



BAR Review Levels

These levels of review are applicable in most cases. Please note that during the administrative review process, Staff may determine that a project must be reviewed by the Board. Contact Staff at 703.746.3833 to confirm which level of review is required for your project.

NO BAR REVIEW	ADMINISTRATIVE (STAFF) REVIEW	BOARD REVIEW
<p>Painting masonry that is currently painted</p>	<p>Repointing</p> <p>Paint removal and cleaning</p> <p>Repair or replacement of any masonry wall over 2 feet in height</p>	<p>Painting, staining, or limewashing unpainted masonry on any portion of a building</p> <p>Demolition of masonry (over 25 square feet), including inappropriate repointing</p> <p>Application of sealants to masonry</p> <p>Application of stucco or other finishes to masonry</p>

Introduction

Masonry building and garden walls are character-defining features that help define a property’s architectural style and age. In the 18th and early 19th centuries, many buildings in Alexandria were constructed with red bricks made from local clay. This early brick was laid with a mortar made with local sand, water, and lime. From the middle to the end of the 19th Century, advances in brick manufacturing led to the creation of stronger bricks and more experimentation with brick color, size, and shapes. It is common in all periods to find high-quality decorative face brick on the front and more common less expensive brick on the side and rear. Beginning around 1920, modern hard-fired bricks were laid with a rigid impervious mortar containing varying degrees of Portland cement. This ingredient was an important structural improvement for modern construction but its use on historic brick walls can irreversibly damage the brick and exacerbate moisture problems. Although brick is one of the most durable and historic building materials, it still requires appropriate care to ensure its longevity. Unpainted masonry is durable and low-maintenance, usually requiring repointing only every 75-100 years.

MASONRY

PARKER-GRAY DISTRICT CITY OF ALEXANDRIA



The foundations of 18th Century buildings in Alexandria were typically constructed with Potomac River granite fieldstone. With rare exception, this stone was always installed below grade. A notable example of these stone foundations can be seen on the Ramsay House. The Carlyle House is the only building in Alexandria that was originally constructed of Aquia Creek sandstone, although it was later refinished with Indiana limestone in the 1970s. Sandstone and limestone were commonly used for stoops throughout the 18th and 19th Centuries. Precast concrete was not used as a building material until the early 20th Century.



The Ramsay house was originally constructed in the 18th Century with a foundation of Potomac River granite fieldstone.



The Carlyle House was originally constructed in the 18th Century with Aquia Creek sandstone.



Guidelines

- o Masonry that is not currently painted should not be painted, stained, or limewashed.
- o Stone repairs should match the density and porosity of the original stone.
- o Stone features that cannot be repaired should be replaced with matching genuine stone rather than cast stone.
- o Before repointing a masonry wall, Staff will review a sample portion of the proposed work in the field to confirm that the appropriate tools and mortar were used and the masonry units were not damaged. See additional information section for more details on preparing a mock-up.
- o Any repointing should match the historic mortar in color, composition, texture, and joint profile.
- o Mortar should be softer than the masonry unit; only lime-based mortar is appropriate on masonry portions of buildings constructed before 1932 (Early buildings). See additional information section for more details on mortar types.
- o Mortar should only be removed using hand tools. The use of power tools is inappropriate for the removal of mortar on Early (pre-1932) buildings.
- o Masonry should be cleaned using the gentlest means possible. Abrasive cleaning, including sandblasting, and high pressure powerwashing are inappropriate.

Additional Information

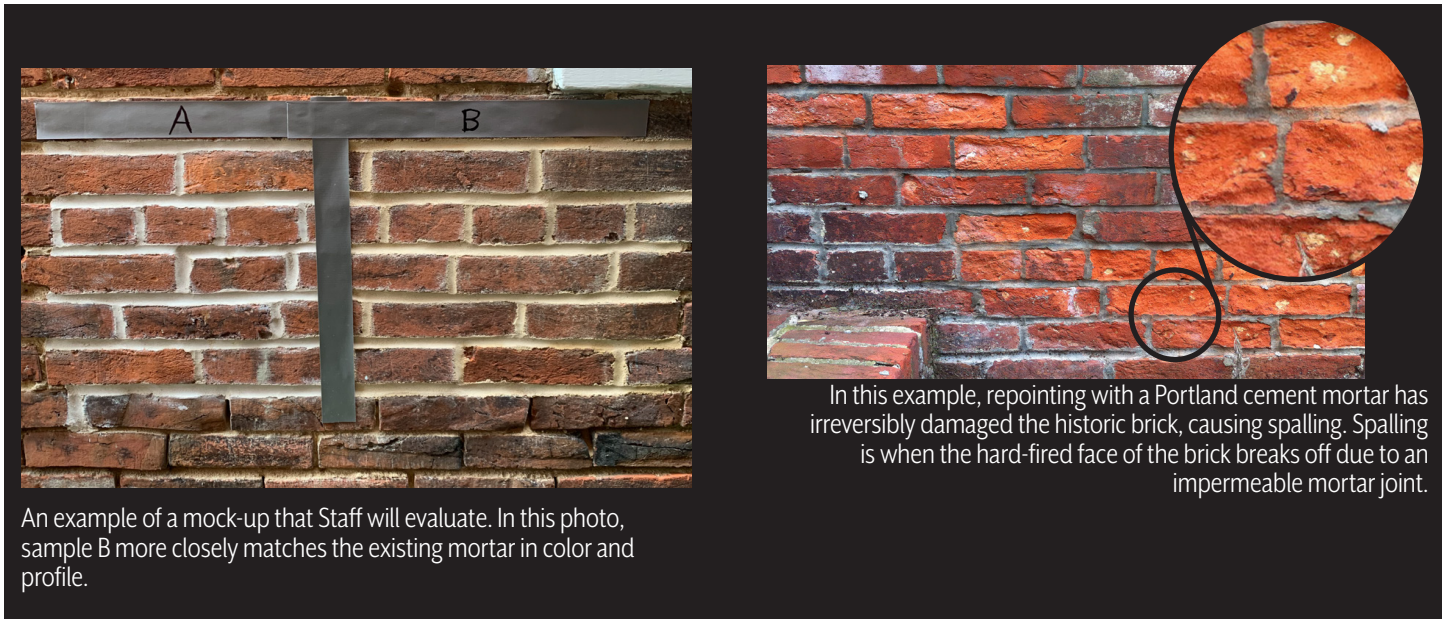
Preparing a Mock-up

A mock-up is required before repointing a masonry wall. Staff will evaluate the mock-up in the field to confirm that the appropriate tools and mortar were used and the masonry units were not damaged. The mock-up should match the historic mortar in color, composition, texture, and joint profile.

In masonry walls, mortar is intended to be softer and more porous than the adjacent masonry. The use of an incorrect mortar that is harder than the brick or stone units impedes their normal expansion and contraction. This can cause irreparable damage resulting in the full or partial loss of the individual masonry units. When repointing a historic masonry wall, a lime-based mortar should be used to prevent this damage. Only buildings constructed of hard-fired brick in the 20th Century or later can use a high percentage of Portland cement in the mortar mix without risking damage to the masonry units. Using



Repointing should not take place if the temperature is less than 40 degrees Fahrenheit during application and curing. Additional mock-ups may be needed if the mortar is not correctly replicated. Allow extra time for this review so that mortar samples are dry enough to represent their final color. When repairing or replacing historic masonry surfaces, limit the repairs to the damaged areas only. It is often unnecessary and potentially damaging to repoint intact areas.



An example of a mock-up that Staff will evaluate. In this photo, sample B more closely matches the existing mortar in color and profile.

In this example, repointing with a Portland cement mortar has irreversibly damaged the historic brick, causing spalling. Spalling is when the hard-fired face of the brick breaks off due to an impermeable mortar joint.

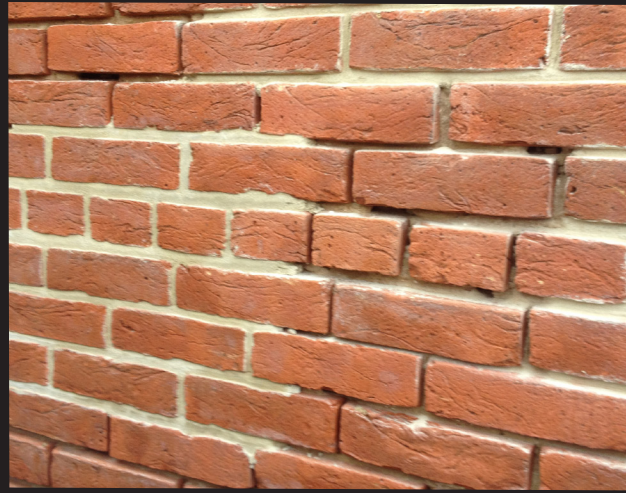
Mortar Removal

Power tools should only be used to remove mortar from horizontal joints by scoring the middle of the joint and using hand tools to remove the remaining mortar. Only hand tools should be used on horizontal joints less than 3/8 inches tall and on all vertical joints. Mortar should be removed to a depth of 2 and 1/2 times the height of the joint. Masonry damaged by improper mortar removal is considered a demolition and both the homeowner and contractor are subject to penalties.

MASONRY



The result of using power tools on mortar joints - the grinders sliced off 1/4 inch sections of brick. The facade is irreversibly damaged, resulting in the loss of the original, handmade bricks. The aesthetic and historic character of the building is lost, as the joints are now twice the original width. In addition, the softer and more absorbant interior of the brick is exposed, leading to future deterioration.



An example of appropriate mortar removal using hand chisels. The width of the original joint and the integrity of the brick are maintained.



Color Matching

New mortar should match the color and texture of the original historic mortar. It may be necessary to look in a protected area where the original mortar has not been repointed, such as behind a shutter or under a cornice. If the wall was previously repointed, it may be necessary to scrape off the outer layer of mortar to reveal the historic mortar's color and texture. Subsequent property owners often choose to remove paint and therefore it is important to color match mortar on painted buildings as well.

The exposed and soiled layer of mortar has been scraped away to reveal clean mortar for an accurate color match.

The samples have been clearly labeled with painter's tape so that they are easily identifiable for Staff.

The mortar on the right is the wrong color, incorrectly applied, and includes a high ratio of Portland cement, which is not appropriate for historic masonry. Both the historic and aesthetic characteristics are permanently lost.





Paint Removal and Masonry Cleaning

Improper paint removal or cleaning can irreversibly damage masonry. Harsh methods like sandblasting or power washing can remove the hard-fired brick surface, exposing the soft interior of the brick to weather. Milder abrasive cleaning methods like soda or media blasting may only be approved by Staff when a skilled architectural conservator has demonstrated it to be the best and safest method. There are several environmentally friendly paint strippers available that can remove multiple layers of paint relatively easily. The use of a paint stripper usually requires the use of low pressure water to remove and neutralize the chemicals and paint residue. It is important that you consult with Staff on the proper water pressure (psi) to prevent mechanical damage to the masonry surface and avoid penetrating the masonry with the water and chemical residue, which can lead to interior damage or damage to the masonry. Control of water runoff and dust may require a separate permit from Transportation & Environmental Services.



The brick on the right side in the photo has been sandblasted, causing the outer hard fired layer to be removed and making it more susceptible to further damage and destroying its historic architectural character. The Board considers this demolition of the masonry.



Graffiti should be removed using the same gentle cleaning methods.



Mortar Ingredients and Types

Mortars have different ratios of sand, hydrated lime, and water, and sometimes cements and other additives:

Sand - Defines the color and texture of the mortar.

Water - Should be clean and free of salts or chemicals.

Lime - Acts as binder or “glue.” It can also affect the hardness and moisture permeability of the cured mortar.

Additives - Historic additives include oyster shells, clay particles, colorants, fly ash, pozzolans, and animal hair.

Cements - Many natural and factory-made cements, including Portland cement, were used in conjunction with lime after 1890. Portland cement is primarily found locally after the 1920s.

Buildings constructed before the 20th Century generally have a soft and porous brick, which is easily damaged by hard and brittle Portland cement. The mortar types that are appropriate on masonry on Early (pre-1932) buildings are: L, O, and K, depending on the location and exposure.

On Later (post-1931) buildings, type N mortar is appropriate.

VERY DURABLE:
granite, modern brick
(20th Century and later)

L

MODERATELY DURABLE:
limestone, molded brick

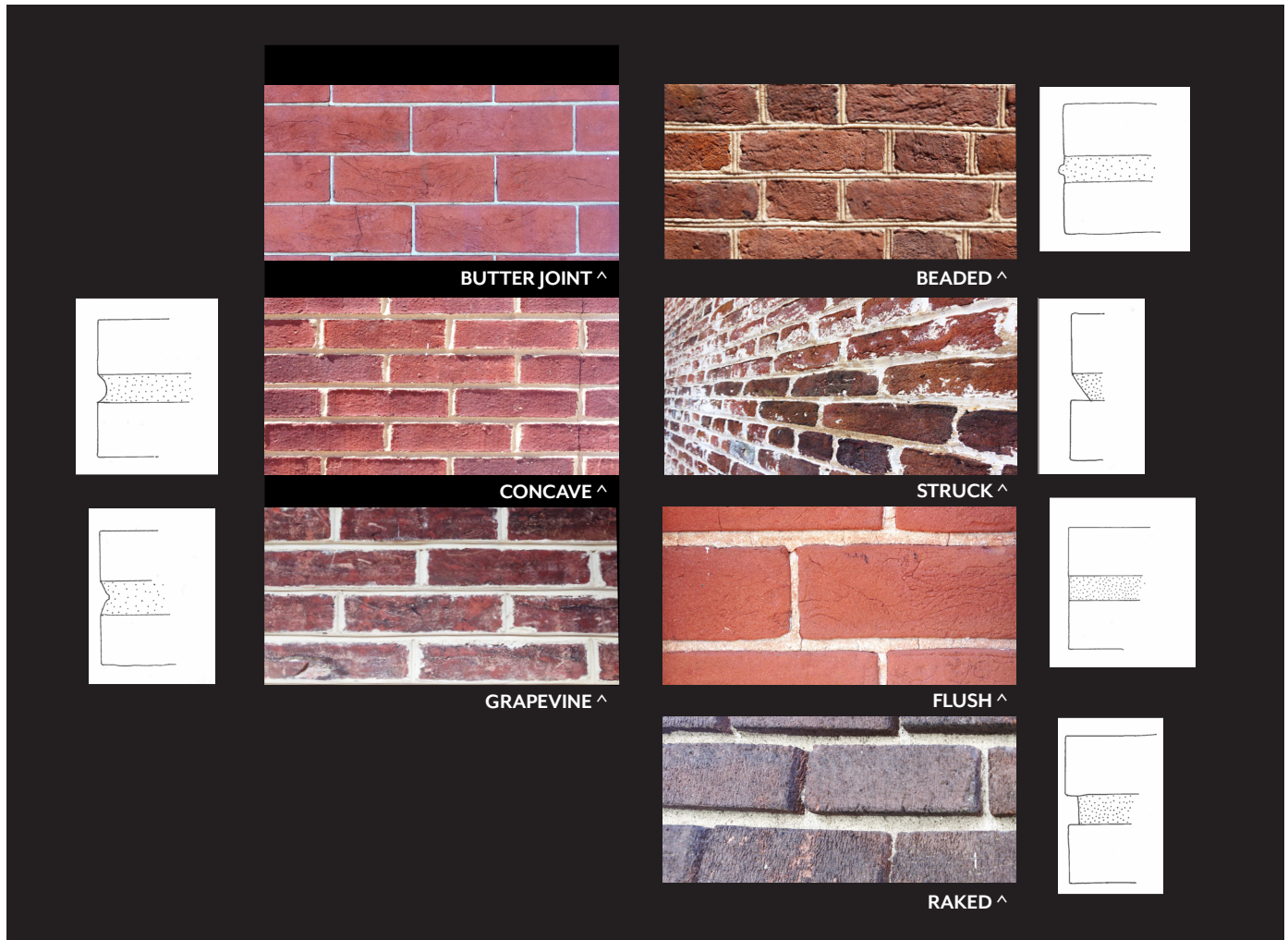
O

MINIMALLY DURABLE:
soft, handmade brick
(18th and early 19th Century)

K



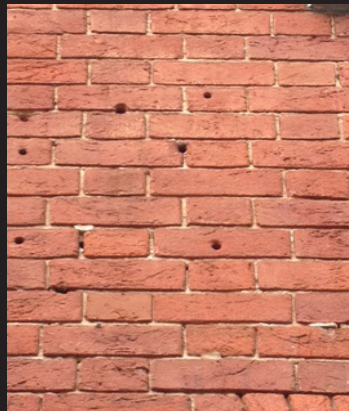
Joint Profiles





Masonry Repairs

Masonry is often damaged due to water-related issues. Some common causes of water damage include interior water leaks, leaking air conditioning units, pipes, drains, clogged gutters and downspouts, and moisture caused by rising damp from below grade. Some of the most common causes of damage to masonry are due to water damage. Masonry can also be damaged by drilling holes into the masonry surface or using silicone glue. Anchors should always be installed in the mortar joint rather than the body of the masonry unit, and should be smaller than the mortar joint, if possible. Like mortar repairs, masonry repairs should use material matching in color and texture. Never use caulk to fill masonry holes.



Holes from previous signs.



Rising damp (water wicking from below) has caused the face of this early brick to crumble from the freeze-thaw cycle.

Sealants

Sealants are often marketed as water-repellent solutions for historic masonry. While many are advertised as “breathable,” they are seldom necessary and can even cause additional damage because they block the porosity of the brick and mortar, potentially trapping moisture.



Additional Resources

[Association for Preservation Technology International Bulletins on Mortar](#)

[National Park Service Preservation Brief #1: Assessing Cleaning and Water-Repellent Treatments for Historic Masonry Buildings](#)

[National Park Service Preservation Brief #2: Repointing Mortar Joints in Historic Buildings](#)

[National Park Service Preservation Brief #6: Dangers of Abrasive Cleaning to Historic Buildings](#)

[National Park Service Preservation Brief #38: Removing Graffiti from Historic Masonry](#)

[National Park Service Preservation Brief #42: The Maintenance, Repair and Replacement of Historic Cast Stone](#)

[U.S. Heritage Group](#)

[ASTM International](#)

[The Brick Industry Association](#)



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NO BAR REVIEW

Roof drainage elements such as snow guards, leaf guards, gutters, and downspouts

ADMINISTRATIVE (STAFF) REVIEW

Repair or appropriate replacement of roofing material (greater than or equal to 100 square feet)

BOARD REVIEW

Any project referred to the Board by Staff

Introduction

Roofs of historic buildings are one of the dominant visual features in the historic district. The choice of roofing materials is an important consideration in the design of any rehabilitation work on a historic structure as well as for new construction. Replacement or new roofing material visible from a public right-of-way requires Staff review. Flat and low-sloped roofs are considered to be not visible by the Board.

Guidelines

All Buildings

The Board discourages replacing original and appropriate roofing material with modern alterations.

Early Buildings (pre-1932)

Original or existing roofing which has acquired historic importance over time should be preserved and repaired whenever possible. When this is not feasible, Staff can approve replacement materials that match the original roofing material. If the original roofing material is missing and cannot be determined, roofing appropriate to the period of the building should be used. Synthetic slate may not replace genuine slate shingles.

Later Buildings (post-1931)

Modern materials such as composite (synthetic) roofing and composition shingles may be used if appropriate to the architectural style of the building. The Board recommends using architectural grade composition shingles in weathered wood or slate blend colors.



Additional Information

- o A building permit is required from Code Administration for the replacement of over 100 square feet of roofing material in the historic districts.
- o The Board recommends using light colors on flat roofs to reduce air conditioning loads on the building and minimize the urban heat island effect.
- o The Board encourages environmentally sustainable materials and practices, including living roofs in minimally visible locations.

Historic Roofing Materials

18th Century Buildings

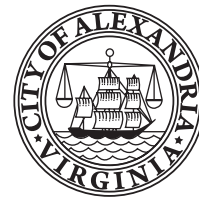
Wood shingle was the predominant roofing material in Alexandria until the early 19th Century. Historic wood shingle roofs were hand split and hand planed to a uniform thickness. Wood shingle roofs were often painted and/or scalloped to simulate tile or slate roofs.

19th Century Buildings

Standing seam metal roofs were in wide use throughout the historic districts by the mid 19th Century. Metal roofs are more fire resistant than wood roofs and have a life span of 50 to 100 years with proper maintenance. Other roofing materials such as slate shingles and clay tile were not widely used in Alexandria until the late 19th Century. Patterned slate shingles are a central architectural feature of roofs of Gothic Revival and mansard roofs on Second Empire style buildings. Clay tile roofs are a standard feature of Romanesque style buildings.

20th and 21st Century Buildings

Composition shingles made of asphalt were not widely used in the historic districts until the middle of the 20th Century. Other roofing materials developed in the 20th Century include fiberglass, rubber membranes, and imitation slate. Standing seam metal, wood, and slate continue to be used for new and replacement roofs in the historic districts.



ROOFING

ROOFING MATERIALS FOUND THROUGHOUT THE DISTRICTS



^ FISHSCALE WOOD SHINGLE
18TH - 19TH CENTURY



^ POLYCHROME SLATE
MID 19TH - EARLY 20TH CENTURY



^ STANDING SEAM METAL
MID 19TH - 21ST CENTURY



^ FANCY CUT SLATE
19TH - EARLY 20TH CENTURY



^ STAMPED METAL SHINGLE
19TH - 21ST CENTURY



^ SLATE SHINGLE
19TH - 21ST CENTURY



^ SINGLE PLY MEMBRANE
20TH - 21ST CENTURY



^ ARCHITECTURAL GRADE ASPHALT
20TH - 21ST CENTURY



^ 3-TAB COMPOSITION
20TH - 21ST CENTURY



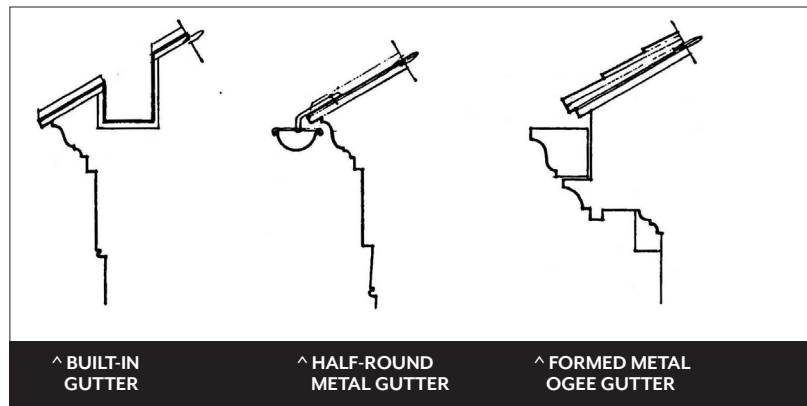
Not visible roof ● ● ●



Gutters and Downspouts

While gutters and downspouts do not require BAR approval, the following are recommended as best practices:

- o Half-round gutters hang from the roof bracket and should be used when no fascia board exists.
- o K-style or ogee gutters should be used when there is a pre-existing fascia board to which the flat side of an ogee gutter can be easily mounted.
- o Gutters and downspouts should be metal or wood and painted or factory finished in a color to match the wall or trim.



Types of gutters appropriate in the historic districts.

ROOFING



Additional Resources

[National Park Service Preservation Brief #4: Roofing for Historic Buildings](#)

[National Park Service Preservation Brief #19: The Repair and Replacement of Historic Wooden Shingle Roofs](#)

[National Park Service Preservation Brief #29: The Repair, Replacement, and Maintenance of Historic Slate Roofs](#)

[National Park Service Preservation Brief #30: The Preservation and Repair of Historic Clay Tile Roofs](#)



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NO BAR REVIEW

Replacement of siding or trim less than 25 square feet

ADMINISTRATIVE (STAFF) REVIEW

Replacement of siding or trim greater than or equal to 25 square feet

BOARD REVIEW

Encapsulation or removal of historic siding material greater than or equal to 25 square feet

Use of materials not explicitly allowed by these guidelines

Introduction

Most historic buildings in Alexandria had wood frames and wood siding. Other siding materials, such as asbestos, Formstone, and faux brick became commercially available in the early 20th Century, but aluminum, modern fiber cement and vinyl were not used until the late 20th Century. The size and type of a building's siding can indicate its age and architectural style, and siding is one the principal character-defining elements of a building. Historically, more decorative "novelty" siding was used on the primary facades. Often, less expensive clapboard or rough-sawn siding was used on the secondary facades. An informed and careful analysis of the existing siding condition should be made before any decision to replace historic siding is made. Maintenance of siding is important because improperly maintained siding affects not only the appearance of a structure, but also its overall integrity. For siding and trim, there are different regulations for buildings constructed before 1932 (Early buildings) and after 1931 (Later buildings).

Unlike in some Southern cities, historically stucco was rarely used as a finish in Alexandria. The Atheneum, Lyceum, Old Town Community Baptist Church, and St. Paul's Episcopal Church are among the only local historic buildings that used stucco. In these cases, the stucco was scored and faux-finished to look like stone blocks. In some instances, stucco may have been later applied over historic siding. When this is the case, the Board encourages the removal of this non-historic stucco and restoration or replacement of the historic siding.



Guidelines

All Buildings

- o Historic wood siding should be retained and repaired wherever possible, as determined by Staff. If Staff determines that historic wood siding may be replaced, composite siding such as fiber cement can be used on the side and rear (all non-street facing sides). Historic wood siding on the front (all street-facing sides) can only be replaced in-kind.
- o Repairs should match the material and profile of existing historic siding.
- o Aluminum and vinyl siding are not appropriate in the historic districts.
- o Wood shingle siding is not appropriate, except on decorative Victorian gables.
- o The Board only requires restoration of features that are being altered. Siding materials that existed when the Parker-Gray District was created in 1983 may be retained and repaired in-kind, but if existing siding is removed, these elevations should comply with current guidelines.

Early Buildings (pre-1932)

- o Before siding can be replaced, Staff will inspect a mock-up in the field to determine whether there is any intact historic siding hidden beneath existing siding layers. See “Additional Information” section for more details on the mock-up inspection process.
- o If Staff finds that existing historic siding is beyond reasonable repair, new siding should match the profile and design of the original. If historic siding is not present, historically appropriate wood siding should be used on the front (all street-facing sides).
- o Composite siding such as fiber cement can be used on the side and rear (all non-street facing sides), provided that it has a smooth finish and is paintable. Likewise, synthetic trim can be applied in limited locations that are consistently exposed to moisture, such as the fascia board behind gutters.

Later Buildings (post-1931)

Composite siding such as fiber cement can be used on all sides, provided that it has a smooth finish and is paintable.

Steps for Siding Analysis

Intact historic siding may be hidden beneath layers of siding, such as aluminum, vinyl, artificial brick, or stone. To determine if multiple layers of siding exist, remove at least one portion a minimum of 2 feet by 2 feet to reveal the first layer of siding. Staff will inspect the mock-up in the field prior to any approval. The graphic on the following page gives an overview of this process.

SIDING+TRIM



STEP 1



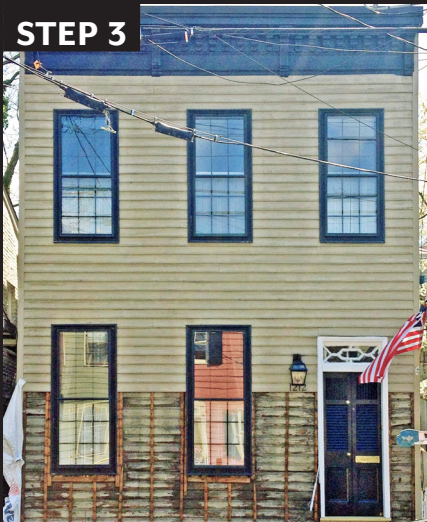
Carefully remove a 2 feet by 2 feet portion of the surface siding.

STEP 2



Using clues such as the siding profile and the type of nails used, Staff makes a determination on the age of the siding.

STEP 3



^ BEFORE

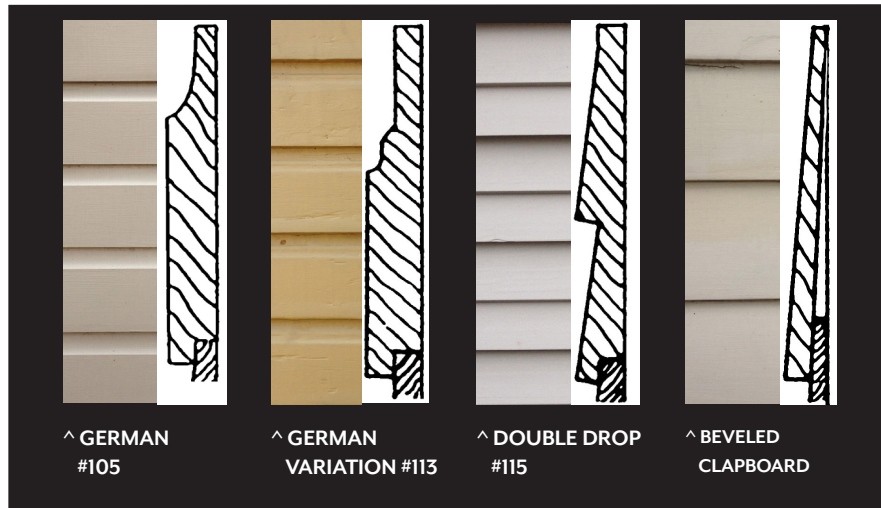
More of the historic siding is exposed for Staff to assess its condition. In this case, the historic siding is in very good condition and will be stripped and painted for reuse on this building.

STEP 4



^ AFTER

In this case, removal of the contemporary siding also revealed ghost marks in the old paint from which the original window and door trim was able to be recreated.



Common types of wood siding in the historic districts.

Additional Information

- o A building permit is required from Code Administration for the replacement of over 100 square feet of siding in the historic districts.
- o The Board recommends priming all sides of each clapboard before installation and installing rain screen sleepers to promote ventilation on the back side.
- o While the Board does not regulate paint color, Staff can provide you with a list of historically appropriate colors.
- o The Board discourages blow-in foam insulation that permanently adheres to the historic framing and siding.
- o Restoring historic wood siding is often less expensive and more eco-friendly than buying all new material.

Additional Resources

[National Park Service Preservation Brief #22: The Preservation and Repair of Historic Stucco](#)