Section 3
HEALTH/SAFETY and ENERGY CONSERVATION

3.1 Hazardous Materials

Historic buildings were often constructed using materials containing asbestos or lead, which are considered hazardous today. When planning to eliminate such materials, the homeowner should carefully consider the architectural importance of those elements containing hazardous materials in making decisions as to whether to remove or encapsulate them. Experts in the field should be consulted in the event there is a concern and the work should be done according to existing regulations.

Points to Remember in Handling Hazardous Materials:

- Hazardous materials, when being removed, should be removed in a manner which will not cause damage to adjacent historic materials and finishes. Plants and landscaping should also be protected.
- Where removal is not desired, appropriate methods for encapsulation (wrapping, paint finishes, covering, etc.) should be sought out. Those methods used should attempt to preserve the important visual character of those architectural components affected by this process through the selection of appropriate materials or finishes for use in encapsulation.
- When in doubt, contact a professional for paint removal or a licensed asbestos abatement contractor.

Asbestos Abatement

Asbestos was proclaimed as a " wonder" material of the early 20th century. This material was resilient, fire-resistant, non-conductive to electricity, and relatively lightweight. Thousands of products were made with asbestos including roof shingles, wall shingles, pipe insulation, and adhesive compounds. Unfortunately, asbestos was later found to be a potential cause of lung cancer and other diseases.

Asbestos products are generally classified as "friable" or "non-friable". Non-friable asbestos refers to products where the asbestos is embedded with other materials, greatly reducing its chances to become a powder and released into the air. Typical non-friable asbestos in historic dwellings includes asbestos-cement roof and wall shingles used from the 1930s to the 1960s. If these products are present on your house, it is generally not a cause for concern. Asbestos wall shingles often have been painted over for years, further reducing the chances that the asbestos fibers could become airborne. If these shingle or siding materials require removal, care should be taken not to break the shingles which could cause the release of asbestos fibers into the air. Before these materials are handled, it is advised that they be soaked with a fine spray or mist of water and that proper air masks and filters be used.

Friable asbestos products are those which are easily crumbled into powder and released into the air. Typical household products which may be friable in historic dwellings include insulation around furnaces, boilers, and heating ducts, and asbestos floor tiles. Friable asbestos should be encapsulated or removed.

Encapsulation is a term used to prevent the asbestos fibers from becoming airborne. Encapsulation of insulation is recommended by wrapping plastic sheeting around it and sealing it airtight with tape. Water-based foams and adhesive are also available which will provide a coating surface to this insulation and prevent fibers from escaping. Floor tiles can be encapsulated by covering them with new floor materials. If there are significant areas of asbestos in a dwelling, professional removal may be the best course of action.

Lead-Based Paint Abatement

Lead was widely used as a pigment in paints, and it is likely that most pre-1945 dwellings have one or two layers of lead-based paint on the interior and exterior. Lead is a health hazard when ingested, especially for children, and flaking or peeling paint can result in lead dust being inhaled. As in the case of asbestos, lead paint can be either removed or encapsulated.

Lead paint removal is the most difficult of these choices, but it does result in the end of this problem. Paint can be removed by scraping or sanding or by the use of a heat gun or plate. Sanding creates hazardous dust and burning off lead paint creates hazardous fumes. Workers who undertake this work should wear proper safety equipment such as a toxic-dust respirator, goggles, gloves, and clothes that protect your skin. If working on the exterior walls, cover the ground or adjacent bushes with drop cloths and regularly dispose of accumulations of chips and dust. If working on interior walls, keep the room where you are working closed off from the rest of the house and cover any air ducts. Children should be removed from the premises during the duration of the project.

Encapsulation of lead through applying new paint is also an acceptable approach. Latex and oil-based paints can effectively seal lead dust on wall and trim surfaces. However, any kind of paint scraping or sanding prior to applying paint will also require the use of appropriate respirators.

Chemicals for Paint Removal and Masonry Cleaning

Chemical cleaning is preferable to sandblasting or other types of abrasive cleaning. The use of chemical cleansers is an effective and appropriate method of masonry cleaning, however, extensive preparation and understanding of the chemical's properties and hazards should be understood prior to undertaking the project.

Before beginning chemical cleaning, carefully evaluate the building to determine if cleaning is necessary. Cleaning may not always be the best option. The preferred method of removing paint or extensive stains from masonry is through the application of chemical removers. There are various types of chemical products on the market and some are more suitable for cleaning brick than stone. Chemical removers can also be hazardous and most cleaning projects are done by professionals. Whoever performs masonry cleaning using chemical agents should thoroughly read the instructions prior to undertaking the project.

The primary consideration in handling chemical cleansers is protection for the person performing the work and protection of the adjacent ground and plantings. Window glass and other materials may also require protection from some cleaners. After coatings of the cleaners are applied to masonry, they have to be rinsed off with water, detergent, or other chemicals. This creates a fair amount of spray and mist as well as liquid runoff which must be contained. Those applying the cleaners should have the proper safety clothes, respirators, and goggles. Most jobs will also require the use of waterproof tarpaulins or other fabrics to collect the chemical runoff. This runoff is then poured into containers for disposal. Plants which can be affected should also be covered and protected.