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Do Asbestos-in-Soil Regulations Threaten Brownfields Success?

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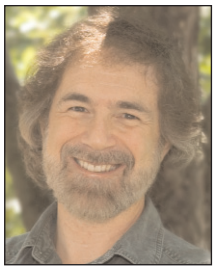

The Massachusetts Department of Environmental Protection has proposed new environmental regulations to establish stricter standards for the cleanup building sites where asbestos may be present in the ground. While well-intentioned, the new requirements could have a chilling effect on the redevelopment of urban land. The future success of federal, state and local brownfields redevelopment programs, which target this redevelopment, may suffer as the additional regulatory requirements take hold.

Prior to the Clean Air Act, asbestos found its way into the urban environment as a result of its use in building construction. Asbestos was widely used for fireproofing, thermal and acoustical insulation, condensation control and decoration. It was sprayed on beams and ceilings, used to cover piping, boilers and air ducts. Wide asbestos use continued until the 1970s, when the EPA banned certain applications. As pre-1970s buildings completed their useful life, the asbestos they contained was often released to the environment when the structures were demolished. Asbestos contaminated rubble from demolition was often used to partially, or entirely backfill the building's foundation excavation.

These practices are now prohibited by the Clean Air Act, which required the U.S. EPA to implement regulations to control exposures to hazardous airborne contaminants. The EPA established the National Emission Standards for Hazardous Air Pollutants (NESHAP) under Section 112 of the CAA, and asbestos was among the first hazardous pollutants regulated. The asbestos NESHAP was promulgated on April 6, 1973, and revised in 1990. It protects the public by minimizing the release of asbestos fibers during renovation and demolition activities. Accordingly, the regulation specifies work practices to be followed for demolitions and renovations of all structures, installations, and buildings.

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History of Use

Since its early use, asbestos has been associated with lung disease. The word "asbestos" refers to six naturally occurring fibrous minerals: chrysotile, amosite, crocidolite, tremolite, anthophylite and actinolite. Prior to most uses, the mineral is first separated into thin bundles of fibers and mixed with a binder. Various combinations of asbestos minerals have been used but chrysotile is the most commonly observed form in older buildings.

Asbestos use dates back centuries and has been incorporated into hundreds of products. Its strength, excellent insulating properties and resistance to fire and corrosion made it a natural wonder material. Ancient Greeks used asbestos in their cloth and Romans used it in their building materials. However, evidence suggests that even in ancient times there was an awareness of its potential for adverse health effects.

In the United States, asbestos became popular in the early 1900s and its use increased greatly during World War II, when it became common in war ships. Longshoremen, pipe fitters, insulators and other shipyard workers were heavily exposed to the material. Almost 4.3 million Americans worked in shipyards during the war. Fourteen of every 1,000 of these shipyard employees are believed to have subsequently died of asbestos–related cancers and asbestosis (irreversible lung scarring that can be fatal). Regulatory programs now include require that "asbestos containing building materials" (ACBM or ACM) must be removed from buildings before renovation or demolition of those structures can proceed.

These is no serious controversy in medical literature about whether asbestos is a hazardous material. Chronic exposure to asbestos increases the risk of lung cancer, mesothelioma (a cancer of the chest and abdominal linings) and nonmalignant lung and pleural disorders. Evidence in humans comes from epidemiologic studies as well as numerous studies of workers exposed to asbestos in a variety of occupational settings.

The most dangerous asbestos fibers are too small to be visible. After they are inhaled, they can remain and accumulate in the lungs. Symptoms of the diseases they cause do not show up until many years after exposure. Most people with asbestos-related diseases were exposed to elevated concentrations on the job, though some developed disease from exposure to clothing and equipment brought home from job sites.

Demolished Buildings

Regulatory restrictions and the wide recognition of asbestos' dangers have virtually eliminated its use in modern construction. Strict state and federal NESHAP regulations help ensure that as old buildings are demolished, the asbestos is safely removed before it can be accidentally released to the environment. However, as discussed above, prior to the current asbestos regulatory regime, a common demolition practice was to "drop" buildings into their foundations after first scavenging valuable components. Because

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ACM components were often not valuable enough to salvage, they would simply be broken up during the demolition process and mixed in with the concrete, wood and brick rubble.

Locations where buildings once stood may now contain asbestos in the ground. Once in the underground, asbestos does not decompose and is not degraded by natural processes that attenuate other contaminants. Its hazardous properties do not decrease with the passage of time.

In Massachusetts, releases of oil and hazardous materials are regulated under the Massachusetts Contingency Plan and asbestos is considered to be a hazardous material for that purpose. While the release of one pound or more of asbestos within a 24-hour period will initiate regulation under the MCP, the absence of criteria to trigger regulatory requirements for historic releases leaves DEP somewhat hamstrung in its efforts to require asbestos cleanups.

Further complications arise because the MCP lacks guidance on how to assess asbestos in the ground and how to determine how much cleanup is necessary, if any. There also is no clear manner in which to reach closure once the DEP is notified of an asbestos release on a site. As if those complexities were not enough, the MCP regulation of asbestos cleanups is made more challenging by other frequently conflicting asbestos regulatory programs administered by the DEP, the Division of Labor and Industry and the federal Occupational Safety and Health Administration.

The DEP has recognized many of the limitations and has been working over the past four years to develop a new regulatory regime to permit cleanups to proceed. However, significant questions remain about whether it will be possible to achieve satisfactory closure of an asbestos release site without incurring expenses that are too high to render redevelopment feasible. There are still some questions about whether achieving a permanent solution, the touchstone for MCP sites, will be practical under the proposed regulations.

Brownfields redevelopment has been a popular program by which underutilized properties, typically in city/town centers, are brought back into productive reuse through a combination of government grants, tax incentives and assistance from regulatory agencies. Additional regulatory requirements targeting asbestos cleanup are bound to have a greater impact on reused urban properties and thereby further complicating the task of bringing these properties back into productive use.

As it stands now, the DEP and its new commissioner are taking another internal look at the proposed asbestos-in-soil regulations, and the final version is not due to be published until mid-2008. Hopefully by that time some of the regulatory inconsistencies will be ironed out and clarity will be provided on the feasibility of achieving closure on these problem sites. ■