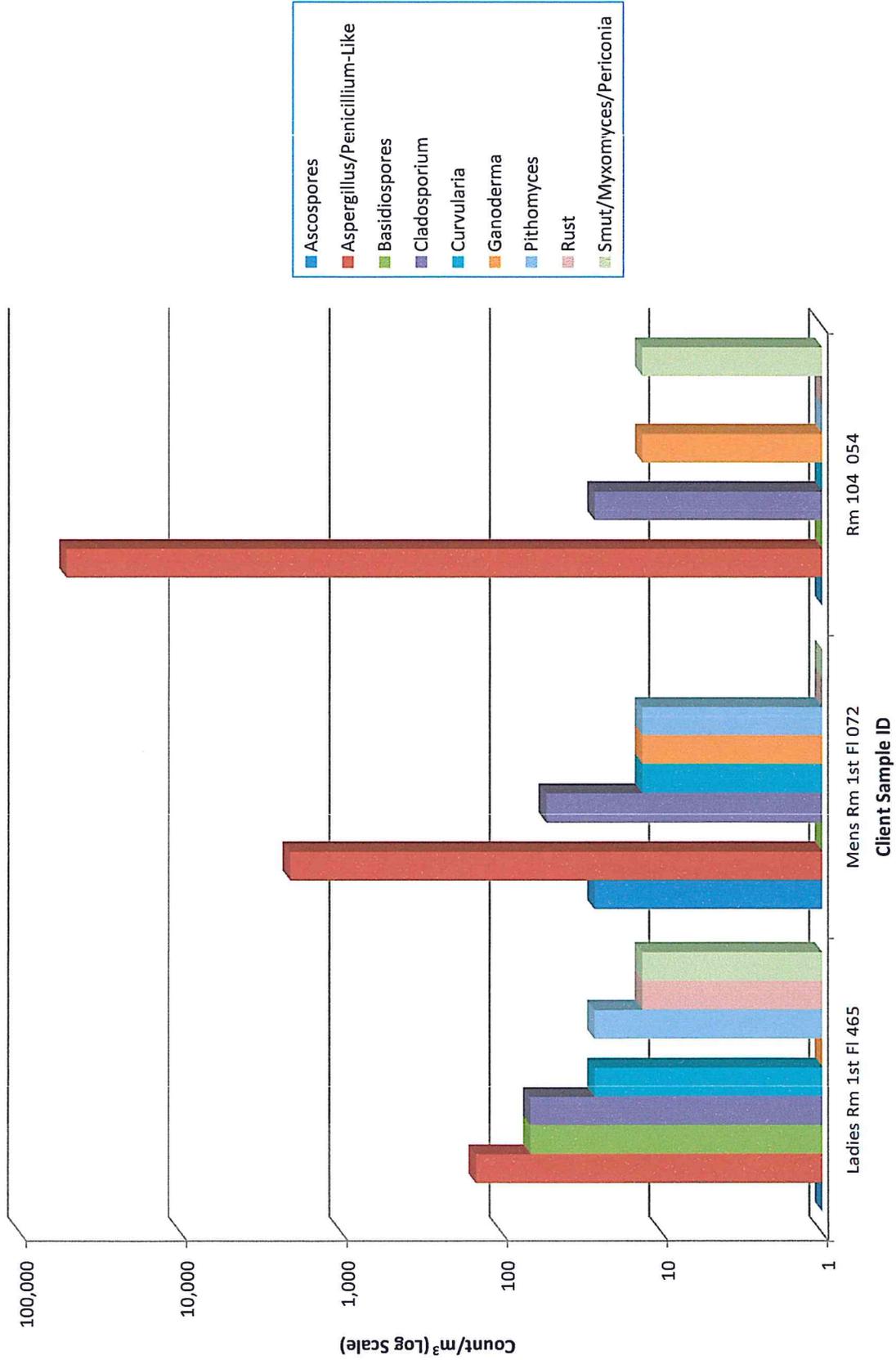
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### Project: 1st Floor New Bldg 13-235-2



Note: Graph may understate the importance of certain genre of spores.



Standard Spore List	
Alternaria	Common allergen causing hay fever or hypersensitivity reactions that sometimes lead to asthma. serious infections are rare, except in people with compromised immune systems. Normal agents from the decomposition of plants.
Arthrinium	No reported infections associated with this fungus. Normally not found indoors.
Ascospores	Very common outdoor spore, associated with rain and moisture.
Aspergillus/Penicillium-Like	Possible allergen. Common cause of respiratory irritation and infection. Found on water damaged wallpaper, carpet and organic materials.
Basidiospores	Possible allergen to sensitive individuals, no known serious health effects associated with this fungus. Mushrooms and dry rot are examples of basidiospore producing fungi.
Bipolaris/Dreschlera	Allergen that can affect nose, skin, eye and upper respiratory track. Found on grasses, grains and decaying food.
Botrytis	Potential allergen, hay fever and asthma effects. Parasite commonly found growing on indoor plants.
Chaetomium	Not well studied but possible allergen with hay fever and asthma effects. Rare cases of nail infections. Found on a variety of cellulose, paper and plant compost.
Cladosporium	Potential allergen, hay fever and asthma effects. Grows well in damp environments, on textiles and window sills.
Curvularia	Hay fever, asthma and or allergic fungal sinusitis are some of the potential allergens associated with this fungi. Possible human health risk. Has been known to cause onychomycosis, ocular keratitis, sinusitis, mycetoma, pneumonia, endocarditis, cerebral abscess, and disseminated infection. Most cases are from immunocompromised patients. Grows on various indoor building materials.
Epicoccum	Potential allergen, effects are hay fever, asthma and skin allergies. Found in soil, air and rotting vegetation.
Fusarium	Potential allergen, hay fever and asthma effects. Commonly found on fruit rot, requires very wet conditions.
Ganoderma	Commonly found in the atmosphere, grows on wood products. Possible allergen at high concentrations.
Memnoniella	Mycotoxin producing spore related to and often found in conjunction with Stachybotrys.
Nigrospora	Potential allergen, hay fever and asthma effects. Usually not found growing indoors. Found on decaying plant material and soil.
Oidium/Peronospora	Common obligate parasites on leaves, stems, flowers, and fruits of living higher plants.
Pithomyces	Possible allergen. Grows well on paper indoors given the right conditions.
Rust	Potential allergen, hay fever and asthma effects. Rarely found growing indoors.
Smut/Myxomyces/Periconia	Potential allergen, hay fever and asthma effects. Rarely found growing indoors.
Stachybotrys	Often referred to as "toxic black mold." It has the ability to produce mycotoxins which may cause a burning sensation in the mouth, throat and nasal passages. Chronic exposure has been known to cause headaches, diarrhea, memory loss and brain damage. Found growing on water damaged cellulose, paper and ceiling tiles.
Torula	Potential allergen, hay fever and asthma effects. Potential allergen, hay fever and asthma effects. Found growing on water damaged cellulose, paper, wicker, straw baskets and ceiling tiles.
Ulocladium	Grows well on cellulose containing materials like paper, straw, wallboard. Requires very wet conditions.
Unidentified Spores	N/A
Hyphal Fragments	Branched structures with cell walls. Hyphae are somewhat analogous to stems or roots in plants whereas the spores would be analogous to the seeds.
Pollen	Allergen that causes hay fever. Pollen is microscopic round or oval grains produced by plants.

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Project: Courthouse 13-252-2  
Sampled: 1/2/2014  
Received: 1/6/2014  
Analysis Date: 1/6/2014  
Report Date: 1/6/2014  
Batch: 39416

**AEML Test: A001 Spore Trap Analysis**

Sample ID:	140106K047	140106K048	140106K049	140106K050					
Client Sample ID:	24088	24079 Room-224	24102 Judges Rm	24080					
Volume Sampled (L):	75	75	75	75					
Media:	Allergenco D	Allergenco D	Allergenco D	Allergenco D					
Percent of Trace Analyzed:	100% at 600X Magnification								
Spore Types	Raw Count	Count/m <sup>3</sup>	%	Raw Count	Count/m <sup>3</sup>	%	Raw Count	Count/m <sup>3</sup>	%
Alternaria	-	-	-	-	-	<1	-	-	-
Arthrinium	-	-	-	-	-	-	-	-	-
Ascospores	13	173	1	4	53	<1	9	120	8
Aspergillus/Penicillium-Like	972*	12,960	95	630*	8,400	93	87	1,160	74
Basidiospores	7	93	<1	10	133	1	4	53	3
Bipolaris/Dreschlera	-	-	-	-	-	-	-	-	-
Botrytis	-	-	-	-	-	-	-	-	-
Chaetomium	12	160	1	2	27	<1	-	-	-
Cladosporium	8	107	<1	17	227	2	5	67	4
Curvularia	-	-	-	3	40	<1	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	2	27	<1	-	-	-	3	40	3
Memnoniella	-	-	-	-	-	-	-	-	-
Nigrospora	-	-	-	-	-	-	-	-	-
Oidium/Peronospora	-	-	-	-	-	-	-	-	-
Pithomyces	1	13	<1	-	-	-	1	13	<1
Rust	-	-	-	-	-	-	1	13	<1
Smut/Myxomyces/Periconia	2	27	<1	5	67	<1	6	80	5
Stachybotrys	1	13	<1	10	133	1	-	-	-
Torula	1	13	<1	-	-	-	-	-	-
Ulocladium	-	-	-	-	-	-	-	-	-
Unidentified Spores	-	-	-	-	-	-	-	-	-
<b>Total Spores</b>	<b>1,019</b>	<b>13,567</b>		<b>681</b>	<b>9,080</b>		<b>117</b>	<b>1,560</b>	
Hypal Fragments	12	160		12	160		4	53	
Pollen	1	13		3	40		2	27	
Debris Rating	4			4			4		
Detection Limit	13			13			13		

\* Estimation performed due to high count.

*Joshua Krinsky*

Joshua Krinsky  
Technical Director

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Project: Courthouse 13-252-2  
Sampled: 1/2/2014  
Received: 1/6/2014  
Analysis Date: 1/6/2014  
Report Date: 1/6/2014  
Batch: 39416

**AEML Test: A001 Spore Trap Analysis**

Sample ID:	140106K051		
Client Sample ID:	24078-Rm 221 A		
Volume Sampled (L):	75		
Media:	Allergenco D		
Percent of Trace Analyzed:	100% at 600X Magnification		
Spore Types	Raw Count	Count/m <sup>3</sup>	%
Alternaria	-	-	-
Arthrinium	-	-	-
Ascospores	6	80	3
Aspergillus/Penicillium-Like	144	1,920	76
Basidiospores	8	107	4
Bipolaris/Dreschlera	-	-	-
Botrytis	-	-	-
Chaetomium	-	-	-
Cladosporium	15	200	8
Curvularia	4	53	2
Epicoccum	1	13	<1
Fusarium	-	-	-
Ganoderma	5	67	3
Memnoniella	-	-	-
Nigrospora	-	-	-
Oidium/Peronospora	-	-	-
Pithomyces	-	-	-
Rust	-	-	-
Smut/Myxomyces/Periconia	6	80	3
Stachybotrys	-	-	-
Torula	-	-	-
Ulocladium	-	-	-
Unidentified Spores	-	-	-
<b>Total Spores</b>	<b>189</b>	<b>2,520</b>	
Hyphal Fragments	21	280	
Pollen	-	-	
Debris Rating	-	4	
Detection Limit	-	13	

\* Estimation performed due to high count.

*Joshua Krinsky*

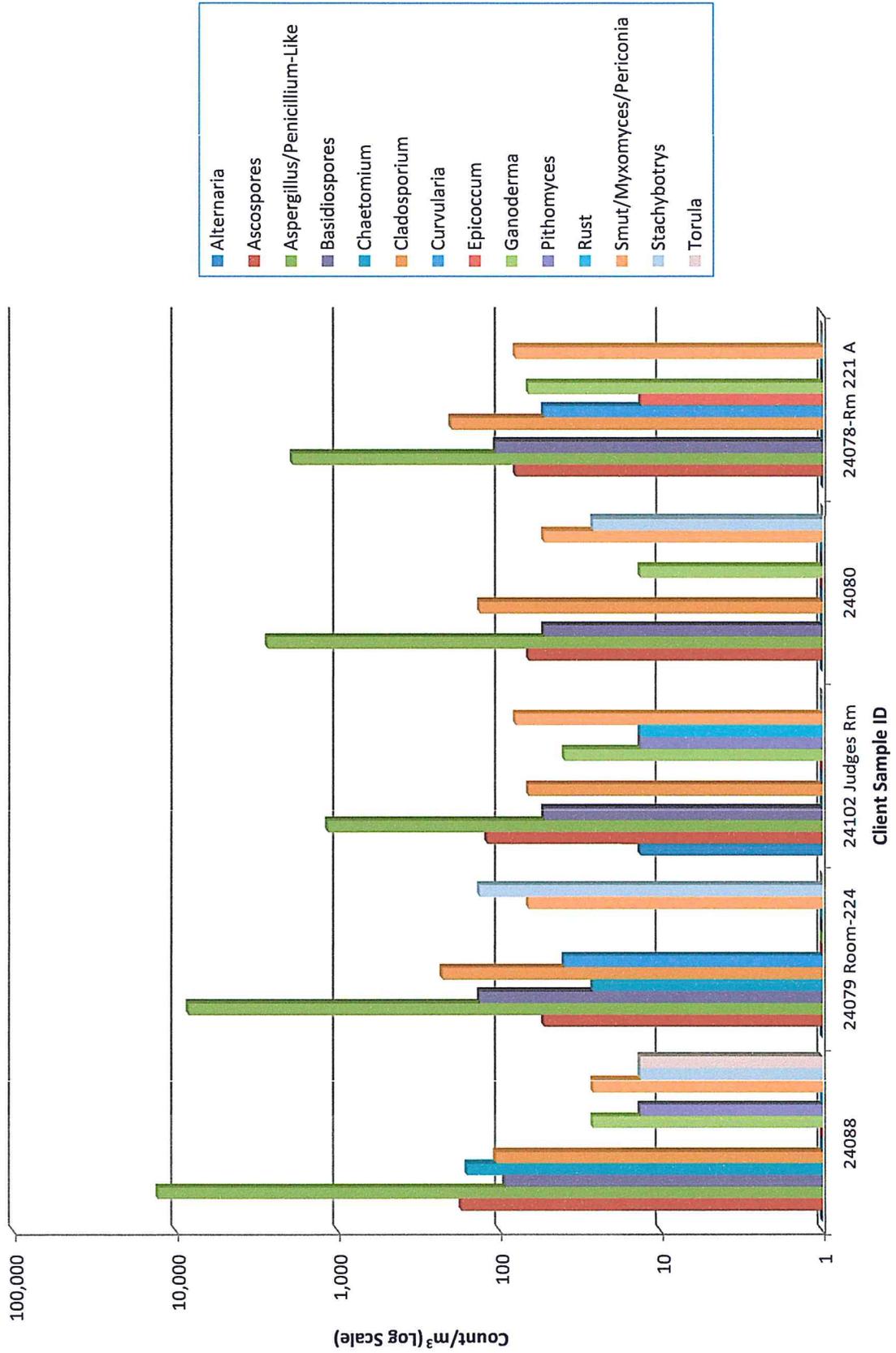
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## Project: Courthouse 13-252-2



Note: Graph may understate the importance of certain genre of spores.



Standard Spore List	
Alternaria	Common allergen causing hay fever or hypersensitivity reactions that sometimes lead to asthma, serious infections are rare, except in people with compromised immune systems. Normal agents from the decomposition of plants.
Arhtrinium	No reported infections associated with this fungus. Normally not found indoors.
Ascospores	Very common outdoor spore, associated with rain and moisture.
Aspergillus/Penicillium-Like	Possible allergen. Common cause of respiratory irritation and infection. Found on water damaged wallpaper, carpet and organic materials.
Basidiospores	Possible allergen to sensitive individuals, no known serious health effects associated with this fungus. Mushrooms and dry rot are examples of basidiospore producing fungi.
Bipolaris/Dreschlera	Allergen that can affect nose, skin, eye and upper respiratory tract. Found on grasses, grains and decaying food.
Botrytis	Potential allergen, hay fever and asthma effects. Parasite commonly found growing on indoor plants.
Chaetomium	Not well studied but possible allergen with hay fever and asthma effects. Rare cases of nail infections. Found on a variety of cellulose, paper and plant compost.
Cladosporium	Potential allergen, hay fever and asthma effects. Grows well in damp environments, on textiles and window sills.
Curvularia	Hay fever, asthma and or allergic fungal sinusitis are some of the potential allergens associated with this fungi. Possible human health risk. Has been known to cause onychomycosis, ocular keratitis, sinusitis, mycetoma, pneumonia, endocarditis, cerebral abscess, and disseminated infection. Most cases are from immunocompromised patients. Grows on various indoor building materials.
Epicoccum	Potential allergen, effects are hay fever, asthma and skin allergies. Found in soil, air and rotting vegetation.
Fusarium	Potential allergen, hay fever and asthma effects. Commonly found on fruit rot, requires very wet conditions.
Ganoderma	Commonly found in the atmosphere, grows on wood products. Possible allergen at high concentrations.
Memnoniella	Mycotoxin producing spore related to and often found in conjunction with Stachybotrys.
Nigrospora	Potential allergen, hay fever and asthma effects. Usually not found growing indoors. Found on decaying plant material and soil.
Oidium/Peronospora	Common obligate parasites on leaves, stems, flowers, and fruits of living higher plants.
Pithomyces	Possible allergen. Grows well on paper indoors given the right conditions.
Rust	Potential allergen, hay fever and asthma effects. Rarely found growing indoors.
Smut/Myxomyces/Periconia	Potential allergen, hay fever and asthma effects. Rarely found growing indoors.
Stachybotrys	Often referred to as "toxic black mold." It has the ability to produce mycotoxins which may cause a burning sensation in the mouth, throat and nasal passages. Chronic exposure has been known to cause headaches, diarrhea, memory loss and brain damage. Found growing on water damaged cellulose, paper and ceiling tiles.
Torula	Potential allergen, hay fever and asthma effects. Potential allergen, hay fever and asthma effects. Found growing on water damaged cellulose, paper, wicker, straw baskets and ceiling tiles.
Ulocladium	Grows well on cellulose containing materials like paper, straw, wallboard. Requires very wet conditions.
Unidentified Spores	N/A
Hypal Fragments	Branched structures with cell walls. Hyphae are somewhat analogous to stems or roots in plants whereas the spores would be analogous to the seeds.
Pollen	Allergen that causes hay fever. Pollen is microscopic round or oval grains produced by plants.

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Project: Courthouse 13-252-2  
Sampled: 1/2/2014  
Received: 1/6/2014  
Analysis Date: 1/6/2014  
Report Date: 1/6/2014  
Batch: 39403

**AEML Test: S001 Swab Analysis**

Spore Types	140106J052			140106J053			140106J054			140106J055		
	Raw Count	Count/cm <sup>2</sup>	%	Raw Count	Count/cm <sup>2</sup>	%	Raw Count	Count/cm <sup>2</sup>	%	Raw Count	Count/cm <sup>2</sup>	%
Alternaria	-	-	-	-	-	-	-	-	-	-	-	-
Arthrinium	-	-	-	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium-Like	-	-	-	671	16,671	33	-	-	-	236	5,863	58
Basidiospores	-	-	-	-	-	-	-	-	-	-	-	-
Bipolaris/Dreschlera	-	-	-	-	-	-	-	-	-	-	-	-
Botrytis	-	-	-	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-	-	-	-
Cladosporium	32,970	819,130	100	1,389	34,509	67	548	13,615	100	172	4,273	42
Curvularia	-	-	-	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-	-	-	-
Memnoniella	-	-	-	-	-	-	-	-	-	-	-	-
Nigrospora	-	-	-	-	-	-	-	-	-	-	-	-
Oidium/Peronospora	-	-	-	-	-	-	-	-	-	-	-	-
Pithomyces	-	-	-	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-	-	-	-
Smut/Myxomyces/Periconia	-	-	-	-	-	-	-	-	-	2	50	<1
Stachybotrys	-	-	-	-	-	-	-	-	-	-	-	-
Torula	-	-	-	-	-	-	-	-	-	-	-	-
Ulocladium	-	-	-	-	-	-	-	-	-	-	-	-
Unidentified Spores	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Spores</b>	<b>32,970</b>	<b>819,130</b>		<b>2,061</b>	<b>51,205</b>		<b>548</b>	<b>13,615</b>		<b>410</b>	<b>10,186</b>	
Hyphal Fragments	11,775	292,547		365	9,068		102	2,534		136	3,379	
Detection Limit		293			293			50			50	

*Joshua Krinsky*  
Joshua Krinsky  
Technical Director

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Project: Courthouse 13-252-2  
Sampled: 1/2/2014  
Received: 1/6/2014  
Analysis Date: 1/6/2014  
Report Date: 1/6/2014  
Batch: 39403

**AEML Test: T001 Tape Lift Analysis**

Spore Types	140106J044 1 Fl-Old Bldg-Unit C 15 Tape Analyzed at 600X Magnification		140106J045 1F-Old Bldg-W-Unit A 15 Tape Analyzed at 600X Magnification		140106J046 1 Fl-Old Bldg-Unit B 15 Tape Analyzed at 600X Magnification		140106J047* Crystal Oil Ceiling 15 Tape Analyzed at 600X Magnification	
	Raw Count	Count/cm <sup>2</sup>	%	Raw Count	Count/cm <sup>2</sup>	%	Raw Count	Count/cm <sup>2</sup>
Alternaria	-	-	-	-	-	-	-	-
Arthrinium	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	-	-
Aspergillus/Penicillium-Like	76	1,170	85	287	4,420	42	46	708
Basidiospores	-	-	-	-	-	-	-	-
Bipolaris/Dreschlera	-	-	-	-	-	-	-	-
Botrytis	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-
Cladosporium	13	200	15	398	6,129	58	-	-
Curvularia	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-
Memnoniella	-	-	-	-	-	-	-	-
Nigrospora	-	-	-	-	-	-	-	-
Oidium/Peronospora	-	-	-	-	-	-	-	-
Pithomyces	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-
Smut/Myxomyces/Periconia	-	-	-	-	-	-	-	-
Stachybotrys	-	-	-	-	-	-	-	-
Torula	-	-	-	-	-	-	-	-
Ulocladium	-	-	-	-	-	-	-	-
Unidentified Spores	-	-	-	-	-	-	-	-
<b>Total Spores</b>	<b>89</b>	<b>1,371</b>		<b>685</b>	<b>10,549</b>		<b>46</b>	<b>708</b>
Hypheal Fragments	7	108		209	3,219		13	200

\* Excessive debris. Reported results may be low.

*Joshua Krinsky*

Joshua Krinsky  
Technical Director

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Project: 2nd Floor-New Building  
Sampled: 12/30/2013  
Received: 1/6/2014  
Analysis Date: 1/6/2014  
Report Date: 1/6/2014  
Batch: 39409

**AEML Test: A001 Spore Trap Analysis**

Sample ID:	140106K002	140106K003	140106K004	140106K005					
Client Sample ID:	Ladies Rm 056	Men's Rm 098	Court Room 218 100	Holding Cell 228 101					
Volume Sampled (L):	75	75	75	75					
Media:	Allergenco D	Allergenco D	Allergenco D	Allergenco D					
Percent of Trace Analyzed:	100% at 600X Magnification								
Spore Types	Raw Count	Count/m <sup>3</sup>	%	Raw Count	Count/m <sup>3</sup>	%	Raw Count	Count/m <sup>3</sup>	%
Alternaria	-	-	-	-	-	-	-	-	-
Arthrinium	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium-Like	1,881*	25,080	98	20,175*	269,000	99	2,709*	36,120	99
Basidiospores	1	13	<1	1	13	<1	-	-	-
Bipolaris/Dreschlera	-	-	-	2	27	<1	-	-	-
Botrytis	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	42	560	2	132	1,760	<1	16	213	<1
Curvularia	-	-	-	2	27	<1	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	2	27	<1	1	13	<1	-	-	-
Memmoniella	-	-	-	-	-	-	-	-	-
Nigrospora	-	-	-	-	-	-	-	-	-
Oidium/Peronospora	-	-	-	-	-	-	-	-	-
Pithomyces	-	-	-	2	27	<1	1	13	<1
Rust	-	-	-	-	-	-	-	-	-
Smut/Myxomyces/Periconia	2	27	<1	2	27	<1	3	40	<1
Stachybotrys	-	-	-	-	-	-	-	-	-
Torula	-	-	-	-	-	-	-	-	-
Ulocladium	-	-	-	-	-	-	-	-	-
Unidentified Spores	-	-	-	-	-	-	-	-	-
<b>Total Spores</b>	<b>1,928</b>	<b>25,707</b>		<b>20,317</b>	<b>270,893</b>		<b>2,729</b>	<b>36,387</b>	
Hyphal Fragments	14	187		3	40		2	27	
Pollen	-	-		1	13		-	-	
Debris Rating	3			4**			-	-	
Detection Limit	13			13			3	13	
<b>Total Spores</b>	<b>3,245</b>			<b>3,245</b>			<b>3,245</b>		
Hyphal Fragments	8			8			8		
Pollen	1			1			1		
Debris Rating	3			3			3		
Detection Limit	13			13			13		

\* Estimation performed due to high count.

\*\* Debris rating due to spores.

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Project: 2nd Floor-New Building  
 Sampled: 12/30/2013  
 Received: 1/6/2014  
 Analysis Date: 1/6/2014  
 Report Date: 1/6/2014  
 Batch: 39409

**AEML Test: A001 Spore Trap Analysis**

Spore Types	Raw Count	Count/m <sup>3</sup>	%
Alternaria	—	—	—
Arthrinium	—	—	—
Ascospores	—	—	—
Aspergillus/Penicillium-Like	2,736*	36,480	98
Basidiospores	2	27	<1
Bipolaris/Dreschlera	—	—	—
Botrytis	—	—	—
Chaetomium	—	—	—
Cladosporium	30	400	1
Curvularia	2	27	<1
Epicoccum	—	—	—
Fusarium	—	—	—
Ganoderma	1	13	<1
Memmoniella	—	—	—
Nigrospora	—	—	—
Oidium/Peronospora	—	—	—
Pithomyces	—	—	—
Rust	—	—	—
Smut/Myxomyces/Periconia	22	293	<1
Stachybotrys	—	—	—
Torula	—	—	—
Ulocladium	—	—	—
Unidentified Spores	—	—	—
<b>Total Spores</b>	<b>2,793</b>	<b>37,240</b>	
Hyphal Fragments	10	133	
Pollen	—	—	
Debris Rating	—	4	
Detection Limit		13	

\* Estimation performed due to high count.

\*\* Debris rating due to spores.

*Joshua Krinsky*

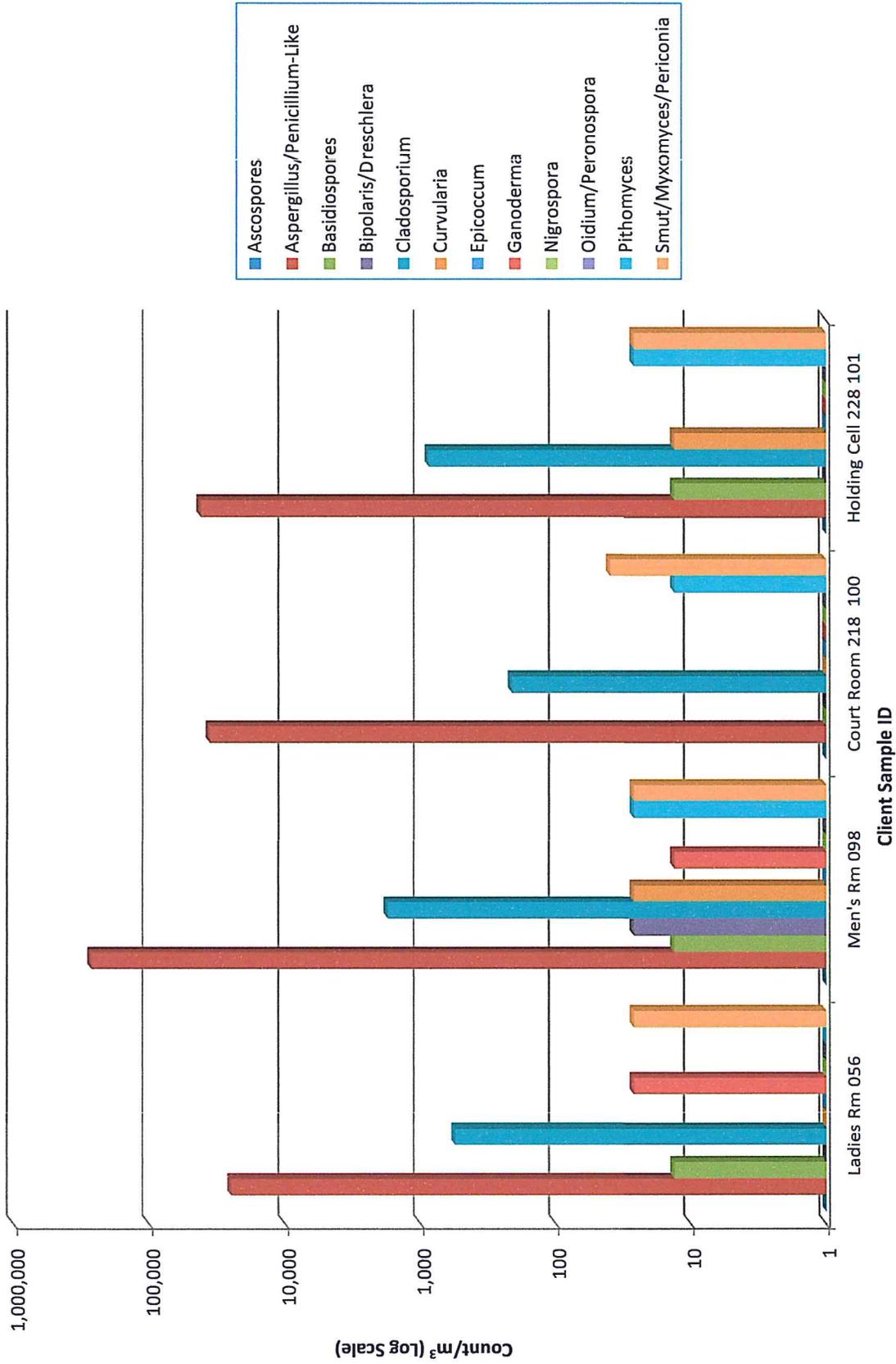
Joshua Krinsky  
 Technical Director

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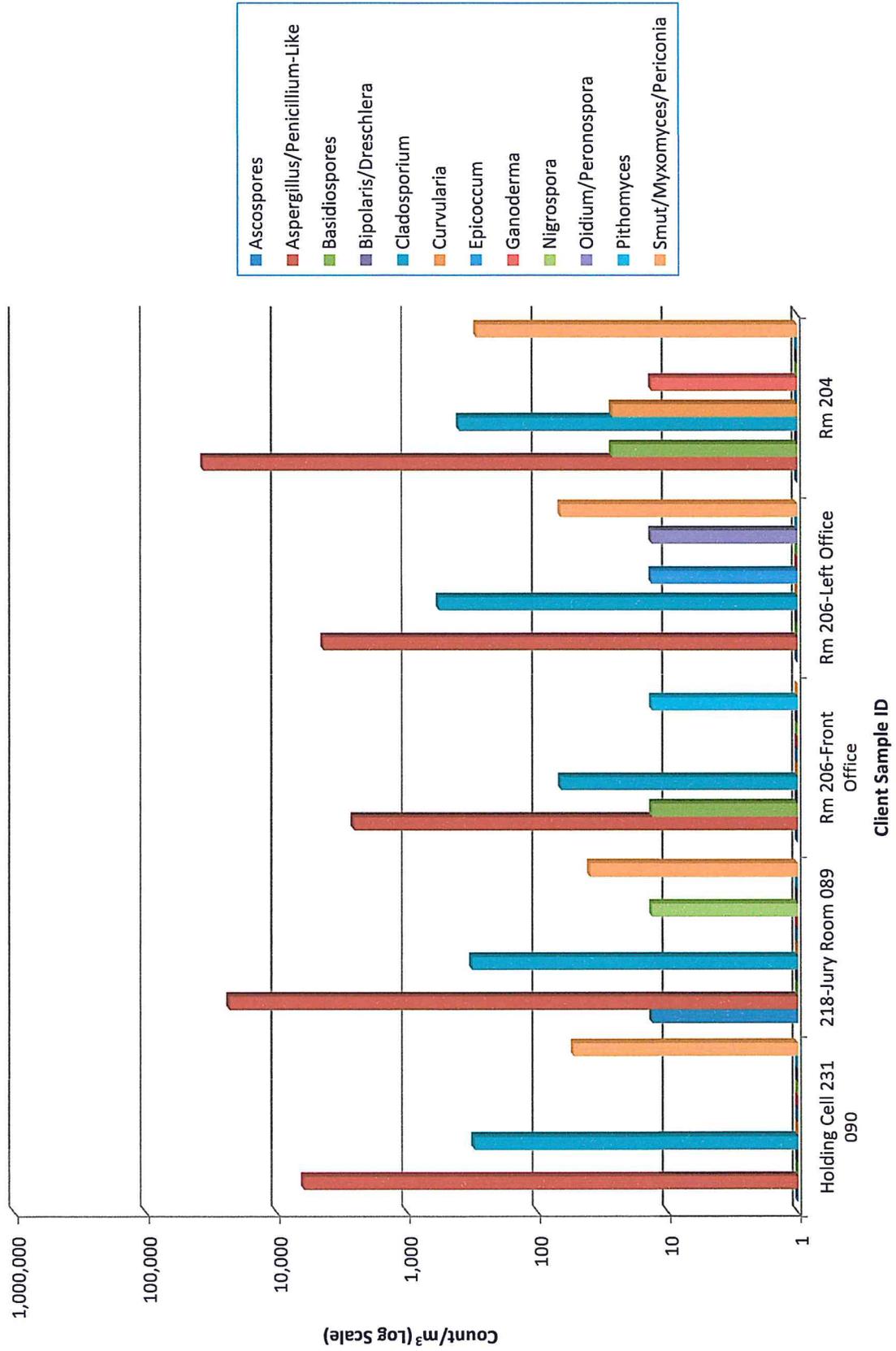


## Project: 2nd Floor-New Building



Note: Graph may understate the importance of certain genre of spores.

## Project: 2nd Floor-New Building



Note: Graph may understate the importance of certain genre of spores.



Standard Spore List	
Alternaria	Common allergen causing hay fever or hypersensitivity reactions that sometimes lead to asthma, serious infections are rare, except in people with compromised immune systems. Normal agents from the decomposition of plants.
Arthrimum	No reported infections associated with this fungus. Normally not found indoors.
Ascospores	Very common outdoor spore, associated with rain and moisture.
Aspergillus/Penicillium-Like	Possible allergen. Common cause of respiratory irritation and infection. Found on water damaged wallpaper, carpet and organic materials.
Basidiospores	Possible allergen to sensitive individuals, no known serious health effects associated with this fungus. Mushrooms and dry rot are examples of basidiospore producing fungi.
Bipolaris/Dreschlera	Allergen that can affect nose, skin, eye and upper respiratory track. Found on grasses, grains and decaying food.
Botrytis	Potential allergen, hay fever and asthma effects. Parasite commonly found growing on indoor plants.
Chaetomium	Not well studied but possible allergen with hay fever and asthma effects. Rare cases of nail infections. Found on a variety of cellulose, paper and plant compost.
Cladosporium	Potential allergen, hay fever and asthma effects. Grows well in damp environments, on textiles and window sills.
Curvularia	Hay fever, asthma and or allergic fungal sinusitis are some of the potential allergens associated with this fungi. Possible human health risk. Has been known to cause onychomycosis, ocular keratitis, sinusitis, mycetoma, pneumonia, endocarditis, cerebral abscess, and disseminated infection. Most cases are from immunocompromised patients. Grows on various indoor building materials.
Epicoccum	Potential allergen, effects are hay fever, asthma and skin allergies. Found in soil, air and rotting vegetation.
Fusarium	Potential allergen, hay fever and asthma effects. Commonly found on fruit rot. requires very wet conditions.
Ganoderma	Commonly found in the atmosphere, grows on wood products. Possible allergen at high concentrations.
Memnoniella	Mycotoxin producing spore related to and often found in conjunction with Stachybotrys.
Nigrospora	Potential allergen, hay fever and asthma effects. Usually not found growing indoors. Found on decaying plant material and soil.
Oidium/Peronospora	Common obligate parasites on leaves, stems, flowers, and fruits of living higher plants.
Pithomyces	Possible allergen. Grows well on paper indoors given the right conditions.
Rust	Potential allergen, hay fever and asthma effects. Rarely found growing indoors.
Smut/Myxomyces/Periconia	Potential allergen, hay fever and asthma effects. Rarely found growing indoors.
Stachybotrys	Often referred to as "toxic black mold." It has the ability to produce mycotoxins which may cause a burning sensation in the mouth, throat and nasal passages. Chronic exposure has been known to cause headaches, diarrhea, memory loss and brain damage. Found growing on water damaged cellulose, paper and ceiling tiles.
Torula	Potential allergen, hay fever and asthma effects. Potential allergen, hay fever and asthma effects. Found growing on water damaged cellulose, paper, wicker, straw baskets and ceiling tiles.
Ulocladium	Grows well on cellulose containing materials like paper, straw, wallboard. Requires very wet conditions.
Unidentified Spores	N/A
Hyphal Fragments	Branched structures with cell walls. Hyphae are somewhat analogous to stems or roots in plants whereas the spores would be analogous to the seeds.
Pollen	Allergen that causes hay fever. Pollen is microscopic round or oval grains produced by plants.

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## Chapter 6

### **Mold Remediation Protocol Report**

#### **Scope:**

H2H Assurance Services, hereby called H2H, is pleased to submit this Mold Protocol Report for the above referenced location. The objective of this report is to provide the licensed remediator a guideline as to removing the infected area and return the facility back to an acceptable living or working area. The original problem that caused the mold to occur must have been fixed to assure the success of the remediation. This protocol is the opinion of H2H Assurance services and is based on the original Mold Assessment Evaluation Report. If the methods and suggestions in this report and the integrity of the site are kept intact then the remediation should be successful in eradicating the problem. After the remediation a post clearance test (separate report) will be required to be conducted to determine if the remediation was successful. It is however possible that additional remediation steps may have to be taken in severe cases. A post remediation assessment test is always require to ascertain whether the property has been restore to a level that is conducive for the inhabitants to live or work in. An Acceptable-Pass condition is based on the Assessors visual inspection as well as the clearance testing from the lab as well as the work performed by the licensed remediator.

#### **IV. General Remediation Guidelines**

##### BASIS

1.0 This Protocol is to be used as a guideline by the Remediation Contractors in remediating the impacted areas in the house. The Contractor must have the training and experience required to properly remediate this area. The objective is to complete the remediation in compliance with all applicable regulations and guidelines of the U.S. Occupational Safety and Health Administration ( OSHA ) , U.S> Environmental Protection Agency (EPA) , State of Florida, and local governments.

2.0 It is strictly the contractors' responsibility to comply with the applicable regulations, guidelines, permits, etc. The remediation should be completed in accordance with IICRC S520 Standard and Reference Guide for Professional Mold Remediation (Institute of Inspection Cleaning and Restoration Certification, December 2003). Any required heating, ventilation, and air conditioning (HVAC) remediation should be completed in accordance with ARC 2006 Assessment, Cleaning, and Restoration of HVAC Systems ( National Air Duct Cleaners Association, 2006). Two documents which have become industry standards and will assist the Contractor are Bioaerosols Assessment and Control ( American Conference of Governmental Industrial Hygienists 1999) and Mold Remediation in Schools and Commercial Buildings (EPA,

March 2001). The Protocol herein does not purport to specify or delineate the requirements of referenced standards and guidelines. It is a performance Protocol, not a specifications Protocol. By agreeing to complete the remediation, the Contractor agrees to perform the work in conformance with applicable sections of the referenced standards and guidelines. The Contractor's goal is to meet the final inspection and Post-remediation Testing criteria of H2H, as stipulated in Section 6.0 herein.

### 3.0 IMMEDIACY & OCCUPANCY

H2H recommends that the affected areas be remediated as soon as possible. If health problems are being experienced, a medical doctor should be consulted concerning occupancy of the premises. During and after remediation, until testing confirms complete remediation, the impacted areas should not be occupied or entered by anyone, except the remediation firm's representatives. This includes cleaning staff and others who may periodically enter the impacted areas. After remediation is completed and testing shows the impacted areas are safe these areas may be entered and occupied.

### 4.0 CONTRACTOR RESPONSIBILITY

In completing the work herein, the Contractor agrees to protect the Workers. Further, the Contractor assumes full responsibility for all work and agrees to abide by the requirements in Appendix I.

### 5.0 REMEDIATION

The affected areas should be contained in negative pressure enclosures in accordance with S520 Standard and the details provided in Appendix I. All sources of water and moisture which caused the problem must be eliminated before preceding any further. Dehumidifiers must be installed to keep relative humidity below 60% until satisfactory Post-remediation Testing results are obtained and materials are put back.

### 6.0 REMEDIATION AREAS (See Sections 2 & 3)

Inspect and remediate all walls, floors, cabinets, ceilings, etc, showing evidence of water intrusion. This would include those areas with known leaks, water stains, water damage, or resultant mold growth. If additional evidence of water intrusion is found, continue removal 3 feet (ft) beyond the end of the evidence, in accordance with S520 Standard for the expanded areas. The following areas require remediation (removal) at this time.

Further, the remediation personnel doing the application must be wearing the proper personal protective equipment. Furthermore, when the ozone is applied, the levels in the air must be below OSHA's Permissible Exposure Limits (PEL) of 0.1 parts per million (ppm) on an 8 hour Time

Weighted Average (TWA) basis. Finally, the room must be thoroughly ventilated before it is occupied again.

6.1 **If any additional affected areas or building materials are discovered during the work above, discuss these with the Owner and H2H Assurance Services.**

#### 7.0 REMEDIATION PROCEDURES (See Section V)

Licensed Contractor agrees to complete the remediation in accordance with the following Remediation Procedures. All work will be completed in a competent, workmanship-like manner.

7.1 After H2H obtains satisfactory mold testing results, install new walls, ceilings, floors, etc.

7.2 Leave area remediated in equal or better condition found, regarding cleanliness and orderliness.

7.3 Maintain strict confidentiality in regard to all aspects of the project.

**V. Assessment Review (Recommended for this facility)**  Pass Criteria after remediation. Based on the experience of this Assessor this level would normally be acceptable for most individuals. However, if an immune deficient person inhabits the area the acceptable level will need to be reevaluated and adjusted.

#### **Air Test:**

- a. Target for pass in each area tested:
  - i.  Total spore count less than 500 p/cm. Asp-Pen, Cladosporium no greater than 300 each. No Stachybotrys, chaetomium or curvularia. Debris rating 3 or lower.

#### **Tape and or Swab Test:**

- b. Target for pass in each area tested:
  - i.  100 to 5,000 cfu/in<sup>2</sup>
  - ii.  5,000 to 10,000 cfu/in<sup>2</sup>
  - iii.  10,000 to 50,000 cfu/in<sup>2</sup>

#### **ATP Test:**

- a.  Less than 50 RLU's
- b.  Less than 150 RLU's

**Remediation "A":** This is for rooms that have tested low for the presence of mold (condition 2 or 3) and are in an adequate condition. There will be no need for negative air containment in these rooms.

**Remediation "B":** This is for rooms that have tested high for the presence of mold (condition 2 or 3). These rooms will require negative air containment. These rooms have newer construction therefore will not required major demolition work.

**Remediation "C":** This is for rooms that have tested high for the presence of mold (condition 2 or 3). These rooms will require negative air containment. These rooms have older construction and therefore required major demolition work along with the remediation work.

**VI. Specific Remediation Protocol "A" (For rooms identified with and "A")**

*Please adhere to Items of Remediation Protocol & Guidelines in IICRC S520 Guide*

	Dry area out using Dehumidifiers
	Install air scrubbers during remediation
	Shut down the HVAC in area and cover all vents with plastic
	Thoroughly wipe down all affected areas, walls, furniture and all surfaces. Clean from the top to bottom. Clean from the source of make-up air toward the AFD. Clean from the clean areas and work towards dirty areas. Clean up needs to follow IICRC S250, 12.2.9.
	HEPA vacuum all areas
	Air polish all walls and ceilings with leak blower or compressed air.
All walls, ceiling. Include windows.	Wipe clean and HEPA vacuum. Fog with Microban or Sporidicin or like material.
Please apply	Spraying of a substance like Microban or Sporidicin on will help kill any spores not removed with the aforementioned procedures. If the occupants have allergies it is suggested to use a Peroxide cleaner like Fiberlock 8314 or Shockwave Green 24
Use on the inside of outer wall	Seal masonry block with mold resistant water proofer like IAQ 9000

Carpets-Floors	Follow 14.3.4.1 of the IICRC S250 in regards to cleaning and or steam cleaning the rugs. If the rugs or floor covering cannot be cleaned using this standard removal may be necessary
All affected areas	<p>Air Polish areas again and have an oscillating fan in area to keep remaining spores if any suspended. Remove dehumidifiers. Make sure all scrubbers are on. Run this way after polishing for 24-48 hours before testing. Make sure scrubbers are off 4-6 hours before testing.</p> <p><b>How to Air Polish a remediated room:</b></p> <ul style="list-style-type: none"> <li>➤ When done with the standard remediation procedures follow the following steps: <ul style="list-style-type: none"> <li>○ Turn off negative air so that the spores are not drawn in from adjacent, unclean areas</li> <li>○ Set up an air scrubber, not in negative mode. (Size of room will dictate the number of scrubbers needed).</li> <li>○ Set up (2) oscillating fans. Position to avoid having dead spots in the room. <ul style="list-style-type: none"> <li>▪ Direct them to sweep the floor and other horizontal surfaces.</li> </ul> </li> <li>○ Periodically use a leaf blower in the direction of the fan to stir up the settled spores and general debris left over after the remediation activities. Direct the blower into carpet if present.</li> <li>○ <b>Be careful not to damage the integrity of the containment barriers.</b></li> <li>○ Reorient the oscillating fans to sweep new areas and re-direct the exhaust of the air scrubber to blow over different areas.</li> <li>○ Operate oscillating fans and air scrubbers at least 36 hours after the cleanup is completed.</li> <li>○ Revisited one more time to polish the area with the leaf blower.</li> <li>○ Shut down fans and air scrubbers at least 8-12 hours before post remediation sampling (clearance test)</li> </ul> </li> </ul> <p>Post Remediation Sampling (PRV):</p> <p>To confirm the success of the remediation effort post remediation verification (PRV) sampling should be carried before and removing of the containment. This should be conducted within 72 hours of the final cleaning. If the space is kept dehumidified the PRV can be extend. The PRV testing should be carried</p>

	out before any remodeling to minimize the likelihood of enclosing residual spores behind the new surfaces.
Please observe  See HVAC system for more specifics	H2H also recommends that the Remediation Contractor remediate the HVAC system. Clean the HVAC air handler and ducts associated with the HVAC system. This will include cleaning all fans, coils, ducts, and associated equipment. This work must be completed under the supervision of an Air Systems Cleaning Specialist (ASCS) certified by the National Air Duct Cleaners Association (NADCA). If the ducts are replaced, the old ducts must be carefully removed, wrapped in 6-mil polyethylene sheeting, and sealed with duct tape, then completely removed from the room.
Please note	Note: Federal, state and local regulations may require asbestos testing prior to demolition of any materials that may be removed or disturbed during the remediation process.
Please Follow	<b>Refer to section IV for post clearance testing to verify the full removal of all spores. THIS NEEDS TO BE PERFORMED BY H2H BEFORE THE REBUILDING PROCESS IS STARTED!</b>
Please note	<b>Deviation from Protocol: 12.2.7: "It is recognized that remediation projects are unique, and that in certain circumstances, common sense, experience and professional judgment may justify deviation from this standard. It is the responsibility of the remediator's to determine and verify on a case by case basis that application of this standard is appropriate. Allowing mold or moisture conditions to remain is strongly discouraged; since it can compromise the health of occupants, further damage building materials and expose remediator's to liability and other consequences.</b>

**VII. Specific Remediation Protocol "B" (For rooms identified with and "B")**

*Please adhere to Items of Remediation Protocol & Guidelines in IICRC S520 Guide*

<p>Entire Room before containment</p>	<p>Remove carpet, Remove all ceiling tiles, Sand down all window sills that require it, Remove any sheet rock that has holes in it, Remove all insulation.</p>
<p>Install at the entrance of the</p>	<p>Create separation from the rest of the building by installing plastic wall w/ zipper door in areas noted on diagram. NOTE: The zipper door needs to be sealed at the sides and the top and bottom.</p>
<p>Please observe</p>	<p>All remediation technicians need to be dressed per IICRC S520, 8.1.1 &amp; 12.2.5: In addition respiratory protection needs to be worn in the area during all work. All respirators should be at minimum NIOSH N-95 Face Piece respirators to a full face air purifying respirator.</p>
<p>Please Observe See Appendix "A"</p>	<p>The zipper door needs to have a "do not enter" tape across it when the remediator leaves.</p> <p>In addition sign or not needs to alert the resident not to open the containment area or to turn off any of the equipment inside the containment area (IICRC S520, 8.4)The remediator is responsible to alerting the resident not enter the area. Any or all on site contractors need to be alerted to this as well. In addition a sign needs to hang when the remediator's are working stating "that mold remediation work is in process per IICRC S520, 12.2.4.</p> <p>Only outfitted licensed remediator's or assessors should enter the containment area. Containment areas need to be intact when Post Clearance testing is conducted. If they are not the Assessor may required the area to be re-treated before clearance can be conducted.</p>
<p>Install intake filter in both the vestibule and the zipper entrance wall. See Appendix</p>	<p>Create negative pressure in the containment areas using exhaust fan. Fan should exhaust to the outside (See Appendix B) per IICRC 12.1.2. 12.1.3 &amp; 12.1.4. The Air Intake needs to be sealed when the room is in a static condition. Use an AFD or NAM to create the proper air flow to draw the air through the filters and exhaust out the window to create a negative pressure</p>

	space. The filter air intake should be sized to provide the proper air make up to the room. The window should have a wood frame with a collar for the plastic exhaust pipe. Air needs to exhaust to the outside <u>not back into the non-containment area.</u>
	If remediation is performed were the ceiling is open to other areas of the building then those areas need to be sealed off (See Appendix C)
	Thoroughly wipe down all affected areas, walls, furniture and all surfaces. Clean from the top to bottom. Clean from the source of make-up air toward the AFD. Clean from the clean areas and work towards dirty areas. Clean up needs to follow IICRC S250, 12.2.9.
	Dry area out using Dehumidifiers in containment areas
	Install air scrubbers throughout the room during remediation
	Shut down the HVAC in area and cover all vents with plastic in both the containment area.
	HEPA vacuum all areas
Include trusses	Air polish all walls and ceilings with leak blower or compressed air.
All walls, ceiling. Include windows.	Wipe clean and HEPA vacuum. Fog with Microban or Sporidicin or like material.
Please observe	All disposal of contaminated materials should strictly adhere to IICRC S520, 12.2.8
Please apply	Spraying of a substance like Microban or Sporidicin on will help kill any spores not removed with the aforementioned procedures. If the occupants have allergies it is suggested to use a Peroxide cleaner like Fiberlock 8314 or Shockwave Green 24
Use on the inside of outer wall	Seal masonry block with mold resistant water proofer like IAQ 9000. Paint with additional moisture lock material.
Use on the affected area	Seal all areas that have been sanded or worked on with a mold resistant sealer (preferably white for post verification)If there is complicated construction like trusses airless spraying of sealer is recommended after proper plastic sealing is performed.
	All interior walls & ceilings above the drop ceiling grid either brick or block need to have spray insulation applied after the water proofing has been applied. For walls inside the room furring strips with foam board insulation should be applied.
	Note: All brick on outside needs to be tuck-pointed in the areas needed. All

	windows require sealing with a high grade caulking material.
Floors	Follow 14.3.4.1 of the IICRC S250 in regards to cleaning floor coverings. If they cannot be cleaned using this standard removal may be necessary
Entire working space	An Ozone treatment needs to be performed once all has been contained. This will assure a final cleansing to the affected area and any other areas that have been exposed to the spores. Seal all windows and doors with tape.
Entire working space	Clean up any ash with a HEPA vacuum
Entire living or working	Wipe clean all walls and ceilings after cleaning any ash with HEPA vacuum
All affected areas	<p>Air Polish areas again and have an oscillating fan in area to keep remaining spores if any suspended. Remove dehumidifiers. Make sure all scrubbers are on. Run this way after polishing for 24-48 hours before testing. Make sure scrubbers are off 4-6 hours before testing.</p> <p><b>How to Air Polish a remediated room:</b></p> <ul style="list-style-type: none"> <li>➤ When done with the standard remediation procedures follow the following steps: <ul style="list-style-type: none"> <li>○ Turn off negative air so that the spores are not drawn in from adjacent, unclean areas</li> <li>○ Set up an air scrubber, not in negative mode. (Size of room will dictate the number of scrubbers needed).</li> <li>○ Set up (2) oscillating fans. Position to avoid having dead spots in the room. <ul style="list-style-type: none"> <li>▪ Direct them to sweep the floor and other horizontal surfaces.</li> </ul> </li> <li>○ Periodically use a leaf blower in the direction of the fan to stir up the settled spores and general debris left over after the remediation activities. Direct the blower into carpet if present.</li> <li>○ <b>Be careful not to damage the integrity of the containment barriers.</b></li> <li>○ Reorient the oscillating fans to sweep new areas and re-direct the exhaust of the air scrubber to blow over different areas.</li> <li>○ Operate oscillating fans and air scrubbers at least 36 hours after the cleanup is completed.</li> <li>○ Revisited one more time to polish the area with the leaf blower.</li> <li>○ Shut down fans and air scrubbers at least 8-12 hours before post remediation sampling (clearance test)</li> </ul> </li> </ul>

	<p>Post Remediation Sampling (PRV):</p> <p>To confirm the success of the remediation effort post remediation verification (PRV) sampling should be carried before and removing of the containment. This should be conducted within 72 hours of the final cleaning. If the space is kept dehumidified the PRV can be extend. The PRV testing should be carried out before any remodeling to minimize the likelihood of enclosing residual spores behind the new surfaces.</p>
Please observe	Clean all tools and equipment in exit area
Please observe	H2H also recommends that the Remediation Contractor remediate the HVAC system. Clean the HVAC air handler and ducts associated with the HVAC system. This will include cleaning all fans, coils, ducts, and associated equipment. This work must be completed under the supervision of an Air Systems Cleaning Specialist (ASCS) certified by the National Air Duct Cleaners Association (NADCA). If the ducts are replaced, the old ducts must be carefully removed, wrapped in 6-mil polyethylene sheeting, and sealed with duct tape, then completely removed from the room.
Please note	Note: Federal, state and local regulations may require asbestos testing prior to demolition of any materials that may be removed or disturbed during the remediation process.
Please Follow	<b>Refer to section IV for post clearance testing to verify the full removal of all spores. THIS NEEDS TO BE PERFORMED BY H2H BEFORE THE REBUILDING PROCESS IS STARTED!</b>
Please note	<b>Deviation from Protocol: 12.2.7: "It is recognized that remediation projects are unique, and that in certain circumstances, common sense, experience and professional judgment may justify deviation from this standard. It is the responsibility of the remediator's to determine and verify on a case by case basis that application of this standard is appropriate. Allowing mold or moisture conditions to remain is strongly discouraged; since it can compromise the health of occupants, further damage building materials and expose remediator's to liability and other consequences.</b>

VIII. Specific Remediation Protocol "C" (For rooms identified with and "C")

*Please adhere to Items of Remediation Protocol & Guidelines in IICRC S520 Guide*

Entire Room before containment

Any leaks (identified in the room identification) need to be fixed prior to beginning work in a leaking room.

Remove carpet,

Remove all lathe boards, plaster and rotted wood associated with them. Any metal mesh needs to be removed as well.

Remove any and all damage sheet rock or ceiling boards.



Remove all ceiling tiles,

Sand down all window sills that require it,

Remove any sheet rock that has holes in it,

Remove all insulation.

Remove an unnecessary wires

	Perform general cleaning before remediation cleaning
Install at the entrance of the	Create separation from the rest of the building by installing plastic wall w/ zipper door in areas noted on diagram. NOTE: The zipper door needs to be sealed at the sides and the top and bottom.
Please observe	All remediation technicians need to be dressed per IICRC S520, 8.1.1 & 12.2.5: In addition respiratory protection needs to be worn in the area during all work. All respirators should be at minimum NIOSH N-95 Face Piece respirators to a full face air purifying respirator.
Please Observe See Appendix "A"	The zipper door needs to have a "do not enter" tape across it when the remediator leaves.  In addition sign or not needs to alert the resident not to open the containment area or to turn off any of the equipment inside the containment area (IICRC S520, 8.4)The remediator is responsible to alerting the resident not enter the area. Any or all on site contractors need to be alerted to this as well. In addition a sign needs to hang when the remediator's are working stating "that mold remediation work is in process per IICRC S520, 12.2.4.  Only outfitted licensed remediator's or assessors should enter the containment area. Containment areas need to be intact when Post Clearance testing is conducted. If they are not the Assessor may require the area to be re-treated before clearance can be conducted.
Install intake filter in both the vestibule and the zipper entrance wall. See Appendix	Create negative pressure in the containment areas using exhaust fan. Fan should exhaust to the outside (See Appendix B) per IICRC 12.1.2. 12.1.3 & 12.1.4. The Air Intake needs to be sealed when the room is in a static condition. Use an AFD or NAM to create the proper air flow to draw the air through the filters and exhaust out the window to create a negative pressure space. The filter air intake should be sized to provide the proper air make up to the room. The window should have a wood frame with a collar for the plastic exhaust pipe. Air needs to exhaust to the outside <u>not back into the non-containment area.</u>
	If remediation is performed were the ceiling is open to other areas of the building then those areas need to be sealed off (See Appendix C)
	Thoroughly wipe down all affected areas, walls, furniture and all surfaces. Clean from the top to bottom. Clean from the source of make-up air toward the AFD. Clean from the clean areas and work towards dirty areas. Clean up needs to follow IICRC S250, 12.2.9.
	Dry area out using Dehumidifiers in containment areas

	Install air scrubbers throughout the room during remediation
	Shut down the HVAC in area and cover all vents with plastic in both the containment area.
	HEPA vacuum all areas
Include trusses	Air polish all walls and ceilings with leak blower or compressed air.
All walls, ceiling. Include windows.	Wipe clean and HEPA vacuum. Fog with Microban or Sporicidin or like material.
Please observe	All disposal of contaminated materials should strictly adhere to IICRC S520, 12.2.8
Please apply	Spraying of a substance like Microban or Sporicidin on will help kill any spores not removed with the aforementioned procedures. If the occupants have allergies it is suggested to use a Peroxide cleaner like Fiberlock 8314 or Shockwave Green 24
Use on the inside of outer wall	Seal masonry block with mold resistant water proofer like IAQ 9000. Paint with additional moisture lock material.
Use on the affected area	Seal all areas that have been sanded or worked on with a mold resistant sealer (preferably white for post verification)If there is complicated construction like trusses airless spraying of sealer is recommended after proper plastic sealing is performed.
	Seal all floor boards above the drop ceiling areas.
	All interior walls & ceilings above the drop ceiling grid either brick or block need to have spray insulation applied after the water proofing has been applied. For walls inside the room furring strips with foam board insulation should be applied.
	Note: All brick on outside needs to be tuck-pointed in the areas needed. All windows require sealing with a high grade caulking material.
Floors	Follow 14.3.4.1 of the IICRC S250 in regards to cleaning floor coverings. If they cannot be cleaned using this standard removal may be necessary
Entire working space	An Ozone treatment needs to be performed once all has been contained. This will assure a final cleansing to the affected area and any other areas that have been exposed to the spores. Seal all windows and doors with tape.
Entire working space	Clean up any ash with a HEPA vacuum
Entire living or working	Wipe clean all walls and ceilings after cleaning any ash with HEPA vacuum
All affected areas	Air Polish areas again and have an oscillating fan in area to keep remaining spores if any suspended. Remove dehumidifiers. Make sure all scrubbers are

on. Run this way after polishing for 24-48 hours before testing. Make sure scrubbers are off 4-6 hours before testing.

**How to Air Polish a remediated room:**

- When done with the standard remediation procedures follow the following steps:
  - Turn off negative air so that the spores are not drawn in from adjacent, unclean areas
  - Set up an air scrubber, not in negative mode. (Size of room will dictate the number of scrubbers needed).
  - Set up (2) oscillating fans. Position to avoid having dead spots in the room.
    - Direct them to sweep the floor and other horizontal surfaces.
  - Periodically use a leaf blower in the direction of the fan to stir up the settled spores and general debris left over after the remediation activities. Direct the blower into carpet if present.
  - **Be careful not to damage the integrity of the containment barriers.**
  - Reorient the oscillating fans to sweep new areas and re-direct the exhaust of the air scrubber to blow over different areas.
  - Operate oscillating fans and air scrubbers at least 36 hours after the cleanup is completed.
  - Revisited one more time to polish the area with the leaf blower.
  - Shut down fans and air scrubbers at least 8-12 hours before post remediation sampling (clearance test)

**Post Remediation Sampling (PRV):**

To confirm the success of the remediation effort post remediation verification (PRV) sampling should be carried before and removing of the containment. This should be conducted within 72 hours of the final cleaning. If the space is kept dehumidified the PRV can be extend. The PRV testing should be carried out before any remodeling to minimize the likelihood of enclosing residual spores behind the new surfaces.

Please observe

Clean all tools and equipment in exit area

Please observe	H2H also recommends that the Remediation Contractor remediate the HVAC system. Clean the HVAC air handler and ducts associated with the HVAC system. This will include cleaning all fans, coils, ducts, and associated equipment. This work must be completed under the supervision of an Air Systems Cleaning Specialist (ASCS) certified by the National Air Duct Cleaners Association (NADCA). If the ducts are replaced, the old ducts must be carefully removed, wrapped in 6-mil polyethylene sheeting, and sealed with duct tape, then completely removed from the room.
Please note	Note: Federal, state and local regulations may require asbestos testing prior to demolition of any materials that may be removed or disturbed during the remediation process.
Please Follow	<b>Refer to section IV for post clearance testing to verify the full removal of all spores. THIS NEEDS TO BE PERFORMED BY H2H BEFORE THE REBUILDING PROCESS IS STARTED!</b>
Please note	<b>Deviation from Protocol: 12.2.7: "It is recognized that remediation projects are unique, and that in certain circumstances, common sense, experience and professional judgment may justify deviation from this standard. It is the responsibility of the remediator's to determine and verify on a case by case basis that application of this standard is appropriate. Allowing mold or moisture conditions to remain is strongly discouraged; since it can compromise the health of occupants, further damage building materials and expose remediator's to liability and other consequences.</b>

## IX. Post Remediation Notification & Clearance Testing

Testing needs to be done in a contained remediated area prior to the installation of the sheet rock and or post construction materials.

The Contractor must contact H2H as early as possible to schedule the Post-remediation Inspection Testing. H2H will conduct the Inspection with the Contractor present to confirm that the Protocol was followed, there are no readily visible remaining water damaged or contaminated materials, and there is no remaining dust or debris. If H2H's final inspection proves unsatisfactory, reclean or remediate. H2H will reinspect after that at the remediator's expense. Once a satisfactory inspection is completed, leave air scrubbers on (in recirculating mode, not outside air mode) for at least 48 hours from finishing the remediation through H2H's testing. The air scrubbers may be turned off after H2H tests, but continue dehumidification until satisfactory Post-remediation Test results are obtained and materials are put back. If testing completed by H2H for Owner shows contamination remains, reclean or remediate as required. H2H will then retest. H2H Post-remediation criteria follow:

- Indoor air mold populations should be smaller than those found during Pre remediation Testing.
- Indoor air populations should not be significantly larger than those outside.
- Indoor air population should have similar mold genera compared to outside.
- Penicillium/Aspergillus should not comprise significantly more than 30% of the indoor air populations, nor significantly exceed the levels outside.
- Indoor air populations should not have significant levels of a few mold genera indicative of wet or damp conditions. These genera include Penicillium, Aspergillus, Stachybotrys, Chaetomium, Trichoderma, Memnoniella, Acremonium, Aureobasidium, Phoma, Fusarium, and Ulocladium. Additionally, no Apseraillus fumigatus shall be present.
- **Air-o-cells or Allegenco D**, one outside and the appropriate number inside will be used. There is a 24 hour turnaround from when the labs receive the samples.
- **Spore traps and agar culture plates** may be used at each air sampling station both inside and outside the Room. **Results will not be available for 6 to 7 calendar days after sample collection.**
- **ATP TECHNOLOGY**  
The Bio-Reveal system uses bioluminescence to detect the presence of the ATP molecule ["Figure A" - below]. The ATP molecule is the chemical compound in which energy is stored in all living cells. In the ATP-luminometric test, the firefly enzyme [luciferase] in the presence of its sampled substrate, luciferin, oxygen and magnesium ions catalyzes the conversion of ATP into light through an oxidation-reduction reaction. The light generated in this biochemical reaction is directly proportional the amount of ATP (bio-contamination) present, thus, the light units can be used to generate a relatively accurate estimate of the total biomass of cells in a sample.

The biochemical reaction is specific for ATP and very efficient, with almost every molecule of ATP causing the emission of one photon of green light. As all organisms

rely on the ATP molecule as the main carrier of metabolic energy, it is a very useful indicator of the presence of living organic cells.

- **Swabs** will be used if there is a visible surface contaminate evident.
- **Cello-tape surface samples** will be collected from remaining building materials and the HVAC system ( if cleaned). Cello-tape sample results should show no more than 25% coverage, no significant wet or damp indicator genera, and no active growth indicators.

## X. Limitations

- a. H2H Assurance services evaluation and test results do not guarantee that the indoor environment is free of contaminates, gases organisms or any analytes sampled for. The customer understands that there are limitations associated with the instrumentation used associated with accuracy, precision and uncertainty. Additionally, further limitations are present as a result of sampling and measurement methods/procedures utilized in testing and measuring as well as any or all factors such as environmental and climatic conditions. The customer is aware that no destructive testing was performed and that the evaluation can only assess for conditions that re visible at the time of the evaluation.
- b. H2H's opinions as noted in the report are based on the findings and upon our professional experience with no warranty or guarantee implied. H2H accepts no responsibility for interpretations or actions based on this report by others. The findings, results and conclusions as part of our assessment are only representative of conditions at the time of the H2H visit and do not represent conditions at other times. This report is intended for your use and your assigned representatives. Is data and content shall not be used or relied upon by other p0arties without prior written authorization of H2H and the client.

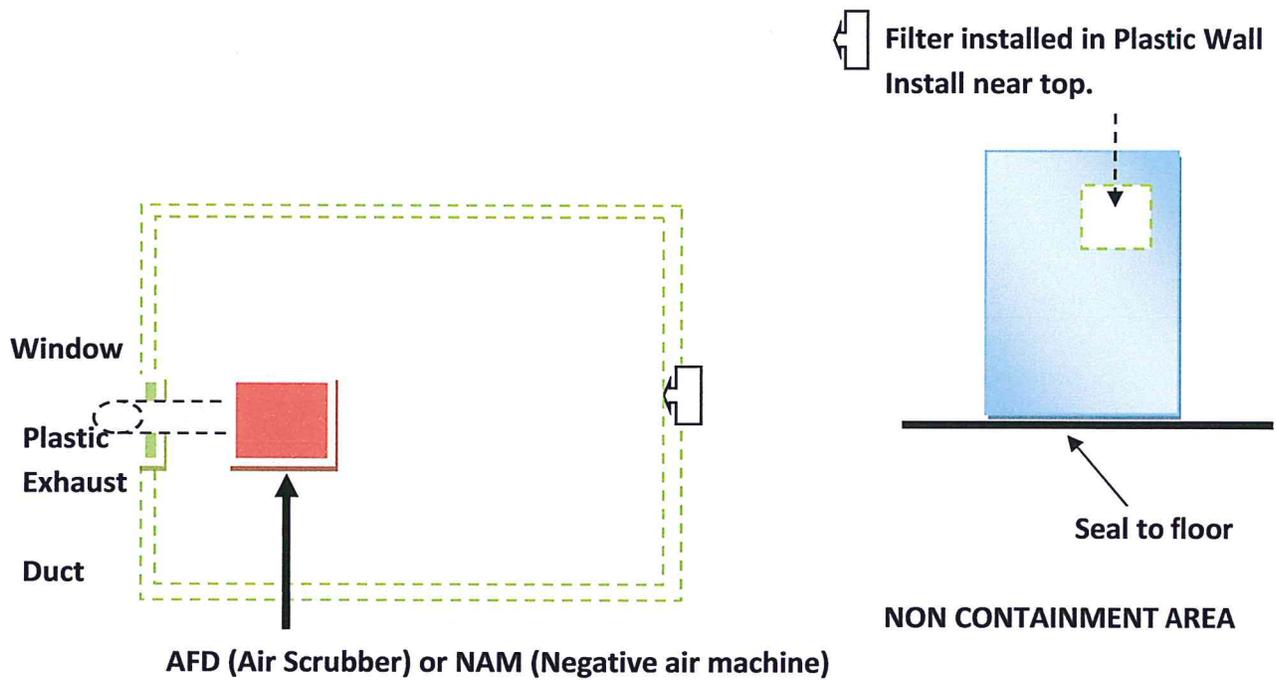
Richard J. Van Dort  
LHI, CMI,LMA, CIAQS, CIA, CTI  
H2H Assurance Services, LLC

*Richard J. Van Dort*

**XI. Appendix "A"**

**Negative Air without containment vestibule:**

- a. NEGATIVE AIR CONTAINMENT AREA (use if applicable and called out in specific protocol)**

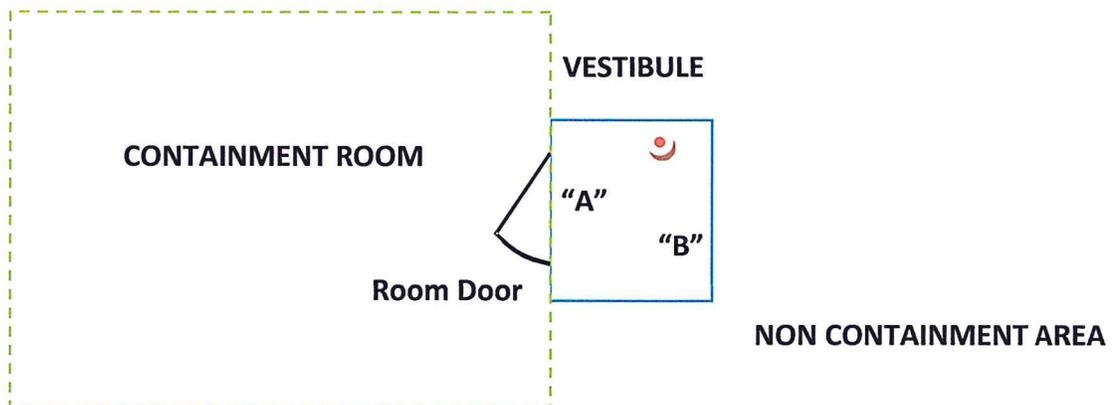


## Appendix "B"

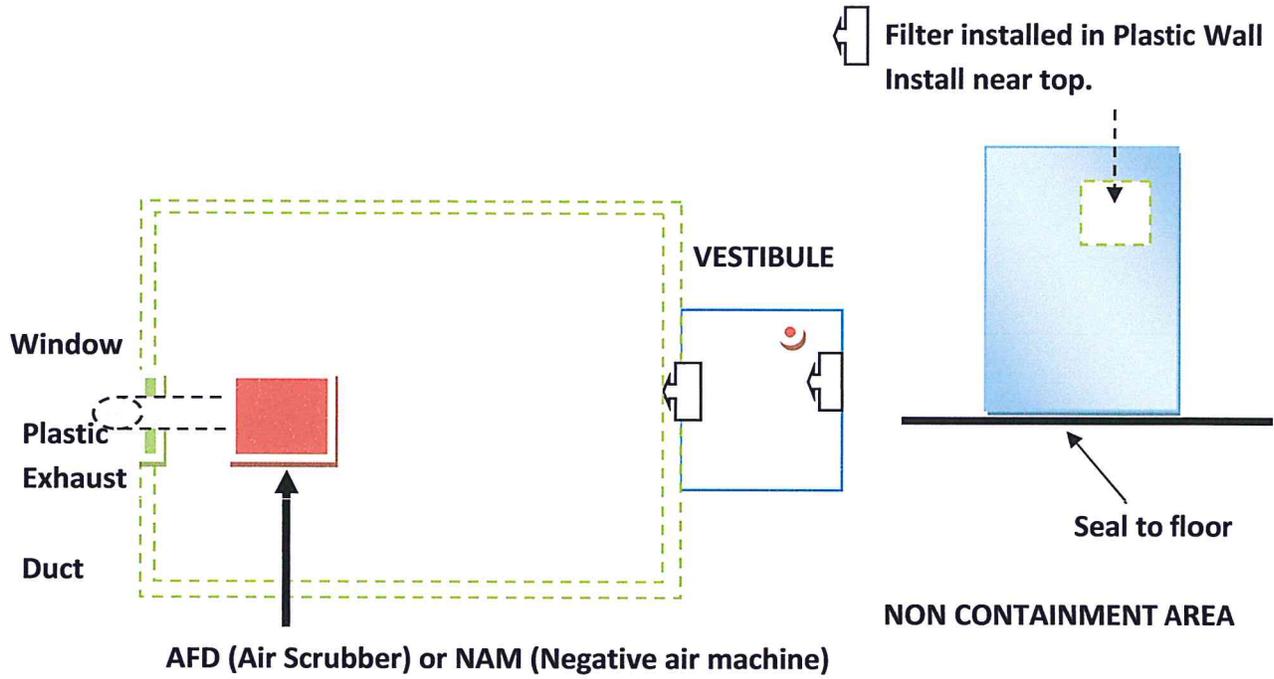
With containment Vestibule:

### CONTAINMENT VESTIBULES (use if applicable and called out in specific protocol)

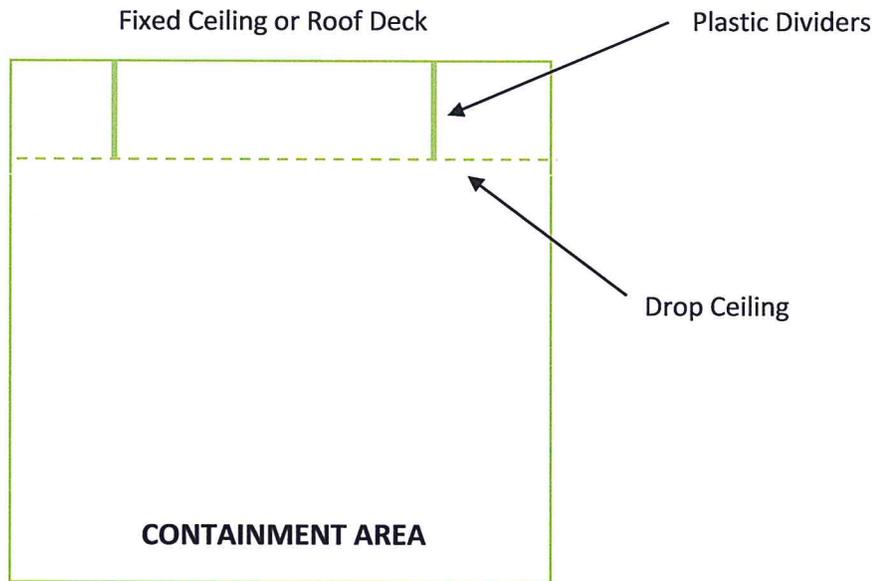
The blue vestibule in the diagram can be constructed from PVC so it can be knocked down and reused. The size of the vestibule should be large enough to contain at least one large individual. A zipper entrance should be installed at spots "A" and "B". The vestibule should have a clothing hanger (☺) in it so protective suits can be donned before going into the containment room or removed before going into the non contained area beyond the vestibule. Keep "A" closed until in the vestibule and "B" is closed. For highly sensitive situations put a sticky floor pad in the vestibule so all spores and dust are removed from shoes before entering the non containment area.



**NEGATIVE AIR CONTAINMENT AREA (use if applicable and called out in specific protocol)**



**C. CEILING CONTAINMENT (use if applicable and called out in specific protocol)**



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