Chapter 18: Lead-Based Paint and Historic Preservation

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How To Do It

1. **Determine if the dwelling is historic.** It may be listed on the National Register of Historic Places, a state register, or other local inventory.

   - If a building is over 50 years old and retains its historic features, it may be eligible for listing.
   - If Federal funds are involved in a lead-based paint hazard control project (whether using interim controls or abatement), the grantee must first determine if the dwelling is listed on or eligible for the National Register of Historic Places and consult with the State Historic Preservation Officer (SHPO) about how the work is done. Federal regulations (36 CFR Part 800) outline the process, commonly referred to as the Section 106 review. Information about the Section 106 review process is available on the HUD Assessment Tools for Environmental Compliance (ATEC) website: ***http://portal.hud.gov/hudportal/HUD?src=/program_offices/comm_planning/environment/review/historic***.
   - For agencies or organizations expecting to undertake lead hazard control activities in a large number of homes, a Programmatic Agreement with the SHPO should be developed. The agreement can contain a list of treatments that are exempt from review, and otherwise streamline the review process.

2. **Identify important historic building features that should be preserved if possible.** With the assistance of trained historic preservation architects, architectural historians, or SHPO staff, determine which architectural elements and character-defining features of the historic building can be preserved.

3. **Establish priorities for intervention.** In historic properties, interim controls are generally preferred over abatement strategies because they preserve the integrity of the structure.

   - Determine if the scope of the project should involve interim controls, or if abatement of all paint or lead-based based paint hazards is required.
   - If the property receives federal housing assistance, the amount and type of housing assistance may contribute to a determination of the approach(es) taken to control lead hazards. The Lead Safe Housing Rule applies if the property receives federal housing or rehabilitation assistance. (24 CFR Part 35, Subparts B–R; see Appendix 6.) For example:
     - — Public Housing Agencies require abatement of all lead-based paint during modernization of historic Public Housing properties (but see below); and
     - — HOME Investment Partnership (HOME) or Community Development Block Grant (CDBG)-funded projects that disturb lead-based paint require interim controls, and may require ongoing lead-based paint maintenance and reevaluation afterwards, if the cost of the project is up to $25,000 per housing unit (apart from lead hazard control costs); and require lead-based paint hazard abatement if over that amount (but see below).
   - Even when the Lead Safe Housing Rule requires abatement in an historic property, if the SHPO requests that interim controls may be conducted instead, with, ongoing lead-based paint maintenance and reevaluation conducted afterward if required by the Rule, they may be used instead of abatement.

4. **Have a combination lead-based paint risk assessment and inspection performed by a certified lead-based paint inspector/risk assessor.** Keep the report and related records to guide future rehabilitation and maintenance work. If properties are of exceptional historical significance, label and store paint samples to assist in future preservation analysis.

5. **Assess the risk of lead exposure for each significant architectural item to determine, in the context of historic preservation standards, what type of intervention is needed, its cost, and its feasibility in order to make the residence lead-safe.** It is possible to strike a balance between lead safety and preservation. HUD requires abatement of lead-based paint or hazards, using methods such as replacement, only in certain cases (see item 3, above). Wholesale removal of historically significant building components as a lead hazard control methodology is not recommended in historic properties. More often, the less serious lead hazards may only require repair and paint stabilization.

6. **Discuss the hazard control strategy with the SHPO and give special consideration to those methods that do not destroy significant architectural features and finishes.** Refer to the following related documents:

   - The Secretary of the Interior's Standards for the Treatment of Historic Properties (1992); these standards (published at 36 CFR Part 68) are also in the following document;
   - The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring & Reconstructing Historic Buildings (2001) (***http://www.nps.gov/history/hps/tps/standguide/***);
   - The Secretary of the Interior's Standards for Rehabilitation & Illustrated Guidelines for Applying the Standards (1995) (***http://www.nps.gov/tps/standards/rehabilitation/rehab/***), covering the standards for rehabilitation (published at 36 CFR Part 67);
   - The Secretary of the Interior's Standards for Rehabilitation & Illustrated Guidelines on Sustainability for Rehabilitating Historic Buildings (2011) (***http://www.nps.gov/tps/standards/rehabilitation/sustainability-guidelines.pdf***); and, especially;
   - National Park Service Preservation Brief 37, "Appropriate Methods for Reducing Lead-Paint Hazards in Historic Housing" (2006) (***http://www.nps.gov/history/hps/tps/briefs/brief37.htm***).

7. **Avoid removal of significant historic materials, avoid the use of harsh abrasive cleaners or chemicals that may damage historic materials, and avoid covering over historic siding, whenever possible and financially feasible.**

8. **Comply with all worker safety and health requirements (including those in Chapter 9 and Appendix 6) and use only approved paint removal methods.** If paint is to be removed, the preferred treatments include: wet sanding of deteriorated peeling paint; finish sanding with special mechanical sanders with a high-efficiency particulate air (HEPA) vacuum local exhaust ventilation; low-heat paint stripping; chemical strippers (except methylene chloride); and offsite stripping with heat or chemicals. Never use open flame or high heat removal of paint, or dry sanding or uncontained abrasive removal.

9. **As appropriate, negotiate a Programmatic Agreement and a Memorandum of Agreement for treatment of the property**. A Programmatic Agreement records terms and conditions agreed upon to resolve the potential for adverse effects of a Federal agency program, complex undertaking or other situation, while a Memorandum of Agreement details the terms permitting a particular project to proceed.

10. **Provide materials to the residents describing the project, and the presence of any remaining lead-based paint upon completion of the project, and guidance on keeping the housing lead-safe.**

- Prompt notification to occupants of testing and hazard control results is required for projects receiving federal housing or rehabilitation assistance, and is recommended for other projects.
- Disclosure of testing and hazard control project results to prospective renters and buyers during subsequent lease or sale actions is required in accordance with the Lead Disclosure Rule (24 CFR Part 35, Subpart A; see Appendix 6), whether or not the project is covered by federal housing or rehabilitation assistance.
- Providing information to occupants on appropriate housekeeping methods to keep the historic property in a lead-safe condition after lead hazard control work is recommended.

11. **Lead Hazard Control measures that meet the Secretary of the Interior's Standards may be eligible for a tax credit.** If undertaken as part of a qualifying rehabilitation on an income-producing property, lead hazard control measures may be eligible for the 20% federal Historic Rehabilitation Tax Credit. Information about the tax credit program is available at ***http://www.nps.gov/tps/tax-incentives/before-you-apply.htm***. Some states also offer state-level historic rehabilitation tax credits, which when combined with the federal tax credit, could provide significant preservation incentive. Investors and entities performing preservation work should explore other leveraging resources as time permits.

I. Introduction

Historic buildings provide quality, affordable housing in urban and rural areas throughout the country. They give communities a strong sense of tradition and pride. To preserve those values, historic buildings warrant special consideration in lead hazard control activities. Some treatments for lead hazard control can cause irreversible damage to historic properties. Such actions, when federally assisted, are subject to special review procedures to avoid adverse effects and protect historic properties. Section 106 of the National Historic Preservation Act (16 U.S.C. Section 470 *et seq.*) and its implementing regulations, 36 CFR Part 800, require Federal agencies to take into account the effects of their undertakings on historic properties and to afford the federal Advisory Council on Historic Preservation (ACHP; ***http://www.achp.gov***) a reasonable opportunity to comment on such undertakings when historic properties may be adversely affected. Every State and unit of general local government receiving HUD Community Development Block Grants (CDBG), HOME Investment Partnerships (HOME), or other HUD housing program assistance should be familiar with the regulations, since they must comply with Section 106 as part of the environmental review for program activities. If the agency responsible for lead-based paint abatement or hazard control (and the environmental review) is not familiar with the Section 106 process, they should contact their State Historic Preservation Officer (SHPO), the HUD Field Environmental Officer, or the State or local agency administering the CDBG or HOME programs for assistance. (Contact information for the SHPOs is at ***http://www.cr.nps.gov/nr/shpolist.htm***. A list of HUD local environmental contacts is at ***http://www.hud.gov***, search for "environmental officers" in quotes).

Implementing the guidance in this chapter will help ensure compliance with Section 106. If an agency or organization is planning to undertake lead hazard control in a large number of homes, a Programmatic Agreement could significantly reduce the time needed for consultation with the SHPO. A Programmatic Agreement records terms and conditions agreed upon to resolve the potential for adverse effects of a Federal agency program, complex undertaking or other situation. Many states and local government agencies have existing Programmatic Agreements for HUD programs like, CDBG and HOME, which can be amended to include lead-based paint hazard control activities.

Also, a Memorandum of Agreement between the responsible entity and SHPO detailing the terms permitting a particular project to proceed may also be used, such as if meeting the Secretary's Standards is economically prohibitive or otherwise not feasible, or if the parties find it helpful to lay out the terms for other reasons.

II. Use of Lead-Based Paint in Historic Properties

Since lead-based paint was commonly used until the 1950s and was not banned from residential use until 1978, it is often present in historic buildings. See Chapter 1. Lead-based paint is generally found on wooden trim and all surfaces that normally received gloss enamel or oil paints (e.g., metal grills and radiators often were painted with lead-rich enamels). Early calcimine and milk paints that were primarily waterborne were often thought to be lead-free, but many of the color pigments contained lead. Significant decorative techniques, such as faux graining, marbling, stenciling, frescoes, murals, and painted friezes frequently involved the use of lead-based paints.

III. Standards for the Treatment of Historic Properties

The Secretary of the Interior is responsible for establishing standards for the preservation and protection of cultural resources. The Secretary of the Interior's "Standards for the Treatment of Historic Properties"

(36 CFR Part 68) were initially developed in 1975 and most recently revised in 1992 (they are accessible from ***http://www.fdsys.gov*** by searching for "36 CFR Part 68"). The Standards advise that significant historic features and materials should be repaired rather than replaced, and that when replacement is necessary, it should be done in kind, i.e. with the same material, design, dimension, etc. The standards, along with guidelines for implementing them, are in the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring & Reconstructing Historic Buildings (2001) (***http://www.nps.gov/history/hps/tps/standguide/***).

The Secretary of the Interior supplemented those standards with Preservation Brief 37, "Appropriate Methods for Reducing Lead-Paint Hazards in Housing" (2006) (***http://www.nps.gov/hps/tps/briefs/brief37.htm***). (The full set of Preservation Briefs can be found at ***http://www.nps.gov/tps/how-to-preserve/briefs.htm***.) The Standards guide owners of historic buildings who are undertaking rehabilitation, restoration, preservation, and reconstruction of historic properties. In addition, the Standards are used by the SHPO and the ACHP to evaluate the impact of physical treatments on historic resources in federally assisted projects.

The National Park Service has also developed "Illustrated Guidelines for Rehabilitating Historic Properties" (***http://www.nps.gov/tps/standards/rehabilitation/rehab/index.htm***). The "Illustrated Guidelines" pertain to historic buildings of all sizes, materials, occupancy, and construction types; they apply to interior and exterior work as well as new exterior additions. Those approaches, treatments, and techniques that are consistent with the Secretary of the Interior's "Standards for Rehabilitation" are listed as "Recommended" in each topic area; those approaches, treatments, and techniques which could adversely affect a building's historic character are listed as "Not Recommended" in each topic area.

When working with historic properties, significant spaces, finishes, and features must be identified and priorities for preservation must be set. This applies to both exteriors and period interiors. The goal is to retain as much of the original historic material and features as possible and to preserve the historic character of the resource.

There may be cases when certain proposed abatement treatments are inconsistent with the Standards for the Treatment of Historic Properties. Removal of historically significant architectural features and finishes that have been previously painted with lead-based paint may result in loss of significant historic materials. Abrasive or chemical paint removal methods may disfigure or destroy evidence of significant craftsmanship. Replacement or enclosure of historic wooden siding with modern cement board, vinyl or aluminum siding may damage historic materials and diminish the architectural integrity of the historic resource. Complete removal of paint from substrates can result in the total loss of paint chronology or important evidence of previous decorative paint finishes and colors for properties of great historic significance.

In historic properties, preservation of the component is preferred and the lead hazard control professional and the construction contractor should strive to find solutions that preserve historical features and control lead hazards. Replacement or alteration of components for the sake of lead hazard control is unnecessary when a less aggressive method of controlling the lead hazard is allowable. While there is no simple method for determining which treatment method may be more or less damaging, the anticipated impact of each lead hazard control method on the hazardous building component should be assessed before a particular approach is selected. (See Sections VI and VII below.)

Factors to be considered when evaluating anticipated impact include: significance of the building component affected; number and thickness of paint layers; physical condition of the component; interior or exterior location on the property; skill level of lead hazard control or historic preservation contractor personnel; and environmental conditions.

In affected properties, if the SHPO requests the exemption, the Lead Safe Housing Rule exempts historic properties (those listed or determined eligible for listing in the National Register or contributing to a National Register Historic District) from normally-required abatement of lead-based paint or lead-based

paint hazards and allows interim controls to be performed (24 CFR 35.115(a)(13)). Normally, this exemption is taken when abatement of hazards is required in historic properties receiving greater than $25,000 per unit in federal rehabilitation assistance, or when historic conventional public housing is being modernized. (See Appendix 6.)

If interim controls are conducted in housing receiving federal housing or rehabilitation assistance, they must be performed in accordance with the Lead Safe Housing Rule at 24 CFR 35.1330 and Chapter 11. If no such assistance is provided, the guidance in Chapter 11 should be used. Ongoing lead-based paint maintenance is required if there is an ongoing relationship between HUD and the property owner; see 24 CFR 35.1335(a) and Chapter 6. If no such assistance is provided, the guidance in Chapter 6 should be followed. HUD program participants should consult their program's regulations and/or Lead Safe Housing Rule and related technical guidance for more information. (See Appendix 6.)

An additional resource for HUD Community Planning and Development (CPD) field staff, grantees and program participants is the CPD Monitoring Handbook Attachment 24-2, Historic Properties and the Lead Safe Housing Rule (go to the CPD website, ***http://www.hud.gov/cpd***, click on the link to the CPD Monitoring Handbook, then the link to chapter 24, Lead Hazards, and then the link to the attachment.)

Although some Public Housing Agencies (PHAs) have historic properties in their inventories, this is not as common as the rehabilitation example. PHAs and contractors / organizations supporting them should use the HUD Office of Public and Indian Housing (PIH) memorandum, "PIH Guidance on the Lead-Safe Housing Rule and Lead Disclosure Rule for Field Office Staff," (***http://www.hud.gov/offices/adm/hudclips/guidebooks/PIH-2007-101/PIH-2007-101GUID.doc***) (February 22, 2008) for general lead safety guidance. They may use the CPD Monitoring Handbook Attachment on Historic Properties, above, as guidance for these properties, adapting its use to the PIH program and regulatory environment.

IV. Property Evaluation

A. Evaluating the Significance of a Property

It is the responsibility of a Federal agency or the recipient of its housing assistance funding to identify the architectural significance of a dwelling *before* undertaking work that might affect the historic resource. The responsible entity may need to enlist an architectural specialist to assist in this effort. (Qualified historical architects and preservation specialists can be found through the State Historic Preservation Office.) The National Park Service's National Register of Historic Places Nomination Forms (***http://www.cr.nps.gov/nr/publications/forms.htm***) or the corresponding State forms are often a tool to use to identify significant character-defining features. (As the National Register webpage notes, individuals should contact their SHPO before downloading or completing the National Register forms. Contact information for the SHPOs is at ***http://www.cr.nps.gov/nr/shpolist.htm***.)

If a building is over 50 years old, and not listed or evaluated for listing on the National Register, it must be evaluated (for historic significance as well as potential to cause effect) prior to project implementation. The Section 106 review applies to buildings that are listed on or eligible for the National Register of Historic Places.

FIGURE 18.1 Delicate muntins and multi-pane sash on early 19th century row houses. Photo Courtesy National Park Service.

The quality of a building's architecture and craftsmanship must be considered when evaluating the significance of a property. Buildings that exhibit distinctive characteristics of architectural design represent work by skilled craftsmen, or have high artistic value may require a greater sensitivity on the part of a responsible entity when undertaking alterations or modifications to that structure (see Figure 18.1). Worker housing in an industrial mill town was often constructed with heavy timber post and beam construction or balloon frame wooden systems, but may have very simple decorative or trim work on the interior. The significance of these properties is more closely tied to social movements within our cultural history than to architectural design. A property designed by a prominent architect using master craftsmen and artistic painters will be noted for its architectural appearance and design.

Responsible entities should identify the character-defining features that render the property eligible for the National Register, in order to prioritize the preservation of significant interior and exterior elements. The exterior may contain significant materials such as painted siding, shutters, decorative cornice brackets, porches, and dormers. While the exterior may contain a building's most prominent features, the interior may also be important in conveying the building's history. Important interior architectural features may include window trim, doors and door trim, staircases, fireplace mantels, built-in book cases and cabinets, decorative radiators, picture and chair rails, crown molding, baseboards, mantels, ceiling medallions and coffers, and wood wainscoting in corridors. Architectural finishes of note may include grained woodwork, marbled columns, and plastered walls.

For each historic property, some elements will be of greater significance than others. As part of a survey of each historic property, the responsible entity should identify the elements that could be altered or removed without harming the integrity of the historic resource (e.g., plain plaster surfaces, simple board trim with no distinctive features, and non-historic intrusions, such as replacement windows). Generally, the front facades of buildings will be more significant than the less visible side and rear elevations. Public spaces on the first floor, such as the entrance area and main staircase, will generally be more significant than private spaces, such as the bedroom, kitchen, and bath. This information will be important when decisions are made about where to perform interim controls and where abatement or encapsulation is appropriate.

FIGURE 18.2 Historic properties should have a window condition assessment preceding work. Photo Courtesy National Park Service.

Identifying, retaining, and preserving windows – and their functional and decorative features – is an important step in preserving the overall historic character of the building. Such features can include frames, sash, muntins, glazing, sills, heads, hoodmolds, paneled or decorated jambs and moldings, and interior and exterior shutters and blinds. An in-depth survey of the interior and exterior features and condition of existing windows will provide the basis for evaluating possible rehabilitation or replacement options to make the windows lead-safe. The exterior portion of a window assessment is shown in Figure 18.2.

B. Risk Assessment/Paint Inspection

As with all lead-based paint evaluations, the responsible entity is also responsible for hiring a certified professional to evaluate lead hazards in the dwelling. Because of the need for special care around historic components, the advice of a risk assessor is very helpful when developing a lead hazard control plan. At the same time, any surfaces of historic significance that have been painted should be tested for the presence of lead as part of the evaluation of the dwelling. Ideally, a combination risk assessment/paint inspection should be conducted in historic buildings. At a minimum, the risk assessor should perform x-ray fluorescence (XRF) tests on significant features so that the integrity of the elements is not damaged. Paint chip samples are discouraged in historic properties. However, when laboratory tests are required as a follow up to XRF testing, paint chips should be collected from inconspicuous locations. For properties of great historical significance, significant surfaces found to contain lead-based paint may benefit from additional laboratory analysis to determine the history of each colored layer (chromochronology). The purpose is to provide information on original colors should the property ever be restored (see Chapter 5 for more detail on risk assessments and Chapter 7 on lead-based paint inspections).

V. Establishing Priorities for Intervention

In the absence of a lead-based paint evaluation, priorities for intervention should focus on areas where lead hazards may exist, such as areas of deteriorated paint and abrading friction surfaces of windows, doors and stairs. **The mere presence of lead paint on a building component does not constitute a hazard.**

The significance of historic elements also affects priorities for intervention. (Figure 18.3.) Historic components should be treated with great care when physical intervention is considered as part of a lead hazard control plan. If the element is extremely significant (e.g., a carved mantel) and is in good condition, it should be disturbed as little as possible while still ensuring that lead hazards will be controlled. In this case interim controls are generally preferred (see Chapter 11). If the element is not particularly significant (e.g., a simple baseboard) and is in poor condition, then it may be acceptable to remove the entire feature and replace it with a duplicate or similar baseboard. If the element is significant, but in deteriorated condition, then preservation measures should ensure that in the process of rebuilding or repairing the element, it is not further damaged. Careful paint removal and thorough cleaning of substrates is very time consuming, but may be appropriate for highly significant elements.

FIGURES 18.3a and 18.3b **Historic property before and after rehabilitation.**

VI. Selecting Interim Controls or Abatement

Interim controls are generally less aggressive than abatement techniques. They include paint stabilization with correction of substrate defects, specialized cleaning, temporary repairs, management and resident education programs, and ongoing LBP maintenance. Paint stabilization, an interim control that

allows intact historic paint to remain in place (with topcoat of lead-free paint) is the least damaging treatment to an element. Stabilized surfaces will, however, have to be properly maintained. Records should be kept documenting the presence of lead underneath the new paint so that workers will use the proper protective methods during renovations or repair. Residents should be instructed to notify the owner or property manager whenever paint deterioration is detected.

Because of its finality, some HUD program participants may consider abatement (such as component replacement) as the only acceptable approach to lead hazard reduction. Others view the cost-effectiveness of component replacement as adequate justification for this approach. However, as discussed above, at the SHPO's request, a HUD program participant is allowed to use interim controls instead of abatement on interior and exterior surfaces when abatement is otherwise required by the Lead Safe Housing Rule. In these cases, the use of interim controls with ongoing lead-based paint maintenance rather than abatement should be given serious consideration.

HUD recommends that all lead-based paint professionals and housing agencies should consider interim controls on historic properties instead of abatement if feasible and permissible. For historic properties, interim controls are preferred because they preserve the original structure and are usually less costly. In some cases, however, interim controls are not technically feasible or the condition of the affected building components is poor, which makes interim controls impractical. In all cases, decision-makers should justify and be able to document their position.

Lead hazard control professionals or housing agency personnel who insist on abatement as a lead hazard control strategy should review this position with the SHPO to determine its appropriateness in light of two factors:

- Costs: The generally higher initial costs of abatement relative to interim controls vs. the lower costs of ongoing maintenance after abatement; and,
- Permanence: The possible irreparable damage to a historical property caused by building component removal or inappropriate alteration or encapsulation.

VII. Selecting Abatement Methods Other Than Paint Stabilization

A. Paint Removal

Recommended paint removal techniques for historic materials include:

- Wet sanding of loose paint to bonded paint.
- Finish sanding using mechanical sanders with high-efficiency particulate air (HEPA) vacuum.
- Low-heat stripping with heat guns or heat plates (less than 450°F, round-edge scraper).
- Solvent-based non-toxic, non-caustic stripper in place (e.g., not methylene chloride).

Caution should be used with stripping with heat, chemicals, or cold-tank dipping. Chemical stripping processes may melt glued joints, thus damaging the element or at least requiring further repair.

The following techniques are not recommended for paint removal from building components of historic properties because of possible irreparable damage to the components:

- Caustic strippers that can raise wood grain (unless supervised by a trained specialist).
- Power sanding that can abrade wood surfaces.
- Hot-tank dipping that may loosen glued joints.

On-site: The removal of lead-based paint down to the substrate, if carefully done, is the second least invasive treatment. Chemical stripping, wet sanding, or low-heat removal of paint allows the substrate to stay intact and remain in place (see Figure 18.4). However, these methods are time-consuming, and haphazard wet scraping or sanding may abrade delicate substrate finishes. Sometimes, the removal of paint along friction surfaces is an appropriate interim control when the intent of such work is not lead hazard control but operational repair or rehabilitation. The removal of paint along the friction surfaces of historic wood windows is often combined with installation of jamb liners to reduce abrasion concerns, and metal panning in window wells to create an easily cleanable surface.

FIGURE 18.4 Wood features on historic properties. Sometimes they can be stabilized instead of stripped of traditional painted finish as in this photo. Photo courtesy of National Park Service.

Several paint removal techniques are prohibited in HUD-assisted properties, and/or by EPA for renovation (which is broadly defined; see the Glossary) or abatement.

- Techniques prohibited by HUD and by EPA for renovation and abatement are:
  - Open flame burning or torching.
  - Machine sanding or grinding without a HEPA local exhaust control (containment).
  - Abrasive (e.g., wet grit) blasting or sandblasting without HEPA local exhaust control containment.
  - Heat guns operating at or above 1100 degrees Fahrenheit or charring the paint.
- Additional paint removal techniques prohibited in HUD-assisted properties, and by EPA for abatement, are:
  - Dry sanding or dry scraping (except dry scraping in conjunction with heat guns or around electrical outlets, or when treating defective paint spots totaling no more than 2 square feet in any one interior room or space, or totaling no more than 20 square feet on exterior surfaces).
- An additional paint removal technique prohibited in HUD-assisted properties is:
  - Paint stripping in a poorly ventilated space using a volatile stripper that is a hazardous substance in accordance with regulations of the Consumer Product Safety Commission at 16 CFR 1500.3, and/or a hazardous chemical in accordance with the Occupational Safety and Health Administration regulations at 29 CFR 1910.1200 or 1926.59, as applicable to the work. (The most common HUD-prohibited stripper is methylene chloride.)

FIGURE 18.5a and 18.5b **Doors to historic property before and after off-site stripping.**

Off-Site: A potentially more damaging paint removal treatment involves the removal of items for off-site stripping. Only companies experienced in treating historic building parts should be used to conduct paint stripping. If the items are easily removed (e.g., doors, shutters, or windows), they can be carefully treated off-site and then reinstalled. (See Figure 18.5). Caution is advised when considering this method because trim, mantels, banisters, newel posts, or other carved elements constructed in sections may be firmly attached and may be damaged when removed, thus requiring repair or reconstruction. Hardware should be removed and labeled before paint is removed.

Rough treatment by gouging, splitting, nail holes, and crowbar marks take their toll on the materials and are to be avoided. The creation of leaded dust generally accompanies the removal of attached trim work.. It should be noted that in the process of dipping, glue joints may loosen or come apart and may need repair. Too often, particularly for wooden elements, surfaces are gouged or grain is raised in an overly aggressive approach to paint removal.

However, if care is taken during preparation, removal and reinstallation, damage can be minimized and the benefits of this method may outweigh the alternative loss of historic components. If elements deteriorate during the paint removal process, repairs or replacement of significant components should match the originals in size, material, and configuration. Less significant features should match the visual appearance as closely as possible.

In homes of great historic significance, it may be important to document evidence of initial construction and subsequent alterations that can be found in paint layering on historic substrates (see discussion of chromochronology in Section IV.B, above). Unless paint analysis is performed prior to paint removal, this evidence will be lost. By comparing paint layers from one portion of the housing unit or room to another, a list of dates and known changes can be recorded. The relocation of significant elements, such as mantels, from one room to another can often be detected by comparing paint layers. The original colors of these elements can also be determined by evaluating samples of paint under a microscope with correcting light filters.

B. Component Removal and Replacement

If significant elements are in poor condition and too deteriorated to withstand paint removal, it may be possible to replace these elements with matching new elements without threatening the historic integrity of the element or building. This is particularly applicable to simple double-hung historic wooden window sashes in poor condition. On readily visible building elevations, such as the front and often typically the side, windows usually are identified as significant elements of the building. In such cases, replacement windows should be wood and should match as closely as

possible the size, configuration, sash, mullion and muntin profile, pane configuration, and other visual qualities of the historic windows. Replacement of too many significant features of a building, however, may jeopardize the historic integrity of the resource. For this reason only seriously deteriorated or unsalvageable materials should be replaced.

Complete removal of painted features and the failure to replace or replicate them is extremely damaging to the historic resource. Proper maintenance is especially important in historic properties containing lead-based paint to avoid the creation of new hazards. For example, if bathroom leaks or other moisture sources deteriorate painted surfaces, paint chips or lead-contaminated dust could become a significant hazard. Residents should be advised to clean their dwellings and notify their building managers if deterioration occurs.

C. Encapsulation

Encapsulating coatings, rigid encapsulant claddings, and wall enclosures affect historic resources in different ways. Depending on the overall visual effect of the resource, the long-term objectives of a preservation project, and the environmental climate of the resource, there will be differing degrees of success. For example, the use of an approved wall lining and skimcoating encapsulating system over deteriorated plaster with a finish coat of paint may be appropriate in a simple interior. However, encapsulating paint coatings over decorative moldings would not be appropriate due to the viscous nature of the coating and the loss of the decorative wood detailing. The use of encapsulant coatings on exteriors of historic wooden buildings in moist or humid areas can have damaging long-term effects. Because the thickness of exterior coatings range from 10 to 14 mil, substrates may deteriorate because of moisture trapped behind the coating.

FIGURE 18.6 **Enclosure of stairs in this manner is generally not appropriate in a historic property.**

D. Enclosures

Enclosing a decorative feature may be appropriate if doing so does not damage the structure beyond a minimal amount (see Figure 18.6). For example, a projecting mantel might be enclosed if the fireplace is not to be used in the interim, and the decorative finishes are to be enclosed behind drywall finishes. While this is a serious loss of historic character, if it is a temporary solution and no harm is done to the feature, it might be an appropriate treatment. The use of artificial siding over painted and otherwise sound historic exteriors often results in a removal of projecting historic elements, such as roof brackets, and conceals the historic trim. The use of these artificial sidings is not recommended.

VIII. Conclusions

There are different levels of historic treatments appropriate to different levels of building significance and condition. Controlling lead hazards in historic

buildings is a balancing act between several important objectives: childhood health, economic feasibility, and historic preservation. For instance, abatement methods that permanently reduce lead hazards may have a more negative effect on the character of a historically significant home than interim controls. For homes of great historic significance, removing historic paint layers and their substrates can result in an irretrievable loss of materials and craftsmanship. Interim controls are more suitable as a long-term solution as long as the historic property is maintained in good condition. As deteriorated elements are repaired or replaced, much of the lead-based paint can be removed with appropriate methods. Retention of the maximum amount of historic material as possible is the goal, while providing a lead-safe housing unit.

IX. Historic Preservation Project Case Study

A group of 1890s row houses is part of a National Register Historic District noted for its Victorian architecture. This group of low-to-moderate income rental units used a variety of Federal and State funding sources, including HUD CDBG Block Grants to the local Housing and Community Development Agency to fund the rehabilitation. The buildings in the group are mostly 3-story brick construction, with side hall plans. There is a Memorandum of Agreement (MOA) among the City, the SHPO, and the ACHP that the rehabilitation of these buildings would conform to the Secretary of the Interior's Standards for the Treatment of Historic Properties (1992). After receiving the evaluation report, the City consulted with the SHPO about the proposed cladding of the windows, and opted for replacing the sash and stabilizing the original frames.

A. Historic Significance:

The significance of each building in the project was established with the assistance of the SHPO. Both the exterior front facade with its distinctive mansard roof, as well as the interior with its traditional plan and period woodwork were significant. Individual features identified for preservation on the interior included an ornate staircase and banister, period woodwork, and trim around windows and doorways, and decorative ceiling medallions. The windows were wooden double-hung units with a curved top with simple large panes of glass in a one over one configuration; the exterior frames had a distinctive bull-nose molding. Roof leaks made many upper floor ceilings structurally unsound. Less architecturally detailed areas were the bathrooms, the kitchen, and rear additions.

B. LBP Evaluation:

- The City estimated the planned rehabilitation of the properties to average $11,000 (excluding lead hazard evaluation and control costs) per unit, which was greater than $5,000 but not more than $25,000 per unit. As a result, the Lead Safe Housing Rule required a risk assessment and allowed interim controls (rather than abatement) to be conducted.

- Although the evaluation requirement for this level of rehabilitation assistance in HUD's Lead Safe Housing Rule was a risk assessment, the local Housing and Community Development Agency contracted with a certified lead-based paint inspector/risk assessor to perform a combined lead-based paint inspection and risk assessment in order to scope the project more fully and minimize unnecessary lead hazard control costs. This evaluation contract included preparing the evaluation report for use in scoping the lead hazard control work, and preparing the notice of evaluation to occupants.

- The property was tested for the presence of both lead-based paint and lead-based paint hazards, including lead-contaminated dust and bare soil. The paint inspection indicated that there was lead-based paint on the painted exterior brick, exterior windows, and all wooden

trim and features inside and on glossy painted wall surfaces inside, such as the kitchen and bathrooms. The overall condition of the paint was deteriorated, and many plaster surfaces were water damaged, but the wooden trim underneath the paint was sound. The windows were in poor condition. Some dust-lead levels were hazardous, including dust underneath the window sills in the kitchen and bathrooms. Soil-lead levels were below the hazard level.

- The notice of evaluation summarized the nature, dates, scope and results of the inspection and risk assessment; provided a contact name, address and telephone number for more information and for obtaining access to the actual evaluation report; and gave the date of the notice. Three days after receiving the evaluation report and the notice to occupants (well within the 15 days allowed), the Agency notified the families in each row house of the results by distributing the notice to each occupied unit.

C. Lead hazard control:

In consultation with the non-profit organization that was rehabilitating the property, the Housing and Community Development Agency established a lead hazard control plan as part of the building rehabilitation effort. As noted, the Lead Safe Housing Rule required that all lead hazards on the property be controlled by interim controls at a minimum. The basic building plan configuration was retained with an upgrade of mechanical and electrical services. Most of the deteriorated paint was stabilized by wet scraping and careful wet sanding followed by repainting.

- Exterior: The exterior was stabilized by wet scraping to remove flaking paint and was repainted with a primer and exterior oil/alkyd paint.

- Wall surfaces: Each room and hallway received new ceilings of drywall to replace water damaged and deteriorated plaster ceilings. Most plaster walls were repaired and repainted, but the kitchen and bathroom walls and ceilings, which contained large amounts of deteriorated lead-based paint on water-damaged plaster, were replaced with new drywall.

- Interior trim: All historic wooden trim remained in place and was stabilized after wet sanding to remove loose lead-based paint. The ornate banisters and handrails that had potentially chewable surfaces, were stripped off-site, then reinstalled. The ceiling medallions were removed and reinstalled after cleaning.

- Windows: The window sashes were replaced with new sash matching the visual configuration of the historic sash, which included an arched upper portion. The historic frames remained in place and received vinyl jamb liners to eliminate friction surfaces. The project was scheduled to have the window frames on the exterior boxed out and clad in white aluminum, but this treatment was eliminated after consultation with the SHPO because it would have altered a significant architectural feature on the primary facade. To preserve the distinctive bull-nose moldings of these exterior frames, it was determined that the wood could either be wet sanded or chemically stripped to remove paint and repainted with oil/alkyd paint. Repainting with oil/alkyd after a mild chemical cleaning was selected for the exterior frames.

D. The scope of the work:

- The scope of rehabilitation work outlined by the Housing and Community Development Agency adhered to the Secretary of the Interior's Standards because it preserved the significant features of the building and provided for replacement in-kind or with compatible materials which

replicated the historic appearance of the deteriorated originals. Had any of the above treatments called for removal or substantial alteration of significant features, the rehabilitation would have resulted in an adverse effect, requiring the city to obtain the Advisory Council's comments.

- The Agency's contract for the rehabilitation work specified that the firm had to be a certified renovation firm (under EPA authorization, the State operated the certification program) and that the workers and project supervisor had to be certified renovators (as required by HUD's Lead Safe Housing Rule, building on the EPA's Renovation, Repair, and Painting (RRP) Rule).
- The Agency also contracted with the original lead-based paint inspector/risk assessor to perform the clearance examination after the lead hazard control work was completed. This contract also included preparing the clearance report and the notice of hazard reduction activity to occupants.
- Because the project was to last longer than 5 days in each building (with the work being conducted, for the sake of efficiency, at the same time in all units and the hallways in a building), the occupants were temporarily relocated to lead-safe housing elsewhere in the Historic District.

E. Project completion:

- The renovation contractor informed the inspector/risk assessor when the work was to be examined for clearance of each row house, and the inspector/risk assessor conducted the clearance examination in all of the units and the hallways in that building. In some buildings, some units and hallways did not pass clearance the first time, so the contractor re-cleaned the failed components and similar untested components. In those units and hallways, the inspector/risk assessor conducted another clearance examination, and determined that the project passed clearance. (Had any of the re-clearances failed, the failed components and similar untested components in those units would have had to be re-cleaned again and re-cleared, with the cycle repeated until successful. The contractor could have decided to do further lead hazard control work before re-cleaning, in an effort to minimize the number of cleaning / clearance cycles.)
- Two days after the lead hazard control work was completed (well within the 15 days allowed), the Housing and Community Development Agency provided the notice of hazard reduction activity to the occupants who were returning to each row house. The notice summarized the nature, dates, scope and results (including clearance examination results) of the hazard reduction work; gave a contact name, address, and telephone number for more information; gave the available surface-by-surface information on where the remaining lead-based paint was in units and hallways where lead hazard work had been conducted; and gave the date of the hazard control notice itself.
- The Agency also provided the returning occupants with instructions on how to maintain a lead-safe home, stressing the importance of using lead-safe methods to keep their housing units free of dust and dirt that might contain lead, with particular information on helping protect the historic character of the housing, and provided contact information if occupants had questions or wanted to report deterioration or damage to the housing.
- The Agency provided disclosure under the Lead Disclosure Rule to prospective tenants looking to move into units vacated by those occupants who had decided to use the occasion of the project to move elsewhere. Information on the inspection, risk assessment, scope of the project's lead hazard control work, and clearance results were part of the disclosure, along with the Lead Warning Statement and other reports, records and knowledge disclosed, as discussed in Appendix 6.