
PROFESSIONAL BUILDING INSPECTORS

1057 MORA PLACE, WOODMERE, NY 11598 • 6 JULIA CIRCLE, EAST SETAUKET, NY 11733



PHONE: 516-295-2581 • FAX: 516-791-6832 • WEB: PROFESSIONALBUILDINGINSPECTOR.COM

August 25, 2009

Mr. R.M.
12 XXXXX
Shirley, NY 11967

Dear Mr. M.,

SUMMARY OF OUR FINDINGS

A site visit was conducted on August 19, 2009 at the above address. Based on our visual inspection of the home we find significant mold growth throughout the basement of the house.

In accord with the New York City Department of Health guidelines on assessment and remediation of fungi in the indoor environment as well as the Institute for Inspection Cleaning and Restoration Certification, **I.I.C.R.C.** standard 520, standard and reference guide for professional mold remediation a preliminary remediation protocol has been prepared. At this time we find an **IICRC Condition 3 Environment in the basement of the home. This is detailed 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.

THE OBJECTIVE OF THE SURVEY

The objective of the survey was to identify conditions, which may be affecting occupant health or comfort in areas of concern and to make recommendations to correct any indoor air quality (IAQ) problems based on a limited, one time, non-invasive air quality survey.

Mankind has recorded mold since Leviticus in biblical times and science has taught us that molds are Mother Nature's way of recycling organic compounds. Without molds the leaves that fell from the trees one hundred years ago would still be laying on the ground. While molds are ubiquitous in the environment there are times when either the levels of mold present are more than we typically compensate for, or the types of mold should not be found in our home or work place. Since molds eat plant matter, and most of our homes are constructed using wood framing mold can actually destroy the integrity of the buildings we live and work in.

There are three elements molds (fungi) need in order to grow and those are:

- The existence of a **food source**, molds eat organic compounds such as cellulose. Cellulose is found in paint, the paper on sheetrock, dirt, wood, clothing and similar

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surfaces.

- The second requirement is **temperature** conducive to mold growth, but unfortunately molds and humans like to live in the same temperature ranges.
- The third requirement is a **water source**. This can be water in a liquid state, i.e. from a flood or leaking pipe, or it can be chronic humidity levels above 60%, such as those found in crawl spaces or damp basements.

We have no realistic way to eliminate temperature, but we do have some control over the two remaining requirements. Chemicals can successfully be used to create a barrier between the food source and the mold; by removing the food we lower or remove the mold growth. We can also control the water by the altering the physical conditions found, by the use of French drains and finally the humidity by the use of self-draining dehumidifiers. A dirty house is just that, dirty - but not moldy. A wet, clean house on the other hand will be a moldy house.

HISTORY OF THE PROBLEM

The building has been poorly maintained over the last several years. There's been chronic elevated humidity in the basement as well as bulk water intrusion. Efforts to renovate and repair the house are underway area concerns have been raised regarding the extensive visible mold growth in the basement.

In addition to the mold growth, concerns have been raised regarding the possibility of an animal/raccoon infestation in the basement and the possibility of bacterial contamination from the raccoon latrine or the bird droppings and birdcages stored therein.

VISUAL INSPECTION

The home is constructed with traditional wood framing and is located in a residential section of suburban Long Island. The home is heated with baseboard radiators and there is no central AC system in the home. The images below is typical of the home on the date the inspection was performed.

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MOISTURE SURVEY

Building **Psychrometrics** were assessed using a various instruments to evaluate the indoor environmental conditions. This included the use of a Fluke 971 temperature and humidity gauge and a Delmhorst BD2100 moisture meter. *There was elevated moisture in the sheetrock throughout the basement of the home.*

HOW INDOOR AIR QUALITY TESTING WAS PERFORMED

There are numerous ways to detect potential environmental problems in a building. Air samples, collection of bulk materials, tape lift sampling, swab sampling, wall cavity testing, and dust and carpet sampling are some of the more common methods.

We referenced materials listed at the end of this document and during this during this inspection it was determined by the inspector which testing methods were most appropriate given the location, timing, and suspected problem.

The purpose of the sampling is to:

1. Determine the mold burden and airborne spore concentrations within representative areas of the building.
2. Provide a comparison of the indoor and outdoor mold spores as well as a comparison of different areas of within the structure.
3. Determine mold spore types.

For the purposes of air spore sampling PBI opted to collect surface swab samples of the visible mold in the basement.

WHAT NEEDS TO BE DONE

Based on our visual inspection and the above mentioned documents we recommend the following:

The entire basement of the house is an **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.

A raccoon latrine is likely to contain roundworm eggs that can be hazardous to human health. The adult stage of the raccoon roundworm (*Baylisascaris procyonis*) lives in the raccoon's intestine and produces microscopic eggs that are shed in the raccoon's feces. One raccoon roundworm can produce more than 100,000 eggs a day. A raccoon can pass millions of eggs in its feces

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everyday, depending on how many worms are in its intestines. Once deposited in the environment, the eggs develop into the infectious form in 2-4 weeks, and can survive in the soil for several years.

If these infectious eggs are inadvertently swallowed by humans, other mammals, or birds, larvae (immature stage of worms) hatch out of the eggs and move into the organs of the body. The larvae travel throughout the body and may cause serious eye disease, spinal cord or brain damage, or death. Discouraging raccoons from living around people and cleaning up raccoon latrines reduces the chance that people will get sick from raccoon roundworms.

Serious roundworm disease is rare (25 cases reported in the U.S. since 2003), but because the disease can be so severe, special precautions should be taken when cleaning up raccoon latrines. If you do not ingest developed eggs, you cannot get the disease. Taking special precautions will help reduce the chance that you will accidentally swallow eggs or contaminate other surfaces or objects. Be sure to avoid spreading eggs further when you clean up a latrine, and keep pets and children away from the latrine area until the cleanup is finished.

Based on our visual inspection and the below mentioned documents we recommend the following:

- Remediation can be conducted by trained staff. Such persons should receive training on proper *cleaning methods, personal protection, and potential health hazards associated with mold, Baylisascaris procyonis exposure, and bacteria associated with avian infestations.*
- All persons performing cleaning shall wear respiratory protection (e.g., N-95 disposable respirator), in accordance with the OSHA respiratory protection.
- Gloves and eye protection should also be worn.
- The work area should be unoccupied by non-trained persons.
- Efforts should be made to reduce dust generation. Dust suppression methods particularly during any cutting or resurfacing of materials are highly recommended. Methods to consider include: cleaning or gently misting surfaces with a dilute soap or detergent solution prior to removal.
- Use of High-Efficiency Particulate Air (HEPA) vacuum-shrouded tools; or using a vacuum equipped with a HEPA filter at the point of dust generation. Work practices that create excessive dust should be avoided.
- Isolation of the basement area using 6 mil fireproof plastic barriers to prevent gross contamination and the remaining portions of the building.

In the basement

- Installation of negative air to maintain containment.

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- Install dehumidification units in the home to bring the moisture content of the timber framing below 15%, sheetrock below 0.5% and relative humidity below 55%.
- Removal of **all personal possessions** from the basement house.
- Disposal of any open food items.
- The demolition and removal of all sheetrock, paneling or other wall covering from the entire basement from floor to ceiling.
- The contaminated sheetrock and other building materials from the walls are to be removed from the building to a disposal container. A disposal container in this instance can be a box truck or dumpster.
- The removal of all insulation associated with the removed sheetrock.
- The removal of and disposal of all carpeting and padding in the basement.
- Removal of any plywood sub floor in the basement of the house down to the concrete slab.
- Cleaning of the joists with abrasive wire brushes, scotch brite pads, soda blasting/sand blasting or dry ice blasting.
- Cleaning should be done until there is no visible mold growth and the staining is removed.
- If the contaminated surfaces cannot be satisfactorily cleaned using the above abrasive methods then encapsulation with **white Fosters 40/20** or equivalent. This encapsulation will kill any mold (fungus) and bacteria, seal it in place, and retard new growth.
- Should there be any items that you wish to keep they should be cleaned with a mildicide / surfactant solution.
- Use of air agitation to loosen all trapped bacteria or debris.
- HEPA vacuuming of all surfaces.
- HEPA air scrubbing in the basement to accomplish 8 air changes per hour for 72 hours.

On the first floor:

- Due to the long-standing nature of the problem in the basement we recommend the following be performed on the first floor of the home.
- Removal of **all personal possessions** from the first floor.
- Disposal of any open food items.
- Should there be any items that you wish to keep they should be cleaned with a mildicide / surfactant solution.
- Removal of all carping and padding from within the first floor.
- Demolition and removal of the ceiling in the right rear master bedroom beginning with the area of collapse and working outwards in all directions until clean sheet rock is encountered for 18 inches.

At this point we recommend you complete the remaining construction and rebuilding of the home.

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Once the major construction and renovations are complete the following should be performed:

- Use of air agitation to loosen all trapped Mold spores, bacteria or debris.
- Wipe down all services using a disinfectant solution such as Foster's 40/80.
- HEPA vacuuming of all surfaces on the first floor of the house.
- HEPA air scrubbing to accomplish 8 air changes per hour for 72 hours.

Note: Your Certified Mold Remediation Contractor (CMR) may elect to modify this protocol based on information found during remediation provided such modification is recognized in the S-520 protocol. It is recommended you have your CMR fax or e-mail us a copy of any revisions to our protocols.

Note: You the client have the right to authorize additional testing at any time. It is possible that the insulation, drywall or other components contain asbestos given the age of the original home. If you would like, we can conduct a NYS Asbestos inspection for the scope of anticipated work, for an additional fee. You client are responsible to insure that all state and federal regulations are followed with regard to asbestos containing building materials encountered in this project.

REGARDING CLEARANCE TESTING

Air monitoring shall be conducted prior to occupancy to determine if the area remediated has been reduced to **Condition 1 levels, normal background levels of mold that do not require remediation**, and if the mold contaminated any other areas between initial testing and completion of abatement. Post remediation testing will include both the remediated area and the surrounding areas exterior to the containment area.

All HEPA filters, air movers and fans need to be shut down for 24 hours flowing the above protocol before post remediation air samples can be taken. In addition, all windows, doors or exterior openings should be closed during this 24 hour period.

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.

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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
NYS EPA Asbestos Inspector #07-07380
EPA Lead Risk Assessor #NYR 17027-1*

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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*

I.I.C.R.C. Standard S-520, *Standard and Reference Guide for Professional Mold Remediation.*

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*

U.S.E.P.A., *Building Air Quality, A Guide for building owners and facility Managers*

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

O.S.H.A., Hazard Communication Standard 29 CFR 1910.1200, 1910.134, 1910.138