The Spring Garden Historic District

A Guide for Property Owners

Philadelphia Historical Commission

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Introduction

A historic district is a sum greater than its parts. Its character derives from the cumulative impact of many historic buildings and structures maintained with sensitivity to their architecture and surroundings. Those who live, work, or own property in a Philadelphia historic district can feel more confident that their community will maintain its special quality because the Philadelphia Historical Commission offers tools to help protect it from inappropriate alterations, thoughtless demolition, and insensitive new construction.

There are other benefits to being part of a Philadelphia historic district. Property owners and architects, developers and contractors working in the district can consult with the Historical Commission for technical, architectural and historical advice. Experience in other cities has shown that historic district designation often boosts property values and stimulates investment. *Economic Benefits of Preserving Philadelphia's Past*, a study published by the Preservation Alliance for Greater Philadelphia in 1998, demonstrated that Philadelphia's historic districts are more stable and retain more of their residents when compared to the city as a whole. They also attract more new residents than other neighborhoods. And they are among the city's most racially, economically, and educationally diverse communities. Most of all, historic districts foster community pride and help improve and maintain the quality of life.

There are some restrictions and a few extra steps if work that affects a building's exterior appearance is planned. But the regulatory process is not burdensome, and the Historical Commission and its staff approach their job in a reasonable and practical way, with an understanding of contemporary living requirements.

Using This Manual

This manual is intended as a practical guide for property owners in the Spring Garden Historic District. It explains the regulatory process involved in obtaining approval for projects in the historic district, and lists the types of work that may require Historical Commission review. It addresses the issues that most commonly confront the historic property owner, but old buildings often present unique and unpredictable situations that may not be included here. Nor does the general guidance provided here constitute or guarantee specific Historical Commission approval for a particular project. The best strategy is to consult the staff of the Historical Commission when you are planning to do work on your property.

This manual also provides information on the proper maintenance of historic buildings, and guidance on approaches to restoration and rehabilitation that the Historical Commission finds most successful. In general, property owners in Philadelphia historic districts should bear in mind that regular building maintenance is preferable to -- and often obviates the need for repairs; that repair of historic building fabric is preferable to replacement; and that replacement in-kind or restoration to the original appearance is preferable to alteration.

What is Regulated?

Under city law, the Philadelphia Historical Commission reviews all applications for work on any building, structure, site, or object, listed on the Philadelphia Register of Historic Places individually or situated in a local historic district, that alters the exterior appearance or for which a building permit is required.

No other city in America can furnish such abundant and diverse material for an architectural retrospect. No other city in America is so conservative or has kept intact so much of the work of each succeeding period. It is a veritable paradise wherein architects may survey styles past and gone. ("Architectural Philadelphia Yesterday and Today," Coften Fitzgerald, *Architectural Record*, July 1913)

Building permit applicants start at the Department of Licenses and Inspections (L&I) and are routinely referred to the Historical Commission if the property is individually designated or is located in a historic district. Common applications include permits to replace doors and windows, reroof, add security features, or erect a building addition. A building permit is also required for demolition or new construction in a historic district.

Alterations which affect the exterior appearance of a designated property – back, sides and roof, as well as the street facade – also require Historical Commission approval even if a building permit is not otherwise required. Such alterations include, but are not limited to, replacing windows, cleaning or repointing masonry, and painting facades. If you plan work which in any way affects the exterior appearance of your building, check with the Historical Commission. Interior work is reviewed by the Historical Commission only to ensure that the exterior is not adversely affected. For example, a kitchen remodeling might involve altering a window.

The Historical Commission is guided in its evaluation of applications by Section 14-2007 of the Philadelphia Code (widely known as the Preservation Ordinance), its Rules and Regulations, and *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring & Reconstructing Historic Buildings*, published in 1995 by the National Park Service. All are available from the Historical Commission office.

The Application Process

Whether you are referred by L&I or bring your application directly to the Historical Commission, it is a good idea to consult with the Commission staff early in the planning process for guidance on preparing the application and providing all necessary support documentation. The Historical Commission returns incomplete applications with a request for additional information.

Along with a completed building permit application available from the Historical Commission or L&I, you will need to provide the Historical Commission with the following documentation: dated and labeled pictures of the present condition of all locations where alterations are proposed (these pictures will remain the property of the Historical Commission); something that demonstrates the proposed materials and design (for example, a catalog picture, a roofing shingle, or a detailed drawing); and, a cover letter that describes the proposed undertaking and any special circumstances you want the Historical Commission to consider. Depending on the nature of the alteration, you may also be asked to provide additional information, such as scaled drawings, plans, or specifications. Contact the Historical Commission for further details before you plan to submit an application for review.

The timetable for approval depends on the complexity and nature of the project. Alterations to secondary elevations that are not visible from public right-of-ways or for interior work which will not affect the exterior are reviewed and approved within five working days by the Historical Commission staff.

More complicated applications are considered by the Historical Commission's Architectural Committee, a technical advisory committee, and then by the Historical Commission itself. You or your representative will be asked to appear at the Committee's monthly public meeting to describe the proposal and answer questions. The Committee will subsequently make a recommendation to the full Historical Commission which formally votes on the proposal.

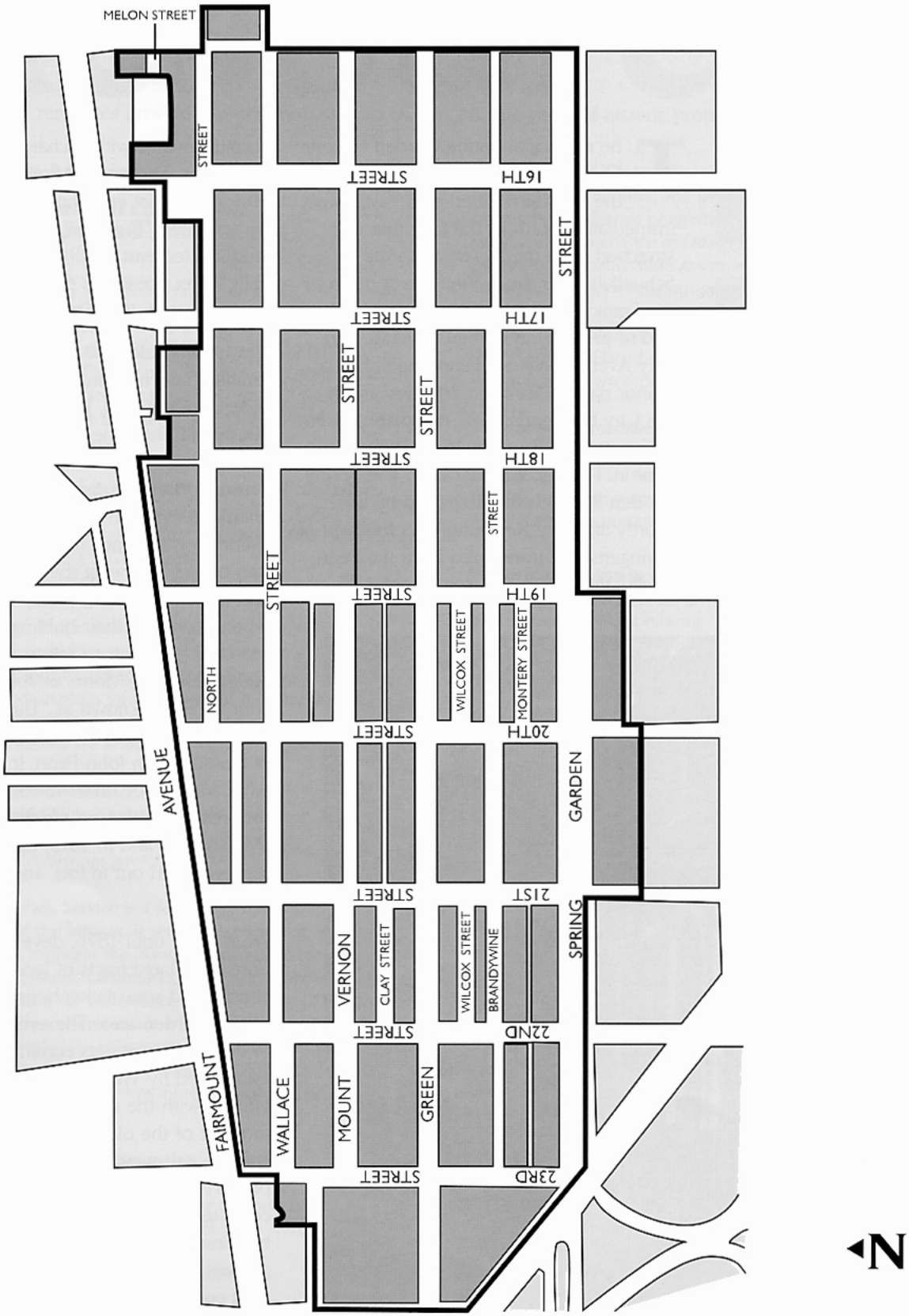
The Historical Commission will weigh the recommendations of the Architectural Committee and Commission staff with its own judgment at its next monthly public meeting, usually within two weeks, and will decide whether to approve, reject, defer (for not more than six months), or request resubmission of the application. The Historical Commission must vote on the proposal within 60 days of receiving the completed application.

If the Historical Commission approves the proposal, a permit can be issued immediately. If revisions to your plans are suggested, the Architectural Committee and Historical Commission staff will work with you to revise your plans so that the work will be acceptable. If approval is denied, you may appeal to the Board of License and Inspection Review within 15 days, if you wish.

The law contains provisions for postponing applications and for hardship situations. Contact the Historical Commission for more information.

by Elise Vider, Center City District

The Spring Garden **Historic District**



History

Most of the houses in this city are built on a uniform plan, being generally three stories high. Within the last few years, however, there has been a decided advance in the style of building, and our streets are now being adorned with edifices that are unrivalled for taste, elegance, and convenience. (*The Stranger's Guide in Philadelphia,* 1863)

The municipal Spring Garden Historic District originally formed a part of the Northern Liberties, a vast district immediately north of the City that stretched from the Delaware to the Schuylkill River, from Vine Street north to the Frankford and Wingohocking Creeks, and to present-day Roberts Avenue and City Avenue. William Penn established a manor named Springettsbury just north of the City boundaries. The manor house on Springettsbury Farm, built for Thomas Penn c. 1736, stood near 20th and Spring Garden Streets, until destroyed by fire shortly after the Revolution. As the land of Springettsbury transferred from the Penn family, the new purchasers established country estates with orchards, meadows, and farms. The present Spring Garden Historic District encompasses two of these early estates: "Bush Hill," a large tract of land located east of 19th Street, and "The Hills," later known as the Morrisville tract, to the west of 19th Street.

"Bush Hill" belonged to Andrew Hamilton, eminent attorney, and designer of Independence Hall. Hamilton developed "Bush Hill" into one of the most prominent country seats of the eighteenth century. After the dissolution of the Hamilton estate in 1814, the land surrounding the manor house was divided into blocks, following the City's grid plan, and dispersed among family members, who subdivided their holdings into marketable parcels to sell to speculative builders. Robert Morris established his country estate known as "The Hills" on land west of the Bush Hill estate that he purchased from John Penn, Jr., in 1788. After Morris's death in 1806, the proprietors of his land named the tract "Morrisville," and in 1813, had the tract surveyed, laid out in lots, and offered at auction.

From 1850 until 1876, developers purchased large tracts of land and constructed speculative housing in the Spring Garden area. The eventual layout of the lots and streets continued the grid established by William Penn and Thomas Holme, with the streets in direct alignment to those of the older sections of the City and the east-west streets serving as the primary thoroughfares. The early residents consisted of middle class merchants, businessmen, factory and shop owners, artisans and professionals, and a working class contingency of servants, coachmen,

and laborers. For some of this mixed group the new development was a kind of suburb, close to but apart from the congested older sections of the city; others appreciated its convenient proximity to abundant manufacturing jobs in the industrial zone south of the neighborhood.

After the Civil War, Philadelphia matured into one of the country's greatest manufacturing cities. The completion of the Columbia Railroad in 1834 provided the catalyst for industrial development to the immediate south of the Spring Garden Historic District, where the tracks ran just below Spring Garden Street. A railroad freight spur ran west from the wharves on the Delaware River along Pennsylvania Avenue (parallel to Spring Garden Street) and crossed Spring Garden Street at 23rd Street. Notable industries of the area included: the Baldwin Locomotive Works (18th and Spring Garden Streets) in 1831, the Bush Hill Iron Works (16th and Spring Garden Streets) in 1859, William Sellers & Company Machine Tools and Iron Works (16th and Buttonwood Streets), William Wood Co. Woolen and Cotton Mills in 1875 (22nd and Spring Garden Streets), and numerous coal yards and small machine shops. In addition to these manufactories, lumberyards proliferated along the west side of Broad Street, from Spring Garden to North Streets.

Builders and developers capitalized on the sale of speculative housing in the Spring Garden Historic District shortly after the Act of Consolidation in 1854. The spacious row and semi-detached houses, wide sidewalks and generous street widths of the Spring Garden Historic District all emphasized relief from the congestion of Old City and Society Hill. The latest comforts in plumbing, central heating, and lighting were now affordable, and these attracted new middle income residents. Business partners Oliver Parry and Nathaniel Randolph constructed at least 300 speculative rowhouses throughout the Spring Garden Historic District. Other local developers include Hiram Miller, Josiah Haines, Elihu Demott, Charles Budd, Cyrus Cadwallader, Samuel Coulson, and Clayton Haines.

Most of these new houses were built in the Italianate style. They had smooth brick fronts, large bracketed cornices and ornamented entrances. The significant group of "terrace" houses on the south side of Green Street between 15th and 17th Streets were the first speculative dwellings built in the Spring Garden neighborhood. Appealing to the middle class citizens who were attracted to this area, the notable feature of these houses was a small grass plot, often raised or terraced, in front of each dwelling. The green space suggested the escape from the congestion of the City, in addition to being an emblem of status.

Improved transportation in the form of the horse-drawn streetcar accompanied this wave of middle class migration. In 1858, horse-drawn streetcars began transportation to and from North Philadelphia, and in 1859 the construction of the Green and Coates Street Railway Stable, located just outside of the Spring Garden Historic District at 24th Street and Fairmount Avenue, established a transportation hub. Wealthier citizens could afford their own horse-drawn carriages. In the Spring Garden neighborhood, carriage houses occupy the eastern blocks of Brandywine Street, between 16th and 20th Streets, serving the more prominent residences built on Green and Spring Garden Streets. The widely adopted electric streetcar replaced the horse-drawn cars in the 1890s, offering economical and expeditious daily commuting to Center City.

A frequently used phrase, that no one of consequence lived "north of Market Street," sums up the exclusion of Philadelphia's newly wealthy from the established social circles of Rittenhouse Square. During the last quarter of the nineteenth century, the Spring Garden neighborhood attracted the *nouveaux riches* who sought an alternative to Rittenhouse Square and West Philadelphia. From 1877 to 1930, newly wealthy industrialists and manufacturers erected larger houses in the latest fashionable styles on the open parcels, demolished existing houses for new construction or refaced existing houses. This circle of wealthy entrepreneurs included the Fleishman family, owners of local successful woolen and yarn manufactories; William Kemble, the president of the People's Bank; John B. Stetson, famous for his hat manufacturing; and S.F. Wittmann, known for his confectionery business.

Spring Garden houses of this later period lack the unity and conservatism of the comparable large residences built near Rittenhouse Square at the same time. Clients and architects favored the exuberance of such late-nineteenth century eclectic styles as the Second Empire, Queen Anne, Italian Renaissance Revival, and Venetian Gothic, and represented the "outer limits of contemporary taste." In the areas north of Market Street, Philadelphia's *nouveaux riches* selected a new generation of architects who were relatively young and who often catered to the newly wealthy: Willis G. Hale, Frank Watson, the firm of Hazelhurst and Huckel and the more conservative James H. Windrim. These architects provided idiosyncratic designs for their clients that displayed wealth and confidence. The architect-designed houses in the Spring Garden neighborhood are easily identifiable by the abundance of ornament and the use of lavish materials such as marble, brownstone, limestone and patterned brick, in contrast to the common brick of the Italianate style rowhouses.

Many institutional and religious buildings were constructed in the Spring Garden area. Henry de Coursey Richards, the chief architect of Philadelphia schools from 1905 until 1918, designed the William Penn High School for Girls, now known as the Franklin Learning Center, in 1908. Richards' successor, Irwin T. Catharine, designed the Classical Revival Julia Reynolds Masterman School for Girls at 16th and Spring Garden Streets. Built in 1924, the St. Francis Xavier School on 24th Street is the only parochial school in the Spring Garden neighborhood. The school is affiliated with St. Francis Xavier Roman Catholic Church, designed by Edwin Durang in 1894. Several other important churches stand in Spring Garden. The United Church, of Christ, originally known as the Evangelical Reformed Christ Church, was designed by Stephen Button and built in 1859. Another early church, the Hedding Methodist Episcopal Church, now the Calvary Baptist Church, was built in 1855 on 16th Street. The Alexander Presbyterian Church, now known as the Enon Baptist Church, and the Olivet Covenant Presbyterian Church were built between 1861 and 1863 to serve those in the western section of the neighborhood.

One of the most significant changes to the Spring Garden Historic District occurred at the beginning of the twentieth century with the construction of the Benjamin Franklin Parkway to the south. The sweeping Parkway created a greenway connecting City Hall to Fairmount Park, and its northwest diagonal route deviated from the established city grid. A "City Beautiful" movement project, this was one of Philadelphia's largest and most controversial undertakings of the period. The project involved the demolition of an industrial neighborhood of factories and working-class rowhouses. This development eliminated the industrial character of the Spring Garden community and separated it from Center City.

The uniform streetscape of the speculatively built rowhouses provides a backdrop for the many architect-designed houses, churches and institutions within the Spring Garden neighborhood. This mix, along with the many terraces and front gardens, which offer a suburban atmosphere in the dense, urban community, makes the Spring Garden Historic District an important example of development during Philadelphia's industrial expansion in the late 19th century.

adapted from the Spring Garden Historic District nomination

Roofs, Cornices, and Related Elements

The Roof of a House is only next in importance to the foundation. A good Roof can only be obtained by the selection of proper material and careful workmanship. (Advertisement for T.S. Johnson, Metal Roofer, *Philadelphia Real Estate Record & Builders' Guide*, 23 April 1890)

The roof of a historic building, along with cornices, pediments, dormers, and other ornamental details, is critical to the architectural character of the structure and urban streetscape. The shape (gabled, hipped, etc.), material, pattern, color, and texture of a roof greatly affect a building's appearance. The roof is also critical, serving as a building's first line of defense against the weather, and taking the heaviest beating from the sun, wind, rain, snow, and ice.

The preservation of any structure, regardless of age, size, or design, is dependent upon a weather-tight roof that protects the building from the elements, and a rainwater conduction system that directs water away from the exterior walls. Yet the roof and its associated structures are among the most vulnerable elements, and they must be maintained vigilantly to prevent the destructive effects of water.

What Causes Leaks?

Typically, moisture penetration, causing the accelerated deterioration of the structure, is the result of one of the following problems:

- Faulty, clogged or missing gutters or downspouts;
- Damaged or deteriorated roof structure, coverings, and/or fasteners;
- Deteriorated or missing flashing at the intersection of roof planes or penetrations such as dormers, vents, or chimneys;
- Damaged or deteriorated dormers, skylights, hatches, or roof ornaments;
- Deteriorated chimneys, parapet walls, cornices and/or associated flashing.

Routine Maintenance

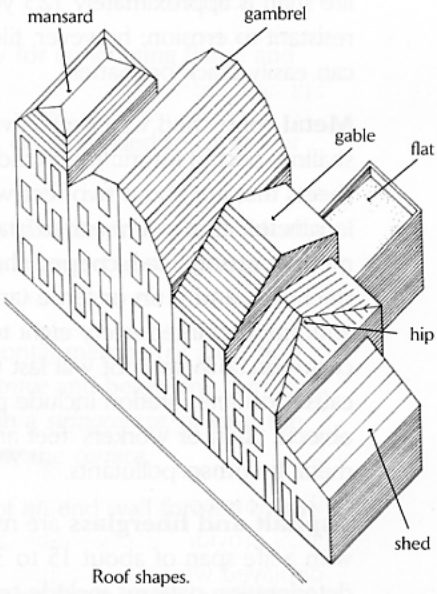
Even the highest quality roof will not protect a building effectively from the elements without proper maintenance. All roofs should be inspected at least twice a year. Look for slipped, missing, or damaged shingles, which should be repaired or replaced as quickly as possible to prevent leaks and water damage. Periodic inspections of the underside of the roof from the attic space following a storm or freezing temperatures may provide early warning of potential leaks or condensation caused by inadequate ventilation.

Gutters and downspouts should be inspected at least twice a year, more if they clog with leaves and debris from nearby trees. The installation of gutter screening at downspouts and over the full length of open gutters can minimize such clogging, although they will still need frequent cleaning.

Roofing Materials

A very low sloped roof, which is invisible from the street, characterizes the typical Spring Garden neighborhood rowhouse. There are many buildings, however, in which steep and complex rooflines are an integral part of the architecture.

"Flat" roofs (they actually have a slight pitch) are usually covered with built-up



Roof shapes.

roofing, which consists of alternating layers of waterproof membranes and bituminous materials. These roofs deteriorate by blistering and cracking. Flat, built-up roofs can be repaired by adding layers of waterproof membranes over the existing roof. After two layers, however, the Philadelphia Building Code requires that the old roof coverings be removed down to the underlying wood sheathing before applying a new roof to keep things watertight and to reduce the weight of the roofing material.

Historic roofing materials for sloped roofs that are typical to Philadelphia and to the Spring Garden Historic District include slate, tile, and metal. The life span of a roof material depends on many factors, including its weathering properties, the method used to fasten the material, and the roof configuration and orientation.

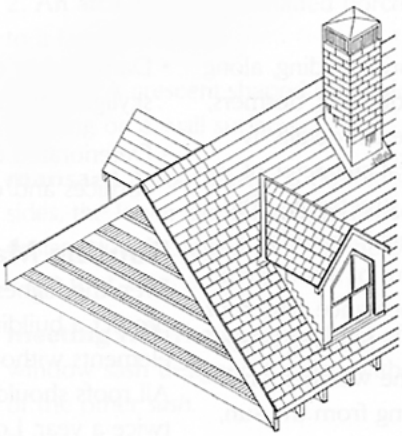
The varied colors and shapes of **slate** shingles enliven many of the historic houses of urban Philadelphia. This masonry roofing material was popular because of its aesthetic potential as well as its durability and fireproof qualities. Depending upon the type of slate used, the life expectancy of a slate roof ranges from 80 to 125 years. Although installation and material costs are high, slate roofing requires minimal maintenance, is extremely resistant to erosion, and is more economic in the long term. Over many years, however, slate will begin to de-laminate (peel off in layers). Sometimes, individual slates will loosen due to the failure of the fasteners.

Clay or terra cotta tile roofs also appear on some historic Philadelphia houses. If maintained properly, their life span is approximately 125 years. Like slate, tile is resistant to erosion; however, tiles are very brittle and can easily crack or shatter.

Metal roofs shed water effectively from a relatively shallow pitch. Historic metal roofs typically consist of sheets that are about two feet wide, joined by a full-length soldered seam, either "standing" or "folded." The metal is usually lead, copper, sheet iron, or galvanized steel plated with tin or terne (an alloy composed of lead and tin). If painted every eight to 10 years to prevent corrosion, a metal roof will last 60 to 80 years. Typical causes of deterioration include puncturing by sharp objects, nails, or workers' feet and the breakdown of the metal by urban pollutants.

Asphalt and fiberglass are modern roofing materials, with a life span of about 15 to 35 years. Typical deterioration patterns include splitting, curling, eroding, or disintegration from continued exposure to the weather. Installation of asphalt and fiberglass is less labor intensive and consequently less expensive than the historic materials listed above. Asphalt and fiberglass roofing is produced in long sheets, designed to give the appearance of individual shingles. Some varieties try to simulate historic materials, with varying degrees of success. However, their use as substitutes for historic roofing materials is usually discouraged, particularly on visible street facades.

Flashing

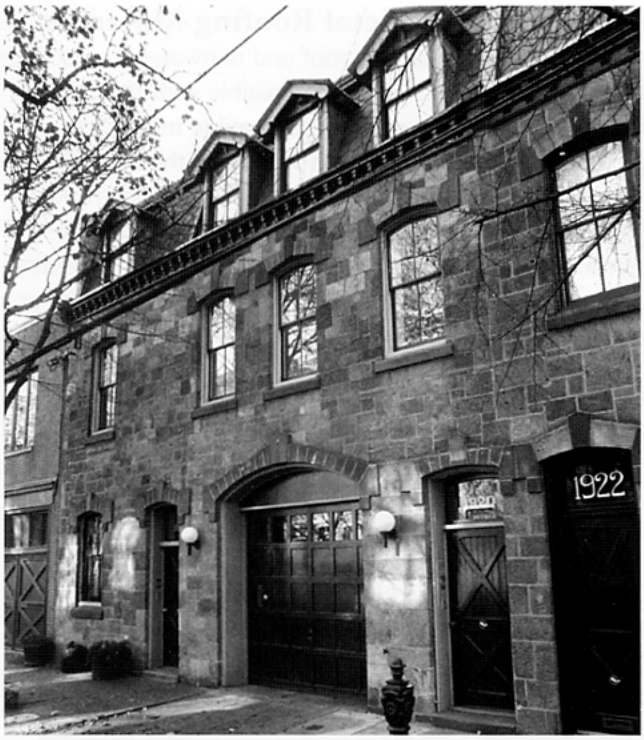


Flashing protects roof intersections from water penetration. Here, valley flashing is used at the dormer gable and step flashing alongside the dormer and chimney.

Flashing, one of the most important and vulnerable parts of a roof system, consists of strips of sheet metal inserted at the intersection of roof surfaces or where the roof is penetrated by dormers, vent pipes, chimneys, etc. Typically the roofing material should overlap the flashing by a minimum of four inches. Cap flashing seals the tops of cornices and walls.

Failure of the flashing is one of the major causes of roof deterioration and leaks. Flashing should be inspected periodically for deterioration due to poor design or workmanship, thermal stress, or metal decay of flashing material or fasteners. All deteriorated or unfastened flashing should be replaced or repaired immediately. Small holes can be repaired with sheet metal patches. Depending on the flashing material, it may be advisable to apply a metal preservative paint.

Replacement of flashing on an existing roof may require the removal of large sections of the roof surface. When installing a new roof, make sure that top quality flashing is used, and that the roofing contractor is fully knowledgeable about the importance of flashing in maintaining a watertight roof.

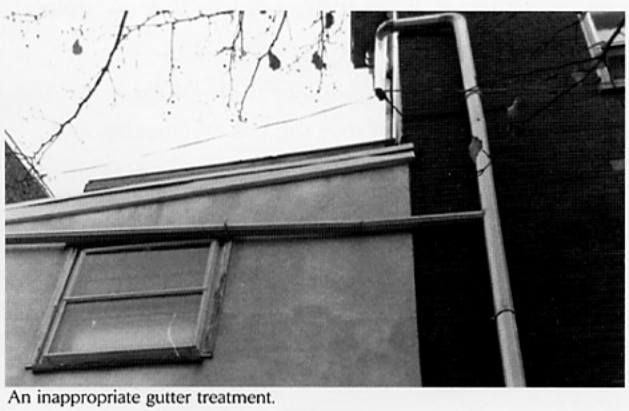


Rainwater Conduction System

The system of gutters, downspouts (also called leaders), and drains which collects water from the roof and directs it down and away from the building wall is critical to the effectiveness of any roof system.

In general, the replacement or repair of specific, individual failed elements is the recommended solution, rather than abandoning prematurely the entire original rainwater conduction system designed for the house. All replacement components should match the profile, materials, and dimensions of the original elements.

If it is necessary to add gutters and downspouts, they should be visually unobtrusive, have historically appropriate forms, and should not obscure the architectural detail or character of the building. To the extent possible, all downspouts should be located at inside corners and on side elevations, rather than on the front facade of the building. They should be painted to blend with the facade or other trim.



An inappropriate gutter treatment.

The rainwater conduction system should be inspected and thoroughly cleaned at least twice annually; more often if trees surround the building. Leaves, twigs, and debris can quickly clog drains and cause overflows. Particular vigilance is required to ensure that internal gutter systems are maintained in good working order, because failure can allow unseen water damage to structural components within the building. These simple maintenance steps can prevent much unnecessary and costly water damage, including peeling paint, rotted wood, and crumbling masonry.

Cornices

Original cornice

Aluminum cladding hides the original cornice details.

Roof cornices and parapets are major architectural features and contribute significantly to the rhythm and continuity of Philadelphia streetscapes. Removing or covering them with aluminum or vinyl siding devastates the appearance of the individual building and compromises the entire block; removing them also exposes the building facade to excessive weathering.

Cornices should be kept well sealed and periodically repainted. Their removal, alteration, or obliteration with siding is inappropriate. Not only does an intact cornice preserve the appearance and character of a historic building, it prevents water from washing down the front facade.

Cornices are usually constructed of wood or sheet metal, although there are cornices of cast iron, and copper throughout Philadelphia. Deteriorated cornice elements should be replaced with matching material. If it is absolutely necessary to remove an existing cornice, it should be replaced with a substitute that matches the profile and detailing of the original. Replacement cornices are available in alternative lighter weight materials such as fiberglass and GFRC (glass fiber reinforced concrete).

Parapets are almost always built of masonry and require adequate flashing where they meet the roof. The coping on parapets, and joints between coping and wall, should be kept well sealed and in good repair to prevent water from leaking through the roof and into the building.

Dormers, Chimneys and Other Roof Elements

Dormers, chimneys, and roof ornaments such as finials, iron cresting, crockets, ornamental ridge tiles, dormer brackets, etc. give character and style to buildings and should not be removed or altered. Dormers are usually constructed of materials used throughout the rest of the building. Chimneys are almost always constructed of brick and lined with mortar, tile, ceramic, or metal flues.

Deterioration and leaks at dormers, chimneys, and other roof elements typically originate at the flashing at the juncture point with the roof. Moisture infiltration may also occur at the top of the chimney. Water travels down the sides of the flue, soaking the chimney wall and into the building. This source of water penetration can be prevented if the chimney is lined with an impervious clay flue liner, which is as close to the original size as possible. A properly installed flue liner also protects the exterior brick, and ensures safe chimney operation. The Historical Commission does not approve metal "B" vents sticking out of chimneys. Instead, use terra cotta liners or cut a metal liner below the brick. A proper chimney cap prevents the entry of rain or snow, and permits adequate ventilation. Installation of chimney liners and caps is a job for a skilled professional, who can ensure that the chimney operates safely.

Other sources of water infiltration at chimneys include open and deteriorated mortar joints. These should be repaired to match the color, texture, tooling, and constituent composition of the original mortar as described in the chapter on Masonry. Covering masonry chimneys with tar, cement, or stucco is not recommended. Even unused chimneys should be kept in good repair, and capped to allow for adequate ventilation.

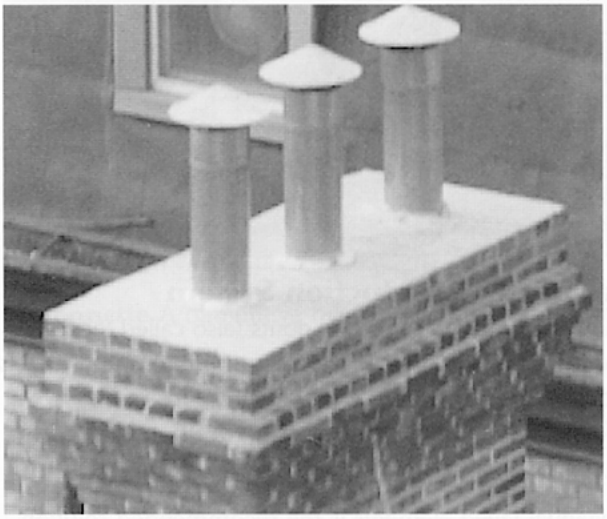
Chimneys, dormers, skylights, hatches, finials, and crestings, etc. are particularly vulnerable to the deteriorating effects of the weather and should be periodically inspected and maintained to stay watertight.

Antennae and satellite dishes should be installed so they are not visible from the street.

A Word About Metal Roofing Materials

All replacement metals on roof and rainwater conduction systems should match or be compatible with the original metals. Contact between non-compatible metals can create a galvanic action, which will cause the metal to corrode. For example, when new aluminum downspouts are fastened to original copper gutters, an electrolytic reaction will quickly corrode the aluminum parts. Some roofing materials will similarly corrode metal fasteners or flashing, so it may be necessary to coat the metal parts.

Repair and Replacement of Historic Roofing Systems



Metal "B" vents are not allowed by the Philadelphia Historical Commission.

Repair of damaged or deteriorated sections of original roofs saves money and preserves the character of the building. Eventually, however, all roofs require replacement. New work should be compatible with the historic and architectural character of the building, and original detailing should be saved or replicated wherever possible.

Individual slates and tiles may fall from time to time. This does not mean the roof itself is failing, but rather that the fasteners (usually nails) that hold the slates and tiles in place have rusted. It is usually more cost effective to have an experienced roofer replace dislodged slates and tiles – on an annual basis, for example – than to replace the entire roof prematurely.

Slate, clay, or terra cotta tile roofs are brittle and cannot be walked on without the risk of cracking and breaking. In order to carry out repairs on these roof types, wide planks can be laid over the roof surface or scaffolds and other devices installed.

The common practice of coating a historic slate, tile, or metal roof with tarpaper or other bituminous material should be avoided. The bituminous material not only compromises the architectural integrity of the historic building, it also damages the original material, and is an ineffective and short-lived sealer which does not prevent water infiltration.

When repair is no longer practical, the ideal course is to replace the roof with historically accurate materials. These may be more expensive than modern materials, but have a far longer life span. Clues to the appearance of the original roof may be obtained by studying neighboring or similar houses, from historic photographs, or by consulting with the staff of the Historical Commission. Often, the historic roof is still in place, hidden under layers of newer roofs, and can be studied by removing a section of the later material. When a roof is being replaced, it is advisable to go to the extra expense of removing all old roofing so that the underlying sheathing material can be inspected and repaired or replaced if necessary. Built up layers of roofing also make it difficult to trace and correct leaks later.

If a modern alternative must be used on a roof that is visible from the street, careful consideration should be given to matching the scale, texture, configuration, profile, detailing, and color of the original as best as possible. Contact the Historical Commission for alternatives.

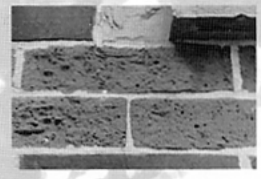
by Lisa Soderberg, Hillier

Not Subject to Philadelphia Historical Commission Approval

Minor patching of roofs, cornices or other decorative elements to restore their original appearance
Replacing or repairing flat built-up bituminous roofs
Routine maintenance

Subject to Philadelphia Historical Commission Approval

Constructing roof hatches, decks, or skylights
Altering or removing dormers, dormer windows, chimneys, or other roof elements
Replacing roofing material
Replacing surfaces or decorative components of cornices
Replacing entire cornices (with an exact replica of appropriate design) or major repair to cornice
Repairing or replacing flashing if large portions of roof are removed
Replacing or repairing skylights, chimneys, roof hatches, and other features
Re-setting and repointing coping stones on parapet walls
Installation of antennae or satellite dishes



Masonry

We make some three hundred kinds of Bricks, in Shapes, Ornaments and Colors, enabling the skillful Architect to produce effects impracticable with other materials, and combining the desirable elements of indestructibility, elegance and economy. (The Peerless Brick Co., Philadelphia, 1888 trade catalogue)

The houses in the Spring Garden Historic District have an unusual mixture of masonry materials, including brick, stone and stucco. This variety complements the different architectural styles found within the district and contributes to the neighborhood's rich texture and solid presence.

Maintaining Masonry

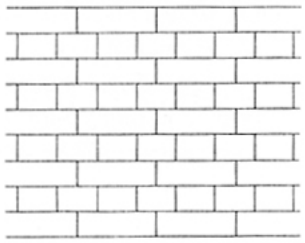
Masonry is defined as the work of the mason using a wide variety of natural and man-made building materials such as stone, brick, concrete block, tile, etc. Masonry is one of the most durable of building materials, and, properly maintained, can last indefinitely; but it is susceptible to deterioration from weather and pollution and improper repairs. Acid rain, airborne pollutants, wind, salting of sidewalks, fungi and plants can all leave masonry vulnerable to water penetration, and inevitable freezing and thawing will ultimately damage any form of masonry.

The first line of defense, therefore, is to keep masonry as dry as possible. Roofs, gutters, cornices, and downspouts should be vigilantly maintained (see Roof chapter) to prevent moisture penetration, and storm drains should be kept clear to help keep foundations dry. It is also essential that the mortar (or "pointing") surrounding masonry units be kept in good repair.

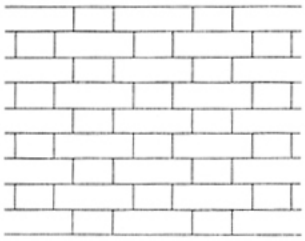
Common Masonry Materials

Brick is the predominant building material throughout Philadelphia, testimony of the abundance of good, cheap local clay. Until just before the Civil War, brick was molded by hand, resulting in a relatively soft and porous brick that was somewhat irregular in shape and color. Machine-made brick is harder, more uniform and less porous.

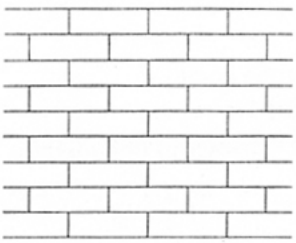
The hardest, best quality bricks were usually reserved to face exposed facades. Softer, so-called salmon brick (also called common brick) was relegated to unexposed areas such as the party walls between houses.



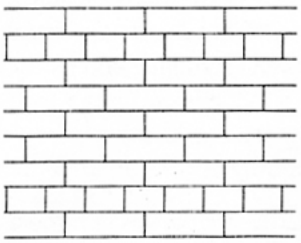
English bond



Flemish bond



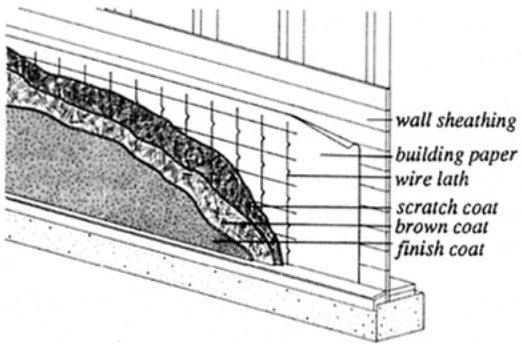
Running bond



Common bond

Brick bond patterns.

The "bonding" pattern in which brick is laid in a wall provides visual interest and characterizes various styles of architecture. Bricks that are exposed to excessive moisture can flake or disintegrate into powder. Abrasive cleaning, especially sandblasting, makes bricks more susceptible to this type of deterioration (See section on Cleaning).



Stucco is an exterior wall covering consisting of Portland cement, lime, sand and water. Old stucco might also include binders of animal hair, straw, pebbles, bits of brick or coal, or even seashells. Stucco is traditionally applied in three coats directly over brick or stone rubble walls with a finish that is either smooth, scored to resemble stone, or rough-textured. Stucco tolerates movement and allows moisture to pass to the wall surface and evaporate. Nevertheless, it is not advisable to stucco a brick facade, since it will alter the historic appearance and may damage the brick and conceal structural problems.

Schist or Wissahickon schist is a stone quarried in Eastern Pennsylvania. The sparkling silver cast of the stone comes from its high mica content. Schist was often used in residential architecture, especially in the suburbs surrounding Philadelphia.

Terra cotta is a man-made clay product often used to imitate carved stone for decorative elements, although it was occasionally used as a veneer for entire facades. Terra cotta may be glazed or unglazed, molded or carved and may be any color from white to brownish red.

Granite is a natural stone, prized for its hardness and durability. Its visual characteristics include a wide range of color from gray and blue-gray to red and black, a glossy or matte finish, and a speckled appearance. Granite is expensive to quarry and difficult to use, and it is found mostly as trim on institutional buildings and as curbing.

Limestone was commonly used for lintels, windowsills, and water tables and occasionally as face material on institutional buildings and late 19th-century homes. Limestone is easy to work with, but is vulnerable to pitting as well as acid rain, which converts it to friable gypsum. Limestone colors include brilliant white, cream, and gray.

Serpentine is a light-to-dark green, granular stone that was popular in the late 19th century as both trim and facing material. A relatively soft stone, it is highly vulnerable to decay caused by the freeze-thaw cycle and further exacerbated by the effects of acid rain.

Marble is used primarily as building ornament and for steps, water tables, windowsills and lintels. It is susceptible to damage by airborne pollutants and paint removers.

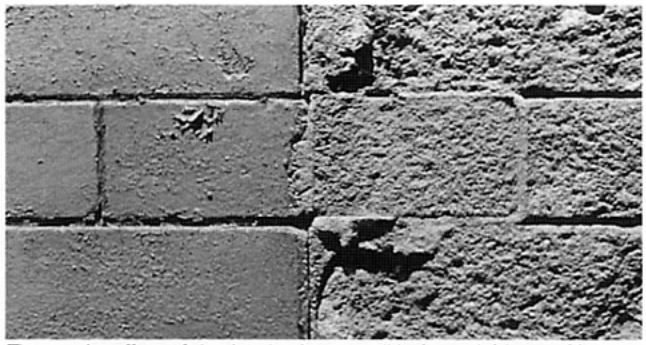
Sandstone has a coarse, grainy texture and matte appearance. **Brownstone** is the common name for the brown (or, occasionally, red, purple or green) sandstone which was popular as both trim and facing in the late 19th century and abounds in the district today. A porous material, brownstone easily absorbs moisture, allowing sub-surface freezing and expansion. This expansion may cause erosion and spalling, a process in which the stone comes apart layer by layer.

Cleaning

Cleaning masonry can result in serious problems that far outweigh any aesthetic gains. For this reason, it always requires review by, and a permit from, the Historical Commission before work begins. Brick is especially vulnerable because it has a hard, protective surface formed during the manufacturing process that can be damaged by cleaning, leaving the wall unprotected against the effects of moisture and atmospheric pollutants. If cleaning is necessary to remove graffiti, waterproof or anti-graffiti coatings, grime, or staining from metal or biological growth, the gentlest method should be used. Consult with the staff of the Historical Commission before undertaking any cleaning and keep in mind that most masonry cleaning is a job for experienced professionals who should do a patch test before proceeding.

A natural-bristle brush, mild household detergent, and buckets of water are all that is needed to clean masonry in a majority of cases. If this method fails to produce satisfactory results, a practiced contractor can test more aggressive methods.

A low-pressure water wash at no more than 500 pounds-per-square inch (psi) can be used for most materials, but even at this pressure, the water can remove the surface of soft brick and mortar. A high-pressure water wash (above 500 psi) is not allowed; this method can cause water to infiltrate the building, abrade the masonry surface, dislodge soft mortar, and break carved details. Spraying or dripping water at a low pressure and volume over a prolonged period avoids the abrasive effects of pressurized washing, but the resulting saturation of the facade may cause mildew, rusting of metal inside the wall, or damage to the interior. Steam cleaning is another option, used only for special problems of oily stains or



The negative effects of abrasive cleaning or sandblasting on brick are evident on the right.

intricate surfaces, since it is generally no more effective than pressurized water washing.

A number of chemical cleaning methods are available, all involving wetting the surface with water to avoid excessive penetration of the chemical and rinsing with a low pressure water wash. Application of these products is strictly a job for skilled professionals, and requires careful testing.

Poultices are chemical pastes that draw stains from masonry as they dry. They are used mostly for spot cleaning or where the extensive use of water is impossible.

Depending on its nature, graffiti can be removed from masonry surfaces with various methods. Use the gentlest method possible and test carefully on a small, inconspicuous area. Small amounts of graffiti can often be removed by a capable do-it-yourselfer, using readily available commercial products. Do not use steel wool, wire brushes, baking soda or anything abrasive and make sure to wear protective clothing, eyewear, gloves and a facemask.

Removal of more extensive graffiti is a job best left to a skilled professional. Make sure the contractor tests carefully, paying particular attention so that the product does not leave a faint image (a "ghost") or cause the graffiti to spread.

Abrasive cleaning in the form of sandblasting, or the use of any type of abrasive grit, is damaging to masonry and should be avoided under all circumstances. Abrasion erodes the surface of the masonry and opens mortar joints, allowing moisture penetration, and obliterates carvings and details.

Masonry Coatings and Paint

Masonry needs to "breathe," so that any moisture in or behind the masonry can escape through the surface. The many commercial masonry coating products, including waterproofing sealers, water repellents, graffiti protectors, consolidants for deteriorating masonry, and even paint, are all more likely to trap moisture and eventually harm the wall or migrate back to the interior, causing interior damage. Even water-repellent masonry coatings that claim to be "breathable," allowing water vapor to pass, are not recommended. Masonry coatings are rarely necessary or effective.

Furthermore, masonry coatings may alter the color and appearance of historic masonry and cause permanent maintenance headaches, attracting dirt, forming a patchy appearance as they age, and proving difficult or impossible to remove.

The use of all masonry coatings should be avoided, except under special circumstances (such as where a brick wall has been damaged by sandblasting), and only after consultation with the staff of the Historical Commission.

Painting brick or stone may seem innocuous, but in fact paint can create an impermeable film and cause serious moisture problems and spalling. Painting also requires subsequent maintenance because, like all surfaces, masonry will need periodic repainting. Finally, paint radically changes the appearance of historic masonry.

However, if a masonry wall is already painted, it is rarely advisable to remove the paint. Paint that is firmly adhered may actually protect poor quality or damaged masonry. And many paint-removing techniques are destructive to brick and other masonry surfaces. If painted masonry needs repainting, it is important to use a paint that is designed for masonry and does not create an impermeable film. Avoid epoxies, most alkaloid paints, and any textured paint. The color should be similar to the original masonry.

Masonry Repair

Repair of damaged masonry is a specialized job for a skilled professional. Masonry consolidants such as silanes, acrylics, and epoxies penetrate the pores of the stone, making it stronger and resistant to further deterioration. Inappropriate application of these materials can result in further damage to the stone, changing its appearance and making it less breathable and more vulnerable to damage by frost. Missing masonry elements can be replaced with carefully crafted, molded cement patches that incorporate powder of the replaced masonry.

Broken masonry can sometimes be repaired using new or salvaged materials by attaching broken elements with non-corroding pins or a non-rusting material scored for proper anchorage. Use epoxy mixed with the powder of the masonry being patched to bond the joint between the two pieces. Care should be taken not to patch across mortar joints, since these joints need to remain flexible. The mortar joint should be filled with a

matching mortar and the masonry patch should replace only the material that is missing. This method is best used for decorative pieces and is not practical for repairs of masonry that cannot be matched, such as brownstone, which is no longer quarried.

An alternative method for more general use, particularly effective with brick, is to remove the unit of masonry that is damaged to its full depth or to sound subsurface material. Replace with the new or salvaged material using a traditional bedding mix. Again, care should be taken to maintain the mortar joint.

All cracks should be evaluated for underlying structural problems and any such issues should be addressed. Generally, the wider and longer the crack, the more serious the problem. Cracks usually appear at corners, in arches, or where different building materials meet.

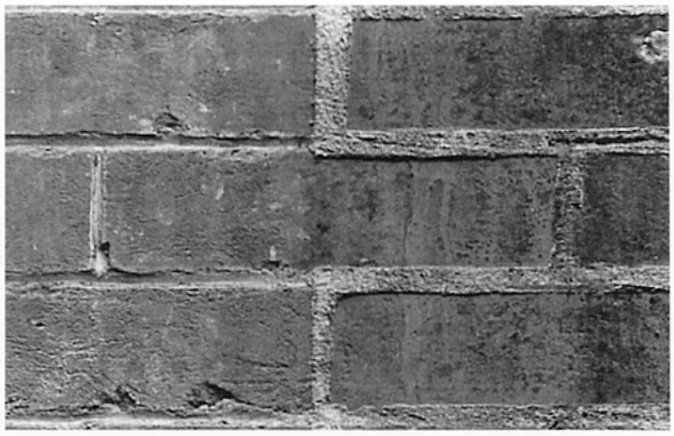
The procedure for patching damaged areas of stone or resurfacing an entire façade is essentially the same. Because the repair of small patches of deteriorated stone is as complicated as resurfacing a whole façade, qualified contractors should be retained for any work involving stone repair. In order to retain as much original fabric as possible, only those areas of a building's masonry façade that are deteriorated should be replaced.

Resurfacing and patching work should only take place when the exterior temperature remains 45-degrees Fahrenheit or above for a 72-hour period after the commencement of work, or the materials will not properly cure. The Historical Commission requires that a sample patch be reviewed and approved by the Commission staff before the work begins.

Repointing

Like the flexible ligaments that bond bone to bone in the human body, mortar is a malleable substance that bonds bricks or masonry units to one another. Repointing, sometimes called tuck pointing, is the process of removing deteriorated mortar, and replacing it with new mortar.

It is essential that mortar – like human ligaments – be flexible to protect the masonry – the bones – that surrounds it. Masonry walls must be able to move slightly in response to the small movements caused by fluctuations in temperature, building settlement, and vibration. If the mortar is too strong, such movements will cause the masonry to crack or spall. Instead, the mortar should be sufficiently soft to absorb such movements. It is much less expensive and invasive to repoint a wall than to rebuild it.

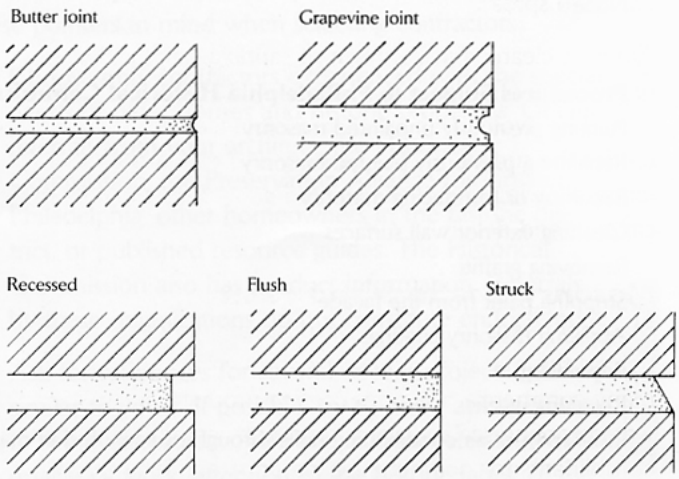


In a good repointing job (left), the new mortar matches the existing mortar in color, hardness, and joint profile. A poor repointing job (right) can destroy the original appearance of the building. Here, the mortar joints are too wide and the composition of the mortar is too hard.

Removal of the mortar is best done by hand; however, mechanical removal for horizontal joints only may be attempted if a thin diamond or carbide blade is used and sufficient skill can be demonstrated by the mechanic on a test patch at the site and on past projects. Care should be taken to remove only the old mortar and at a depth of $2^{1/2}$ times the height of the joint or deeper to sound material. (Typically 1/2 to 3/4 inches deep for brick and 1 to 2 inches for stone.) Any damaged brick must be replaced since the absence of the protective skin of the brick will lead to failure.

Application of new material should be demonstrated on a test patch with attention given to matching color, hardness of the mortar and the joint profile.

A tested mortar mix for most 19th-century buildings, recommended by the New York City Landmarks Preservation Commission, is as follows:



1 part Portland cement (ASTM C – 150, Type I)

$2^{1/2}$ parts lime

5-6 parts sand

- parts are by volume;
- mix dry ingredients first before adding potable water;
- use dry pigments (natural or synthetic stable oxide pigments) to tint or color mortar;
- mix all ingredients thoroughly

Individual mortars will vary according to the type of aggregate (sand, pebbles or even shells) used and experimentation will be needed for a good color match. This mix is for a mortar that is softer than the surrounding brick and avoids the danger of using too much cement. A cement-rich mix will be harder than the surrounding brick and is unable to expand and contract at the same rate as the brick. This causes damage to the brick or hairline cracks that will allow water to infiltrate the wall.

The finished joint profile is usually slightly recessed from the face of the wall and avoids over filling of the joint. Good joint design does not present a horizontal shelf for water to rest. If water does wash down the wall it should flow unimpeded or be deflected away from the wall.

Replacement Siding

Encasing a masonry structure in aluminum or vinyl is not allowed in the historic district. Siding obliterates the historic appearance of the building and masks any potential problems on the building surface.

Repaired stucco must have a smooth finish; special decorative finishes are not allowed. Beige may not be the appropriate color. Contact the Historical Commission for advice.

Air Conditioners

The insertion of an air-conditioning unit through a hole cut into the facade of a masonry building causes irreversible damage to the building and should be avoided. If air-conditioning units installed in windows require support brackets, these should be affixed to the mortar joints only – not into the masonry.

by Joseph F. McCarthy, AIA, adapted in part from the New York City Landmarks Preservation Commission Rowhouse Manual

Procedures Not Subject to Philadelphia Historical Commission Approval
None

Procedures Subject to Philadelphia Historical Commission Approval
Painting previously unpainted masonry
Repainting previously painted masonry
Repairing or resurfacing masonry
Cleaning exterior wall surfaces
Removing graffiti
Stripping paint from the facade
Applying masonry coatings
Repointing
Repairing cracks
Installation of air-conditioning units through or anchored in masonry

Windows

The architectural significance of windows, sash and casement sash, due to their size, design and location, plays an important part in planning the home. ("Bilt-Well Millwork," Carr-Trombley Mfg. Co., St. Louis, 1925 trade catalog.)

Windows are key to defining a building's historic character. The style, size, configuration, profile, and materials of the window's features, including frames, sash, muntins, glazing, sills, heads, hoodmolds, paneled or decorated jambs and moldings, and interior and exterior shutters, are individually and collectively important elements of the building's overall design. The continuity of window patterns creates a visual rhythm along the street. Inappropriate alterations or replacements are intrusions that can compromise the integrity of a building, the entire street, and the historic district.

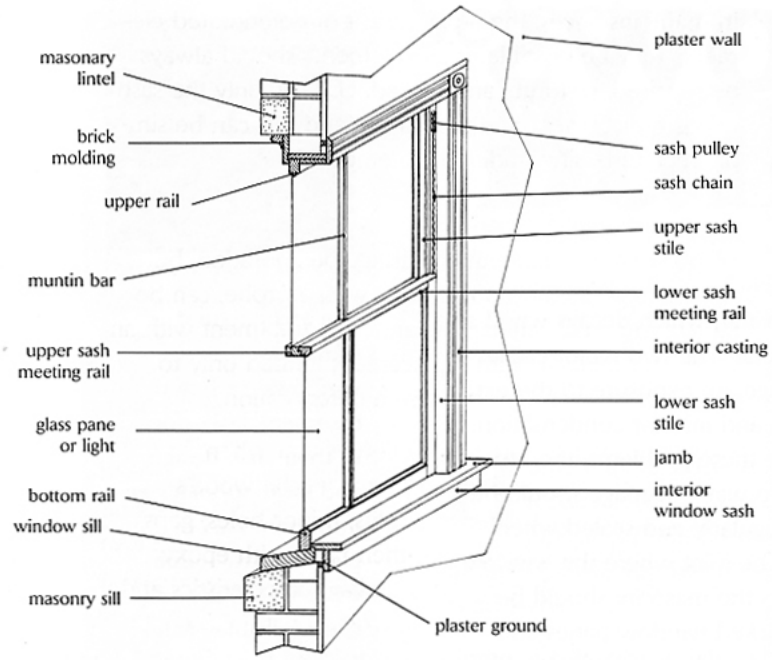
Yet windows are among the most vulnerable features of historic buildings. Age, weathering, and inadequate maintenance all contribute to their deterioration. Damaged windows can be drafty and difficult to operate, prompting their premature replacement or alteration on the mistaken assumption that they are beyond repair. Simple yet effective maintenance, repair, and retrofitting measures will save both money and the building's historic fabric.

Many windows in the Spring Garden Historic District have been replaced over the years, often with inappropriate substitutes. Studying the neighboring buildings for clues to the original windows' appearance can be misleading; if replacements are contemplated, consult with the Historical Commission staff.

Routine Maintenance

Windows that seem beyond repair often require only basic maintenance and repairs to reestablish their smooth operation and improve their energy efficiency. Deterioration to windows is primarily caused by water, which decays wood and corrodes metal. The two major causes of water damage are exposure to the exterior elements and interior condensation. To minimize these problems, the areas vulnerable to water seepage should be inspected regularly and sealed when necessary. The joint where the window frame meets the masonry should be caulked, cracked window panes and dried or missing glazing putty should be replaced, all chipping and peeling paint should be removed, and the window primed and repainted. Bare wood and metal are particularly susceptible to decay and should never be left exposed to the elements.

Over time, old windows can become difficult to operate due to excessive paint build-up or broken operating mechanisms. Paint can best be removed by the careful scraping or stripping of the paint



with a chemical paint remover or heat gun. Use the heat gun on the sill, stops, parting beads, and window trim. Chemical paint stripper should be used on the sash since the glass will break if heated. Take care to follow safe lead paint removal procedures, and the manufacturer's recommendations for the safe use of chemical strippers. While heat guns are effective at removing old paint, their improper use by an inexperienced operator may result in the scorching of wooden elements and can also be a fire hazard. Paint removal can be hazardous; be sure to follow all safety precautions.

Windows that bind, have become inoperable, or will not remain open may require repairs to the operating system. On most double-hung windows with a counterweight and pulley system, an experienced do-it-yourselfer can attend to these problems by removing the interior trim and jamb or the jamb access panel to examine the pulley, and rope. First, examine the condition of the pulley. If it is coated with layers of paint, tie off the sash cord, remove the pulley, strip the paint layers, lubricate the pulley and reinstall it in the jamb. If the pulley is too damaged, replace it with a new matching element. The other potential problem is a broken and/or damaged pulley, sash cord or chain. Either stripping the chain of interfering paint layers or replacing the sash cord or chain with a new element will re-establish the smooth operation of the sash.

Storm Windows and Weather Stripping

A variety of cost-effective options exist to improve the energy efficiency of historic windows. In addition to replacing caulk and glazing putty, weather stripping can be applied around sash and frames and at the meeting rails of windows to prevent drafts. Weather stripping is one of the least expensive means of improving energy efficiency, yet it can increase energy performance by as much as fifty percent.

Storm windows insulate against noise and drafts, and exterior storms protect windows from weathering. Exterior storm windows, however, can have a detrimental visual impact on the architectural integrity of a building. Depending on their design and color, exterior storm windows can be obtrusive and unsightly and can cause reflections, which obscure the configuration and detail of the historic windows. The meeting rails and stiles of the storm must align with those of the historic window and the color should match the color of the window frame.

Interior storm windows are much preferred, especially on primary facades. A variety of interior storm windows are available, ranging from the interior version of a traditional triple-track unit to a single sheet of clear glazing applied within the window jamb.

Other options, such as the installation of thermal glass into existing windows, may also be available to preserve old windows while increasing their energy efficiency.

Repair or Replace?

Seriously deteriorated windows require careful evaluation to determine whether repairs are possible. The integrity of historic wood windows can generally be assessed through a few simple steps. Assessing the overall stability of metal windows is much more complex and typically requires the attention of an experienced professional.

One simple test to determine the structural integrity of the window is to prod the various frame and sash elements with a sharp probe or tool, such as an ice pick. If the probe easily penetrates the wood or the surface of the metal, and brittle strands can be dug out, then the element is beyond traditional repair.

A window with original detailing.

An inappropriate window replacement.

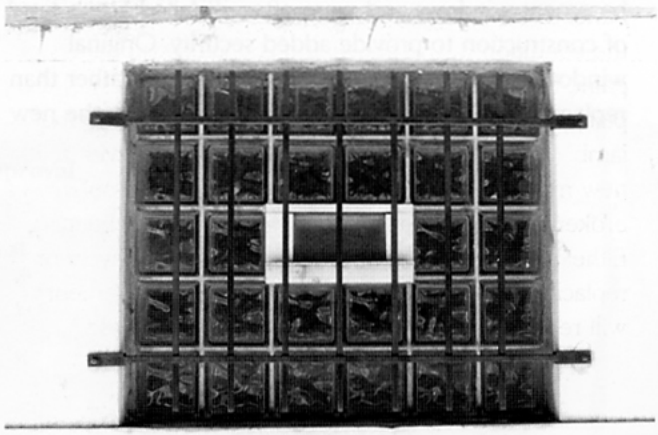
Even then, wholesale replacement may not be required. In many instances, the replacement of deteriorated elements may be possible. Intact elements should always be repaired, restored, and reused. Usually, only the sash needs replacement and the frames and sills can be simply repaired using traditional methods.

Methods of Repair

Wood windows that exhibit surface deterioration, but appear to be sound upon testing with a probe, can be repaired in a cost-effective manner by treatment with an epoxy consolidant, with replacement limited only to those sections that exhibit severe deterioration.

Wood consolidants are syrupy liquids that when brushed onto decayed wood permeate the wood's surface, restoring its strength. Splits, minor holes, gaps, and other damaged areas are then filled with epoxy paste which, when cured, has similar characteristics and flexibility to wood, and can be worked with ordinary woodworking tools and painted.

If the deterioration is more substantial (particularly in the sill area) but is limited to only a section of the wooden element, the damaged area can be removed, squared-out and a "dutchman" patch installed.



Glass block should not be used to replace a basement window.

Replacement Guidelines

Repair and retrofitting of historic windows is always preferable to replacement. Replacement of original windows should be considered only as a last resort and is justified only when the severity and extent of deterioration warrants. If replacement window sash and frames are installed on primary or highly visible facades, they should match the original in materials, operation, configuration (the pattern or organization of glass panes), profile and detail. Matching historic windows maintains the historic character of the building and helps retain the sense of scale and rhythm of the historic district.

In undertaking the replacement of windows, always seek the advice and review of the Historical Commission. The staff will help you determine the correct configuration of the window, based on historical photographs, pictures, surveys, and other documents, and has numerous samples to show you.

The Historical Commission does not approve vinyl windows with snap-in muntins. If multi-pane windows are appropriate, they should be "true-divided-lights" in which the wooden muntin holds each pane of glass in place.

If possible, keep the original window frames and replace the sash only. If the frame must be replaced, the Historical Commission requires that the dimensions and profiles match the original. The Historical Commission recommends, but does not require, that counterweight-and-pulley systems on double-hung windows be retained, especially on large, heavy windows.

Repair is generally more cost-effective than replacement and, when accompanied by routine maintenance procedures, ensures the preservation of one of a building's most distinguishing features.

Security Bars or Grilles

Metal window bars or grilles are typically found on basement windows and were often installed at the time of construction to provide added security. Original window grilles should always be maintained rather than replaced. If replacement is necessary, however, the new grilles should match the originals, and should be installed without damaging the window frame or masonry.

The installation of modern security bars or grilles on the outside of windows that would not have originally had such features is generally discouraged, and the use of alternative security measures, including interior bars, should be explored.

Awnings, Exterior Shutters and Flower Boxes

Shutters were of great importance to certain styles of historic architecture, providing security and a means of controlling light and heat. The replacement of missing shutters is encouraged, as is the preservation and restoration of existing original shutters. Where replacement is necessary, the new shutters should match the originals in wood. If the originals are not available, match the panel pattern of historic doors and reveals. Before painting, treat new shutters with a wood preservative to increase their resistance to weather.

Make the new shutters operable, or at the very least, appear operable, and completely fill the window opening when closed. In addition, the shutters must contain the appropriate hardware such as hinges, shutter dogs, and bolts. Fortunately, on most historic buildings that had shutters, the shutter pintles are often in place, simplifying installation of new shutters. Lock rails of new shutters must fall below the sash meeting rails.

Fixed aluminum awnings are not appropriate for any historic dwelling.

Consult with the staff of the Historical Commission before purchasing and installing flower boxes. Care needs to be taken when they are attached. Do not screw flower boxes directly into a stone sill or allow them to rest against the masonry wall to prevent future water damage.

by Robert Powers and Cynthia Hamilton, Powers & Company, Inc.

Not Subject to Philadelphia Historical Commission Approval

Caulking
Weather stripping
Reglazing
Minor repairs to original window materials
Repairing suspension systems (pulleys, chains, ropes)
Repairing or replacing window hardware
Installing most interior storm windows
Installing interior security bars or grilles
Installing regulation child guards
Painting

Subject to Philadelphia Historical Commission Approval

Installing new sash or frames
Installing exterior storm windows
Installing or removing exterior shutters
Installing window awnings
Installing or removing exterior security bars or grilles
Altering the size, shape, or design of a window opening
Blocking in existing window openings or constructing new openings
Restoring original window openings
Replacing original window materials (extensive)

Few features of a house are more noticeable than its entrance. It seems to introduce us to its life and spirit. It may wear the plain word "Welcome!" all over its generous proportions and its genial aspect, or it may impress us as cold and forbidding. (*Philadelphia Real Estate Record & Builders Guide, 21* March 1887)

Doorways Doors

The doorways in the Spring Garden Historic District reveal much about their original builders and owners. The elaborate entries of Green Street signal wealth and opulence; the less ornamented doorways on Brandywine or North Streets honestly reflect the simplicity of the houses. Yet even on the plainest dwelling, the greatest attention to detail was usually lavished on the doorway. Fortunately, many houses in Spring Garden retain their original doors, adding to the district's integrity.

Door Construction

Most historic wooden doors are made of stiles (the vertical elements) and rails (the crosspieces), a centuries-old construction method in which finished and ornamental wood planks are assembled, usually with strong mortise and tenon joints. Most historic doors conform to this basic type, whether they have several wood panels or glass panes.

Paneled doors consist of a frame of solid wood parts filled in with wood or glass panels. The rails are mortised into the outside stiles, then wedged and glued. The panels are held in place in grooves in the inner edges of the frame or by moldings fastened to the frame. Wood panels should not be glued in place; they need to move freely within the frame to allow for normal wood shrinkage and swelling.

Maintenance and Repair

Doors deteriorate because of exposure to weather, flaws in construction, and the enormous wear they endure. Although exterior doors are installed so that they are somewhat protected from the elements, over time wood doors are subject to wear and rot. Fortunately, wood is easily maintained and repaired, and a properly maintained wood door will last for generations.

Regular varnishing and painting are essential, not only for appearance, but structural stability as well. Varnish and paint create hard, protective coatings that shed water and protect the wood from moisture and rot. Occasionally paint needs to be removed, since too many layers weaken the adherence of the paint to the surface and hide carved or molded detail. Too much paint can also freeze the joint where the panels of a paneled door meet the frame, which should be kept free moving to allow for natural expansion and contraction of the wood.

Damage or rot to wood doors is relatively easy to repair. Dents, checks, and surface marks can be fixed with glue, plastic wood, small wood shims, and household tools. Stiles and rails can be matched by experienced mills and new panels and moldings can be made to replace missing and damaged parts.

Rotting areas of the doorframe, often at the bottom where the end grain has absorbed water, can be consolidated with epoxy resins, and missing areas can be reconstituted and molded out of epoxy paste fillers. Or, an experienced carpenter can mortise a replacement piece of wood in place. Such "dutchman" patches are

An inappropriate door replacement radically changes the look of the house.

also useful when locksets or hinges are changed and the mortises of the former hardware exposed.

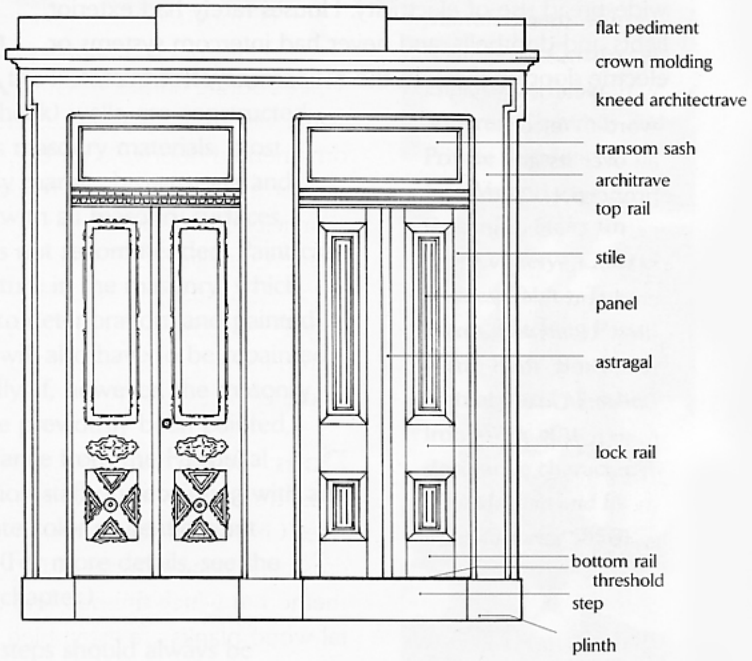
If an original door must be replaced, the new door should match the original design, material, and configuration. If the original door is missing, appropriate replacements can sometimes be determined by examining neighboring or similar buildings; by looking at historical photographs, pictures, and surveys; and in consultation with the Historical Commission staff.

Door Surrounds

The woodwork, moldings, and ornamental masonry that surround a door are all part of the architectural design and character of the building. For the most part, the simple, brick rowhouses in the Spring Garden neighborhood have plain brick reveals at the door with molded wood casings and simple lintels and sills. More decorated dwellings have elaborate entranceways that include paneled wood reveals, carved moldings of masonry or wood, or perhaps a carved stone hood.

This artistic ensemble should be preserved and restored. Removal without replacement of eroded or rotted elements, removal of the entire surround, or sheathing it in another material are inappropriate. So is adding an architectural element that was never there or is of the wrong style. A Colonial-style surround added to a Queen Anne house, for example, confuses the style and meaning of the house's architecture. If you suspect that a more modern piece has been added to the original doorway, contact the Historical Commission if you are interested in removing and replacing it with something more appropriate.

The exposed elements surrounding historic doorways often deteriorate over time, and their restoration is rarely a do-it-yourself job. Stone ornamentation can be restored using masonry consolidants such as silanes, acrylics, and epoxies that penetrate the pores of the stone, making it stronger and resistant to further deterioration. Missing masonry elements can be replaced with molded cement-based patches. (For more details, see the chapter on Masonry.) Similarly, rotted wood elements can be treated with wood epoxy consolidants that permeate porous or decayed wood. Gaps in the wood can be filled with epoxy paste



which, when dried, has characteristics similar to wood and can be worked with ordinary tools, primed, painted or varnished. Almost all of these repairs will require the skills of experienced restoration masons or carpenters.

Door Types and Configurations

Blocking up or altering transoms; reducing, enlarging or blocking up door openings, or cutting new openings where none previously existed all destroy the appearance of a historic building and jeopardize its physical integrity. In some cases, however, the original door has already been replaced. Contact the Historical Commission for guidance in choosing an appropriate design when you wish to change a door.

Hardware

The style of the hardware on a door should be compatible with the age and style of the door and dwelling. Generally, residences have simple round or oval knobs made of easily cleaned materials like brass, bronze or glass. If the original hardware is missing, you can determine an

appropriate replacement by looking at a similar house in the neighborhood and by consulting with the Historical Commission.

Storm and Screen Doors

Prepainted aluminum doors, especially those with added scalloped or "colonial" ornament, are not appropriate on the houses in the Spring Garden Historic District. Consider weather stripping as an alternative.

Lighting and Electrical Devices

Most houses in Spring Garden were built before the widespread use of electricity. Houses rarely had exterior lights and doorbells, and never had intercom systems or electric door openers. In the modern city, however, these items have become necessities to improve security in the home and safety on the street.

Generally, these devices should be as simple and unobtrusive as possible, and wiring should be run inside the building. Exterior lighting should be appropriate to the style of the building, or as inconspicuous as possible. A simple, modern light fixture is a better choice than an overly elaborate or inappropriate reproduction such as a colonial style carriage lamp. Doorbells and intercom boxes should be small and recessed in to the casing or wood reveal to the side of the door.

by Charles A. Evers, AIA,
Atkin Olshin Lawson-Bell Architects

Not Subject to Philadelphia Historical Commission Approval

Painting wood elements
Sanding or refinishing
Repairing wood door and/or frame
Replacing or installing locks
Replacing broken glass
Weather stripping

Subject to Philadelphia Historical Commission Approval

Installing exterior lighting, intercoms or doorbells
Installing new doors, storm doors or door frames
Installing security grilles or bars
Replacing solid door panels with transparent materials
Replacing transparent door materials with solid materials
Altering door frame and/or surround
Altering door material or configuration (size, number of doors, transoms, or glazing)

Stoops, Railings, Gardens and All The Rest

Wood & Perot Ornamental Iron Works, 1136 Ridge Avenue, Philadelphia. Manufacturers of Iron Railings for Cemetery Enclosures, Public Squares, Churches and Private Residences, Iron Verandahs, Balconies, Stairs (in every variety), Chairs, Settees, Tables, Tree Boxes, Hitching Posts, Lamp Posts, Brackets, Statuary and all other Iron Work of a decorative character. (*Philadelphia and Its Manufactures*, 1858)

Miscellaneous building and site elements – sidewalks, stoops, railings, etc. – are easy to overlook, but play an important role in creating the character of the Spring Garden Historic District. These significant details establish a relationship between the building and the street, and contribute to the overall streetscape.

Original stoops and railings were designed to harmonize with the building façade. Front steps, cellar entrances, and basement-level water tables were often constructed of the same material. Railings might also exhibit patterns and shapes associated with the style of the building.

Stoops in the historic district, and their side (or cheek) walls, are constructed of various masonry materials, most commonly marble, brownstone and brick. As with all masonry surfaces, painting is not recommended. Paint can trap moisture in the masonry, which can lead to deterioration, and painted masonry will also have to be repainted periodically. If, however, the masonry steps have previously been painted, seek guidance from the Historical Commission staff on repainting with an appropriate color or gentle paint removal. (For more details, see the Masonry chapter.)

Joints on steps should always be mortared to prevent moisture from getting behind the stones where it may

Masonry steps should be maintained to prevent the damaging effects of water penetration.

freeze and expand, upsetting the stones. Masonry steps can be taken apart and reassembled if they have shifted dangerously out of position; additional structural support may also be required. When replacing mortar (repointing), use a mortar made with lime, sand and cement. Most modern mortars made only with Portland cement are too hard and may damage the masonry. (Again, see the Masonry chapter for more details.)

Historic stair railings, boot scrapers, and bollards are made of wrought or cast iron. Wrought iron is shaped by beating or hammering; cast iron is formed by casting, or pouring, molten metal into a mold. The different processes result in different characteristics. Wrought iron can be welded and bent (or "wrought") into delicate, often curvilinear shapes; it tends to be lighter in appearance. A cast iron railing is constructed of separately cast pieces bolted together (large pieces are usually hollow); it generally tends to be more weighty in appearance.

Steps often crack at the point where a railing post is set into the surface of the tread (the part you step on). Rainwater ponding on the masonry surface at the railing base causes the metal to rust and expand, exerting pressure on the surrounding masonry and causing it to crack and become dislodged. To prevent this, the post base should be set into the masonry using a soft material or a stainless steel sleeve. Traditionally, lead was used for this purpose; sealants are more commonly used today. Filling the joint with cement is discouraged because it does not have the flexibility required to withstand normal thermal expansion and contraction.

Many blocks in Spring Garden have original iron gates between houses; however, many of these are showing signs of wear. Rusting, caused by moisture on bare metal, is the primary cause of iron deterioration. Keeping your cast or wrought iron railings and gates painted is a simple and effective way to preserve them. Rust can be removed by hand scraping and wire brushing. This should be followed immediately with an application of a rust-inhibiting primer and a compatible finish coat. Small voids may be repaired with plumbing epoxy or auto body putty, but be sure to maintain the original profile of the metal. Replacing screws and bolts with new stainless steel ones may repair loose connections in cast iron assemblies.

Sidewalks

Many of the historic sidewalks in the district are made of brick pavers. Historic sidewalk paving may require repair if there are cracks, sunken, or raised areas that make the walkway hazardous to pedestrians. Repair by removal and reinstallation of original materials is recommended because it retains the actual historic

Brick sidewalk paving

fabric of the sidewalks. Damaged or missing pavers should be replaced with new or salvaged material that matches the original.

Brick paving may be installed with or without mortar joints. Mortar is the binding material in the joints between the bricks, as you would see on a brick building wall. Mortared brick paving requires that the bricks be set on a stable base, such as a concrete slab. Separating bricks from mortar for reuse can be difficult, but a qualified contractor may be able to remove the mortar.

Many brick sidewalks are mortarless, or "dry laid." This makes removing the pavers, reestablishing the base (or bed) and resetting the pavers easier, and better accommodates thermal movement. In a mortarless installation, the bed should consist of six inches of gravel topped with three inches of sand or soil. The pavers are then set as close together as possible, and sand or a sand/cement mixture is brushed into the joints.

Granite, because of its durability, was historically used for curbing and is still used for this purpose today. Bluestone, although more fragile, is also a historic curbing material. The most common r eplacement for these original materials is concrete, which, while initially less expensive, is not as durable. Nor does concrete have the character and texture of historic paving materials.

Gardens

Some houses in the Spring Garden neighborhood have front yards. These small plots of grass and trees offered early residents a bucolic suburban atmosphere within the city limits. For this reason, the Historical Commission must review any plans to reduce or eliminate these garden areas. For problems with street trees, including damage to sidewalks and curbs caused by root growth, contact the Fairmount Park Commission.

by Suzanna Barucco,
Martin Jay Rosenblum, R.A. & Associates

Procedures Not Subject to Philadelphia Historical Commission Approval

Minor sidewalk repairs
Repairing railings (e.g. replacing worn or missing fasteners)
Painting metal railings, bollards or security gates
Landscaping garden areas

Procedures Subject to Philadelphia Historical Commission Approval

Repairing or repointing masonry steps
Painting or cleaning masonry steps, cheek walls, or railings
Replacing or removing steps or railings
Repaving a sidewalk with new materials
Major sidewalk repairs
Paving of garden areas

Storefronts

Stores

The retailer, recognizing the general interest of the public in things artistic, especially those things of an architectural nature, realized that a shop possessing architectural value and decorative interest, both inside and out, would appeal to his prospective customers and increase business by luring them into his store. (*American Commercial Buildings of Today*, 1928)

Shaped by ever-changing commercial tastes, storefronts require special consideration by owners of historic buildings, but their sensitive preservation contributes to both the retail atmosphere and the integrity of the historic district. The Spring Garden Historic District was built primarily as residential and most of the storefronts found in the neighborhood today are associated with small corner stores catering to the immediate neighborhood. Later storefronts were added to buildings on entire blocks, like those found on Fairmount Avenue and Spring Garden Street.

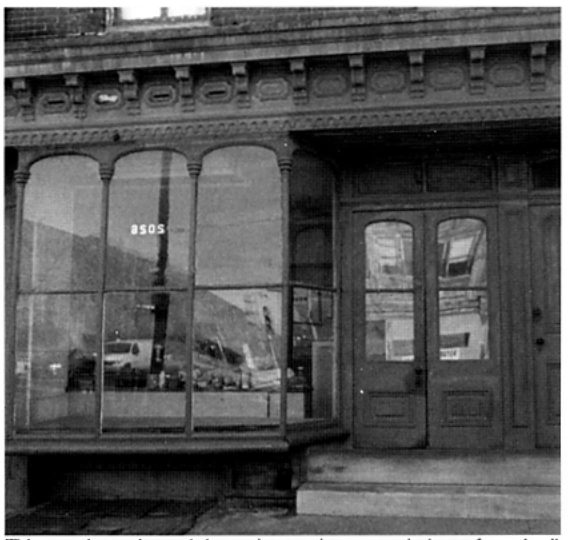
Large plate glass windows supported by cast iron columns and piers generally characterize late 19th- and early 20th-century storefronts. Wooden components include decorative cornices, paneled bulkheads below the display windows, and half-glazed paneled doors. Modern materials such as pigmented structural glass, baked enamel panels, ceramics, and stainless steel made possible the sleek streamlined storefronts of the 1930s and 1940s.

Even though many storefronts in the historic district do not date from the building's original construction and may differ in style from the earlier building, they reflect an important aspect of neighborhood history and are worthy of preservation in their own right. The more rare original storefronts are an even more important part of the architecture of their buildings.

Maintenance of Historic Storefronts

Storefronts are susceptible to deterioration, primarily because of water infiltration and weathering. Water penetration behind the storefront, possibly into the supporting building, can cause unseen damage. The primary areas of concern include the storefront's cornice, which requires proper flashing and water conduction, and the joints between components. (For more information, see the chapter on Roofs, Cornices and Related Elements). On wooden storefronts, moldings traditionally were used to cover joints. Seams and joints in storefronts made of metal and other materials should be sealed with caulk. Regular painting will help protect wooden elements from water infiltration and rot, and will prevent metal components from rusting.

Historic storefronts should be retained, repaired, or restored with matching materials. An existing storefront may



Thin wood muntins and decorative cornices are typical storefront details.

Corner entrances are typical of late 19th-century storefronts.

An intact historic storefront.

not appear to be historically significant, but historic fabric may be hiding under later alterations. Consult the staff of the Historical Commission before planning any changes.

The Historical Commission encourages the repair of early storefront features and the incorporation of any remaining fragments into new design. Restoration to an earlier period – even to the building's original appearance – may not be appropriate. If the historic storefront is completely missing, the new storefront should approximate the original configuration, based on photographs or other historical evidence. Again, consult with the Historical Commission staff for guidance. In the absence of solid evidence, simple generic storefront features are recommended. As with all new design in an historic district, these storefronts should be compatible with the building and streetscape in scale and proportion, materials and finishes, height and configuration, etc.

If a building with a historic storefront is being returned to residential use, the storefront is considered a significant alteration and should be retained. Contact the staff of the Historical Commission for options regarding privacy and security.

Signage and Awnings

All signs and awnings in the historic district – including banners – require the approval of the Historical Commission. The size, shape, design, material, location and method of attachment of commercial signs have a large impact on historic storefronts. Signs should be to scale with the building and storefront, and should be placed within the historic "signboard" area – the fascia under the storefront's cornice. Signs must not obscure, damage or destroy any of the character-defining features of the building. Backlit or illuminated plastic box signs are not allowed.

Awnings should have a shed-type shape and fabric-like material. If there is any signage on the awning it should be placed on the apron, not on the slope. Depending on the architecture of the storefront, the size of the awning should be consistent with an individual window or doorway.

Signs and awnings may also require the approval of the Art and Zoning Commissions.

Security Grilles and Bars

Every attempt should be made to situate security grilles and bars on the interior of the storefront, behind the glass. Exterior grilles may damage or obscure important storefront features. Open, see-through grilles are preferred to solid metal screens, which pose security and safety risks. Contact the Historical Commission staff for guidance on grille placement.

by Sara Jane Elk

Not Subject to Philadelphia Historical Commission Approval

Painting wood or previously painted metal components

Subject to Philadelphia Historical Commission Approval

Painting masonry
Removing, replacing, or installing awnings
Removing, replacing, or altering storefronts
Installing or replacing security grates, grilles, or bars
Installing or replacing signage

New Construction

Visitors from out of town are wont to sigh with rapture when they see our trim blocks of tall brick buildings – that even cornice running in a smooth line for several hundred yards really is quite a sight – and exclaim, "Oh, I wish we had something like this in New York!" (Christopher Morely, *Pipefuls*, 1921)

The Spring Garden Historic District is an intact 19th-century neighborhood with a remarkably high number of important buildings and relatively few vacant lots. Opportunities for new construction are limited; most building involves rear additions, the replacement of the few structures that do not contribute to the district, and the building out of the few empty lots. The Historical Commission must approve any changes or additions to all existing structures within the district. New construction on an empty lot is subject to the review and comment of the Historical Commission, whose advice, while not binding, will help insure the integrity of the historic district.

New construction in the district should not obscure, damage or destroy character-defining features. Additions to historic buildings should not exactly duplicate the design in an attempt to fool viewers into believing they are original. Instead, new additions should be designed so that it is clear what is historic and what is new. Good architecture is of its time; it is better for new construction to reflect our time than to give a false historical impression. At the same time, all new construction should be compatible with the size, scale, color, material and character of the property and neighborhood.

An experienced design professional can help meet your needs with a design that is compatible with the historic district. And the staff of the Historical Commission is available for advice and consultation.

These contemporary houses follow the cornice line and fenestration patterns of older, neighboring houses, yet anounce their 20th-century construction.

Where to Begin?

The predominant feature of the Spring Garden Historic District is the rowhouse. Rowhouses create a consistent street façade and provide many starting points for your new design, including setback, materials, overall height, and the spacing and scale of window and door openings.

As you think about your new building or addition, take a careful look at the adjacent buildings as well as others throughout the district. Note the materials used, almost

always some form of masonry: brick, stucco, or brownstone. Look at special features, such as bay windows, dormers, the number of windowpanes, and style of windows.

Note how most houses in the district are consistent in scale and materials, whether the buildings were built as a single design or grew gradually over time. Taking design cues from the surroundings is a good way to ensure sensitive new construction in the district.

Design Considerations

Height In the Spring Garden Historic District, consistency of building height, typically three to four stories, is one of the strongest design guides for new construction. Zoning also plays a major role in dictating building heights and massing. Even though building heights vary considerably along some streets, most builders in the past put up structures similar in height to adjacent structures. The height of adjacent buildings will help dictate the height of your new construction.

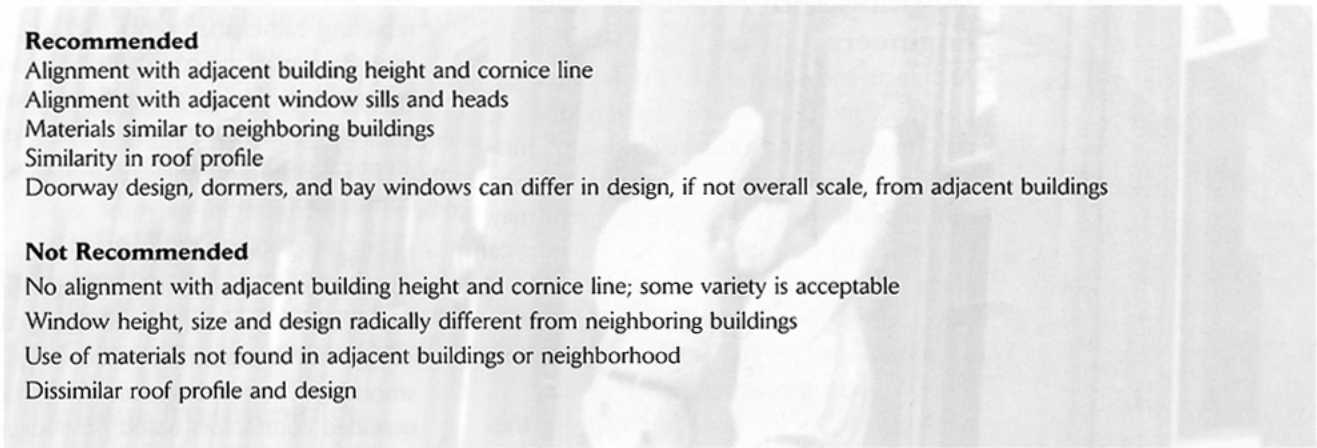
Materials Brick is the most common building material found in the district. Most brick is typically a rich reddish-brown in color, although some 20th-century buildings use other colors. Try to use brick that is similar in color to that found on adjacent buildings. Also consider the variety of materials in neighboring buildings. Some may have details carved in brownstone or a marble veneer on the first floor. These can be matched in new materials. While stone is desirable, carefully detailed stucco or concrete can be made to match brownstone or other stone.

Street Wall and Cornice Line A uniform setback of the buildings as they line the street creates the "street wall" and is essential to preserving the character of the district. New construction should respect the street line created by its neighbors. So should the cornice line, which is a predominant feature of most Philadelphia rowhouses.

Rhythm of Openings Windows and doors establish a rhythm for the streets and any new construction should be harmonious. Windows should be of similar size and overall placement as adjacent buildings. Remember that most historic windows are tall and narrow. Particularly important is matching the window sill and head heights to the adjacent buildings.

A design professional can juggle all of these ideas, while at the same time establishing an addition or new building that meets the owner's needs. Sympathetic new construction can only add to the richness and vitality of the historic district.

by Michael Stern, AIA,
Community College of Philadelphia



Recommended
Alignment with adjacent building height and cornice line
Alignment with adjacent window sills and heads
Materials similar to neighboring buildings
Similarity in roof profile
Doorway design, dormers, and bay windows can differ in design, if not overall scale, from adjacent buildings

Not Recommended
No alignment with adjacent building height and cornice line; some variety is acceptable
Window height, size and design radically different from neighboring buildings
Use of materials not found in adjacent buildings or neighborhood
Dissimilar roof profile and design

The attention of builders and architects and others has been closely devoted to supplying materials for buildings that would add to beauty, cheapness and durability. (*Philadelphia Real Estate Record and Builders' Guide,* 16 August, 1886)

Selecting and Working with Building Professionals

Home maintenance and many routine repairs lie within the capabilities of the typical old-house owner. There are instances, however, when professional help is advisable.

Some of the areas in which building professionals can prove invaluable are the assessment and correction of structural problems (why is a wall bulging?); the assessment, specification, and correction of major repairs (the replacement of a roof, for example); and the design and specification of additions or alterations to ensure that they meet the preservation requirements of the Historical Commission.

Three types of building professionals can be of help: architects, engineers, and contractors who specialize in working with historic buildings and are familiar with Philadelphia's regulatory structure.

Working with Architects and Engineers

Architects and engineers can diagnose problems and prescribe remedies. Don't presume that using their services represents an added expense; an architect or engineer can supply a wealth of advice for what may be a minimal consulting fee. An architect can guide you through the entire design and construction process ñ from helping define what you want to build, to helping get the most for the construction dollar, all the while preserving the historic integrity of the building. An engineer is more typically retained to address structural problems.

Architects and engineers can:

- Help clarify and refine building needs by providing an overall assessment of a building's condition, or an assessment of a specific problem, including structural issues, deterioration of materials, and electrical and mechanical systems. Through a process called programming, you and your architect discuss your requirements, needs, and budget. The architect then helps define the project. The architect can prepare contract documents, plans and specifications (instructions to contractors) for repair projects, and can also design a sensitive addition or alteration to your historic house.
- Maximize your construction dollar. The architect and engineer can help you select appropriate materials, workmanship, and systems at a fair price, and can help you avoid unnecessary or inappropriate work and costly mistakes. For example, an architect may advise on how to save money by repairing, rather than replacing, an old slate roof. By producing contract documents for competitive bidding, the architect helps ensure that contractors are bidding on identical work, potentially controlling construction costs.
- Manage the project. From conception to completion, the architect protects your interests and pursues ways to make the design and construction processes go smoothly. The architect can help you find qualified contractors based on your requirements. During construction, the architect visits the site to verify that the project is

progressing according to approved plans and specifications. In addition, if your project requires engineering or other special services, the architect can coordinate this team of experts. The architect also sorts out complex building codes, zoning laws, and historic district regulations and helps ensure that you get all necessary permits and are in compliance.

If you are contemplating a project that may involve an architect, consider seeking architectural consultation early in the process. Many architects are willing to meet with you initially without obligation or cost. Consultations with two or three architects will provide you with an understanding of what can be expected from different architects and will help ensure a satisfactory match. Choose an architect with both experience with, and appreciation of, historic buildings. Request that a prospective architect supply references for similar projects that he/she has done, and check these references.

Where to find an appropriate architect? The Philadelphia Chapter of the American Institute of Architects' Architect Resource and Referral Center offers recommendations, information about architectural firms, and examples of their work according to numerous project categories (For more information, look in the Preservation Resources chapter.) Another good source is neighbors in the historic district who have retained architects for their projects.

Working with Contractors

Contractors carry out the actual repair or rehabilitation work, or construct additions. During the planning stages, they can also advise on alternative methods of construction or ways to control construction costs.

In general, except for routine work, contractors do not provide design services; this is a role for an architect. The homeowner – with the assistance of an architect or other building professional – should define the exact scope and nature of construction work through plans and specifications, rather than have a contractor define the work. This assures objectivity and cost control.

A general contractor manages larger projects that will use various subcontractors or specialty building trades. If the project is limited in scope or involves primarily one building trade (for example, painting), a general contractor is probably not required. In addition, keep these pointers in mind when selecting contractors:

- Choose only contractors experienced with the special needs of older houses and historic properties. Obtain referrals from your architect, the Historical Commission, the Preservation Alliance for Greater Philadelphia, other homeowners in the historic district, or published resource guides. The Historical Commission also has product information. Referrals by these organizations do not constitute endorsement.
- Ask for references for several, recent projects that are similar to yours. If possible, try to make arrangements to see these projects, and check these references for quality of work, attention to the historic fabric of the

building, finishing on budget and on time, and willingness to work with the homeowner.

- Narrow the possibilities by concentrating on reputable companies which have been in business at least several years. A newly formed company could be considered if it comes highly recommended and has done similar projects.
- Call each firm on your list and meet with the person who would be overseeing your project. Determine what warranties and guarantees cover workmanship and materials, and who is responsible for subcontractors. Ask to see the contractor's license and permit, proof of state workman's compensation coverage, and insurance certificates.
- For larger projects, receiving three or more competitive bids is advisable. Along with bids, obtain the specifics of the job in writing, including a thorough explanation of how the work will be executed. An architect can provide bid documents for you, including plans and specifications. Don't automatically take the lowest bid. Look for the best value combining a competitive price with experience and a thorough understanding of the project and of the special characteristics of the architecture of the house.

A signed contract, along with plans and specifications, should include a description of the work, the payment schedule, acceptance of responsibilities, insurance, warranties, provisions for additional work, trash removal, compliance with ordinances and statutes, obtaining of permits, arbitration of disputes, time of completion, and acceptance and occupancy by the client.

Remember that the building owner has ultimate responsibility to obtain a permit that covers all the work to be undertaken. If you have asked your contractor to get the permit, have him or her give it to you to post in the window.

With the help of qualified architects, engineers, and contractors, old house owners in the historic district can ensure that their homes meet their needs now and in the future, while preserving the charm and architectural integrity of their historic properties.

adapted by Robert J. Hotes, AIA, DPK&A Architects, LLP
from: Ridley Park Design Guidelines (Preservation Alliance for Greater Philadelphia, 1995); Invest in a Dream with Your Architect (AIA, 1992); How to Hire a Contractor by Marjorie Roth (Old House Fair Resource Guide, 1997).

Architectural Styles in the Spring Garden District

"Style" is one of the most used – and abused – words in the English language, particularly when pressed into service in the study of architectural history. (*What Style is It?: A Guide to American Architecture*, 1983)

The architecture of the 19th century is characterized by a proliferation of styles that went rapidly in and out of fashion. The Spring Garden Historic District contains a great collection of buildings from that style-conscious century. Many of the developers' rows that fill much of the district are simple, vernacular buildings constructed with minimal attention to style. Some buildings are mixtures of stylistic motifs, reflecting a transition from one period to another, with very few buildings adhering to a pure expression of a particular style.

For these reasons, the Historical Commission in its deliberations rarely takes purity of architectural style into account. Documentary evidence – old photographs, drawings, and other accounts, with many available at the Commission – is far more reliable as a basis for rehabilitation, as is a careful study of similar houses within the district. Observation and solid historical evidence will yield clues to what is appropriate for each house, without a blind adherence to the dictates of style.

What follows is a very brief look at the styles most often found in the Spring Garden Historic District. For a more thorough discussion of architectural styles, refer to the books in For Further Reading.

Greek Revival

Buildings of this style incorporated motifs from Greek temple architecture, including marble watertables and door entablatures, denticulated cornices and a simplified appearance.

Italianate

Influenced by the Italian Renaissance, this simple style is characterized by bold, projecting ornamentation, especially the cornices, which often have elaborate brackets.

Victorian Eclectic

Many buildings of the late 19th century incorporate elements of many different styles, yet do not adhere to any particular one. This eclectic mix has a rich appearance and usually includes several different materials.

Second Empire

Influenced by French architecture under Napoleon III, buildings of this style usually have mansard roofs with slate shingles, iron crestings, and ornate moldings and brackets.

Renaissance Revival

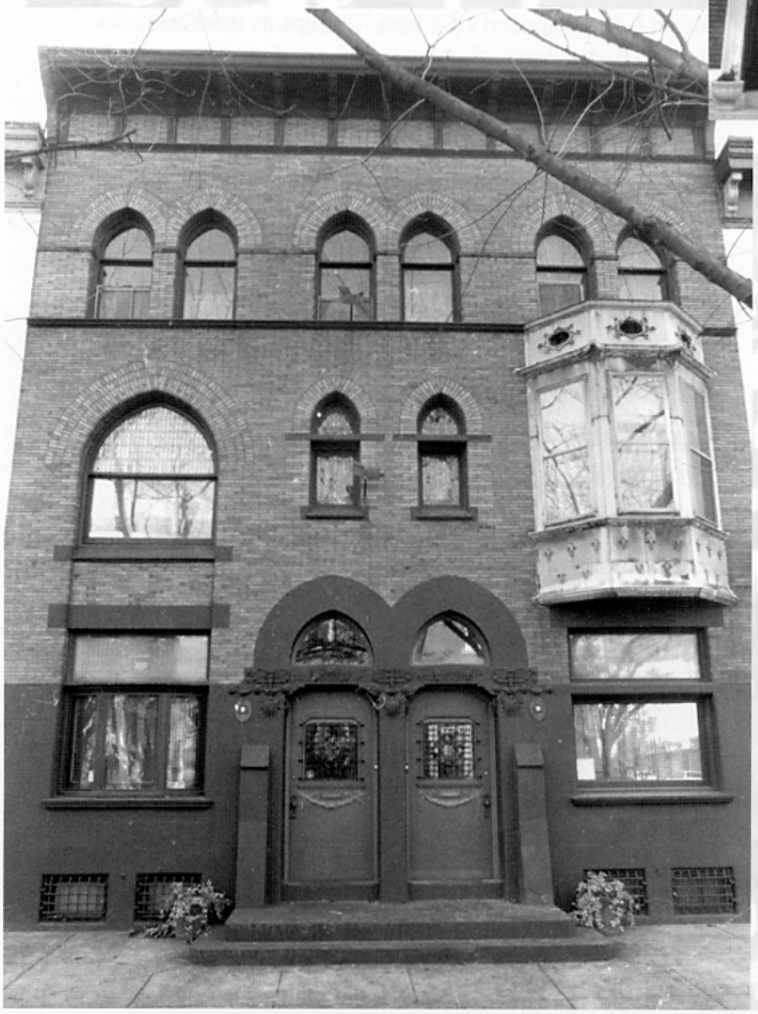
Buildings of this style have decorative facades influenced by 15th-century Italian architecture. Details include ornate carvings, festooning, and elaborate window hoods.

Neo-Grec

This style is characterized by simplified classical details, angular forms, and stylized incised detailing.

Queen Anne

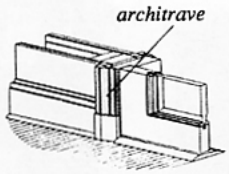
An eclectic style combining motifs from the late Medieval and early Renaissance periods, the Queen Anne style uses asymmetry, a mix of materials, colors and textures, and a diversity of window types.



Venetian Gothic

Instead of coming from a French origin, this style reflects the architecture found in Venice, Italy, mixing Moorish, Italianate, and Renaissance elements.

Glossary



architrave 1. The lowest part of a classical *entablature*. 2. A molding enframing an opening such as a window.

areaway The below-grade space between a rowhouse and the sidewalk, usually providing light or access to the basement.

awning A projecting shading device mounted on the outside of a door or window.

baluster One of a series of short vertical posts, often ornamental, used to support a rail.

balustrade A railing composed of *balusters* and a top rail running along the edge of a porch, balcony, roof, or *stoop*.

bay A regularly repeating division of a facade, marked by *fenestration*.

bay window A projecting structure containing windows that rises from the ground or from some other support, such as a porch roof; see also *oriel*.

bituminous roofing A type of sheet roofing material made from bitumen, a class of cementitious substances found in asphalts and tars.

bracket A projecting angled or curved form used as a support, often ornamental, found in conjunction with balconies, *lintels, pediments, cornices,* etc.

brick molding A milled wood trim piece covering the gap between the window frame and masonry.

cap flashing A waterproof metal sheet that seals the tops of cornices and walls.

capital The topmost member, usually decorated, of a *column* or *pilaster*.

casement A window *sash* that is hinged on the side.

cast iron A type of iron, mass-produced in the 19th century, created by pouring molten iron into a mold; used for ornament, garden furniture, and building parts.

clapboard Wood siding composed of horizontal, overlapping boards, the lower edges of which are usually thicker than the upper.

colonnade A row of regularly spaced *columns* supporting an *entablature*.

colonnette A diminutive *column* which is usually either short or slender.

column A vertical cylindrical support. In classical design it is composed of a base (except in the Greek *Doric* order), a long, gradually tapered shaft, and a *capital*.

console A scroll-shaped projecting bracket that supports a horizontal member.

Corinthian One of the five classical orders, characterized by slender fluted *columns,* and ornate *foliate* capitals.

coping A protective cap or cover of a wall parapet, commonly sloping to protect masonry from water.

corbel An architectural member which projects upward and outward from a wall that supports a horizontal member.

cornice A projecting molding, usually ornamental, that tops the elements to which it is attached; used especially for a roof or the crowning member of an *entablature*, located above the frieze.

cresting A decorative element, frequently of iron, usually located at the peak or edge of a roof.

crocket An ornamental *foliate* form placed at regularly spaced intervals on the slopes and edges of the spires, pinnacles, gables, and similar elements of Gothic buildings.

cupola A small dome on a base crowninga roof.

de-lamination The splitting apart of the outer surface of natural stone into thin layers that peel off, also called exfoliation.

dentil A small, square, toothlike block in a series beneath a *cornice.*

Doric of five classical orders, recognizable by its simple *capital.* The Greek Doric *column* has a fluted shaft and no base; the Roman Doric column may be fluted or smooth and rests on a molded base.

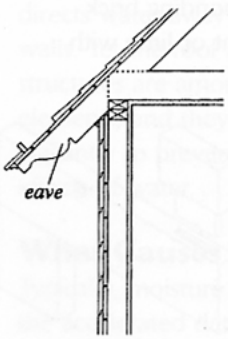
dormer A vertical structure, usually housing a window, that projects from a sloping roof and is covered by a separate roof structure.

double-hung A type of window with two sash, each sliding on vertical track.

downspout A horizontal or vertical cylinder, usually made of metal, which carries water from the gutter to the ground; also called a leader.

drip molding A projecting molding around the head of a door or window frame, often extended to the sides of the frame, intended to channel rain away from the opening; also called a drip *lintel.*

dutchman A patch cut to size, glued, and sanded in a location where deteriorated material has been removed.



eave The overhanging edge of a roof.

efflorescence White powdery soluble salt deposits on masonry, caused by slow seepage of water.

egg and dart An ornamental band molding of egg forms alternating with dart forms.

elevation An exterior face of a building; also a drawing thereof.

enframement A general term referring to any elements surrounding a window or door.

English bond A pattern of brickwork with alternate courses of headers and stretchers.

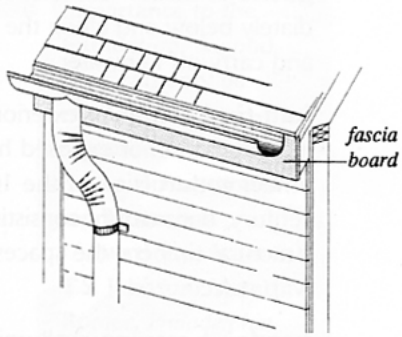
entablature In classical architecture, a major horizontal member carried by a column(s) or pilaster(s); it consists of an architrave, a frieze, and a cornice. The proportions and detailing are different for each order.

eyebrow dormer A curved dormer with no sides, covered by a smooth protrusion from the sloping roof.

facade The main exterior face of a building, sometimes distinguished from the other faces by elaboration or architectural or ornamental details.

fanlight A semicircular or semi-elliptical window above a door, usually inset with radiating glazing bars.

fascia A horizontal, flat element, often combined with a cornice or architrave.



fenestration The organization and design of windows in a building.

festoon A carved ornament in the form of a band, loop, or wreath, suspended from two points; also called a "garland" or a "swag."

finial The crowning ornament of a pointed element, such as a spire.

flashing Strips of sheet metal bent to fit the angle between any two roof surfaces or between the roof and any projection, such as a chimney.

Flemish bond A pattern of brickwork in which each course consists of *headers* and *stretchers* laid alternately; each header is centered between the stretcher above and the stretcher below it.

flue Channel in a chimney for conducting flame and smoke to the outside.

foliate Decorative leafage, often applied to *capitals* or *moldings.*

French door, window A tall *casement* window that reaches to the floor usually arranged in two leaves as a double door.

frieze 1. The middle horizontal member of a classical *entablature,* above the *architrave* and below the *cornice.* 2. A similar decorative band in a *stringcourse,* or near the top of an interior wall below the *cornice.*

gable The upper portion of an end wall formed by the slope of a roof.

galvanized iron Iron that has been coated with zinc to inhibit rusting, usually coated with paint to further inhibit rusting.

glazing Glass panes set in a framework.

glazing bar See *mullion.*

Gothic sash A window sash patterncomposed of *mullions* that cross to form pointed arches.

grille A decorative, openwork grating, usually of iron, used to protect and/or to provide ventilation through a window, door, or other opening.

gutter A shallow channel of metal or wood set immediately below and along the eaves of a building to catch and carry off rainwater.

half-timbering An exterior decorative wall effect giving the illusion of exposed heavy timber construction of the 16th and 17th century, but actually consisting of non-structural timbers, the spaces between which are infilled with stucco.

header A masonry wall unit of brick which is laid so that its short end is exposed.

hood A projection that shelters an element such as a door or window.

Ionic One of the five classical orders, characterized by *capitals* with spiral elements called *"volutes,"* a fasciated *entablature,* continuous *frieze, dentils* in its *cornice,* and by its elegant detailing.

jamb Upright piece forming side of door or window opening.

jigsaw carving An ornament cut with a thin narrow saw blade.

joist One of a series of parallel timber beams used to support floor and ceiling loads, and supported in turn by larger beams, girders, or bearing walls; the widest dimension is vertically oriented.

key A block, often used in a series, which projects beyond the edge of the *enframement* of an opening and is joined with the surrounding masonry. A block handled is such a manner is keyed to the masonry; see *quoin.*

keystone The central wedge-shaped member of a masonry arch; also used as a decorative element on arches in wood structures.

latticework Thin strips of wood arranged in a netlike grid pattern, often set diagonally.

leaded window A window composed of small panes, usually diamond-shaped or rectangular, held in place by narrow strips of cast lead.

leader See *downspout.*

lime Crushed limestone, historically used as the binder in mortar mixes when combined with an aggregate, usually sand.

lintel A horizontal structural element over an opening which carries the weight of the wall above it.

loggia 1. An arcaded or *colonnaded* structure, open on one or more sides, sometimes with an upper story. 2. An arcaded or colonnaded porch or gallery attached to a larger structure.

lunette A crescent-shaped or semicircular area or opening on a wall surface.

mansard A roof having a double slope on all four sides, the lower slope being much steeper. In rowhouse design, double-sloped roof on the building front, below a flat roof.

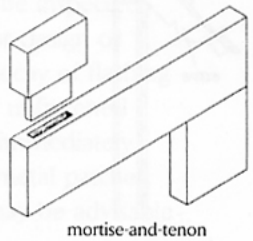
meeting rail The horizontal rail of a *double-hung* window sash designed to align with the adjacent rail of the other *sash.*

modillion A simple horizontal block arranged in series under the *soffit* of a *cornice* or a projecting scroll-shaped *bracket.*

molding A decorative band of varied contour; used to trim structural members, wall planes, and openings.

mortar Material used for pointing and bonding brick and other masonry units; made of cement or lime with aggregate (sand) and water.

mortise-and-tenon A joinery technique formed by a projecting piece (the tenon) fitting into a socket (the mortise).



mortise-and-tenon

mullion A vertical primary framing member that separates paired or multiple windows within a single opening.

muntin A thin framing member that separates the panes of a window sash or glazed doors.

newel The main post at the foot of a stairway or stoop.

oriel A projecting bay window carried on corbels or brackets.

Palladian window A three-part window opening with a tall, round-arched center window flanked by smaller rectangular windows and separated by posts or pilasters.

panel A portion of a flat surface recessed, or raised from the surrounding area, sometimes distinctly set off by molding or some other decorative device.

parapet A low wall that serves as a vertical barrier rising above the edge of the roof, terrace or other raised area; in an exterior wall, the part entirely above the roof.

party walls In rowhouse construction, the walls shared by two adjoining houses.

paver A block of stone used in sidewalk or areaway paving.

pediment 1. In classical architecture, the triangular space forming the *gable* end of a roof above the horizontal *cornice*. 2. An ornamental *gable*, usually triangular, above a door or window.

pier 1. A *column* designed to support concentrated load. 2. A member, usually in the form of a thickened vertical section, which forms an integral part of a wall; usually placed at intervals along the wall to provide lateral support or to take concentrated vertical loads.

pilaster An engaged *pier* or pillar, attached to a wall, often with *capital* and base.

pintle Vertical rod attached to window frame to attach shutter.

pitched Sloping, especially referring to a roof.

plinth A platform base supporting a *column* or *pilaster*.

pointing, repointing The treatment of joints between bricks, stone, or other masonry components by filling with mortar; also called tuck-pointing.

portico A small porch composed of a roof supported by columns, often found in front of a doorway.

p.s.i. Pounds per square inch, a term generally used when describing water pressure when cleaning a building.

quoin A structural form, usually of masonry, used at the corners of a building for the purpose of structural or visual reinforcement, frequently imitated for decorative purposes.

relief Carved or molded ornament that projects from a flat surface.

repointing See *pointing*.

return The part of a *molding*, *cornice*, or wall surface that changes direction, usually at a right angle, toward the building wall.

reveal The side of an opening for a door or window between the frame and the outer surface of a wall, showing the wall's thickness.

rock-faced Masonry treated as a rough surface that retains or simulates the irregular texture of natural stone.

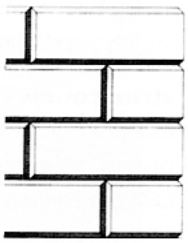
rosette A round floral ornament, usually carved or painted.

round arch A semicircular arch.

rowhouse One of a group of an unbroken line of attached houses that share common side walls, known as party walls.

rubble stone Irregularly shaped, rough-textured stone laid in an irregular manner.

rustication, rusticated Stonework composed of large blocks of masonry separated by wide, recessed joints; often imitated in other materials for decorative purposes.



rustication

sash The framework of a window which holds the glazing (glass panes) in place; may be operable or fixed; usually constructed of horizontal and vertical members; sash may be subdivided with *muntins*.

secondary facade The facade or facades that do not face a public thoroughfare or courtyard.

segmental arch An arch which is in the form of a segment of a semicircle.

semidetached A building attached to a similar one on one side but unattached on the other; a "twin."

shaft The vertical segment of a *column* or *pilaster* between the case and the capital.

shed dormer A *dormer* window covered by a single roof slope without a gable.

shingle A unit composed of wood, cement, asphalt compound, slate, tile or the like, employed in an overlapping series to cover roofs and walls.

shouldered arch An arch composed of a square-headed *lintel* supported at each end by a concave *corbel*.

shutter dog Metal attachment, often ornamental, which holds shutters in an open position against the face of a building.

sidelight A vertically framed area of fixed glass, often subdivided into panes, flanking a door.

sill The horizontal member at the bottom of a window or door.

soffit The exposed underside of any architectural element, especially an eave.

spalling The chipping or erosion of masonry caused by abuse or weathering.

spandrel A panel between the top of one window and the sill of another window on the story directly above it.

stile A main vertical member of a door or window.

stoop The steps which lead to the front door.

stretcher A masonry unit or brick laid horizontally with its length parallel to the wall.

stringcourse A narrow horizontal band of masonry, extended across the facade, which can be flush or projecting, and flat surfaced, molded, or richly carved; also called a "beltcourse."

stucco A coating for exterior walls made from Portland cement, lime, sand, and water, sometimes referred to as cement plaster.

sub-frame A secondary frame set within a masonry opening.

sugaring A term describing the deterioration of stone caused by the breaking up or dissolving of the stone surface.

surround The ornamental frame of a door or window.

swag A carved ornament in the form of a draped cloth or a festoon of fruits or flowers.

terra cotta Hard-fired clay, either glazed or unglazed, molded into ornamental elements, wall cladding and roof tiles.

tie rod A metal tension rod connecting two structural members, such as gable walls or beams, acting as a brace or reinforcement; often anchored by means of a metal plate in such forms as an "S" or a star.

tracery An ornamental configuration of curved *mullions* in a *Gothic sash.*

transom 1. The cross-bar separating a door from the window, *panel,* or *fanlight* above it. 2. The window above a *transom bar* of a door.

transom bar A horizontal element that subdivides an opening, usually between a door and window.

trefoil A three-lobed decorative form used in Gothic architecture.

tuck-pointing See *pointing.*

turret A small tower, usually supported by *corbels.*

viga The projecting, exterior end of a roof beam, usually decorative only, found primarily in Spanish Revival or Pueblo style buildings.

volute A carved spiral form in classical architecture; often used in pairs as in the *capitals* of *Ionic columns.*

voussoir A wedge-shaped component of an arch.

water table A ledge or projection, usually at first-floor level, that protects the foundation from water running down the wall of a building.

wrought iron Iron that is worked by being forged or hammered.

Reprinted, with additions, from the New York City Landmarks Preservation Commission Rowhouse Manual

Preservation Resources

A number of resources provide useful information to owners and stewards of historic properties.

Government Agencies

Philadelphia Historical Commission
Room 576, City Hall, Philadelphia, PA 19107
215-686-7660
website: http://www.phila.gov

The Historical Commission is the city agency responsible for designating and regulating historic properties and historic districts listed on the Philadelphia Register of Historic Places. It provides technical advice, maintains records and lists, and serves in an advisory capacity to the mayor and City Council on matters regarding historic preservation.

Pennsylvania Historical and Museum Commission, Bureau for Historic Preservation
Commonwealth Keystone Building, 2nd floor, 400 North Street, Harrisburg, PA 17120, 717-787-2891
website: http://www.phmc.state.pa.us

This state commission reviews nominations to the National Register of Historic Places, conducts initial review of federal tax credit applications for compliance with Secretary of the Interior's Standards, and provides information and technical assistance. Its Pennsylvania History and Museum Grants and Keystone Historic Preservation Grants are available to eligible organizations.

National Park Service
Northeast Field Office, Customs House, 3rd Floor, Philadelphia, PA 19101, 215-597-0652
website: http://www.nps.gov/chal

The National Park Service is a federal agency within the Department of the Interior. It serves as steward of National Historic Parks, manages the National Register of Historic Places and National Historic Landmarks, and reviews applications for federal tax credits for compliance with Secretary of the Interior's Standards. Technical Preservation Services in Washington, DC specializes in technical assistance and publications and can be reached by phone at 202-343-9583, fax 202-343-3921, email at hps-info@nps.gov hps-info@nps.gov and on the Internet at http://www.cr.nps.gov

Membership Organizations and Advocacy Groups

Preservation Alliance for Greater Philadelphia
1616 Walnut St., Suite 2110, Philadelphia, PA 19103
215-546-1146,
website: http://www.preservationalliance.com

The Alliance is the Philadelphia region's non-profit preservation organization, dedicated to the protection and appropriate development of Greater Philadelphia's historic resources – buildings, communities, and landscapes. A membership organization, Alliance programs include public advocacy, the acquisition and maintenance of facade easements, and the provision of rehabilitation grants and technical assistance to stewards of historic religious properties and house museums.

Preservation Pennsylvania
257 North St., Harrisburg, PA 17101, 717-234-2310
website: http://www.preservationpa.org,

This statewide membership organization assists Pennsylvania communities and groups to protect and utilize the historic resources they want to preserve. It also monitors state legislative activity, publishes a newsletter, and administers a grant program for Philadelphia preservation projects.

American Institute of Architects, Philadelphia Chapter
117 South 17th St., Philadelphia, PA 19103, 215-569-3186
e-mail: architect@aiaphila.org
website: http://www.aiaphila.org

The local chapter of the national organization has a long history of preservation advocacy: its Preservation Committee monitors endangered landmarks, advises the chapter on important issues and policies, and bestows the annual Landmark Building Award. Resumes and portfolios of architects with expertise in historic preservation are kept on file at the Resource Center of the AIA Bookstore and Design Center at 17th and Sansom Streets.

Association for Preservation Technology
P.O. Box 22443, Philadelphia, PA 19110
Contact: Richard I. Ortega, 610-565-1131
email: RICKORTEGA@aol.com
website: http://www.apti.org

This membership organization is devoted to the dissemination of technical information on preservation topics; members include architects, conservators, contractors, engineers, stewards of historic properties, and preservationists. The national organization publishes a scholarly journal and holds an annual conference, training sessions, and tours. The local chapter organizes monthly events, including tours, lectures, and conferences.

National Trust for Historic Preservation
Northeast Field Office, P.O. Box 18889, Philadelphia, PA 19119
215-991-5778
website: http://www.nthp.org

The field office of this private, non-profit organization chartered by Congress in 1949, serves Pennsylvania, Delaware, and New Jersey.

The Trust encourages public participation in preservation, provides limited financial assistance through grant and loan programs, and produces numerous preservation publications.

Partners for Sacred Places
1700 Sansom Street, 10th floor, Philadelphia, PA 19103
215-567-3234, e-mail: partners@sacredplaces.org
website:http://www.sacredplaces.org, www.sacredplaces.org

Partners is a national, non-profit, non-sectarian organization founded in 1989 to help Americans embrace, care for, and make good use of older and historic religious properties. Partners' goals are to help congregations and their communities be good stewards of their sacred places, to develop an effective national network of advocates for sacred places, and to enhance public understanding of the value of sacred places as irreplaceable centers that create and sustain community life.

Libraries/Research Facilities

The Athenaeum of Philadelphia
219 S. 6th St., Philadelphia, PA 19106
215-925-2688
e-mail: athena@philaathenaeum.org,
website: http://www.philaathenaeum.org and
http://www.philadelphiabuildings.org

The Athenaeum holds an extensive collection of architectural plans and drawings by noted Philadelphia architects and other materials useful in researching old Philadelphia houses. Philadelphiabuildings.org is an on-line resource with information on approximately 20,000 historic properties in the Philadelphia area.

Fisher Fine Arts Library, University of Pennsylvania
220 S. 34th St., Philadelphia, PA 19104, 215-898-8326
e-mail: finearts@pobox.upenn.edu
website: http://www.library.upenn.edu

The Fisher Fine Arts Library is open to the public, and has an extensive collection of books and periodicals on architecture, architectural history, and historic preservation.

Free Library of Philadelphia
Logan Square, Philadelphia, PA 19103
215-686-5322,
website: http://www.library.phila.gov

The Social Science and History Department provides access to some of the periodicals related to historic preservation and to the techniques involved in alteration, repairs, and rehabilitation of historic structures. The Map Collection and Print and Picture Department contain resources that may help in researching historic houses.

Historical Society of Pennsylvania
1300 Locust St., Philadelphia, PA 19107,
215-732-6200
website: http://www.hsp.org

The Society is an excellent source of materials on Philadelphia history, including census records, old newspaper articles, family histories, maps, and atlases. The Society also has a large collection of watercolors and early photographs of various buildings and landscapes throughout the Philadelphia area.

Philadelphia City Archives
3101 Market Street, Suite 150, Philadelphia, PA 19104
215-685-9401, e-mail: archives@phila.gov
website: http://www.phila.gov

The City Archives contains deeds and mortgages from the founding of Philadelphia to 1952, birth, death, and cemetery records up to 1915, and an excellent early photograph collection, all invaluable in researching an old Philadelphia house.

Philadelphia Department of Records
City Hall, Room 154, Philadelphia, PA 19103
215-686-2260, website: http://www.phila.gov

The Department of Records stores records of property transfers between 1865 and the present, useful in establishing a chain of title for an old house.

Urban Archives, Temple University
Samuel Paley Library, ground floor,
Philadelphia 19122, 215-204-8257,
e-mail: urban@www.library.temple.edu,
website: http://www.library.temple.edu/urbana

The Urban Archives exists to document the social, economic, and physical development of the Philadelphia metropolitan area from the mid-19th century to the present. Among the holdings are books on Philadelphia's history and growth, city directories and atlases, and newspaper clippings, including those from the Philadelphia Bulletin.

For Further Reading

The National Park Service produces publications on a wide variety of preservation topics. Publications listed with GPO stock numbers are available from the Government Printing Office, Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954, (202) 512-1800.

Preservation Briefs #1 - 14 can only be purchased by the set - GPO stock number: 024-005-01026-2. The texts of Preservation Briefs #1 - 40 are also available at www.housenet.com/HistoricHomeWorks/PBriefs/pb00-toc.htm

Other National Park Service preservation publications listed are available from the National Technical Information Service, 5285 Port Royal Rd., Springfield, VA 22161, (703) 487-4650.

For further information on ordering, the Park Service's Heritage Preservation Services can be reached by phone at 202-343-9583, e-mail at hps-info@nps.gov or on the Internet at http://www.cr.nps.gov

Introduction:

The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring and Constructing Historic Buildings. Technical Preservation Services, National Park Service, US Department of the Interior. 1995, GPO stock number: 024-005-01157-9.

The Secretary of the Interior's Standards for Rehabilitation with Guidelines for Rehabilitating Historic Buildings. Technical Preservation Services, National Park Service, US Department of the Interior. Unillustrated, 1990. GPO stock number: 024-005-01061-1. Illustrated, 1992, GPO stock number: 024-005-01091-2.

Kitchen, Judith L. *Caring for Your Old House.* Washington: The Preservation Press, 1991.

Leeke, John. "Controlling Old-House Maintenance." *Old-House Journal* (July-August 1993) pp. 40-45. Preservation Sourcebook. Mid-Atlantic Edition. Vienna, Va.: Preservation Publications, 1997. To order call (703) 255-6803.

Roofs, Cornices, and Related Elements:

Cotton, J. Randall. "Flashing Points: A Primer on Protecting Roof Junctures." *Old-House Journal* (November-December 1995) pp. 42-45. Leeke, John. "Half-Round Metal Gutters." *Old-House Journal* (July-August 1992) pp. 35-41. Levine, Jeffrey S. "Slate from the Source." *Old-House Journal* (July-August 1997) pp. 36-39.

Leeke, John. "Half-Round Metal Gutters." *Old-House Journal* (July-August 1992) pp. 35-41.

Levine, Jeffrey S. "Slate from the Source." *Old-House Journal* (July-August 1997) pp. 36-39.

– "The Repair, Replacement, and Maintenance of Slate Roofs" *Preservation Brief # 29.* Technical Preservation Services, National Park Service, US Department of the Interior, 1992. GPO stock number: 024-005-01109-9.

Sweetser, Sara M. "Roofing for Historic Buildings." *Preservation Brief # 4.* Technical Preservation Services, National Park Service, US Department of the Interior, 1978.

Masonry:

Arndt, Jacob. "Mastering Brick Maintenance." *Old-House Journal* (May-June 1994) pp. 38-42.

Chase, Sara B. and Kim Lovejoy. *Brownstone: An Owner's Care and Repair Guide.* Boston, MA: Society for the Preservation of New England Antiquities, n.d.

Garskof, Josh. "Brick by Brick: An Old-House Brick Glossary." *Old-House Journal* (May-June 1994) pp. 36-37.

Grimmer, Anne E. "Dangers of Abrasive Cleaning to Historic Buildings." *Preservation Brief # 6.* Technical Preservation Services, National Park Service, US Department of the Interior, 1979.

– *A Glossary of Historic Masonry Deterioration Problems and Preservation Treatments.*Technical Preservation Services, National Park Service, US Department of the Interior, 1984. Available in photocopy form: contact Technical Preservation Services, Attn: Archive, as listed above.

– *Keeping it Clean: Removing Dirt, Paint, Stains, and Graffiti from Historic Exterior Masonry.* Washington: Government Printing Office, 1987. GPO stock number: 024-005-01035-1.

London, Mark. *Masonry: How to Care for Old and Historic Brick and Stone.* Washington: The Preservation Press, 1988.

Mack, Robert C. "The Cleaning and Waterproof Coating of Masonry Buildings." *Preservation Brief # 1.* Technical Preservation Services, National Park Service, US Department of the Interior, 1975.

Mack, Robert C, de Teel Paterson Tiller, and James S. Askins. "Repointing Mortar Joints in Historic Brick Buildings." *Preservation Brief # 2.* Technical Preservation Services, National Park Service, US Department of the Interior, 1980.

McKee, Harley J. *Introduction to Early American Masonry: Stone, Brick, Mortar and Plaster.* Washington: The Preservation Press, 1973.

Speweik, John P. "Repointing Right." *Old-House Journal* (July-August 1997) pp. 46-51.

Tiller, de Teel Patterson. "The Preservation of Historic Glazed Architectural Terra-Cotta." *Preservation Brief # 7.* Technical Preservation Services, National Park Service, US Department of the Interior, 1979.

Weaver, Martin E. "Removing Graffiti from Historic Masonry." *Preservation Brief # 38.* Technical Preservation Services, National Park Service, US Department of the Interior, 1995. GPO stock number: 024-005-00158-7.

Windows:

Albrecht, Robert J. "Charleston Shutters: A Study in Repair Technique." *Old-House Journal* (May-June 1993) pp. 42-46.

Garskof, Josh. "Security Measures." *Old-House Journal* (July-August 1996) pp. 34-39.

Habel, Kurt. "Shutter Sourcebook." *Old-House Journal* (July-August 1996) pp. 47-50.

Leeke, John. "A Window on Sash Repair: How to Make and Install Replacement Parts." *Old-House Journal* (May-June 1995) pp. 46-51.

– "Sash Window Workshop." *Old-House Journal* (September-October 1991) pp. 30-35.

Myers, John H. "The Repair of Historic Wooden Windows." *Preservation Brief # 9.* Technical Preservation Services, National Park Service, US Department of the Interior, 1981.

O'Donnell, Bill. "Troubleshooting Old Windows: What To Do With Neglected Double-Hung Windows." *Old-House Journal* (February 1986) pp.16-23.

Smith, Baird M. "Conserving Energy in Historic Buildings." *Preservation Brief # 3.* Technical Preservation Services, National Park Service, US Department of the Interior, 1978.

Weeks, Kay D. and David W. Look. "Exterior Paint Problems on Historic Woodwork." *Preservation Brief # 10.* Technical Preservation Services, National Park Service, US Department of the Interior, 1982.

Zingman-Leith, Elan. "Historic Metal Windows: Their Architectural History." *Old-House Journal* (November 1986) pp. 422-428.

Doorways:

Bowyer, Jack, editor. *Handbook of Building Crafts in Conservation.* New York: Van Nostrand Reinhold Co., 1981.

Hiro, John E. *Millwork Handbook.* New York: Sterling Publishing Co., Inc., 1993.

Ireton, Kevin, editor. *Doors.* Newtown, CT: The Taunton Press Inc., 1995.

Parker, Harry. *Materials and Methods of Architectural Construction.* 3rd edition. New York: John Wiley and Sons, 1958.

Weeks, Kay D. and David W. Look. "Exterior Paint Problems on Historic Woodwork." *Preservation Brief # 10.* Technical Preservation Services, National Park Service, US Department of the Interior, 1982.

Porches, Stoops, Railings, and All the Rest:

Chambers, J. Henry, AIA. *Cyclical Maintenance for Historic Buildings.* Washington: U.S. Government Printing Office, 1976.

Gayle, Margot, David W. Look, and John G. Waite. *Metals in America's Historic Buildings: Uses and Preservation Treatments.* Washington: U.S. Government Printing Office, 1992 GPO stock number: 024-005-01108-1.

Magaziner, Henry J. "The Art of Ironwork." *Old-House Journal* (May-June 1997) pp. 32-39.

Sonn, Albert H. *Early American Wrought Iron.* New York: Bonanza Books, 1989.

Southworth, Susan and Michael Southworth. *Ornamental Ironwork: An Illustrated Guide to Its Design, History and Use in American Architecture.* New York: McGraw Hill, Inc., 1992.

Wallace, Philip B. *Colonial Ironwork in Old Philadelphia.* New York: Dover Publications, Inc., 1970.

New Construction:

Bock, Gordon. "Making Sense of Sensitive Additions." *Old-House Journal.* (May-June 1995) pp. 33-37.

Hale, Jonathan. "The Old Way of Seeing Additions." *Old-House Journal* (May-June 1995) pp. 38-41.

Weeks, Kay D. "New Exterior Additions to Historic Buildings: Preservation Concerns." *Preservation Brief # 14.* National Park Service, US Department of the Interior, 1986.

Selecting and Working with Building Professionals:

The New Old House Starter Kit. National Trust for Historic Preservation Information Series, 1997. Order Number 2196 from Information Series, National Trust for Historic Preservation, 1785 Massachusetts Ave. NW, Washington, D.C. 20036, (202)-588-6286

A number of publications are available from the AIA (American Institute of Architects) Philadelphia Chapter, 117 South 17th Street, Philadelphia, PA 19103, (215) 569-3186 AIA National, 1-800-AIA-9930.

Architectural Styles in the Girard Estate Historic District McAlester, Virginia and Lee McAlester. *A Field Guide to American Houses.* New York: Alfred A. Knopf, 1984.

Phillips, Steven J. *Old-House Dictionary.* Washington: The Preservation Press, 1992.

Poppeliers, John C., S. Allen Chambers, Jr., and Nancy B. Schwartz. *What Style is It? A Guide to American Architecture.* Washington: The Preservation Press, 1983.

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