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HAZMATS IN RENOVATION PROJECTS – RISK MANAGEMENT CONCERNS

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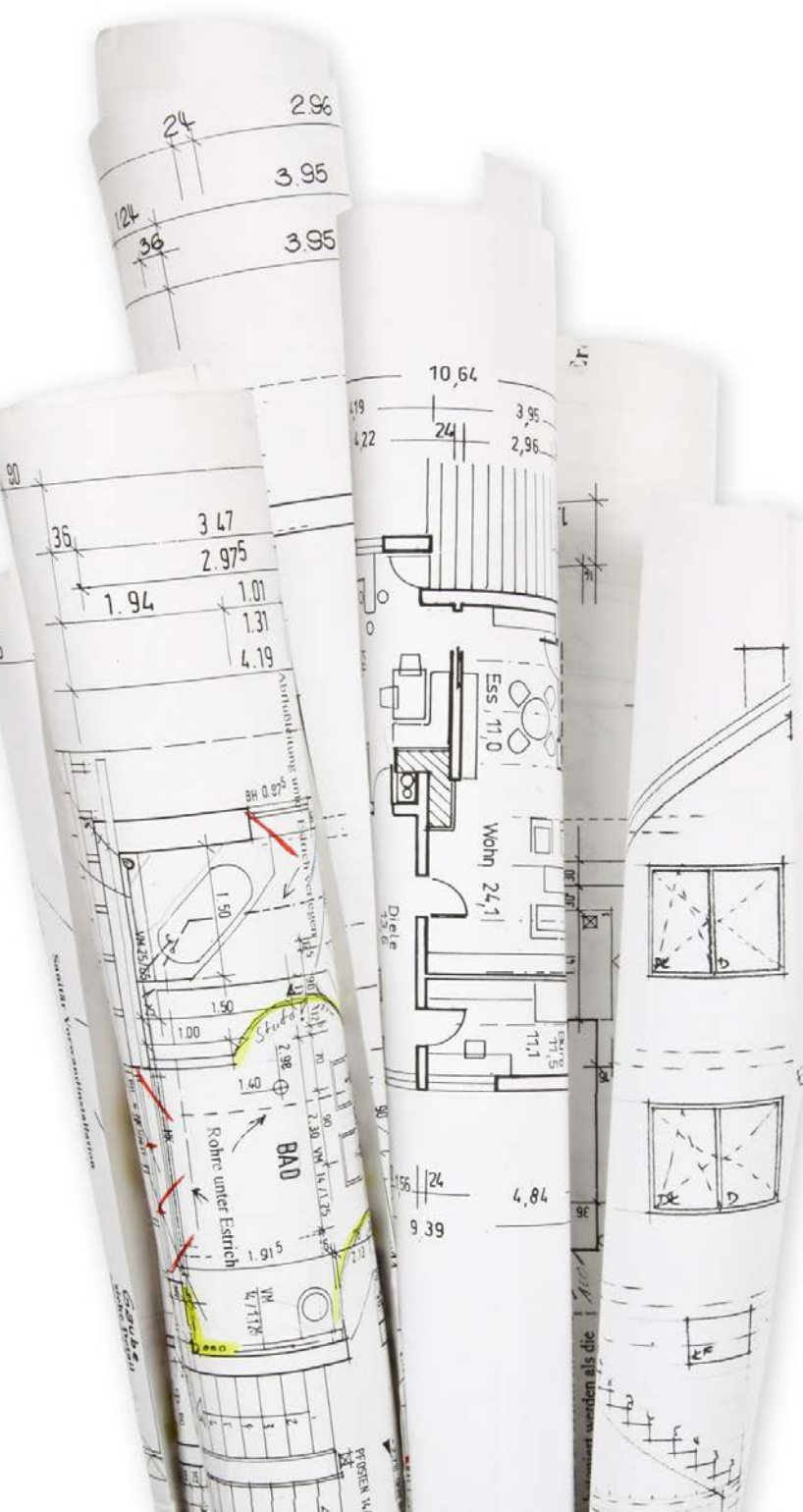
Especially in renovation projects, it is certainly possible that an architect or engineer may encounter hazardous materials (HAZMATS) at the site. What are the risk management considerations? First, let's determine what the concerns are with certain common HAZMATS.

The big three—typical substances that come to mind are asbestos, lead paint and polychlorinated biphenyls (PCBs) in existing buildings.

- **Asbestos** has superior thermal resistance and acoustical properties. It was used in fireproofing, insulation, vinyl asbestos floor tiles, adhesives, ceiling tiles, roofing, plaster and in drywall compound. Long exposure to the fibers, when inhaled, causes two types of lung issues. Asbestosis is a non-cancerous form of pulmonary fibrosis where the lung tissue becomes thickened over a period of time, due to permanent scarring. Mesothelioma is an incurable asbestos-related cancer that affects the lining of several areas within the body.

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- **Lead paint's** greatest risk is in existing structures impacts brain development, where irreversible damage can occur. Higher levels of exposure can damage the kidneys and nervous system in both children and adults. Very high levels may cause seizures, unconsciousness and death.
- **PCBs** are resistant to extreme temperature and pressure. Exposure to this HAZMAT causes changes in blood and urine that result in cancers in the liver, gall bladder, biliary tract, gastrointestinal tract, brain, breast and cancer, and skin disease.

RISK MANAGEMENT CONCERNS FOR RENOVATION PROJECTS

Asbestos

One approach to tackle the problem is to remove the asbestos in what is called abatement. Another approach is to encapsulate the substance. And thirdly, leave it intact if it is not friable (powder-like). Abatement is expensive, time consuming, messy and very involved. An abatement contractor has to go through extreme measures to keep its workers, occupants and the building safe. Encapsulation is much easier, such as applying a layer of drywall over the asbestos. Like encapsulation, intact asbestos must be monitored, and must be removed is it degrades.

The first building type that the construction industry targeted were K-12 schools, since students would have had long time exposure of asbestos. A one-time encounter of airborne fibers would not be a real concern. After many if not all schools were abated, the construction industry turned its attention on public buildings.

LITTLE KNOWN FACTS & THEORIES—FIRE RESISTANT ASBESTOS

The World Trade Center's Twin Towers

Because of its superior thermal resistance, a theory postulates that had the steel columns and beams in the towers had asbestos fireproofing, the fires from the jet fuel may not have caused the structures to fail on 9/11/2001.

The initial material used for most of the fireproofing (later withdrawn because it contained asbestos) was a mineral fiber formulation consisting of about 20 percent chrysotile asbestos, 60 to 65 percent mineral wool, and the remainder made of gypsum and Portland cement binder. This was sprayed on structural steel up to the 36th floor and parts of the 37th and 38th floors of the North Tower.

Above this point in the North Tower, and for the entire structure of the South Tower, the spray was an asbestos-free successor to the original product consisting of mineral wool and binder. These formulations were applied to core columns, the outside face of the exterior walls and columns, the long-span steel joists (trusses) that supported the concrete floors, and trench headers for the underfloor raceway system.

FireEngineering, "Fireproofing" at the WTC Towers, by Roger G. Morse, August 19-24, 2021



<https://pixabay.com/photos/world-trade-center-wtc-new-york-city-2699805/>

Charlemagne's Tablecloth

Perhaps the most famous user of asbestos was the emperor Charlemagne. He was said to have had a tablecloth made from the substance. He'd host dinner parties, with people eating and drinking off the tablecloth. Then, at the end of the evening, when the table was cleared, he would pick up the cloth and throw it into the fire to burn off the food scraps. When it failed to burn his guests were amazed. It was said that he used it to convince some of his guests that he had supernatural powers. *GIZMODO Newsletter* <https://io9.gizmodo.com/the-sordid-bizarre-history-of-asbestos-goes-all-the-wa-5833469>

Lead Paint



<https://www.finehomebuilding.com/project-guides/painting/lead-paint-safety>

Lead paint should be removed. Banned in 1978 in the United States, this HAZMAT is still present in millions of older homes, under layers of newer paint. Unlike asbestos, another coat of lead-free paint does not make sense, since the outer layer can be breached. The classic environmental problem is where children touch surfaces such as door and window frames, kitchen and bathroom cabinets, and walls, where friction causes paint dust that can be inhaled or ingested. Young children have been known to ingest the dust that tastes a bit sweet. Leaving lead paint in-place is hazardous.

PCBs

This HAZMAT substance was used widely in electrical equipment, like transformers and capacitors in existing buildings, and was banned in the United States in 1979.



https://www.google.com/search?q=electrical%20transformer%20images&tbm=isch&hl=en&tbs=il:cl&sa=X&ved=0CAAQ1vwEahcKEwjYo_aw8qDuAhUAAAAAHQAAAAAQAg&biw=1492&bih=788#imgrc=VQ3Kvr7zP30fPM&imgdii=kt5UFidC2bk6EM

IN CONCLUSION

This risk management article is by no means inclusive of all of the HAZMAT concerns and issues when an architect or engineer is involved in a renovation project. It is wise for the project owner to engage qualified professionals with experience with HAZMATs. The wisdom is that if an architect or engineer engages an environmental engineer who designs the abatement, encapsulation or monitoring intact of HAZMATs, and a claim occurs, the design professional would be in the first line of liability, in what is called “vicariously liability” to the project owner (respondeat superior—Latin translated means “let the master answer,” which is a doctrine that a party is responsible for the acts of those they hire).

The Engineers Joint Contract Documents Committee's Agreement Between Owner & Engineer for Professional Services states that:

6.10 F. Owner acknowledges that Engineer is performing professional services for Owner and that Engineer is not and shall not be required to become an "owner," "arranger," "operator," "generator," or "transporter" of **hazardous substances**, as defined in the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended, which are or may be encountered at or near the Site in connection with Engineer's activities under this Agreement. (Emphasis added)

A generic sample provision of a design professional's agreement with their client can be included as follows:

It is acknowledged by both parties that the Consultant's scope of services does not include any services related to the presence at the site of asbestos, lead paint, PCBs, petroleum, hazardous waste or radioactive materials. Client acknowledges that the Consultant is performing professional services for Client and the Consultant is not and shall not be required to become an "arranger," "designer for removal," "operator," "generator" or "transporter" of **hazardous substances**, as defined in the Comprehensive Environmental Response, Compensation, and Liability Act of 1990 (CERCLA).

The American Institute of Architects' Standard Form of Agreement Between Owner & Architect B101, states that:

§5.5 **The Owner shall furnish** services of geotechnical engineers, which may include test borings, test pits, determinations of soil bearing values, percolation tests, **evaluations of hazardous materials**, seismic evaluation, ground corrosion tests and resistivity tests, including necessary operations for anticipating subsoil conditions, with written reports and appropriate recommendations. (Emphasis added)

§10.6 Unless otherwise required in this Agreement, the **Architect shall have no responsibility for the discovery, presence, handling, removal or disposal of, or exposure of persons to, hazardous materials** or toxic substances in any form at the Project site. (Emphasis added).

About the Author

Eric O. Pempus, FAIA, Esq., NCARB has been a risk manager for more than 15 years with experience in architecture, law and professional liability insurance, and a unique and well-rounded background in the construction industry. He has 25 years of experience in the practice of architecture, and as an adjunct professor teaching professional practice courses at the undergraduate and graduate levels for the last 34 years. As a Fellow of the American Institute of Architects and Chair/Hearing Officer of the AIA National Ethics Council, he has demonstrated his impact on architectural profession. He has presented numerous loss prevention and continuing educational programs to design professionals and architectural students in various venues across the United States and Canada.

The above comments are based upon DesignPro Insurance Group's experience with Risk Management Loss Prevention activities, and should not be construed to represent a determination of legal issues, but are offered for general guidance with respect to your own risk management and loss prevention. The above comments do not replace your need for you to rely on your counsel for advice and a legal review, since every project and circumstance differs from every other set of facts.

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