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RESTORING FLIGHT 1549

Two restorers help tell the story of the Miracle on the Hudson

Living R.I.C.H.

RIA Leadership Summit & Industry Expo in Review

Doing What's Right

5 Questions With Heather Becker

By Michael A. Pinto, CSP, CMP

Rebuilding After Restoration for Sensitized Occupants

If you have been in the cleaning and restoration business for a substantial length of time, you have had customers who have not only been traumatized by their loss but also sensitized by one or more contaminants in the building they occupy. It has happened with office workers after a fire, store employees after ducts are cleaned with chemicals, children in school following carpet cleaning that utilizes standard detergents, and multitudes of residents after fungal contamination has affected their homes. Although these cases seem odd, they happen with enough frequency for restoration and cleaning contractors to realize that they are not psychosomatic.

Occupant sensitization is now recognized as a significant problem by both government agencies and the private sector. In August 2012, an architectural firm, Perkins+Will, released a study that included a list of 374 known asthmagens identified by government agencies, third-party regulatory agencies and academic sources. The report used the term "asthmagen" instead of "allergen" to emphasize the growing recognition that even contaminants that do not typically evoke an allergic response can be an asthma trigger. In essence, scientists and doctors now realize that sensitization can occur in situations where it was never anticipated in the past.

> *"Occupant sensitization is now recognized as a significant problem by both government agencies and the private sector."*

While these particulars about allergens, asthmagens and sensitization may seem inconsequential, they actually have a direct bearing on cleaning and restoration contractors. There is an evolving trend for restoration professionals to be responsible not only for removing contamination but also for conducting complete structure cleaning. Restorers are even completing the repair and rebuild of the property to minimize future problems.

Over the years, the team at Wonder Makers Environmental has dealt with every one of the specific examples listed at the beginning of this article. Through an extensive process of research, coupled with a good dose of trial and error, we have learned about numerous products and processes that can help in rebuilding remediated structures. We have several recommendations for restoration contractors trying to build a safe haven for sensitized individuals.

Please note that Wonder Makers has no financial ties to any of the products or processes listed and that there may be alternatives. Nor are we licensed builders or contractors, so you should verify that all suggestions meet local building codes. Finally, we would like to hear about any additional techniques that have been successful so that the whole industry can continue to move forward in this critical area.

Suggested Construction Techniques

Foundations

- Slab on grade instead of basement, especially in water-prone areas.
- Grade subsoil and landscaping away from the house.
- A 2-foot to 4-foot buffer zone with rock or stone rather than grass or plants around the structure.
- French drain around perimeter of the footings to channel subterranean water away from the basement/slab.
- Pea stone or other rock on top of the compacted soil under the cement slab.
- Plastic vapor barrier under the cement slab, which is tied to the vapor barriers on the walls.

Framing

- Metal framing rather than wood.
- Plywood rather than OSB or particleboard for floors, roof deck and sheathing.
- If wood framing is used, check lumber for mold and treat prior to installation.

- As an alternative to treating individual pieces of lumber and sheathing, apply an antimicrobial protective coating to the entire structure after it is framed and roofed, but prior to installation of any finish materials.
- Consider plywood with a factory-adhered foil radiant barrier for roof deck and subfloors over a basement or crawl space.
- Utilize 45-pound roofing felt or specialty underlayment below shingles.
- Install asphalt-saturated kraft building paper (ASK) as a vapor barrier on the exterior sheathing rather than house wrap.

Attic

- Adequate soffit vents.
- Gable vent fan with controls that have both hygrometer and temperature control setting.

HVAC components

- Galvanized metal ductwork, seams sealed with aluminized tape, ASTM-rated exterior insulation on all supply and return ductwork.
- No flex duct.
- Pleated supply filter with MERV 13 rating.
- Antimicrobial drain pan, coating, venture tape ASTM-rated.
- Bath exhaust fans on timer delay and tied into the light switch.
- PVC pipe rather than flex duct for dryer exhaust.
- Fresh air vent of PVC piping to high-efficiency furnace/dryer.

Interior walls

- Plaster, if possible, or mold-resistant gypsum board (fiberglass on the back side rather than paper).
- No greenboard in water-prone areas, utilize cement board up to four feet in all bathrooms, kitchens and mudrooms, as well as all walls and ceilings for shower/tub surrounds.
- No MDF particleboard for walls or cabinets.

Cabinets and cupboards

- No particleboard; all-plywood construction (APC).
- Use ¼-inch bumpers on base to allow drying in the event of leak; gap covered with base trim.

Flooring

- Hard flooring with accent area rugs rather than wall-to-wall carpeting.
- Maximum size of 6-foot by 8-foot for rugs so that they can be rolled up and washed in commercial washing machine.

Plumbing

- All flexible connections of braided steel to sinks, toilets, dishwasher and clothes washer. Floor drain in laundry room and mechanical room where the water heater is located.
- Water heater mounted in secondary collection pan with a connection to floor drain or to outdoors.

Garage

- Slope concrete from rear of structure to the door.
- If a trough is installed in the concrete to catch the bottom of the garage door as a weather seal, ensure that there is a slight slope to the trough so that water has an exit channel out of the garage. RIA

Michael Pinto, CSP, CMP, is the CEO of Wonder Makers Environmental Inc. He has more than 30 years of safety and environmental experience from jobs in the private sector, the non-profit arena and regulatory agencies. Pinto is the author of five textbooks and more than 150 published articles. He can be reached at map@wondermakers.com.