



CASE STUDY: HURRICANE SANDY

PROJECT DESCRIPTION: RESIDENTIAL WATER DAMAGE/MOLD REMEDIATION

Scope of Services: AET was contracted by single family homeowners along the New Jersey seashore to develop and implement remediation

work plans for water damaged building materials impacted by *Hurricane Sandy*. Hurricane Sandy's storm surge resulted in over 5-7 feet of water flooding the residences and resulting in water damage extending 4-5 feet up the interior wall of the residences. Remediation at each project exceeded 1000 square feet of water impacted building materials.

Problems Encountered

1. **State of Emergency:** Access to the shore communities was halted for approximately 5 days after the storm; mold growth commences after 48-72 hours after water impact. Once authorized entry was permitted remediation work hours were restricted to 7:00 a.m. - 2:00 p.m. weekdays only.
2. **No Electrical Power:** Gas powered generators had to be used to power drying equipment (fans, dehumidifiers) and cleanup equipment (HEPA vacuums) on a daily basis. Electrical power was not completely restored for 10-20 days after the storm. Water rose above the height of the interior electrical wall outlets.
3. **Crawl Spaces:** Most residences had dirt-floored crawl spaces which were completely flooded and filled with debris. The water table below the dirt floor is close to the surface resulting in moisture being drawn from the dirt floor and significantly extending the drying process. Studies indicate the ground surface can evaporate 12-18 gallons of water per day in a 1000SF crawl space area.
4. **Insurance Issues:** Due to the magnitude and wide spread devastation, insurance companies could not respond promptly and remediation work had to be started (and mostly finished) without an insurance adjusters review/approval of the remediation work plan. Insurance reimbursement for the homeowners was critical.

To help insure maximum reimbursement to the homeowners, AET's remediation work plan included:

- Property specific remediation work plans.
- Detailed, itemized listings including quantities of water damaged building materials to be remediated.
- Maintenance of photo documentation of each property and specific building materials impacted/removed. Representative samples of building materials were also collected for future inspection by the insurance carriers.

AET Experience: Storm surge water can be contaminated with disease-producing viruses, bacteria and parasites. Sewage, insecticides, pesticides and other chemicals may also be present. Contamination is exacerbated by the duration of contact/impact with the building material (well beyond the 48 hour recommended guidelines).

Decision-making on non-porous materials (metal, glass, hard plastics, etc.) which normally can be dried, cleaned and reused, often defaults to removal/disposal from a cost effective standpoint. Porous materials (drywall, carpets, insulation, ceiling tiles, etc.) are removed and disposed except in very rare exceptions. Decision-making on semi-porous materials (wood and concrete) are key items since they can be cleaned; however, water is embedded well below the surface requiring extensive drying. When wood is exposed to water, it will swell and buckle. This is most evident with composite wood materials such as laminated beams, plywood and oriented strandboard. Wood will begin to rot at 17-18% moisture causing floor joists, beams and other wooden materials to weaken. Structures that are constructed on concrete block or brick piers and foundations can have deteriorated mortar joints, footings, and foundations which can be deteriorated and weakened.

Follow-up professional engineering and electrical inspections of the residences is essential to verify structural integrity and safety concerns. Further, periodic inspections of the dried semi-porous building materials is required as these materials will add moisture after drying from background humidity levels. Evidence of mold on wood surfaces must be properly remediated and additional controls implemented.

When you need professional help or advice, email Roy Mosaicant, CIH at r.mosaicant@aetinc.biz or Eric Sutherland at e.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.