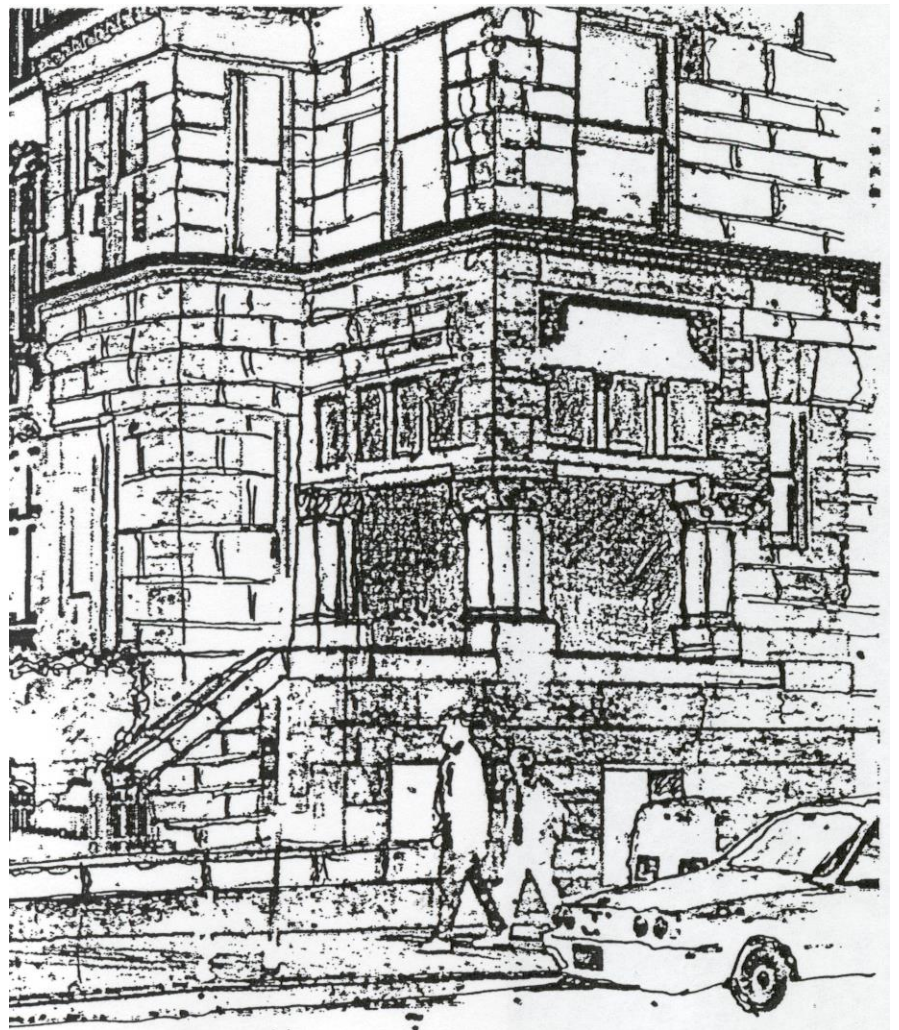


# District of Columbia Historic Preservation Guidelines

## WALLS AND FOUNDATIONS OF HISTORIC BUILDINGS



Government of the District of Columbia  
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Historic Preservation Office  
1100 4<sup>th</sup> Street, SW  
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Washington, DC 20024  
202-442-8800

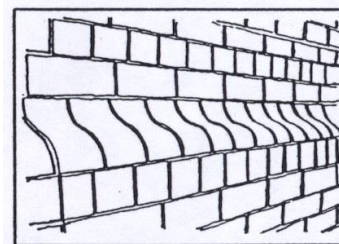
# Designs of Walls and Foundations

Walls and above ground foundations are among the most important character-defining elements of historic buildings. The design of walls and foundations is influenced by the types of materials used, the location, proportions and scale of openings for doors and windows, massing and rhythm of features such as bays and porches, and details and ornamentation. The exterior walls of most free-standing buildings are also structural, that is they carry the weight of the floors and roof to the foundation. Conversely, the front and rear walls of rowhouses and other party-wall buildings are usually not load bearing; rather the side walls carry the weight of floors and roofs to foundations.

Altering, repairing or replacing primary character-defining walls and foundations -those facing major public streets or sidewalks- must be carefully considered so as not to detract from a building's character. Changes to secondary non-character-defining walls and foundations (typically on the sides and rear of buildings) should also be carefully considered. Greater flexibility in selecting methods of construction and materials is possible for changes to non-character-defining than for character-defining walls and foundations.

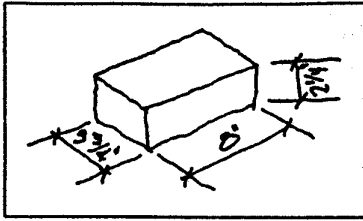
Above ground foundation walls are often visually distinguished from the main wall by a change of plane. For example, brick and stone foundation walls are often visually separated from the wall above by a belt course of molded brick or shaped stone. In other cases, foundation walls are visually distinguished from walls by a change of material. The material used for an exposed foundation wall, how it is finished and how it connects to the wall above, are all distinguishing characteristics.

Most historic buildings in Washington have a primary wall and foundation that face a public street. Typically they significantly contribute to the character of the building. The primary wall usually contains the front entrance, is formally composed and uses high quality materials. Primary walls may also contain elaborate ornamentation and intricate details. Secondary, or side and rear walls that do not face a major public street, are often less formally composed and may employ lesser quality materials as well as have less elaborate ornamentation than the primary wall.

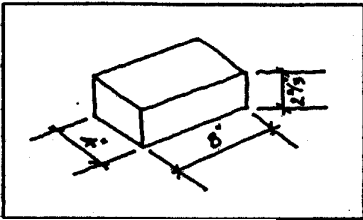


**A belt course is often used at the junction between the wall and above ground foundation.**

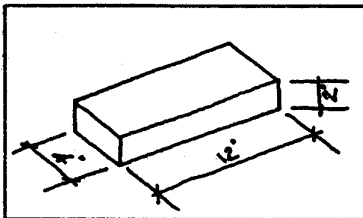
# Brick



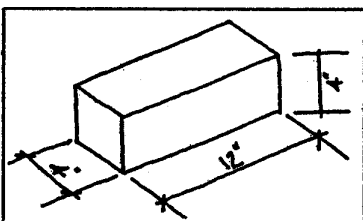
Pressed



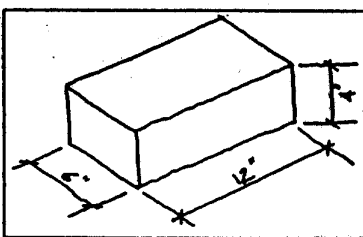
Common



Roman



Utility



Jumbo

Brick is the most prevalent wall and foundation material in Washington. It is found in a wide variety of sizes, shapes, textures and colors. The most common types of brick are pressed, common, Roman, and utility. Modular and jumbo brick can also be found.

Most of Washington's historic brick was manufactured using iron or steel molds and local clay. However, some of the earliest buildings were made of hand-made brick formed in wood molds. The molds used to manufacture brick give it its texture, shape and size. The type of clay and the temperature of the kiln during firing gives brick its color and hardness. The manner in which headers and stretchers are used, how the rows are laid (called coursing) and the width, profile and color of the mortar joints also contribute to the character of brick walls and foundations.

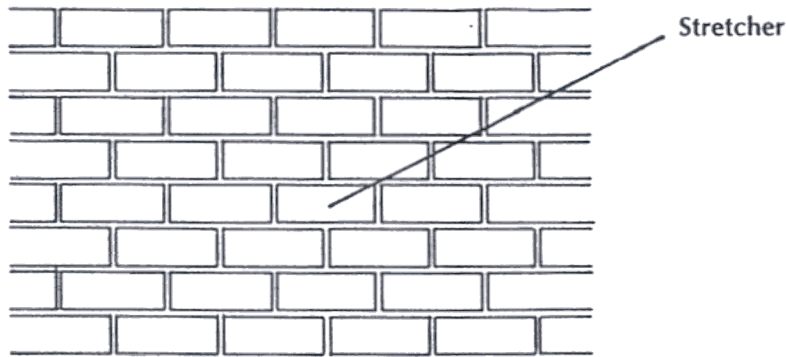
Prior to the 1870's, most bricks were hand-made in wood molds. Sometimes this brick was fairly porous requiring that it be painted to protect it from the weather. Pressed brick, smoother and more regular in appearance than hand-made brick, was introduced in the 1870s and quickly became a popular building material. Machine made common brick was also introduced around this time.

By the 1880s most kilns were fueled by gas allowing much higher temperatures to be achieved and a harder brick to be produced. These bricks had the advantage of being non-porous and thus could usually be left unpainted. However, not all bricks produced by gas-fired kilns were of the same hardness. Bricks stacked in the center of the kiln were less exposed to the heat and thus softer (more porous) than those on the outside of the stack. The softer bricks were frequently used for party-walls or rear walls, while the hard-fired brick from the outside of the kiln stack was used for primary elevations.

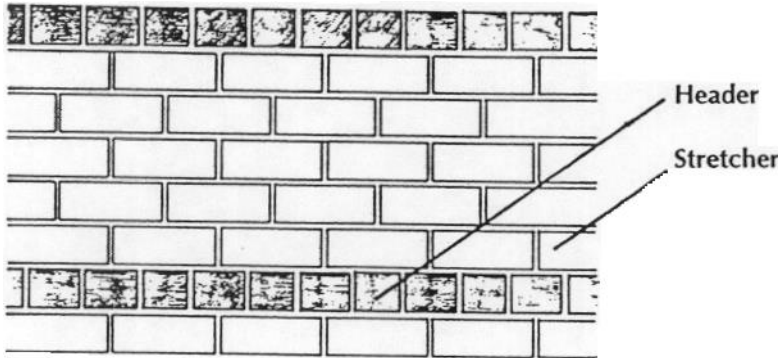
Local clay gives the majority of unglazed brick a red color, although brown and gray brick is also found. Glazed brick, which is manufactured by adding glaze to the finished brick and re-firing, can be found in a wide range of colors.

Walls and foundations are laid in different ways. Pressed brick is laid in a running bond. Other types of brick are usually laid in common and Flemish bond. In addition to the coursing, the width, color and profile of mortar joints contribute significantly to the appearance of the wall. Mortar joints vary from 1/8" to 1/2" in width, although other widths exist. Common mortar joint profiles include struck, weather, and flush. Other less common profiles include raked, vee and concave. Mortar is naturally a gray-white color, although some mortar used in historic brick walls and foundations is red or some other color due to the addition of coloring agents.

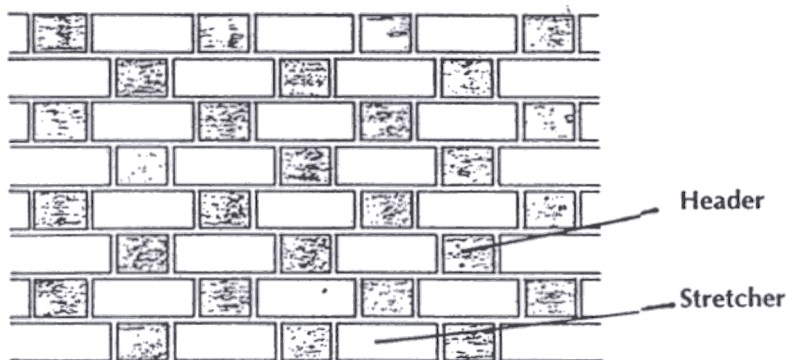
# Typical Brick Coursing



Running bond consists of all stretchers.

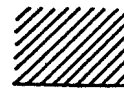


Common bond consists of five rows of stretchers and one row of headers.



Flemish bond consists of alternating rows of stretchers and headers.

# Types of Mortar Joints



Struck



Weathered



Flush

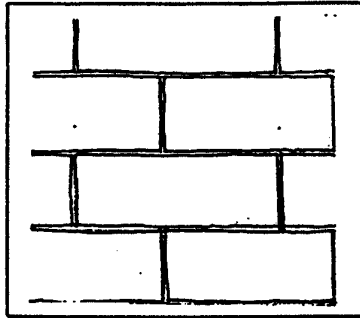


Vee

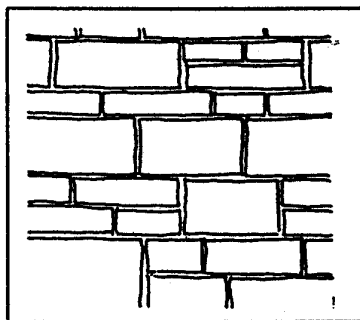


Concave

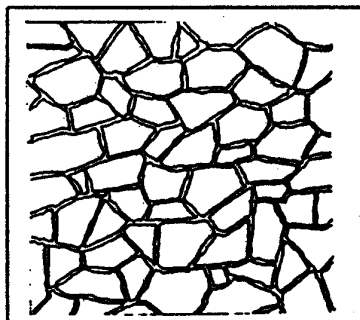
## Typical Stone Coursing



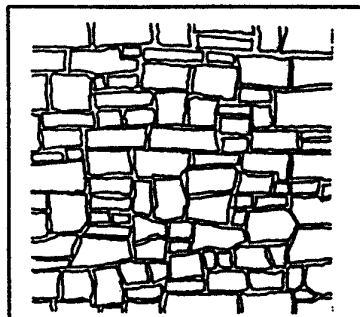
Regular



Broken Range



Rubble



Uncoursed

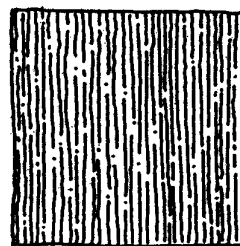
# Stone

Stone is a wall and foundation material commonly found in residential, commercial, institutional, government and some industrial buildings. It may be used in combination with brick or other materials such as stucco or terra cotta.

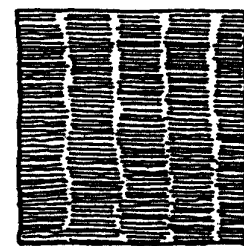
The type of stone used, how it is finished and laid, and the width, color and profile of the mortar joints all contribute to the appearance of a stone wall or above ground foundation. Stone commonly used for walls and foundations include granite, limestone, sandstone and marble. Each comes in a variety of colors ranging from buff, gray, cream and white to pink, green, brown and yellow depending on where it was quarried. Some granite and most marble have different colored veins or specks through-out.

In addition to the type of stone used, the appearance of a stone wall or foundation also depends on how the surface is finished and how it is cut and laid. The type of mortar joints used also contributes to the appearance of stone walls and foundations. Stone is traditionally finished using a variety of hand tools and machines including saws, planes and chisels. A stone's finish may also be the result of grinding or rubbing the surface with an abrasive. Popular finishes include tooth chiseled, tooled, saw face and rock face. Stone may be hand or machine cut with square edges giving it a geometric appearance (called ashlar) or with irregular edges (called rubble or field). Stone coursing may be regular, broken range, rough or uncoursed.

## Types of Stone Finishes



Tooled



Tooth Chiseled



Saw Face



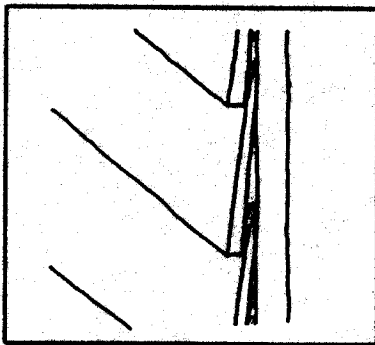
Rock Face

# Wood

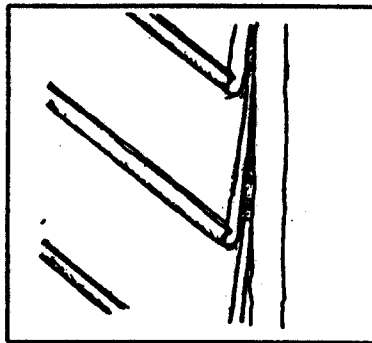
Wood siding is most commonly found on free-standing residential buildings although it can also be found on a few historic rowhouses and commercial buildings. The latter were primarily built prior to 1870 before building codes, intended to reduce the spread of fire, were introduced in the city.

Many varieties and shapes of historic wood clapboard siding can be found including beveled, German, shiplap, V-rustic and simple-drop. In addition to clapboard, some wood walls are made of wood shingles. Each type of siding gives a wall a unique character and is usually associated with a particular building period or style. In most cases, the corners of clapboard and wood shingle walls feature wood corner boards that seal the joints as well as give character to the wall. Historically, wood siding was painted for weather protection.

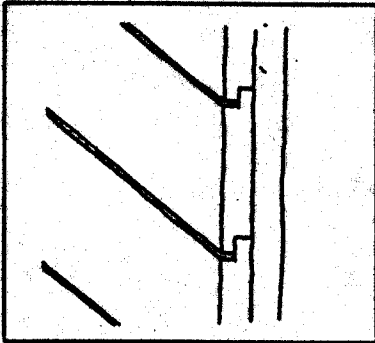
## Types of Wood Siding



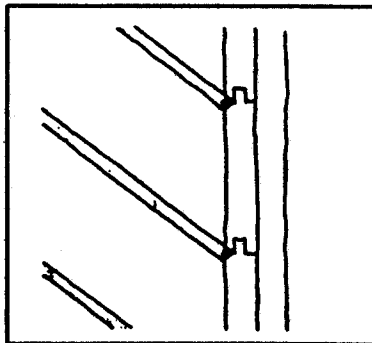
**Beveled**



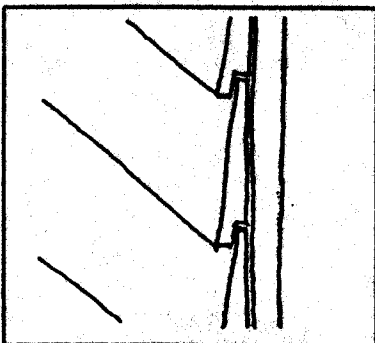
**German**



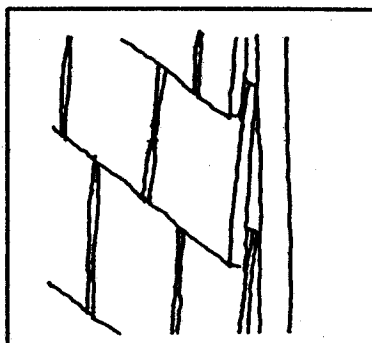
**Shiplap**



**V-rustic**



**Simple-drop**



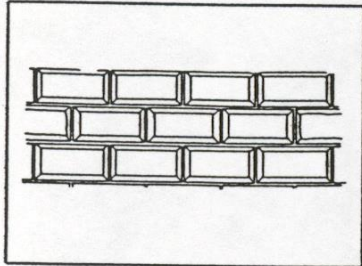
**Shingle**

## Other Wall Materials

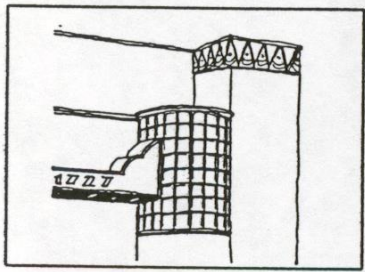
Although not as prevalent as brick, stone and wood, cast stone, stucco, glass block and terra cotta, are also used for wall material on historic buildings.

### *Cast Stone*

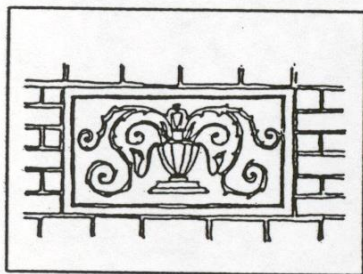
Cast stone was popular from the 1900's to 1940's as an inexpensive substitute for stone. Made from concrete, the exposed face is finished to resemble rock face ashlar or other stone finishes.



Cast stone was popular was material from the 1900's to 1940's.



Glass block and stucco are often used for Art Deco buildings.



Terra cotta is often used for details and ornamentation.

### *Stucco*

Stucco is an inexpensive, non-structural, cement-based material used for walls in many historic districts. Historically, stucco was applied, in two or three coats, to wood or masonry structural walls. Finished in a variety of textures, it was sometimes patterned to resemble stone. Stucco can be colored by adding stone dust to the mixture or by painting the surface after it hardens.

### *Glass Block*

Appearing after 1930, glass block was a popular wall material for Art Deco buildings, although examples can be found in other building styles. Used as either a wall or window material, glass block is found in a variety of textures and appearance.

### *Terra Cotta*

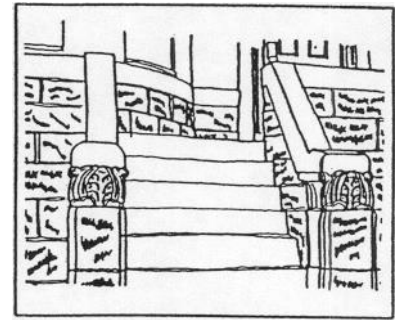
Terra cotta is a glazed masonry product popular for facades of commercial buildings built between the 1870's and 1930's. It was also extensively used for details and ornamentation on apartment, institutional, government and other types of buildings. Terra cotta may be natural brown-red in color (hence, its name) or glazed in a wide range of colors.

## Altering or Adding Details and Ornamentation

Many historic buildings have elaborate wall details and ornamentation. Sometimes the details and ornamentation are of the same material as the wall; other times they use different materials. For example, terra cotta or stone details are sometimes used in brick walls. No matter what material is used, details and ornamentation

are character-defining elements of walls and should be maintained, repaired and, if necessary, replaced. Missing details and ornamentation should be duplicated based on photographic or other documentary evidence.

Adding new details or ornamentation to an existing primary wall or above ground foundation wall is almost never appropriate. Their addition will change the character of a wall, giving a false sense of its historic appearance. On the other hand, it may be appropriate in some cases to add details or ornamentation to a secondary, non-character-defining wall. If this is done, the details and ornamentation should be compatible with the design of the wall and building, but not seek to make it appear more historic. Before deciding to add details or ornamentation to a wall the building owner should consult with the Historic Preservation Division.



**Existing details and ornamentation that contribute to the character of walls and above ground foundations should not be altered.**

## Altering Openings in Walls

Creating a new opening or enlarging an existing opening in a primary character-defining wall for a window, door, through-wall air conditioning unit or other reason is almost never appropriate. If a new opening must be created, for example to make a building functional, it should be located on a rear, non-character-defining wall. The size, design and detailing of the new opening should be compatible with the character of the wall.

Similarly, it is almost never appropriate to close or cover-up an existing opening in a character-defining wall. Closing or covering-up openings in secondary walls may sometimes be appropriate if the material used is compatible with the wall. Before deciding to create a new opening or close or cover-up an existing one, the building owner should consult with the Historic Preservation Office.

## Covering Non-original Wall Materials

Sometimes the walls and above ground foundations of a historic building are covered with a non-original wall material. Usually it was installed directly over the historic material to hide deterioration or to modernize the appearance of the building. For example, asbestos and asphalt shingles were used from the 1890's to the 1940's to cover wood walls. After World War II aluminum and vinyl siding were popular non-original wall covering materials. Similarly, stucco has been used since the nineteenth century to cover historic brick and stone walls. A patterned stucco called permastone was popular in the early twentieth century.

The removal of a non-original wall covering should be carefully considered. In some cases, it may be determined to have



achieved significance in its own right and thus should be maintained and repaired rather than removed. For example, stucco installed in the nineteenth century over an original brick wall usually should be retained rather than removed. If, however, the non-original material is inappropriate to the character of a historic building, and is not considered significant, the building owner should consider its removal. Owners may also consider removing a non-original wall material since it may trap moisture inside the wall, leading to deterioration of surface and structural elements.

When considering removing existing, non-original wall material, the owner should first investigate the technical issues involved. Stucco, for example, often bonds tightly to brick and stone surfaces. Removing it will often damage the surface of the underlying material. Removing asbestos shingles is often difficult due to strict controls on handling and disposing of this material. Owners considering the removal of non-original wall coverings should also examine the condition of the underlying wall material before proceeding. It may have been badly deteriorated prior to installing the covering or damaged during installation. Removing selected sections of the covering material will allow the condition of the original wall to be determined.

Covering primary walls with a new material is almost never appropriate since it will alter the character of the wall and may accelerate deterioration. However, it may be appropriate to cover a non-character-defining wall if it is done with a new material that is compatible with the existing. If possible, the original material should be left intact under the new material. The new material should also be applied so that it does not contribute to the deterioration of the wall or its structural elements. Before removing or adding a non-original wall material, building owners should consult with the Historic Preservation Office.

## **Adding Insulation to Walls and Foundations**

Most free-standing buildings lose only 20-30% of their heated or cooled interior air through walls and foundations; the majority is lost through windows, doors and roofs. Rowhouses and other party-wall buildings have less exposed wall and foundation surfaces than free-standing buildings. Thus even less heated or cooled air is lost through walls and foundations. Before adding insulation to walls and foundations, a building owner should consider insulating windows, doors and the roof.

If the decision is made, however, to insulate the walls, it is important that the insulation material and method of installation does not create maintenance problems or harm the appearance of the wall. Brick and stone cavity walls are often insulated by filling the cavity with foam.<sup>(1)</sup> However, since this alters the density of the wall, interstitial condensation may

**1) A cavity wall's interior and exterior surfaces are separated by an air space.**

occur.(2) If not properly vented, the moisture may cause interior paint and wallpaper to peel, plaster to deteriorate or accelerate the deterioration of mortar joints. Similarly, insulating wood walls with foam or blown-in insulation may cause interstitial condensation to rot the sill plate or exterior paint to peel. Over time, some types of blown-in insulation will settle to the bottom of the cavity, thus reducing its effectiveness.

## **Painting Brick and Stone**

A few historic walls are made of porous brick that was painted to protect it from the weather. In most cases however, exterior brick was hard-fired and thus did not need to be painted. If a wall is made of porous brick that has always been painted, it should remain painted. Removing the paint will expose the brick to the weather, accelerating its deterioration. If the brick was never been painted, it should remain unpainted. Painting an unpainted brick wall may trap moisture inside the walls and will drastically alter its character.

## **Maintaining and Repairing Walls and Foundations**

Most wall and above ground foundation materials require little maintenance. However, all will eventually need some maintenance and possibly repair. In a few cases the materials may need to be replaced. Rain, snow, hail, wind-borne grit and pollutants can affect all types of wall and foundation materials. Wood is also susceptible to damage from insects. In addition, vegetation such as ivy growing on walls and foundations will accelerate their deterioration.

Building owners should regularly inspect and maintain existing walls and foundations. When deterioration is detected, the owner should consult with an architect, engineer or contractor knowledgeable in historic construction techniques and materials. Consideration should first be given to repairing only those areas needing attention, using in-kind materials; in other words, using the same types of materials as the existing. If deterioration is extensive, replacing the entire wall or foundation may be required. If this is necessary, the owner should first investigate the feasibility of replacing it in-kind. Only after in-kind replacement has been shown not to be economically or technically feasible, should the owner consider replacing the wall or foundation in a substitute material that is chemically and physically compatible with adjacent materials and is similar in appearance to the existing material.

**2) Interstitial condensation occurs in the cavity between the exterior and interior wall surfaces.**

## Spalling Brick and Stone

Brick and stone are among the most maintenance-free materials used for historic buildings. However, they are subject to deterioration. One of the most common problems, called spalling, happens when water penetrates the surface through pores or cracks. In cold weather the water will freeze and expand causing the surface of stone or brick to spall or break away. Over time, the face of stone or brick can become deeply eroded.

Spalling may also be a result of the type of stone used in the wall or foundation or a result of the stone being improperly laid. For example, certain sandstone and limestone is very porous and thus susceptible to water penetration. In other cases, the stone may have been laid with its cleavage planes exposed, allowing water to penetrate the surface.<sup>(3)</sup> Spalling walls may also be the result of sandblasting or other inappropriate cleaning techniques that remove the protective surface of stone or brick. Spalling stone or brick foundation walls also may be the result of rising damp.<sup>(4)</sup>

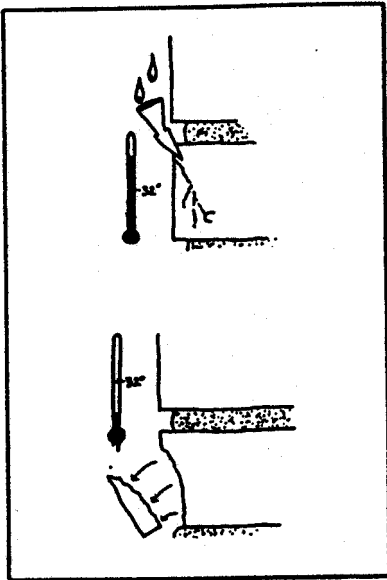
Lightly spalled stone may be patched using appropriate cement-based materials. However, it is often difficult to match the color of the existing stone. Thus, over time, the patch may become more evident as it weathers differently from the stone. An alternative to patching lightly spalled stone is to apply an appropriate stone consolidant. This will not cosmetically improve the appearance of the stone, but it will slow its deterioration. Heavily spalled stone or spalled brick should be replaced in-kind.

## Cleaning Brick and Stone

Brick and stone walls may become disfigured through air-borne grit or pollutants, or defaced with graffiti. Dirt and pollutants may, over time, contribute to spalling and other brick and stone surface deterioration problems. While unsightly, graffiti is normally not harmful to a wall material.

Cleaning brick or stone should begin with the gentlest means possible, proceeding in careful steps to more aggressive methods until the dirt, pollutant or graffiti is removed. This is done to protect the physical and visual integrity of the brick or stone. Aggressive cleaning methods, such as blasting with sand, grit, plastic beans or other substances that erode surfaces causing future maintenance problems, should never be used.

Cleaning methods should be tested on a small inconspicuous area of the wall to determine their effectiveness. If the gentlest means does not produce the desired results, the next most aggressive means should be tested. The gentlest method to clean brick and stone is water washing with detergent using a hand-brush. If this proves not to be successful, the owner



Spalling occurs when water freezes behind brick and stone surfaces.

3) Cleavage planes are the lines along which the stone cleaves or breaks naturally.

4) Rising damp is water wicking-up through pores in brick or stone.

should try power-washing with water or steam beginning at low pressure, gradually increasing the pressure until the dirt, pollutant or graffiti is removed. The most aggressive appropriate method of cleaning brick or stone is chemical cleaning. Selecting an appropriate chemical for the substance to be cleaned and for the wall material is very important. Controlling run-off from chemical cleaning is also an important consideration.

## Sealing Brick and Stone

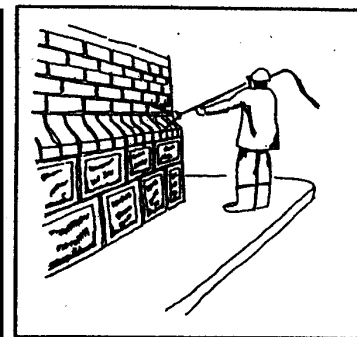
In the past twenty years a number of masonry sealants have been developed to correct some surface deterioration problems of brick and stone. In some cases, sandblasting or other inappropriate methods of cleaning walls and foundations caused these problems. A building owner should carefully consider the effectiveness and potential side effects of using a masonry sealant before applying one to a wall. Some sealants will discolor the wall material, others will trap moisture inside the wall where it can damage interior finishes. Still others may be effective for only a few years. Before proceeding to seal deteriorated brick or stone walls or foundations, the building owner should consult with the Historic Preservation Office.

## Preventing Below-grade Water Penetration

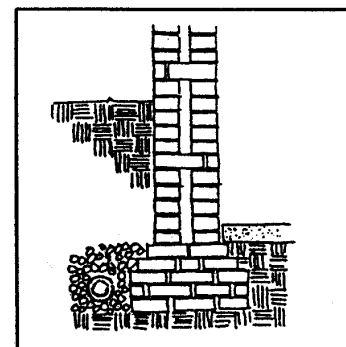
In the nineteenth century, the below-grade outer surface of brick and stone foundation walls were sealed with a cement-based coating. Foundations constructed in the twentieth century were usually sealed with a tar-based material. Both act as a water-proof membrane, keeping the crawl space or basement dry and preventing rising damp. In addition, most historic free-standing buildings had French drains made of perforated clay tile. Installed at the base of the foundation wall, they carry ground water away from the building.

Over time, the water-proof membrane may have deteriorated or the drain tiles become clogged with soil or roots, allowing water to penetrate into the basement. The most effective, and usually most expensive, method of repair is to replace the membrane or tiles. Another often-effective corrective measure is to have an expanding cement-based compound injected into the ground against the foundation wall.

Historic brick and stone foundations are also subject to rising damp. The pores in the masonry act as wicks, drawing ground water up into the wall. If the base of the wall or top of the above ground foundation wall is spalling, but other areas are not, the cause may be rising damp. Installing a damp proof course at the horizontal mortar joint between the foundation and wall is the best solution to this problem.(5) However, since



**Brick and stone should be cleaned using the gentlest means possible.**



**A French drain is used to channel ground water away from foundations.**

**5) A damp proof course is a waterproof material inserted into a horizontal mortar joint at the base of the wall.**

this involves cutting the mortar joint, it should only be done after consulting with the Historic Preservation Office.

## Repointing Mortar Joints

The mortar used in brick and stone walls and foundations is also subject to deterioration. Moisture condensing between the inside and outside layers of walls migrates to the outside through the mortar joints in the absence of weep holes.(6) Over time the water carries the mortar away. Deterioration of mortar joints in foundations may also be due to rising damp.

When mortar joints have eroded 1/2" or more behind their original surface, the building owner should consider repointing the joints with new mortar.(7) The mortar used to repoint historic brick and stonewalls should be chemically similar to the existing. It is particularly important that modern high-strength Portland cement mortar not be used to repoint historic walls containing low-strength cement mortar. Since modern mortar is harder than most historic brick and some stone, moisture migration from the interior to the exterior will move through the masonry units rather than the mortar joints. In cold weather this will cause spalling of the brick or stone.

Old mortar should always be removed with hand tools. Saws and other power tools will chip the edges of brick and stone, disfiguring the wall or foundation. New mortar should be profiled in the same manner as the existing joints. It should also be the same color as the existing mortar.

## Repair and Repainting

Almost all historic wood walls are painted to protect them from the weather that is lost when paint blisters, cracks, flakes, or peels. Loose paint should be removed by hand-sanding and the bare wood primed prior to repainting. To provide better adhesion between the new and old paint, the same type of paint (oil or latex) should be applied. Heavily encrusted paint that obscures details and profiles should be stripped to the bare wood by hand sanding or appropriate chemical strippers before priming and repainting. Power sanding, sandblasting, heat guns or other methods likely to damage wood should not be used.

Many wood walls constructed prior to 1960 were painted with lead-based paint. Before repainting historic wood walls, the building owner should have samples tested by a reputable testing laboratory. If lead-based paint is found, the owner should contact a paint removal contractor that is qualified to properly remove and dispose of lead-based paint.

**6) Weep holes are small openings in the mortar at the base of a wall to allow interstitial condensation to drain to the exterior.**

**7) Repointing is also called tuckpointing.**

Selecting new paint colors is often a difficult decision. One method is to use historic colors, based on analyzing the various coats of paint on the building. Another is to consult various books on appropriate colors for historic residential buildings. Whichever method is chosen, paint colors should complement each other, the colors of unpainted exterior materials, and the colors of neighboring buildings. Typically, no more than three different colors should be used for the wall, trim and details.

Minor rot and insect infestation can be repaired by consolidating the affected areas with epoxy or other appropriate wood consolidants after proper drying and treatment. If the damage is more extensive, the affected areas should be replaced in-kind, using the same or similar species of wood, finish and profile as the existing.

## Maintaining and Repairing Other Wall and Foundation Materials

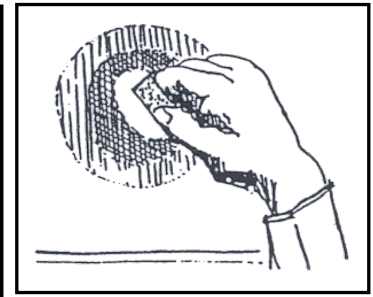
Concrete and cast stone are subject to spalling and deteriorating mortar joints. Stucco may craze, crack or become detached from the backing material.(8) Glass block may crack or the sealant used between the units may deteriorate. Terra cotta may craze or its anchors may corrode.

Minor spalling of concrete or cast stone can be repaired using an appropriate patching concrete, colored and finished to match the existing. Deteriorated mortar joints should be repointed. Cracked glass block should be replaced with new matching glass block. Deteriorated sealant should be replaced with an appropriate new sealant. Crazed or detached stucco can be repaired by applying new stucco that is the same in composition, finish and color as the existing.

There is no proven method or product available that will halt the crazing of terra cotta. When the deterioration becomes pronounced, the affected units should be removed and replaced with new ones manufactured to duplicate the existing. On the other hand, if the terra cotta unit is loose due to corrosion of its anchors, the unit should be removed, new stainless steel anchors installed, and the original unit re-installed.

## Substitute Materials

While it is always best to repair or replace wall and foundation materials in-kind, in some cases this will not be technically or economically feasible. In these cases, a property owner may consider using a substitute material. When selecting a new substitute material



**Carefully sanding painted wood surfaces will expose historic paint colors.**

**8) Crazing is fine hairline cracks in stucco and terra cotta.**

a substitute material, particular attention should be paid to the new material's expansion, contraction, weathering and chemical properties.

Materials expand and contract at different rates due to temperature change and sunlight falling on the wall or above ground foundation. Installing a new material with very different expansion and contraction ratios may cause the joints between the new and old materials to open. Materials also weather differently, changing appearance over time. When a substitute material is considered for repair or replacement, its weathering properties should be similar to the existing so it does not become visually apparent.

The most common substitute materials proposed for historic wood walls are metal and vinyl siding, and stucco. Typically, these materials are installed over existing surfaces so that the wood does not need to be repainted every seven to ten years. Covering existing wood siding may cause it and its appearance to deteriorate by trapping moisture behind the new surface. Installing metal or vinyl siding over existing wood siding will also alter the depth of window and door surrounds, changing the structural elements of the wall. Metal siding is almost never appropriate because its surface finish, profiles and reflectivity are not similar to wood. Certain types of vinyl siding may be appropriate for secondary elevations that are not visible from a public street if their reflectivity, finish, size, profile and other visual characteristics simulate the existing wood and it is installed in a manner so that the depth and character of window and door surrounds remains the same. Stucco may also be an appropriate substitute material for rear walls. Before selecting a substitute material, a building owner should consult with the Historic Preservation Office.

## Substitute Materials

The following substitute materials may be suitable for replacing historic materials on character-defining and non-character-defining walls and foundations. Because character-defining walls and above ground foundations are usually more important to the overall appearance of a building than those on secondary elevations, the number of acceptable substitute materials is more limited. Before proceeding with a substitute material, the building owner should consult with the Historic Preservation Office.

### Historic Material

### Substitute Material

#### Character-defining Walls and Foundations

-Stone  
epoxy concentrate)

-GFRC (glass reinforced

-Stucco

-Acrylic polymer stucco\*

#### Non-Character-defining Walls and Foundations

-Stone

-GFRC  
-Stucco

-Stucco

-Acrylic polymer stucco\*

-Wood  
-Stucco

-Vinyl siding

-Brick

-Stucco

-Cast Stone

-Stucco



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