



P. O. Box 1024
Schenectady, NY 12301
(518) 346-6374 (Phone)
(518) 346-4062 (Fax)
www.4spectrum.com

MOLD REMEDIATION PLAN

Woodstock Public Library
5 Library Lane
Woodstock, NY

Prepared for
Alten Project Solutions



Prepared by:
Spectrum Environmental Associates, Inc.
2539 Albany Street, Schenectady, NY 12304
518-346-6374

February 9, 2021

INTRODUCTION

This Mold Remediation Plan, prepared by Spectrum Environmental Associates, Inc. (Spectrum), involves the remediation of mold throughout the Woodstock Public Library located at 5 Library Lane, Woodstock, New York. This Mold Remediation Plan satisfies the requirements of Article 32 of the New York State Labor Law. The work is to be conducted by persons who are licensed and trained to comply with Article 32 of the New York State Labor Laws in the removal, handling, and disposal of these materials, and the subsequent cleaning and treatment of the affected environment.

Spectrum stresses that moisture is the major contributor to the growth of mold. Therefore, control of moisture is paramount in the control of mold. Because mold is prevalent in all environments, if moisture isn't mitigated there is no guarantee that mold will not reappear, even after an effective remediation.

MOLD INSPECTION

On the day of the inspection, the building was occupied with employees and the heat was on. The building is mostly a one story structure with a second level in the middle. Several additions have been added to the building over the years. There is an attached 'book barn' and garage that is being used as storage at the rear of the building. There is a partial basement and several crawl spaces.

In the basement, pooled water was present on the cement floor, slowly moving towards the sump pump. The sump pump did not appear to be in good working order. Humidity levels in the basement were above 55% and considered elevated. Ventilation was minimal. Water appears to be intruding from the foundation walls and slab. A HVAC air handler is present in the basement. Visible mold was identified on the inside of the humidifier attached to the HVAC system. Visible mold was also identified on the underside of the wood stairs and on several contents in the basement including cardboard boxes and wood. The adjacent crawl spaces vent into the basement.

In the crawl spaces, a strong mold like odor was emanating. Although access was limited, visible mold was identified on the wood components in the crawl spaces. Humidity levels in the crawl spaces were also above 55%. Several ducts appeared to have shifted and are no longer tightly sealed.

On the first floor of the library, all areas appeared generally clean however there was visible mold identified on several window sashes. This is likely due to condensation being trapped behind the closed blinds. Water damage was identified on the ceilings in the front left office and in the middle right office. Buildup of dust and debris were identified in the heating registers on the floor.

The second floor of the library also appeared generally clean. There are unfinished storage closets at the front, right, and left side. The walls and sheathing inside these closets are improperly insulated. Visible mold was identified on the wood under the insulation in several areas. This is likely due to condensation being trapped under the insulation. Water staining was also identified on wallboard, sheathing, and on some wood components in the right storage closet.

In the book barn and garage, hundreds of books and contents are being stored on wood shelves and tables. This area is not heated. Water staining was identified on the ceiling insulation suggesting a roof leak at some time. Visible mold was identified on the underside of the tables. Water staining and visible mold was also identified on the lower wall near the side door.

At the exterior of the building, gutters and downspouts were missing from the roof line in several areas. Water damaged wood was identified under the roof line and the flat roof appears to be settling in a manner that may allow water to collect. This could lead to ponding and possible water intrusion within the building and should be investigated.

It could take up to one month to remediate and cost between \$10,000 and \$50,000. Please note this is a mere estimate required by Article 32, but without additional information concerning the exact methods to be used, or if the scope of work will expand due to hidden mold, we encourage our clients to discuss time frames and pricing with their contractor.

MOLD REMEDIATION

- *IMPORTANT: Mold remediation is recommended in this section and specific steps for your project are below. When the remediation is underway the scope of work indicated here may change. This process involves working in the area of the remediation and possibly cleaning of the air and other surfaces further outside of the actual remediation area. The actual remediation areas should be separately contained with 6 mil (Fire resistant) plastic with adequate negative air pressure to prevent mold spores from migrating into other areas. Generally, affected materials that may include wallboard, insulation and/or flooring or other cellulose materials are removed a minimum of 18" beyond the affected area. All remaining materials in the affected areas, including HVAC equipment and ducting, are thoroughly cleaned using the HEPA method of cleaning in conjunction with the use of air scrubbers to clean the air. The cleaning refers to the "HEPA sandwich" method of cleaning as recommended by the Institute of Inspection Cleaning and Restoration Certification (IICRC). This includes a process of HEPA vacuuming, then damp wiping, and then HEPA vacuuming again.*

If staining remains on any components following cleaning these areas should be sealed with an antimicrobial sealer such as Fiberlock IAQ 6000.

The use of biocides such as Microban or Shockwave may also be part of the remediation and cleaning process. Any of these products are allowable so long as they remain registered with the United States Environmental Protection Agency for the intended use. The contractor should be aware of any reaction to these compounds by the inhabitants of the dwelling or commercial space and then should be changed if needed.

The remediation and cleaning are to be performed by experienced workers with the proper use of personal protective equipment including, but not limited to, Tyvek coveralls with attached hood and booties, N-95 respirator masks, goggles and gloves. Depending on the type of project different respirators may be required.

In a building that is currently occupied where remediation will occur, occupants shall be notified of project details including estimated start and completion times and the restricted remediation areas. All remediation projects shall have proper posting at the entrance to the work area indicating the remediation being performed. Only the workers of the actual remediation are permitted to enter until final clearance is achieved by the assessor in a satisfactory manner. It is recommended that air cleaning equipment be removed from the job site 24 hours prior to final sampling if possible.

Based on the inspection, Spectrum presents the following recommendations.

- Mold remediation should take place in the basement. All affected contents should be removed and discarded. The humidifier on the HVAC system should be removed from the unit and decommissioned. The entire HVAC system, including all ductwork should be HEPA cleaned as described above. Routine cleaning of the system should take place every 3-4 years. The affected wood components on the stairs should be HEPA cleaned and if staining remains, encapsulated with an antimicrobial sealer. A dehumidifier should be used in this area to keep moisture levels low. The sump pump should be inspected by a trained professional and repaired accordingly. The basement should not be used for storage. In addition, the "stream" of water running through the basement should be investigated and stopped from entering the building. The constant stream creates moisture which encourages mold growth. This may involve excavating on the exterior of the building and redirecting the water flow around the building.
- Mold remediation should be performed in the crawl space to discard all contents with visible mold. All other debris should be removed as well. The vents around the crawl space should be closed and sealed. The affected wood components in the crawl space should be cleaned as described above. Encapsulation should be considered. In addition, fire retardant 6 mil or greater plastic sheeting should be installed on the dirt floor and secured onto the top of the foundation walls. The plastic sheets should overlay adjacent sheets by at least a foot with a complete application of glue so that the sheets form a complete barrier to water. Dehumidification may be necessary to keep the relative humidity below 50%.
- Remediation should continue to the first floor. The affected windows should be HEPA cleaned and wiped. The water damaged ceilings on the first floor should be opened by the contractor to further investigate for hidden mold colonies. If found proceed as described above.
- In the second floor storage closets, consideration should be made to remove all improper insulation. The affected wood components in these areas should be HEPA cleaned as described above.
- In the book barn and garage, affected tables should be removed. The affected lower wall near the door should also be removed and HEPA cleaning performed on the underlying components. Due to the uncontrolled environment of these areas, consideration should be made to store books elsewhere.
- Once mold removal is completed, the entirety of the project areas, including all surfaces and remaining contents, should be HEPA cleaned along with the use of air scrubbers to clean the air.
- The roof should be inspected for leaks by a trained professional and repaired accordingly. Gutters and downspouts should be properly installed around the building to help disperse storm water away from the foundation.
- A professional engineer should be consulted to determine the structural integrity of the wood components and foundation of the building. Mold is a symptom of high moisture which, if allowed to exist for prolonged periods, can be damaging to any structure and will promote the development of wood decaying fungi thus jeopardizing the stability of the components.

SPECTRUM CLEARANCE CRITERIA

- After the remediation but prior to the demobilization and/or removal of containment and negative air machines from the building, Spectrum will inspect the work area(s) and may collect and have analyzed air samples from the containment area(s) and from the exterior for background comparison purposes.
- The **clearance criteria** will be based on a visual inspection showing a clean, dry, dust and debris free work area, absent of any visible mold growth. Air samples for non-viable mold spores may be collected from within the work area(s) from the area outside of the work area(s) but still within the residence, and from the exterior. Spectrum may make a comparison of the sample results from the work area(s) and adjacent area with the exterior/background sample prior to determining whether the remediation has been successful.
- Spectrum will give approval for ending the remediation activities after its final inspection and results of any air sampling have indicated that the mold has been effectively remediated. Spectrum will then provide a closure letter summarizing the project results.


IMPORTANT CONSIDERATIONS

Care should be taken during these activities to avoid compromising the structural integrity of the building. Due to the amount of interstitial spaces in the building, and the availability of moisture throughout, there is likely to be hidden mold growth present in the building envelope. If mold is newly discovered at any point during the removal process, it should be brought to the attention of Spectrum and added to the scope. Care should be taken to prevent adverse effects such as discoloration by the application of the detergent water solution.

Appropriate state and federal regulations concerning the identification and remediation of asbestos, lead based paint and other environmental hazards should be followed. If asbestos containing materials are identified, NYS ICR-56 requirements should be followed and would take precedence over mold remediation procedures. The Work Plan should take all other applicable regulations into account when being prepared.

Should you have any questions concerning the collection and/or the analytical results presented in this report, please do not hesitate to contact our office at (518) 346-6374.

Prepared by



Robert A. Lankau Jr.
Senior Project Manager
Spectrum Environmental Associates, Inc.
NYS DOL Mold Assessor MA00087

REPORT DISCLAIMER

THE INFORMATION PROVIDED IN THIS REPORT IS LIMITED BY THE SCOPE OF THE ASSESSMENT REQUESTED BY THE CLIENT. NOT ALL ASSESSMENTS YIELD INFORMATION REGARDING THE PRESENCE OF MOLD AND THE EXISTENCE OF MOLD HAZARDS IN ALL MEDIA. YOU ARE ADVISED TO CLARIFY THE SCOPE OF THE ASSESSMENT PROVIDED WITH THE ASSESSOR.

THERE ARE CURRENTLY NO REGULATIONS REGARDING WHAT LEVELS OF ANY MOLD TYPES ARE ACCEPTABLE OR UNACCEPTABLE. The results of this investigation are open to interpretation to the person reading them. Furthermore, any change to the property being referred to will change the legitimacy of the appraisal report provided. The accuracy of any mold assessment performed is, therefore, limited to the condition of the property at the time the assessment report herewith was conducted. The assessor assumes no responsibility for retesting or reinvestigating the property to determine changed conditions. Any and all changes in the premises or its condition may result in the creation of mold hazards not in existence at the time of assessment.

The assessor does not ordinarily move any furnishings or individual items (for example furniture, shoes, wall hangings, and so forth.) for reasons for this evaluation. Furthermore, the assessor won't remove any trim work, ceilings, walls, floors, or insulation to investigate internal conditions. This sort of intrusive examination could possibly make a more dangerous environment than currently exist.

Not all areas were tested are made available for testing. The assessor makes representation with respect to the presence of mold or the condition of areas not tested, or with respect of any lead painted, or asbestos containing surfaces that may be disturbed during mold remediation work. Areas which were not investigated may, when tried, yield results which show the presence of mold or other environmental hazards. The client is advised to take such factors into account when performing remediation and repairs in these areas.

This report is intended only for the benefit of the assessor and the client and does not create any rights in any third parties. Use of these test results or reports or other materials by the client without written permission or adaptation by Spectrum Environmental for the specific purpose intended shall be at the user's sole risk, without liability on Spectrum Environmental Group's part, and the client agrees to indemnify and hold Spectrum Environmental harmless from all claims, damages and expenses, including attorney's fees, arising out of such unauthorized use.

Property Information

Property	Woodstock Library
Address	5 Library Lane, Woodstock NY

Building Information

Building Component	Description / Material / Locations	Condition G/F/P or N/A
Frame	Wood / Masonry	Fair
Siding	Vinyl / Aluminum / Concrete	Fair
Roof	Rubber	Fair
Interior Walls	Plaster / Wallboard / Sheetrock	Fair
Smoke / CO	Yes – meets building code	Good

Room	Access	Insulated Y / N	Vented Y / N	Condition G / F / P	Description
Attic	Limited	Yes	No	Poor	Sporadic insulation
Basement	Interior	No	No	Poor	Full + crawl space

The structure is a library normally open to the public throughout the year.

The furnace is of unknown age and presumed to be inefficient despite periodic upgrades. Library staff indicate the furnace is inspected annually. An infrared camera indicates the attic and exterior wall insulation does not create a continuous insulation and air barrier. Insulation should be upgraded to achieve an intact building envelope.

The last page of this report is a list of energy efficiency improvement recommendations, listed in order of savings to investment ratio (SIR). In general, higher SIR items will provide better energy efficiency return on investment. However, there may be reasons other than energy efficiency, such as health and safety or code compliance, to be considered when ranking the importance of these recommendations.

Summary of Health and Safety Recommendations

Inspect Chimneys, Vents, and All Combustion Heating Appliances Annually

Completely inspect entire length of the currently used chimney and all vents connected to chimney to ensure proper ventilation of all combustion appliances. Inspect all combustion appliances to ensure proper draft and safe, hazard free operation.

Estimated Cost: \$500.00

Estimated first Year Savings: N/A

Savings to Investment Ratio (SIR): N/A

Summary of Energy Management Recommendations

Seal All Areas of Significant Air Leakage

Blower door testing indicated potential sites for significant air leakage was observed in the areas described above. Note: It is recommended that a post blower door test be completed on the building to determine the post-renovation Building Airflow and potential need installation of mechanical ventilation.

Estimated Cost: \$2,400.00

Estimated First Year Savings: \$150.00

Savings to Investment Ratio (SIR): 1.25

Install Insulation

All un-insulated wall and ceiling (attic) cavities should be filled with cellulose insulation as per manufacturer's recommendations to achieve a total value of R-30 wherever feasible. Insulate roof and knee wall crawl spaces to R-38.

Estimated Cost: \$4,000.00

Estimated First Year Savings: \$200.00

Savings to Investment Ratio (SIR): 1.0

Replace Heating System

Replace current heating system with an Energy Star rated high efficiency unit.

Estimated Cost: \$8,500.00

Estimated First Year Savings: \$275.00

Savings to Investment Ratio (SIR): 0.65

Replacement Windows

Replace single pane wood frame windows.

Estimated Cost: \$8,000.00

Estimated First Year Savings: \$85.00

Savings to Investment Ratio (SIR): 0.38