

# Restoration Guide for Historic Masonry Buildings on the Trail of Tears National Historic Trail

National Park Service  
Trail of Tears National Historic Trail  
MTSU Center for Historic Preservation



## Table of Contents

Introduction.....	1
Masonry Buildings on the Trail of Tears.....	2
Preservation Issues and Suggested Solutions.....	4
First Steps and General Considerations.....	4
My Historic Masonry Building Needs Cleaning: What Can I Do?.....	9
Repointing Mortar on Historic Masonry.....	12
Repairing Historic Masonry.....	15
Suggested Readings.....	16

For information about the NPS National Trails Intermountain Region and the various trails it administers, including the Trail of Tears National Historic Trail, please access: <http://www.nps.gov/orgs/1453/index.htm>.



The Center for Historic Preservation joins with communities to interpret and promote their heritage assets through education, research, and preservation.

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## Introduction

In 1838, the United States government forcibly removed more than 15,000 Cherokee from their homelands in western North Carolina, northern Georgia and Alabama, and southeastern Tennessee to Indian Territory (present-day Oklahoma). The impact to the Cherokee was devastating, as hundreds died during the trip west. This event, now known as the Trail of Tears, largely completed the implementation of the Indian Removal Act of 1830, which mandated the removal of most American Indian tribes east of the Mississippi River to lands in the West.

In 1835, a minority of Cherokee leaders, acting outside of the authority of the Cherokee government, signed the Treaty of New Echota. This treaty set the conditions for the Cherokee Removal: In exchange for \$5 million, the tribe would abandon their homes and lands and relocate to Indian Territory. When the Treaty of New Echota was signed, most Cherokee farmed the fertile soils across the hills and valleys in the Cherokee Nation. Some owned prosperous plantations, stores, taverns, ferries, and enslaved African Americans. In many respects, Cherokee communities did not differ much from those of their American neighbors.

The Cherokee were given until May 1838 to remove voluntarily. Most refused to recognize the Treaty of New Echota, and few left before the deadline. In May 1838, the U.S. Army and state militias forced the thousands of remaining Cherokee, enslaved African Americans, and Creek from their homes and held them at one of three emigrating depots, two in Tennessee and one in Alabama. Poor conditions at the emigrating depots led to rapid outbreaks of disease, and many Cherokee perished before the journey began.

In June 1838, three groups of Cherokee left from Ross's Landing (present-day Chattanooga), Tennessee, to begin their journey to Indian Territory. Demanding summer weather and a drought quickly took its toll, as disease and deaths plagued the Cherokee en route. As a result, Cherokee Principal Chief John Ross and other leaders petitioned the U.S. government to allow the Cherokee to control the remainder of their removal. Federal officials granted permission, and after being held at camps at the emigrating depots for months, the remaining Cherokee were organized into detachments of about 1,000 people each and began moving west.

It took up to six and a half months for each detachment of Cherokee to travel hundreds of miles to Indian Territory, with the last detachment arriving on March 24, 1839. The journey that they traveled tested the strength and will of each man, woman, and child. Despite the great loss suffered by the thousands of people who traveled this trail, the Cherokee people today live on as a renewed, invigorated nation.

## Masonry Buildings on the Trail of Tears

A number of brick and stone buildings associated directly or indirectly with the Cherokee removal are scattered along the Trail of Tears National Historic Trail. While the majority of Cherokee lived in modest log dwellings before removal, a wealthy few lived in stately brick homes (see Figure 1). In 1825, Missionary Samuel Worcester commented on the great diversity of Cherokee homes: “The houses of the Cherokee are of all sorts, from an elegant painted or brick mansion, down to a very mean cabin.” These former Cherokee homes mark the beginning of the Trail of Tears.

Other masonry buildings along the trail belonged to white settlers, whose businesses and homes stood at the time of the removal (see Figures 2–3). Some of these existing brick and stone masonry buildings have long been recognized as landmarks, while others have been ignored or forgotten. These buildings are not just tangible reminders of the removal landscape, but also are important examples of the vernacular architecture of early nineteenth-century America.

To help property owners become better stewards of this architectural and historical legacy, the Center for Historic Preservation at Middle Tennessee State University partnered with the National Trails Intermountain Region of the National Park Service to develop this guide. It offers advice and solutions regarding the restoration and preservation of historic masonry buildings associated with the Trail of Tears National Historic Trail by addressing common problems faced by property owners and construction/preservation professionals.



**Figure 1.** *This two-story, Federal-style house was built in Murray County, Georgia, between 1819 and 1823 for Cherokee leader Joseph Vann.*



**Figure 2.** Built in the Greek Revival style, the State Bank in Decatur, Alabama was constructed in 1833 along the Tuscumbia, Courtland, and Decatur Railway. The Deas and Whiteley detachments passed by the building on their journey to Indian Territory.



**Figure 3.** Located on the Northern Route of the Trail of Tears in Livingston County, Kentucky, this 1½-story, double-pile, hall-parlor dwelling was reportedly built for Richard Caldwell in 1824.

## Preservation Issues and Suggested Solutions

### First Steps and General Considerations



**Figure 4.** *Overgrown vegetation damages the ca. 1833 Lee and Gould Iron Furnace located on the Benge Route in Hickman County, Tennessee.*

#### **Locate where the problems are.**

Before beginning preservation work on a historic masonry building, you should perform a preliminary physical inspection of the building and its surroundings. As restoration expert Harvey McKee once observed, “A building is a system in which all of the materials are interrelated. Although each material must be studied separately, one must not lose sight of the system as a whole. The hardness of brick or stone is related to the thickness of a wall, the mortar, the bond and the quality of workmanship; all are important in determining the load-carrying capacity, resistance to weather, and appearance.”

Also, consider the effect that landscaping, plantings, vibration from nearby industry or transportation, and drainage may be having on the building (see Figure 4). Take notes about potential problems, and take photographs to identify specific problems so you have points of reference for future repairs.

## **Discover the history of your property.**

Visit the local library and/or archives to consult local histories and/or primary sources to find out as much as you can about the history of the property. Knowledge of the history of the building, such as construction dates, owners, occupants, function, and whether or not the building has been moved will prove valuable for your future decisions regarding the overall treatment of your historic property.

## **Decide if there is enough “history” left to justify the building’s preservation.**

Before you consider a restoration project, consider this question: Have changes on both the outside and inside of the building, along with the surrounding environment, been so intrusive that there is not enough “history” itself left in the property?

Preservationists have a technical term for this process: assessing the property’s “integrity.” Does the property still convey its location, setting, design, workmanship, materials, feeling, and association from its period of significance with the Trail of Tears? Would your restoration plans lessen the building’s integrity? If so, then you risk severely damaging, if not destroying, what made the building historic.

According to guidelines from the National Register of Historic Places, we can assess integrity of **location** by “whether the property has been moved or relocated since its construction. A property is considered to have integrity of location if it is in its original location or if it was moved before or during its period of significance.”

Integrity of **design** is defined by “the composition of elements that constitute the form, plan, space, structure, and style of a property.” Look carefully and review primary sources to determine when and to what degree changes have occurred to the building, such as additions to the side or rear or alterations in doorways, window openings, even the number of floors (see Figures 5 and 6).

Integrity of **setting** also calls for looking closely. “Setting is the physical environment of a historic property that illustrates the character of the place.” Are there radical changes; is a once-rural property now surrounded by modern development (see Figure 7)? Historic maps can be invaluable guides for determining the integrity of setting.

Integrity of **materials** is crucial—if there has been too much replacement of original building materials over the decades, the building lacks integrity. It is not a historic resource.



**Figure 5.** *Although the façade (above) of the Sim House in Golconda, Illinois, retains integrity, the number and date of the rear additions (below) would raise questions about the building’s overall architectural integrity.*



**Figure 6.** *Rear additions of the Sim House in Golconda, Illinois.*





**Figure 7.** *The Willstown Mission Smokehouse in Dekalb County, Alabama, is an important remnant of the mission, but it is now surrounded by modern development that affects its integrity of setting and feeling.*

Integrity of **workmanship** speaks to the craftsmanship of the building. If modern repairs have overwhelmed the original workmanship—“the physical evidence of the crafts of a particular culture or people during any given period of history”—then the building has lost crucial elements of what made it historic.

Integrity of **feeling** is intangible, but consider whether your building still evokes a sense, through its setting, design, and materials, of the period of the 1830s, the decade of the Trail of Tears. Do you feel like you are in the presence of the past?

Finally, this booklet is very much concerned with properties that have integrity of **association**. What are the links between the property and the Cherokee people or the series of historic events that defined the Trail of Tears? All of a building’s characteristics, from its history to its design to its setting to its materials and to its location “combine to convey integrity of association.”



**Figure 8.** Detachments traveling the Northern Route of the Trail of Tears crossed the Cumberland River in Nashville via a covered toll bridge constructed in 1823. The west abutment of the toll bridge remains extant today and retains much of its integrity. Photo courtesy of Martin Stupich, *Historic American Engineering Record*.

### **Embrace the three golden rules of successful restorations:**

- Regular maintenance is the best insurance against costly repairs and replacement.
- Repair damaged historic features and elements, when possible, rather than replacing them with reproductions or new materials.
- If replacement is the best option, ensure that the replacement matches the original as closely as possible in design, materials, texture, and detail.

### **Don't hesitate to ask for assistance.**

When you are not sure about any of these steps, contact a preservation partner for assistance. Property owners should consider consulting with professionals from State Historic Preservation Offices, Tribal Historic Preservation Offices, and/or historic preservation non-profit organizations before beginning any restoration project. These preservation professionals can help you find solutions for many problems in advance, prevent you from making costly miscues, and ensure, as much as possible, that the job is done right the first time.

## **My Historic Masonry Needs Cleaning: What Can I Do?**

Masonry is among the most durable of historic materials, but it can be damaged by harsh and inappropriate cleaning techniques. The exterior surface is particularly susceptible to removal or damage through abrasive cleaning techniques.

Many frame and log buildings associated with the Trail of Tears have masonry features, typically in the foundation or the chimney of the building. Many of these features date post-1840 and are replacements made in the twentieth century. It is important, no matter the date of a masonry foundation or chimney, to maintain it in good condition since deteriorated masonry will often impact the long-term sustainability of the historic property.

### **Recommendations**

- In general it is best to clean historic masonry only when it is subject to heavy soiling or, as a way to slow or abate deterioration (see Figures 9 and 10). If you decide that the masonry requires cleaning, first test your technique and cleaning solution on a small patch of masonry, ideally in an inconspicuous location, to see if the cleaning method or cleaning solution discolors the masonry or damages it in an irreversible manner.
- Use the most gentle method possible to clean masonry. Low pressure water and non-acidic detergents (what we call light soapy water), applied by hand, is the best method to clean historic masonry. You can use natural bristle brushes but do not use metal bristle brushes or “Brillo” pads. This recommended cleaning method will not remove all of the accumulated grit—true—but it ensures that you do not accidentally damage the historic surface in an irreversible manner.
- Review the building’s roof, gutters, and landscaping to ensure that water is being carried away from the building and is not being allowed to drip on or accumulate around the historic surfaces.

### **Cleaning historic masonry should NEVER involve:**

- Sandblasting. This method of cleaning calls for sand, glass, or other abrasive material to be machine-propelled across the surface of a hard material until the surface is “sanded” or appears clean. Sandblasting will remove marks and grime, but it also permanently changes the historic masonry surface by removing an original layer of protective material. Some contractors will



**Figure 9.** *Mold grows on the north elevation of the Chief Vann House in Murray County, Georgia, and needs cleaning. Sometimes it is not enough to simply clean the walls regularly, though. This mold is likely caused from the boxwoods planted in front of the building, which are blocking sunlight and leading to moisture issues.*



**Figure 10.** *The limestone walls of the Lewis Ross Springhouse in Mayes County, Oklahoma, need cleaning after vandals damaged the interior with spray paint.*

suggest that, yes, dry abrasive cleaning with high-pressure hoses will damage the exterior but offer that wet abrasive cleaning is somehow safe. It is not. Abrasive cleaning is never an appropriate preservation option, whether sandblasting, bead blasting, wheel blasting, or bristle blasting. Cleaning by such abrasive cleaning techniques significantly increases the chance of moisture and environment deteriorating the material, leading to the ultimate failure of the masonry wall and/or foundation.

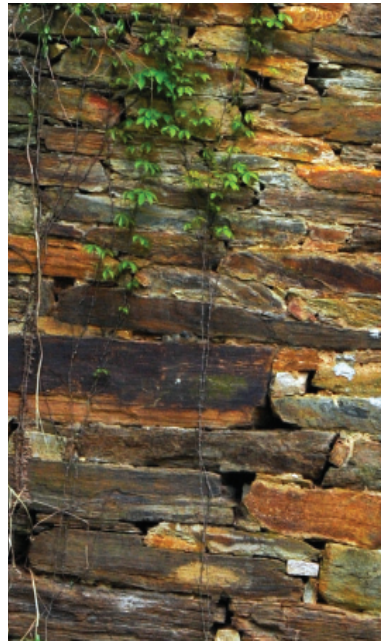
- High-pressure water cleaning. This technique means a wall can be “cleaned” quickly by a single individual but also the high-pressure jets damage the masonry and loosen historic mortar.
- Acidic or harsh chemical treatments. These should be avoided, especially in cleaning limestone or marble surfaces.
- Use of chemical and water treatments in freezing temperatures. The introduction of chemical or water on masonry surfaces in cold weather can interject moisture into the surface of the masonry. When the liquid freezes, it expands and can cause cracks in the historic masonry surface.

## Repointing Mortar on Historic Masonry

Your building inspection may have found places of missing mortar, cracks in mortar joints, walls damp to the touch, disintegrating masonry, and buckled walls and plasterwork—all signs that water is eroding the building either from the outside or inside and typically an indication that the mortar needs to be repaired or repointed (see Figures 11 and 12).

### Recommendations

- Hand-rake, with a natural bristle tool, mortar joints to remove loose or damaged mortar.
- Re-create as close as possible in texture, composition, and color the historic mortar, and use a similar width and profile with the mortar joints.
- It also is very important to replicate, as close as possible, the strength of the historic mortar—that is, measuring by compressive strength, the mortar should be “softer” than the brick or stone and as “soft” as the existing historic mortar. Mortar that is “harder” than the brick will lead to stress fissures and cracks in the brick itself—let the mortar “give” to the natural contraction and expansion of bricks and stones.
- Repoint only those areas that require it—you do not always have to address an entire wall or foundation.



**Figure 11.** *Much of the mortar holding together the stone chimney of the Thomas Tatham House in Cherokee County, North Carolina, has disintegrated.*



Figure 12. *James Brown House, Hamilton County, Tennessee.*

**Repointing historic masonry mortar should NEVER:**

- Use mortar with a high percentage of Portland cement (see Figure 13). Historic mortar was typically composed of salt-free water, one part lime and two parts sand. Portland cement (ASTM C-150 Type 1) may be used in the lime composition, to make the material easier to work, but should always remain a small percentage of the mortar material—no more than 20 percent.
- Use a brand of synthetic (plastic) caulking.
- Change the joint's width or profile when applying new mortar (see Figure 14).
- Apply the mortar with what is called a scrub-coating technique. Scrub coating involves applying a thin coat of mortar over the entire hard surface, then scrubbing away the mortar on the hard material so only the mortar remains.
- Apply the mortar when the temperature is at or near freezing. You also should take care to apply mortar in hot weather when the surface is in the shade so the mortar does not dry too quickly.



**Figure 13.** *The chimney of the Snelson-Brinker House in Crawford County, Missouri, was patched with Portland cement.*



**Figure 14.** *James Brown House, Hamilton County, Tennessee.*



## Repairing Historic Masonry

At times, a masonry structure may be deteriorated to the degree that sections of wall or foundation require repair or replacement. The guidelines above for a restoration job apply here as well: It is always better to repair than replace, and reproduced materials should be of compatible substitute material and be aesthetically and physically compatible with the existing historic appearance of the property (see Figure 15).

Do **not** use waterproofing or water repellent coatings on historic masonry to abate existing damage due to water issues. Such coatings can change the original appearance of the masonry and may, due to the chemical composition of the sealant, actually accelerate deterioration.

Do **not** add stucco or cement to “patch” a brick or stone wall or as a cheaper option of repairing the hard material and the historic mortar.



**Figure 15.** *The Cherokee Supreme Court Building in Cherokee County, Oklahoma, is an excellent example of a restored masonry building.*

## Suggested Readings

Anne E. Grimmer. *Keeping It Clean: Removing Exterior Dirt, Paint, Stains and Graffiti from Historic Masonry Buildings*. Washington, D.C.: National Park Service, 1988.

Mark London. *Masonry: How to Care for Old and Historic Brick and Stone*. Washington, D.C.: National Trust for Historic Preservation, 1988.

Robert C. Mack, de Teel Patterson Tiller, James S. Askins. "Repointing Mortar Joints in Historic Brick Buildings." *Technical Preservation Services for Historic Buildings*. Washington, D.C.: National Park Service, 1980.

Patrick McAfee. *Stone Buildings: Conservation, Repair, Building*. Dublin, Ireland: O'Brien Press Ltd., 2010.

Harley J. McKee. *Introduction to Early American Masonry: Stone, Brick, Mortar and Plaster*. Washington, D.C.: National Trust for Historic Preservation, 1973.

For additional technical assistance, contact your State Historic Preservation Office (SHPO): <http://www.nps.gov/nr/shpolist.htm>.



Figure 16. *Old State House, Pulaski County, Arkansas.*



