February 14, 2012

Ms. J. S.
Mattituck, NY 11952

Dear Ms. S.,

SUMMARY OF OUR FINDINGS

At your request a second site visit was conducted on February 4th, 2012 at your facility. There were several goals of this second inspection including:

1. Identify the origin of the water entry into the building
2. Inspect the spaces in the basement adjacent to the finished office space
3. Inspect the HVAC system air handler and ductwork
4. Evaluate the contents stored in the rear basement storage area
5. Collect additional indoor environmental samples

Additional details and images are provided below. In our professional opinion, based on the testing and inspection performed we find the following conditions.

1. Water intrusion into the left rear corner of the basement appears to be the result of deficient grading and drainage. There are visual indications of water movement through the foundation wall with efflorescence and stains as seen on the interior of the left foundation wall in the rear of the building. Additional water entry could have occurred through the rear basement entrance door.

2. In the adjacent basement spaces we find a small area of mold on the dry wall adjacent to the electric water heater. This is less than 1 sq/ft. No other mold was seen on the contents or exposed framing in the areas we had access to.

3. The air handling units located in the basement mechanical area could not be opened for an internal inspection. We did find the fiberglass filters were loose fitting and not sealed allowing filter by-pass. A video inspection of the first floor heating ducts finds moderate accumulation of dust and particulate in all trunk lines indicating a need for cleaning.

4. Approximately 20 cardboard storage boxes in the rear of the basement have water stains. Some, but not all, of the paper contents in those boxes have surface mold growth.

5. Additional indoor air samples in the building find (a) the presence of dog allergens and cat allergens in the carpeting and an Environmental Relative Moldiness Index (ERMI) level 3 for both the basement and first floor carpeting.
Additional details are provide below. Please read the remainder of the report for a detailed explanation of how the testing was performed, interpreted, and additional comments we have regarding indoor air quality. Please know that many clients ask for referrals to qualified contractors, and over the years working with insurance carriers and loss prevention firms we have developed a list of reputable contractors, none of which we have any financial relationship with, ethically that would create a conflict of interest. Should you need assistance in locating a contractor please feel free to contact our office and we can provide you a list of firms qualified to handle projects such as this.

1. Source of water intrusion

The building is a one story office building with a full height basement. The structure is home is constructed with traditional wood framing and located on the eastern end of LI. There is a parking lot on the East, west and South sides of the building. The north side faces the road.

Parking lot drainage appears satisfactory with several dry wells in the field of the parking lot and a positive slope away from the building. The roof structure appears to be sloped from North to South with a gutter system along the South (rear) elevation. There are down spouts from the roof in the rear.

We find several down spout extensions on the left rear of the building. These appear to be recently added.
On the southeast corner we find indications that a downspout was located in this area in the past and drained into a below grade system. This has been removed and cement repair performed.

Inside the building, on the southeast foundation wall we find water stains, cracks in the foundation and efflorescence on the wall, indications of prior water intrusion.
The rear basement entrance is shown below. There is a drain at the bottom of the stairs. It is possible that the drain had become clogged with debris and during periods of heavy rain water pooled at the bottom of the stairs, and entered the basement.

As noted above, in our professional opinion, based on the testing and inspection performed, the water intrusion into the southeast portion basement appears to be the result of deficient grading and drainage. As water accumulated in the soil adjacent to the east side of the building the water took the path of least resistance and in this case moisture moved through the wall into the basement. These visual indications of water movement through the foundation include efflorescence and stains as seen on the interior of the left foundation wall in the rear of the building.

2. Visual Inspection of remaining basement

In our prior report we made several assumptions regarding the areas not accessible “…building is heated with forced hot air, gas fired system and there is separate ductwork for the central AC system mounted on the roof. There was no access to inspect the HVAC air handlers.”

During this second site visit access was made to the adjacent unfinished basement. As a result
we find the building to have a geothermal heat pump system and not a gas fired furnace as previously suspected.

This system is located approximately ½ the distance front to back along the eastern side of the basement. These units, while operational, do have some leaks and rust on the outer jackets.

In both air handlers we find fiberglass filters. These filters provide relatively low quality filtration as smaller particulate can pass through the large openings in the filter. In addition the filters are not sealed with foil tape allowing significant filter by pass to occur. Images below show the filters as seen on the date of the inspection.
Adjacent to the air handlers is an electric water heater. This unit appears relatively new. There is a water stain on the floor surrounding this unit and a small area of visible mold on the lower portion of the dry wall.

We suspect, but cannot confirm, the water heater to have been recently replaced and the prior water heater to have failed. This would account for the stain on the floor and small area of isolated visible mold. A surface swab sample was collected from the area above. Subsequent laboratory analysis confirms this to be *Penicillium* and *Stachybotrys* with Hyphal elements. The visible area is less than 1 sq/ft. **Focused remediation of the wall should be performed as detailed below in the report.**

The remaining inspection of the basement did not reveal any gross fungal contamination. We did note additional indications of water / moisture movement through the eastern foundation wall. In several locations we found efflorescence. The image below was taken in the front portion of the basement adjacent to the air handler and is typical of our findings.
3. Video inspection of the first floor heating ducts

Using an *Extech* BR250 video boroscope / wireless inspection camera (with extension) a video inspection of the first floor heating ducts was conducted. In multiple locations the floor register diffuser was removed and the boroscope camera inserted approximately 6' to 10'. The ducts we could see consisted of round and rectangular sheet metal with no insulation on the inner surface. In all locations we inspected we found large particulate at the terminus of many of the floor registers. This is consistent with debris from the floor falling into the ducts. Farther back into the trunk lines we find moderate accumulation of dust and particulate.
Above image shows large particulate at the terminus of the ducting

Above images are typical of the settled dust in the ducting. The lines you see are from the camera passing in and out of the duct leaving “tracks”.

Both of the HVAC air handlers in the basement and the associated ducting should be cleaned and sanitized per NADCA ACR guidelines.

4. Items stored in the rear of the basement

Various office materials and paper are stored in the rear of the basement, south east corner. Of the numerous contents stored within we find approximately 20 cardboard storage boxes to have water stains. Upon careful inspection of these water stained boxes we find some of the contents, mostly paper medical charts to have water stains and mold growth.
Some, but not all, of the paper contents in those boxes have visible surface mold growth. This was confirmed by the attached laboratory results labeled “chart swab samples”. We find *Penicillium, Hyphal fragments and Yeast-like* fungi.
5. Additional indoor samples

There are numerous ways to detect potential environmental problems in a building. In our previous site visit air samples were obtained using a Buck Bioslide 1020 slit impactor. The Buck impactor is specifically designed for the rapid collection and analysis of a wide range of airborne aerosols including viable and non-viable spores.

5.1 Allergen Testing

In addition to the spore trap air samples previously reported PBI collected a bulk composite dust sample from the first floor carpeting for Indoor Allergen Testing via the ELISA method. The results of this test are provided in greater detail in the attached PDF file labeled, “Allergen Test”. In summary review of this result we find Low Allergen Risk Levels for Cat allergen and Dog Allergens. The below chart is copied from page 2 of the attached report.

<table>
<thead>
<tr>
<th>Test Parameter</th>
<th>Antigens</th>
<th>Detection Limits</th>
<th>Concentrations</th>
<th>Allergen Risk Levels</th>
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</thead>
<tbody>
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<td>Dust Mites Allergen</td>
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<td>0.40</td>
<td>ND</td>
<td>µg/g</td>
</tr>
<tr>
<td>Dust Mites Allergen</td>
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<td>Cat Allergen</td>
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</table>

5.2 Environmental Relative Moldiness Index

Developed by EPA researchers, the ERMI is an acronym for Environmental Relative Moldiness Index. The mold burden of a building can be defined by two factors; the quantity of each mold species and the diversity of species present. The ERMI takes into account both of these factors and measures the long term mold burden.

The results of the ERMI tests find the building to have an ERMI value of 5 and an ERMI interpretation of 3. Below is an excerpt from the ERMI report.
PBI acknowledges that the ERMI test was originally developed for use in residential buildings. Accordingly, hard conclusions cannot be drawn from this result as we are using the analysis method in a commercial structure.

We consulted with Dr. Quanyi Li, Ph.D. of EMSL analytical to review the specific results for this project. Following that discussion, it is our professional opinion, that there is a borderline elevated mold burden in the building. There are 9 of 26 molds present in group 1, ~34%.

HOW THE RESULTS ARE INTERPRETED

When Professional Building Inspectors interpreted the attached laboratory results several documents were referenced, some of which are listed at the end of this document. Although there are no current Federal or State regulations with regard to mold, the EPA and the New York City Department of Health have published guidance documents.

The Institute of Inspection Cleaning and Restoration Certification, I.I.C.R.C., is a not for profit, independent certification body and this organization has developed The Standard reference guide for Professional Mold Remediation, IICRC S-520. This document is the only current standard and widely accepted in the industry. The standard defines three (3) environmental conditions related to mold levels and the category identified predicates the type of remediation to be followed. You will find the appropriate categories listed below when we discuss what has to be done to clean up the mold.

The American Conference of Governmental Industrial Hygienists, A.C.G.I.H., develops Threshold Limit Values (TLV's) as a guideline to assist in the control of health hazards in the work place. There are no current TLV's for mold. The A.C.G.I.H. has stated that in non-problem environments

<table>
<thead>
<tr>
<th>ERMI Value:</th>
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</tr>
</thead>
<tbody>
<tr>
<td>ERMI Interpretation</td>
<td>Level 3</td>
</tr>
</tbody>
</table>

- **ERMI Value > 5** - High Relative Moldiness. Further investigation needed to determine the sources of this mold.
- **ERMI Value > 4 and ≤ 5** - Moderate Relative Moldiness; Further investigation needed to determine if sources of mold exists.
- **ERMI Value ≤ 4** - Low Relative Moldiness. It is unlikely you have a mold problem.
the concentrations of fungi (mold) in indoor air typically is similar to or lower than the concentration seen outdoors, except when outdoor air concentrations are altered by weather conditions.

6. Recommendations

Based on information gathered during both of our site visits, a careful review of the laboratory data, and the reference documents in the report we recommend the following:

In the basement of the building that is finished as office space remediation as detailed below.

Technically speaking the mold condition in the basement is I.I.C.R.C. Condition 3 (actual growth): an indoor environment contaminated with the presence of actual mold growth and associated spores. Actual growth includes growth that is active or dormant, visible or hidden.

- Remediation to be conducted by trained mold remediation staff. Such persons should receive training on proper mold cleaning methods, personal protection, and potential health hazards associated with mold exposure. This training can be performed as part of a program to comply with the requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200).
- Respiratory protection to be used by remediation staff (e.g., N-95 disposable respirator), in accordance with the OSHA respiratory protection standard (29 CFR 1910.134).
- Gloves and eye protection to be used by remediation staff.
- The work area should not be occupied by owners / tenants during remediation without proper P.P.E as above.

- Install 6mil fire proof plastic barrier at the top of the basement stairs
- Installation of negative air to maintain containment.
- Installation of re-circulating HEPA air filtration in the basement.
- Seal HVAC ventilation ducts/grills and other openings in the work area with plastic sheeting to prevent cross contamination to the upper floors of the building.
- All items in the rear storage area be removed from the basement to facilitate cleaning.
- Remove and dispose of all carpeting and padding in the basement down to concrete.
- Use of air agitation to loosen all trapped spores.
- All surfaces need HEPA vacuuming.
- Wipe down all non porous surfaces using a mildicide/surfactant solution.
- HEPA air scrubbing in the basement to accomplish 8 air changes per hour for 72 hours.
- Air handlers and duct work to be cleaned and sanitized per NADCA standards by a professional duct cleaning firm
  - We recommend the filters be replaced with 3M filtrete filters or equivalent.
In the unfinished north side of the basement dry wall adjacent to the water heater.

- The demolition and removal of mold contaminated dry wall, pictured above.
- Continue to remove dry wall as necessary until no contaminated materials are found for 24” in all directions.
- The removal of any insulation associated with the removed sheetrock.
- The contaminated sheetrock and other building materials from the walls are to be removed from the building in heavy weight plastic bags, wiped down prior to removal to a disposal container. A disposal container in this instance can be a box truck or dumpster.
- The spraying of all exposed organic surfaces in the work area with Fosters 40/25. Such surfaces would include lumber framing, plywood, etc.
- The spraying of all exposed inorganic surfaces with Fosters 40/80 or equal as determined by this firm.
- HEPA vacuuming of all surfaces in the work area once the above has been accomplished.

On the main floor of the building.

While there is no visible mold on the upper floor and the mold spore trap samples were negative the ERMI test was positive as was the allergen test. We therefore recommend that following

- Work in a room by room / area by area fashion and install 6mil fire proof plastic barriers
- Seal HVAC ventilation ducts/grills and other openings in the work area with plastic sheeting to prevent cross contamination.
- Installation of re-circulating HEPA air filtration in each area.
- All surfaces need HEPA vacuuming.
- HEPA air scrubbing in each work area to accomplish 8 air changes per hour for 72 hours.
- Use of air agitation to loosen all trapped mold spores and allergens.
- Professionally clean all carpeting in accord with IICRC S100.
- Wipe down all non porous surfaces using a mildicide/surfactant solution.
- Air handlers and duct work serving the floor to be cleaned and sanitized per NADCA standards by a professional duct cleaning firm

Limitations

Due to the fact that this is a nondestructive forensic inspection of the building not all of the building components are accessible for inspection. My observations and conclusions are therefore based solely upon the conditions found at this site on the date of the inspection. No building plans, technical drawings or other documents that are specific to this building have been provided or reviewed.
Photographs were taken by the Inspector during the course of the inspection. All photographs taken are solely and exclusively owned by Scott Gressin and no other parties have any rights or claims to the photographs. All photographs taken are for the sole use of the inspector. Photographs may be provided to the client and their representative(s) for the sole purpose of clarification of conditions observed during the inspection. Images are typical of the date of the inspection.

This report is not intended to provide medical advice or advice concerning the relative safety of an occupied space. Always consult an occupational or environmental health physician who has experience addressing indoor air contaminants if you have any questions.

Samples were analyzed in order to determine the type(s) and approximate amount of fungal components present at the sampling location(s). The samples analyzed represent the conditions present at the time of the collection, but we caution you that since Mold is a living species it has the potential to grow in areas not affected at the time of this testing. Since it is not possible to test all areas PBI follows accepted standards for the testing of visible mold and for Blind Testing where there is a suspicion of mold but none can be observed. You, as the client have the right to authorize additional testing for an additional fee at any time.

This report was designed following current industry guidelines for the interpretation of microbial sampling and analysis utilized by the independent laboratories used by Professional Building Inspectors for the analysis of samples taken. Interpretation of these parameters is a scientific work in progress and may as such be changed at any time without notice. This report makes no express or implied warranty or guarantee as to the testing methodology used, and Professional Building Inspectors makes no express or implied warranties as to such use or interpretation.

Sincerely,

Scott Gressin

Certified Indoor Environmental Consultant # 0705065
NYS Home Inspector License #16000028893
Certified EIFS Inspector #785806
Certified Infrared Thermographer #32227
Certified Environmental Thermography Consultant #1005010
NYS EPA Asbestos Inspector #07-07380
EPA Lead Inspector Risk Assessor #NY-R-17027-1
Council Certified Structural Drying Supervisor #1011032

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REFERENCE MATERIALS

I.E.S.O., (Indoor Environmental Standards Organization), Standards of Practice for the Assessment of Indoor Environmental Quality, 2nd Edition


U.S.E.P.A., Office of Air and radiation, Indoor Environments Division, Mold Remediation in Schools and Public Buildings

N.A.D.C.A. ACR 2006, Assessment, Cleaning and Restoration of HVAC Systems

N.Y.C. DOH, Guideline on Assessment and Remediation of Fungi in the Indoor Environment


A.C.G.I.H., American Conference of Governmental Industrial Hygienists, Bioaerosols, Assessment and Control