

CASE STUDY: SOOT/WATER IMPACT FROM ADJACENT TENANT FIRE

PROJECT DESCRIPTION: IAQ MOLD ASSESSMENT (FINANCIAL SERVICE OFFICE)

Scope of Services: AET was contracted to evaluate the impact of a fire and fire fighting activities in a Financial Service Office located in a strip shopping center. The fire which completely destroyed the end tenant unit also resulted in soot and water contamination in up to 10 adjacent units. All units shared a common basement service hallway which provided a preferential pathway for soot and moisture intrusion. Approximately 8 inches of water was observed in the basement of this unit after the fire event. Restoration activities (water extraction followed by dehumidifier and fan use) had commenced prior to AET's inspection.

AET's Investigative Approach/Tools

1. **Visual Inspection:** A pronounced soot odor was noted when entering the basement. Soot stained footprints were noted on the basement carpet. The carpet was slightly damp to the touch; a pungent musty odor was noted on the back of the carpet. Water lines were visible on area doors and on sheetrock walls.
2. **Moisture Testing:** Moisture testing and infrared thermography confirmed moisture impact on the lower four feet of sheetrock wall and on carpeting/adhesive throughout the basement. No significant area of moisture impact were noted on the 1st floor.
3. **Surface Soot Sampling:** Tape lift samples confirmed soot contamination on non-porous and porous building materials in both the basement and 1st floor levels. Soot was also confirmed in the ceiling plenum and the returns of the buildings HVAC system.

Conclusion: Remediation must be performed in a negative pressure containment vented with HEPA air filtration devices. The HVAC filters for the building must be changed prior to the commencement of the remediation process. The supply/return grills must be sealed during remediation and a minimum of MERV 8 filters installed during reoccupancy and changed monthly during the first year following reoccupancy.

Remediation response actions prior to re-occupancy included:

- Disposal of stored porous items throughout the basement and first floor.
- Removal and replacement of porous furnishings on both levels.
- Removal and replacement of carpet and ceiling tiles on both levels.
- Removal and replacement of the moisture impacted sheetrock (i.e., bottom 4 feet) in the basement.
- Comprehensive soot cleaning of finishes and building surfaces on both levels including ceiling interstitial spaces.
- Duct cleaning (for soot) of the HVAC systems including removal and replacement of flexible ductwork.
- Cleaning/encapsulation of wall cavities in the basement followed by sealing wall penetrations to adjacent spaces.

When you need professional help or advice, email Alan Sutherland, CIH, CHMM at a.sutherland@aetinc.biz or call 610-891-0114. We provide nationwide services; phone consultations are free. Check out the full range of environmental contracting/consulting services we provide at our website www.aetinc.biz.

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