CHAPTER 7

Guidelines for Materials

Loudoun County's historic buildings are constructed of traditional materials such as brick, stone, and wood. These materials have a distinctive patina as they age. The continued preservation of these materials is what gives a historic building its unique character.

A. INTRODUCTION

Loudoun County's historic buildings are constructed of traditional materials such as brick, stone, and wood. These materials have a distinctive patina as they age. The continued preservation of these materials is what gives a historic building its unique character.

- In rural Goose Creek, some houses have brick, stone, and frame sections built linearly as wings on a small original building.
- In Waterford, materials were rarely mixed as the early residents preferred brick.
- Most of Aldie's buildings are frame with masonry construction confined to larger dwellings and commercial structures.
- In Bluemont, while stone was used for some of the oldest buildings, the predominant wall-cladding material is horizontal wood siding.
- At Oatlands, the formal buildings are stuccoed brick, however, the more utilitarian structures are a mix of stone, frame and log, as are the other buildings that contribute to the district.
- The early character of Taylorstown is evident through the preserved log and stone buildings in the district.

In this chapter you will find helpful information on the maintenance and repair of various materials that were used for structures throughout the districts. Care should be taken to guard the prevailing character of each district through the choice of materials. You will also find guidance on replacement materials that may be approved for use on your building.

Many of Loudoun County's historic building materials are evident in this early photograph. Stucco covers the foundation, brick is used between the framing (nogging), and wood siding once covered the building.

Stone is also a common building material in Loudoun. This structure was built in two stages but stone is common to both. Each section has been whitewashed in the past.

Preservation Brief #09:
The Repair of Historic Wooden Windows
www.nps.gov/history/hps/tps/briefs/brief09.htm

Preservation Brief #10:
Exterior Paint Problems on Historic Woodwork
www.nps.gov/history/hps/tps/briefs/brief10.htm

Preservation Brief #26:
The Preservation and Repair of Historic Log Buildings
www.nps.gov/history/hps/tps/briefs/brief26.htm

Some of the districts earliest structures were of log construction with stone chimneys.

Before painting, sand the wood to remove unsound paint and replace rotted boards that are beyond repair.

B. WOOD

The availability and flexibility of wood has made it the most common building material throughout much of America's building history. Some of Loudoun County's earliest buildings were of log construction. Wood continued to be one of the primary building materials in districts throughout their development. Wood-framed houses in the districts were clad in wood siding, wood shingle roofs adorned early buildings, and original windows and doors were constructed of wood.

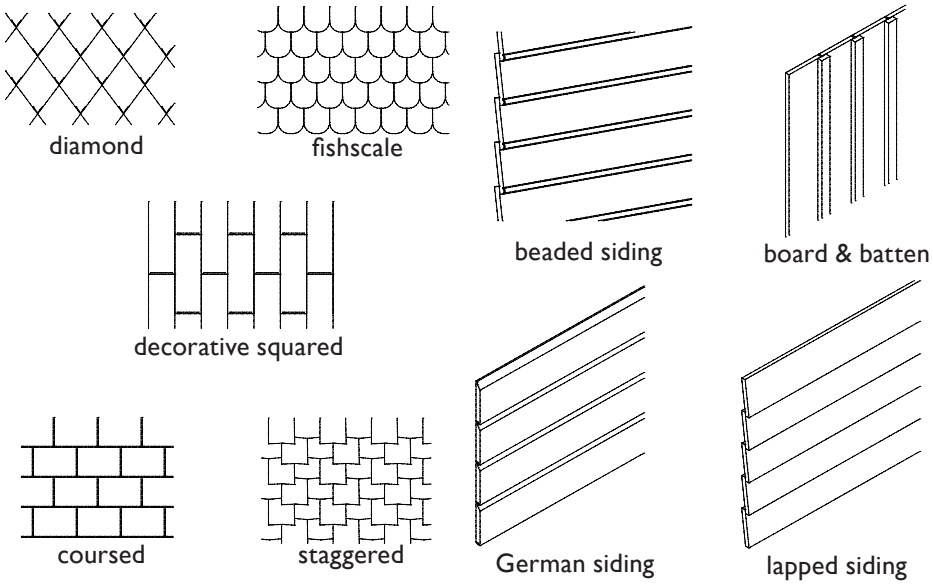
Because it can be shaped easily by sawing, planing, and carving, wood also is used for a broad range of decorative elements, such as cornices, brackets, shutters, posts and columns, railings, and trim.

MAINTENANCE

1. Wood requires consistent maintenance. The main objective is to keep it free from water damage, rot and wood-boring pests.
2. Identify sources of moisture problems, and take appropriate measures to fix them.
3. Check for foundation settlement, moisture and insect damage to wood near the ground. Any contact of wood with the ground should be avoided, and if found, remedied.
4. Inspect all wood features of the building that are subject to the effects of weather for signs of deterioration.
5. Keep all wood surfaces primed and painted.
6. Use appropriate methods to control insect damage, as necessary, following product instructions carefully.
7. Recaulk joints where moisture might penetrate a building.
8. Remove vegetation that grows too closely to wood, and take any other steps necessary to ensure the free circulation of air near wood building elements.
9. Repair leaking roofs, gutters, downspouts, and flashing.
10. Maintain proper drainage around the foundation to prevent standing water.

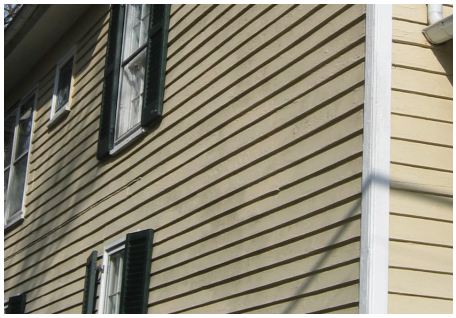
INAPPROPRIATE TREATMENTS

1. Do not use chemical wood preservatives on exposed log structures. They may change the color or appearance of the historic material and may be toxic. An exception to this may be the use of a borate solution followed by a water-repellent coating.
2. Do not move historic log structures unless there is no other alternative to preservation.
3. Do not use liquid siding. See *Section F: Paint* for more information on this treatment.
4. Do not use cement fiberboard to replace original wood siding.
5. Do not use synthetic siding, such as vinyl or aluminum, over existing wood siding or as a replacement for removed wooden siding.
6. Do not use high-pressure power washing to clean wood siding as the pressure may force moisture behind the siding where it can lead to paint failure and rot.
7. Do not caulk under individual siding boards or window sills as this action seals the building too tightly and can lead to moisture problems within the frame walls and to paint failure.



A variety of wood shingle patterns are found on the districts' Victorian era dwellings. Some of these patterns are available in newer substitute materials such as cementitious siding.

The most common wood board siding profiles in the districts are pictured above. The depth of the reveal may change dependent upon the era in which the siding was applied.



The earliest wood siding is called lapped siding and may be a plain board or have a beaded edge detail. Here two different depths of siding are shown on the same building, likely indicating that new siding was applied when the addition was constructed.

German siding is the name for siding that has a beveled top edge. It was popular during the Victorian period.

Board-and-batten siding is the use of vertical boards with narrow strips to cover the seam between the wider boards. This type of wood siding is often seen on farm buildings, sheds, and garages.

NOTE:

Clapboard:

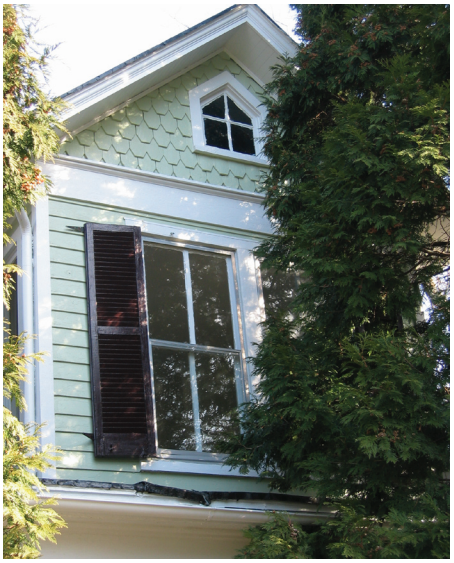
Horizontally laid wooden boards which taper from the bottom to the top.

A number of log structures are found in the County's historic districts. Here, the gable end is clad in lapped siding, a historical practice in the area.

B. WOOD, continued

GUIDELINES

1. Stabilize wood that has been partially damaged by decay or insects in order to preserve the building's integrity.
2. *For log buildings,* remove bark from any new wood used unless the original logs are bark covered. Use materials, formulas, and finishes that match the original chinking and daubing in strength, color, texture and other visual and physical characteristics.
3. If a wood structure must be moved to assure its preservation it should be moved in one piece, not dismantled.
4. Retain wood as one of the dominant framing, cladding and decorative materials for district residences.
5. Repair rotted or missing sections rather than replacing the entire element. Use new or salvaged wood, epoxy consolidants or fillers to patch, piece or consolidate parts.
6. Replace wood elements only when they are rotted beyond repair. Match the original in material and design or use surviving material.
7. Base the design of reconstructed wood elements on pictorial or physical evidence from historic sources.



Decorative wooden shingles, seen here in a fishscale shape, were often used to adorn the central gable of Victorian dwellings.

This cross-gable is decorate with diamond shaped shingles. Note the vertical wood cornice and German siding below the gable.

Interest is added to this lapped siding facade by the use of a projecting trim band just above the window level on each floor.

Many brick structures in the districts have stone foundations as the indigenous stone is less porous than brick and therefore does not wick moisture.

The use of larger, more rectangularly shaped stones (quoins) at the corners provides a traditional detail in this irregularly coursed stonework.

C. STONE AND BRICK

Stone houses, foundations and walls, brick and stone chimneys, and brick houses are found throughout Loudoun County's Historic and Cultural Conservation districts. The color and texture of these materials are character-defining elements of many buildings in the districts.

Stone is common in the rural area of Goose Creek but frame predominates in the village of Lincoln. Goose Creek's rural area has many examples of mixed materials. As houses were enlarged, a brick section may have been added to a small log dwelling that had itself been covered with horizontal wood siding.

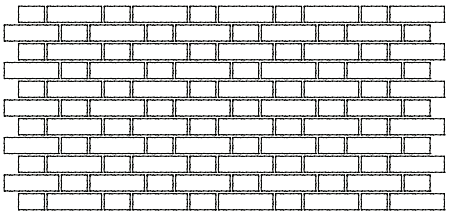
Brick appears throughout the districts; sometimes as a predominant material, sometimes as a secondary material. Common bond was the usual masonry bond; although Flemish bond was used on some facades with common bonds on the other sides of the structure. Running, or stretcher, bond was not often used on old buildings, as it required specialized bricks or metal locks to hold it together.

Due to the amount of brick construction in Waterford, it is necessary to pay special attention when choosing new brick for a project. The traditional brick used for construction was red, local brick. Both the dark red brick associated with the Victorian period and the pale pink shade often marked "Colonial" are inappropriate in the district.

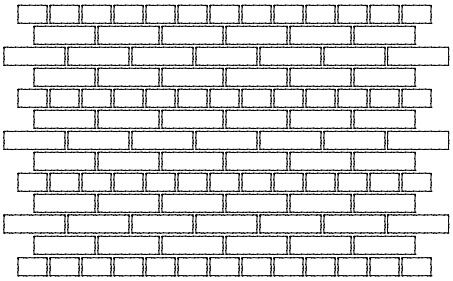
NOTE:

Choosing Stone

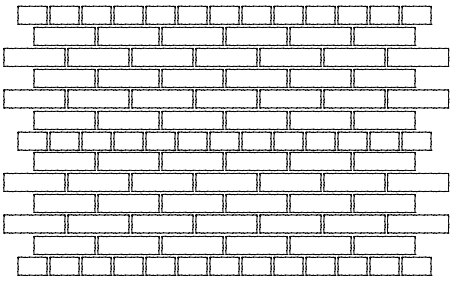
In Northern Virginia and Loudoun County there are several stones that were historically quarried for use. These define the look of stone structures in the historic districts. In Loudoun County, many local stone houses have used Catoctin green stone or the tan flagstone prevalent in Quaker construction.



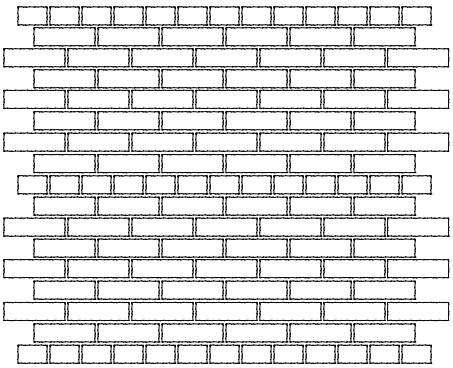
Flemish Bond



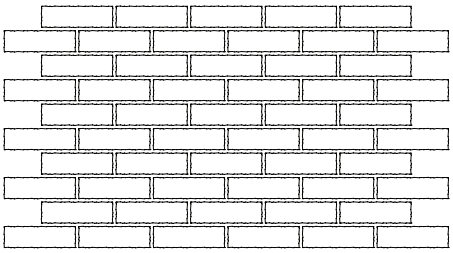
3-course American Bond



5-course American Bond



7-course American Bond



Stretcher or Running Bond

C. STONE AND BRICK, continued

History of Brick

Settlers from England and Europe brought the tradition of brickmaking to the colonies. Masons numbered among those on the first ships to land at Jamestown. In Virginia, in addition to stands of virgin timber and indigenous stone, pioneers often found clay soils suitable for brickmaking. This allowed on-site kilns to be constructed and output of up to 5,000 bricks per day. Manufacturing of brick allowed the limited supply of stone and wood to be used where most needed.

Bond Patterns

Flemish bond, in which headers alternate with stretchers in every course, was popular throughout Virginia from the mid-seventeenth century through mid-nineteenth century.

Three-course American bond consists of a course of headers and three courses of stretchers. More economical than Flemish or English bond, its use became widespread in Virginia after the Revolution.

In some instances Flemish bond would be used for the facade and American bond on the side and rear walls.

Five-course American bond became the pattern of choice by the 1820s and remained in fashion into the late-nineteenth century.

Stretcher bond came into use prior to the Civil War. It is tied to the structure walls by either a specially shaped brick or metal tabs.

Brick Types

The size of a brick remained consistent from the thirteenth through the nineteenth century at 9" by 4 1/4" by 2 1/4". Commonly known as a Flemish brick the size was determined by the amount of clay a man could lift and throw into a mold comfortably coupled with the size and shape of a rectangle that is easily grasped with one hand while holding a trowel in the other.

Colonial or molded brick was formed in a wooden mold dusted with sand to prevent the clay from sticking. After firing, the result of this technique was a brick with a grainy texture and often, uneven edges. When laying these bricks, masons often would score the resulting irregular mortar joints with a straightedge to lend a more regular appearance to the wall. These joints are often called scored, rodded, or grapevine joints.

As brickmaking technology improved, bricks became more consistent in size, texture, and color. Joints also became more regular and a flattened bead or flush joint replaced the earlier scored joint. Outside of urban areas, rural masons were able to approximate the finer brickwork of the cities by painting their more irregular joints with a fine white line for visual regularity.

Common stock bricks were manufactured in metal rather than wood molds and were therefore of a much more standard size and finer texture. Stock brick is found in mid-nineteenth century townhouses.

Pressed brick is used in late-nineteenth and early twentieth century veneer construction. They were fashioned by forcing very stiff clay into metal molds under very high pressure and were then burnt in gas-fired kilns. Compared to handmade bricks they are very hard and dense.

Evenly sized mortar joints were difficult to achieve with handmade brick. Also note the soft red color of this locally made brick.

Variations in the color of bricks, as seen here, is a result of their placement during firing. The darker bricks were closer to the heat source.

Machine made brick is applied here in a stretcher bond pattern highlighted by glazed headers, simulating the earlier appearance of those bricks closest to the fire.

C. STONE AND BRICK, continued

Brick Details

Glazed headers are those bricks that were located closest to the heat source in the kiln. The characteristic blue-gray coloring only occurs if the kiln is heated with oak, which reacts with the potash in the clay. These bricks were used to emphasize the checkered effect of the Flemish bond pattern. By the mid-eighteenth century, most native oak had been depleted and the use of glazed headers abandoned.

Diapering is the use of glazed headers to create a diamond pattern. It can be found on some late-eighteenth and early-nineteenth century structures.

Both dogs-tooth and corbelled cornices were used in the early-nineteenth century. A dogs-tooth or sawtooth cornice features a row or two of bricks set diagonally directly below the eave. A corbelled cornice uses bricks stepped out progressively from the wall plane under the roof eave.

Flat brick arches, stuccoed jack arches, and stone or wood lintels replaced the gauged brickwork seen before the Revolution.

A Gothic Revival church in Waterford exhibits many finely crafted brick details including arches, buttressed pilasters and a corbelled cornice.

This segmental arch is constructed of three-courses of brick.

A jack or flat arch uses tapered bricks to complete the single soldier course between the top of the window and the cornice.

A dogs-tooth cornice constructed of diagonally set bricks decorates the facade just below the eave.

MAINTENANCE

1. Most masonry problems can be avoided with monitoring and prevention. Disintegrating mortar, cracks in mortar joints, loose stones or bricks, or damaged plasterwork may signal the need for masonry repair.

2. Prevent water from gathering at the base of a wall by ensuring that the ground slopes away from the wall.

3. Repair leaking roofs, gutters, and downspouts and secure loose flashing.

4. Ensure that cracks do not indicate structural settling or deterioration. Repair cracks and unsound mortar according to the guidelines later in this section.

5. Cleaning
   Masonry should only be cleaned when necessary to remove heavy paint buildup, halt deterioration or to remove heavy soiling.

   a. Know what you are cleaning. Newer masonry products may not be what they appear. Some are not integrally colored and require different treatment than historic materials.

   b. Always clean from the bottom to the top. This will prevent runoff from soaking into and streaking the masonry.

   c. The best method for cleaning unpainted masonry is to use a low-pressure wash of no more than 200 pounds per square inch (PSI), equivalent to the pressure in a garden hose. A mild detergent may be added when necessary.

   d. Test any detergent or chemical cleaner on a small, inconspicuous part of the building first. This is a mandatory step if you are applying for federal or state rehabilitation tax credits. Note: Older brick may be too soft to clean and can be damaged by detergents and by the pressure of the water.

   e. Use chemical paint and dirt removers formulated for masonry cautiously. Do not clean with chemical methods that damage masonry, and do not leave chemical cleaners on the masonry longer than recommended.

   f. Follow any local environmental regulations in regard to chemical cleaning and disposal.

Preservation Brief #01:

Assessing Cleaning and Water-Repellent Treatments for Historic Masonry Buildings

www.nps.gov/history/hps/tps/briefs/brief01.htm

Preservation Brief #02:

Repointing Mortar Joints in Historic Masonry Buildings

www.nps.gov/history/hps/tps/briefs/brief02.htm

Preservation Brief #06:

Dangers of Abrasive Cleaning to Historic Buildings

www.nps.gov/history/hps/tps/briefs/brief06.htm

Preservation Brief #38:

Removing Graffiti from Historic Masonry

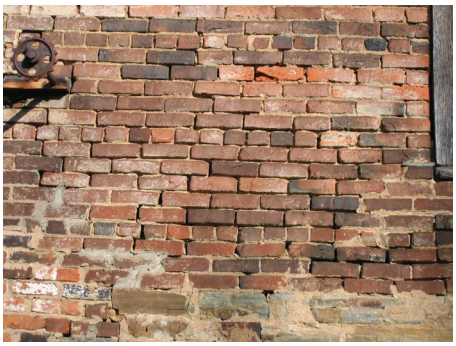
www.nps.gov/history/hps/tps/briefs/brief38.htm

Preservation Brief #39:

Holding the Line: Controlling Unwanted Moisture in Historic Buildings

www.nps.gov/history/hps/tps/briefs/brief39.htm

Recent repairs to this brick wall have highlighted the alternating colors used in the brickwork that frames the windows. Care should be taken to preserve such distinctive workmanship.



This five-course American bond brick wall shows evidence of prior repairs. The bricks and mortars of different strengths and compositions that have been used over time may have contributed to the current mortar failure at the center of the image.

C. STONE AND BRICK, continued

6. Repointing

Appearance is not the only issue. An improper mortar mix can damage historic masonry. Professionals experienced in working with old masonry can guide you in appropriate repointing methods.

a. Remove deteriorated mortar and masonry by hand-raking the joints to avoid damage to the brick or the surrounding area. Roughly one inch of old mortar should be removed to allow for the new mortar.

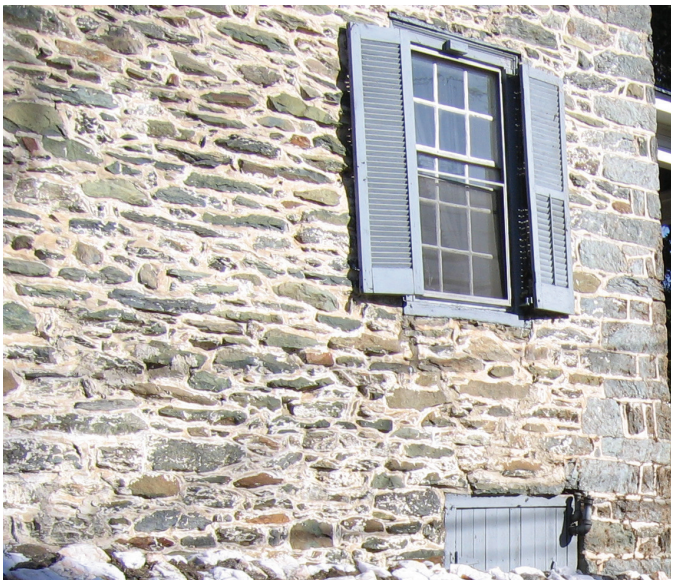
b. Duplicate old mortar joints in width and profile (see the Types of Masonry Joints illustration below). For new sections of masonry, use a traditional v-shaped joint profile to protect mortar and direct rainwater away from the stones.

c. It is also possible to match the color of the new mortar to that of a clean section of existing mortar. Color new mortar to match existing examples of weathered lime mortar or other mortar characteristic of the period of development of adjacent structures.

d. Do not repoint with mortar that is stronger than the original mortar and brick. Brick expands and contracts with freezing and thawing conditions, and old mortar moves to relieve the stress. If a hard portland cement mortar is used, the mortar will not flex as much, and brick can crack, break, or spall.

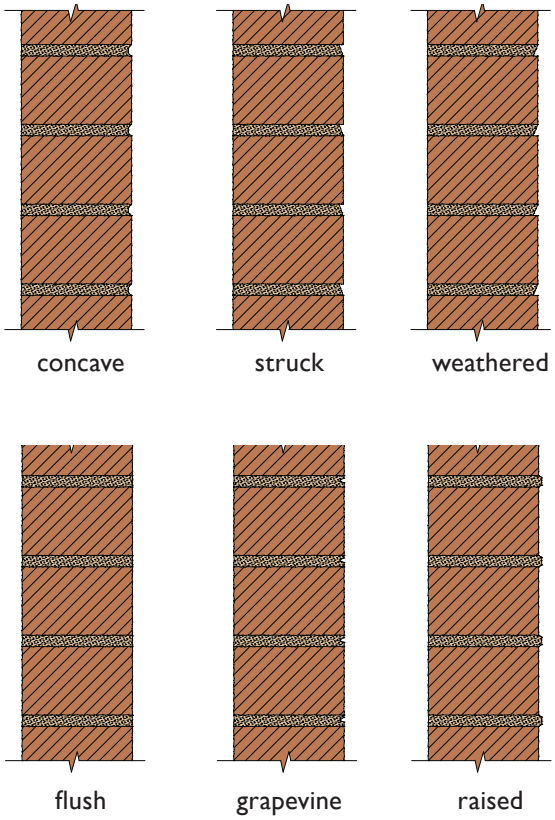
e. Mortar of older brick buildings has a high lime and sand content, usually one part lime to two parts sand. Portland cement may be substituted for a portion of the lime as long as the mortar mix is no more than 20 percent portland cement.

f. Manufacture of real lime mortar has been reintroduced to the market. It is possible to find suppliers that will analyze the content of your original mortar and provide a mortar mix that replicates the historic ingredients, appearance, and strength.



Large mortar joints were sometimes necessary to allow for the uneven size of the local stone in the construction of Clayton Hall.

TYPES OF MASONRY JOINTS



INAPPROPRIATE TREATMENTS

1. Do not sandblast masonry, use high-pressure water blasting, or chemically clean with an inappropriate cleanser such as raw acid, as these methods can do irreparable damage.
2. Do not repoint masonry with a synthetic caulking compound or portland cement as a substitute for mortar.
3. Do not use a "scrub" coating, in which a thinned, low-aggregate coat of mortar is brushed over the entire masonry surface and then scrubbed off of the stone or bricks after drying.
4. Do not remove mortar with electric saws or hammers that damage the surrounding masonry.
5. Do not use waterproof, water-repellent, or non-historic coatings on masonry unless they allow moisture to "breathe" through the masonry. An anti-graffiti coating may be used on masonry areas that have seen repeated vandalism and where improved lighting and other security measures have not been successful.
6. Do not paint unpainted masonry.
7. Do not use wire-cut brick.

GUIDELINES

1. Retain masonry features that are important in defining the overall character of the building.
2. Repair or replace a masonry feature when necessary, using stones or bricks that respect the size, texture, color, and pattern of the historic material, as well as mortar joint size and tooling.
3. Use brick that is free from artificial or chemical treatments and that replicates the color of locally fired bricks used in the construction of historic structures in the district.
4. Repair cracks and unsound mortar with mortar and masonry that matches the historic material.
5. Repair by repointing only areas where mortar has deteriorated. Sound mortar should be left intact.
6. Dress new stones with natural ingredients that will aid in the development of a timeless, weathered appearance. Recipes using vinegar, buttermilk, beer, compost, oatmeal, mold spores and easily obtained ingredients can be found on the internet.
7. Select products that simulate indigenous stone and brick when using these materials for new construction.
8. Brick may be painted on additions or new construction.

Use early stone structures as a guide for selecting new stone that will blend with existing buildings.

In the twentieth century, concrete block became a popular building material. It was an inexpensive alternative to stone. A smooth-faced example is shown above.

Rough-faced concrete block was also used in the districts. This example uses three designs to provide visual interest.

Cracks in the stucco coating may allow moisture to penetrate causing the failure of the coating.

Paint must be maintained to protect the finish coat of stucco underneath.

D. STUCCO

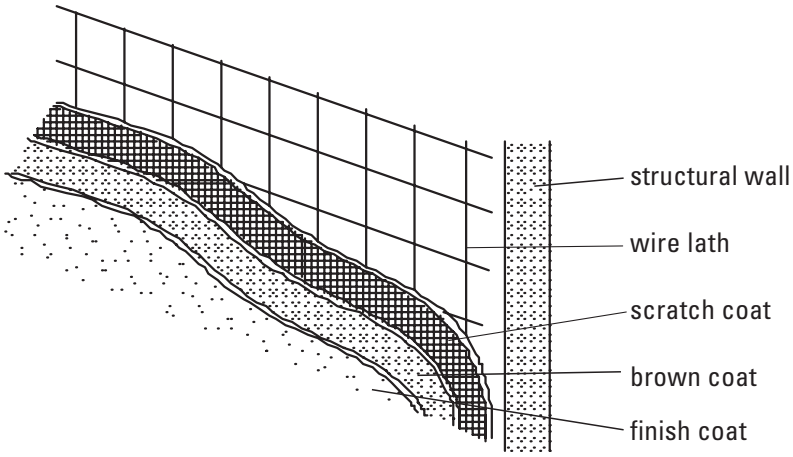
Stucco is a type of exterior plaster. It may be applied directly over masonry, or applied over wood or metal lath, on a wood structure. Stucco can be finished in numerous surface textures dictated by the style of the building including smooth, roughcast, sponged, and scored. Most of these finishes can be found among Loudoun County's historic districts.

First used in the United States during the Federal period, stucco emulated European stonework examples and was often used on important institutional buildings. Stucco was popularized by the publication of *The Architecture of Country Houses* in 1850. The author, Andrew Jackson Downing advocated the use of this inexpensive and easily tintable cladding material for suburban and urban Italianate-style dwellings.

Stucco can be used directly over fieldstone or brick and is applied over lath on log or wood frame structures. Historically stucco has been used as a protective coating or to convey a more refined appearance. By scoring or lining the stucco it is possible to emulate stonework at a fraction of the cost.

While stucco is considered a protective coating, it is highly susceptible to water damage, particularly if the structure underneath the stucco is damaged. Historic stucco needs regular maintenance in order to keep it in good condition. If stucco is the primary wall cladding, the materials under the stucco were not intended to show so complete removal of stucco in these instances is considered inappropriate. A stucco surface may have also been applied to your building at a later date. As a secondary material it may have acquired its own significance over time and in many cases should also be retained.

STUCCO WALL CONSTRUCTION



MAINTENANCE

1. Look for signs of water infiltration from the roof, chimneys, window and door openings and at the foundation. Isolate the source of moisture and take remedial action.
2. Check for cracks in the stucco that may arise from settlement, excessive vibration or the failure of old repairs due to incompatible material strength and composition.
3. Seal hairline cracks with a coat of finish coat stucco, paint, or whitewash.
4. Clean a stucco building using the most gentle means possible, preferably a low-pressure water wash and soft bristle brush. Take care not to damage the surface texture.

INAPPROPRIATE TREATMENTS

1. Do not remove historic stucco coatings from brick, stone, or log structures.
2. Do not use commercial caulks or other compounds to patch the stucco. Because of the difference in consistency and texture, repairs made with caulk will be highly visible and may cause more damage.

GUIDELINES

1. Maintain historic stucco. It is a character-defining material that has acquired significance over time.
2. Repair any water damage to the underlying structure to provide a sound base for necessary stucco repairs.
3. Repair stucco or plastering by removing loose material and patching with a new material that is similar in strength, composition, color, and texture.
4. Use a professional plasterer for stucco repair. A qualified tradesperson will assess the damage and perform an analysis to match the new stucco composition to the existing material.
5. Stucco may be tinted or pigmented and sometimes was whitewashed or color-washed. When replacing or repairing stucco, match the color or tint of the existing material.
6. After repairs have been made, many stucco buildings will require repainting. Consult a professional to determine the appropriate compatible paint for the existing surface coating.
7. Replace stucco completely if more than half of the surface area has lost its bond with the substrate.
8. Use a replacement stucco mix that is weaker than the masonry to which it is being applied and which replicates the visual qualities of the historic stucco.

Preservation Brief #22:

The Preservation and Repair of Historic Stucco

www.nps.gov/history/hps/tps/briefs/brief22.htm

Historically, smooth stucco was often scored to create the effect of regular stone blocks.

Rough stucco finish is identified with the early twentieth century, and the Craftsman and Tudor Revival styles.

Rust will lead to the deterioration of metal roofs.

Metal site elements such as this fence should be cared for in the same way as house features.

Rather than replacing the historic fence, this owner chose to refurbish the existing metal fence.

E. METAL

Metal in Loudoun County's Historic and Cultural Conservation Districts is primarily used for fences, gutters and downspouts, roofs, and roof features. For more information on the types of metals used in the district and their care please refer to *Chapter 6: Roof Forms and Materials*.

MAINTENANCE

1. Use the gentlest means possible when cleaning metals.
2. Prepare metal surfaces for repainting by hand-scraping or brushing with natural bristle brushes to remove loose and peeling paint. Removing paint down to the bare metal is not necessary, but removal of all corrosion is essential.
3. Clean cast iron and other hard metals with a low-pressure, dry-grit blasting of 80 to 100 pounds per square inch if gentle means do not remove old paint properly. Protect any adjacent wood or masonry surfaces from the grit.

INAPPROPRIATE TREATMENTS

1. Do not remove the patina of metals since it provides a protective coating and is a historically significant finish.
2. Do not introduce new historic metalwork such as balconies, railings, porch columns or decorative metal cornices to buildings where there is no historic documentation of their use.
3. Some metals such as steel and copper are incompatible and should not be placed together without a separation material, such as nonporous, neoprene gaskets or butyl rubber caulking.

GUIDELINES

1. Retain architectural metals that provide a distinct quality to the districts.
2. Repair or replace these metal features as necessary, using in-kind materials.
3. Substitute materials may be considered for reconstructing missing metal elements if it is not technically feasible to replace them with the original material.

F. SUBSTITUTE MATERIALS

A building's historic character is a combination of its design, age, setting, and materials. The exterior walls of a building, because they are so visible, play a very important role in defining its historic appearance. Wood clapboards, wood shingles, log, brick, stone, and stucco are the original exterior wall materials in Loudoun County's Historic and Cultural Conservation Districts and are an integral part of their distinctive historic character.

Synthetic materials can never have the same patina, texture, or light-reflective qualities as the original wall cladding materials and, therefore, detract somewhat from the district's historic character.

Substitute siding materials that may have been used in the districts have changed over time and include asbestos, vinyl, and aluminum. These materials were created to simulate the appearance of original siding materials and sold with the promise of reduced maintenance when compared to the original material.

1. Asbestos

Asbestos may be found in either roof or siding materials. The first question to ask is whether or not it is necessary to remove the material. Asbestos is only a hazard if it is disturbed. Otherwise it is a long-lasting and often character-defining twentieth-century substitute material.

Preservation Brief #16:

The Use of Substitute Materials on Historic Building Exteriors

www.nps.gov/history/hps/tps/briefs/brief16.htm

NOTE:

HDRC Criteria for New Materials

The HDRC will use the following criteria in evaluating new materials:

- durability; visual compatibility of the proposed materials to existing material;
- trim of material, especially for siding applications; joining of materials; and
- the availability and permanence of color.

Material review will also take into consideration whether the material is to be used for rehabilitation, an addition or new construction.

The asbestos clad section of this structure helps to date this modification to the building.

Asbestos can often be identified by its texture and wavy edge.

F. SUBSTITUTE MATERIALS, continued

Preservation Brief #08:

Aluminum and Vinyl Siding on Historic Buildings: The Appropriateness of Substitute Materials for Resurfacing Historic Wood Frame Buildings

www.nps.gov/history/hps/tps/briefs/brief08.htm

Cementitious siding can be applied to a new structure in the same manner as wood.

Cementitious siding can be ordered in a variety of historic shingle patterns.

2. Vinyl and Aluminum Siding

Vinyl and aluminum siding will not be approved for use as a replacement material or over existing wood siding in the districts.

When possible, remove existing synthetic siding and restore the original wood siding underneath. By revealing the original siding you may uncover hidden maintenance issues earlier than they would otherwise be detected.

The following list covers a number of misconceptions associated with vinyl siding:

a. Often property owners wish to install artificial siding because of the desire to avoid maintenance issues associated with repainting. The vinyl siding industry offers artificial siding as a maintenance-free solution that will solve your exterior building problems for a lifetime.

b. Vinyl siding is usually guaranteed for 20 years. (Guarantees over 20 years are usually prorated.) Two or three quality paint jobs may cost approximately the same as replacement siding. Good quality latex exterior paint applied according to the manufacturer's instructions may have a warranty of 15 years or more. Properly maintained wood siding has been found to last hundreds of years.

c. Painting of vinyl or aluminum siding can be a challenge, as paint may not adhere well to these materials. Painting may also void your warranty.

d. Vinyl and aluminum siding are not weatherproof. Time and extreme temperatures can take an immense toll on artificial siding. Over time, some artificial siding may dent, warp, cup, become brittle, buckle, break, fade and become dirty due to numerous environmental factors.

e. Unlike wood, substitute siding materials are difficult to repair to match the existing. Factory colors, styles, and finishes change over time.

3. Cementitious Siding

Cementitious siding will not be approved as a replacement or repair material for wood siding on existing structures. It may be approved for additions to historic structures or for new construction and its use for that purpose is covered in *Chapters 4* and *5: Guidelines for New Construction* and *Guidelines for Additions*.

4. Composite Trim Materials

Some currently available composite materials are available in custom-formed lengths such as urethane; while others, including cellular PVC, are dimensional mill-ready blanks. Flat board dimensional materials are available in wood-resin composites and cement board but are not able to be worked in the traditional manner of wood.

When wood features are beyond repair, composite or fiberglass replacement trim elements may be approved by the HDRC if they replicate and are visually compatible with the appearance of the original wood elements.

INAPPROPRIATE TREATMENTS

1. Do not replace historic wooden window, door, or porch trim unless it is deteriorated beyond repair.
2. Do not apply new trim over existing trim.
3. Do not introduce trim elements that convey a different period of construction.
4. Do not use composite materials to patch existing wooden trim.

GUIDELINES

1. In general, artificial materials may be used in the historic districts only if the material replicates the original material in dimensions, proportions, and appearance. As new materials continue to evolve they will be considered on a case-by-case basis by the HDRC.
2. Use composite trim only if it replicates the dimension, scale, and overall appearance of the original wood trim.
3. Choose materials that may be painted to allow for a later change in the color scheme of the house's exterior.
4. Select colors that are historically appropriate according to *Section G: Paint and Color.*

A three-part simulated divided light window is trimmed in a composite material. The architrave molding of the trim replicates a historic profile.

Inside and outside corner boards, crown molding and a beaded-board ceiling are all historic trim details available in substitute materials.

Preservation Brief #37:

Appropriate Methods for Reducing Lead Paint Hazards in Historic Housing

www.nps.gov/history/hps/tps/briefs/brief37.htm

NOTE:

While the Historic District Review Committee (HDRC) does not review color in the historic districts, these recommendations are provided as reference for the property owners in the districts.

G. PAINT AND COLOR

Properly painted, the character-defining details of a building are accentuated. Painting is also one of the least expensive ways to maintain historic fabric and to make a building an attractive addition to the historic district.

In some instances buildings may be painted inappropriate colors, or colors may be placed on the building incorrectly. Some paint schemes use too many colors, while others paint all building elements the same color – neither one of these is a preferred treatment.

An early single color paint scheme. Red oxide was a relatively inexpensive pigment and the color replicated more expensive brick construction.

1. Lead Paint

Paints containing lead have not been manufactured since 1978 and, therefore, may not be the top coat on the exterior of a structure. However, if you are removing a substitute cladding material that has been installed over the original wood siding, you may have a lead paint top coat on the underlying wood. If the paint is sound, it may be possible to encapsulate the lead paint layer under new exterior paint. It is not necessary to remove the wood to reduce the lead paint hazard.

A two-color paint scheme has been applied to this log structure. Painting of log buildings was less expensive than covering in wood siding and provided some weather protection.

2. Color Selection

a. Georgian and Federal

Various shades of white or ivory are appropriate on wood trim and cornices. Wall colors can be white or shades of gray or beige on frame structures. Doors and shutters should be darker – black, greens, grays, or blues.

b. Vernacular Victorian and Queen Anne

Deep, rich colors such as greens, rusts, reds and browns can be used on the exterior trim and walls of late-Victorian-era houses. These colors will, however, be prone to chalk and fade more quickly than lighter colors. Shingles and other decorative elements may be painted a color that coordinates with, but is different from, the siding of the same building. It is usually best to treat similar elements with the same color to achieve a unified rather than overly busy and disjointed appearance. As a general rule, the more ornate the house, the more colors can be used.

Three colors of paint were often used on Victorian period residences.

c. Colonial Revival

Soft colors should be used for the trim and wall color of these buildings. The trim should be painted white or ivory since the style reflects a return to classical motifs.

d. Bungalows

Natural earth tones and stains of tans, greens, and grays are the most appropriate for this style, using color to emphasize the many textures and surfaces.

3. Color Placement

a. Residential Buildings

Generally walls and trim can be painted contrasting colors, with doors and shutters a third, accent color. Individual small details should not be painted with additional accent colors.

b. Commercial Buildings

Trim, including trim boards, cornices, storefronts, and window framing should be painted the same color. The wall, if painted, should be a contrasting color. The window sash and doors can be painted a different accent color from the walls and trim.

MAINTENANCE

1. Keep existing painted materials well painted.
2. Clean painted surfaces of accumulated dirt on an annual basis in order to prolong the life of your paint job.
3. Follow all local environmental regulations.
4. Prepare, prime, and paint one side of the house before moving on to the next. Otherwise the surface gets dirty between coats, causing possible paint failure.
5. Remove loose and peeling paint down to the next sound layer using the gentlest means possible: hand-scraping and hand-sanding are best for wood and masonry. Oil and lead-based paints cure slowly while latex cures quickly. By removing paint to bare wood, the new paint will be less apt to fail due to these different rates.
6. Hire a contractor experienced in working on historic buildings, to perform professional chemical removal when necessary.
7. Ensure that all surfaces are free of dirt, grease, and grime before painting. Wash the bare wood with tri-sodium phosphate (TSP), then rinse with a hose with no nozzle.
8. Repair rot and cracks with wood or epoxy.
9. Prime surfaces if the bare wood is exposed or if you are changing types of paint. This will allow new paint to adhere properly.
10. Use an oil-based alkyd primer applied by brush not sprayed on.
11. Caulk after priming using acrylic/latex caulk with silicone.
12. Use a high-quality paint and primer, and follow the manufacturer's specifications for application.

Preservation Brief #10:

Exterior Paint Problems on Historic Woodwork

www.nps.gov/history/hps/tps/briefs/brief10.htm

Significant paint has accumulated on this wood siding.

Cracking of paint, often due to incompatible formulations, is called alligatoring. This surface should be sanded to smooth paint.

Wood should not be allowed to remain exposed to weather for a prolonged period. Once peeling has been begun, it will continue until the underlying problem has been mitigated.

G. PAINT AND COLOR, continued

This wood surface has been properly prepared to accept a new coat of primer and paint.

A well-painted roof will prolong the longevity of the metal.

This colorful yet subdued paint scheme is appropriate for a carriage house that relates to traditional Victorian dwelling designs.

INAPPROPRIATE TREATMENTS

1. Do not paint masonry that is unpainted.
2. Do not completely remove paint to achieve a natural finish.
3. Do not use sandblasting, open flames, or high-pressure water wash to remove paint from masonry, soft metal, or wood.
4. Do not burn off old paint as it may be a fire hazard and can permanently damage the surface of the wood.
5. Do not apply latex paint directly over oil-based paint as it might not bond properly and can pull off the old oil-based paint. Ensure good adhesion by using an alkyd primer as noted in Maintenance #10.
6. Do not use overly bright and obtrusive colors. Refer to Paint Selection earlier in this section.
7. Do not use liquid vinyl coatings because:
    a. These coatings may not allow historic structures to properly disperse moisture causing an accelerated rate of structural decay hidden by the coating.
    b. The thickness of these coatings may obscure character-defining details of historic woodwork and masonry.
    c. This product has not been shown to be easily removable; therefore, it may cause potential negative impact to the historic fabric of the structure and the district.

GUIDELINES

1. Select a color scheme appropriate to the time period in which your building was constructed and that is generally compatible with adjacent structures. Refer to Paint Selection earlier in this section.
2. Treat similar elements with the same color to achieve a unified rather than overly busy and disjointed appearance.
3. Paint unpainted aluminum-frame storm windows and doors to match wood trim.
4. Allow pressure-treated wood to season for a year before painting it. Otherwise, the wood-preserving chemicals might interfere with paint adherence.