Girard Estate Historic District

A Guide for Property Owners

Philadelphia Historical Commission

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Introduction

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. ("Architectural Philadelphia Yesterday and Today," by Coften Fitzgerald, *Architectural Record*, July 1913)

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 protects 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 in 1998 by the Preservation Alliance for Greater Philadelphia, demonstrated that Philadelphia's historic districts are more stable and retain more of their residents than other neighborhoods. They also attract more new residents. 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 Girard Estate 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 tries to address the issues that are likely to confront the historic property owner, but old buildings often present unique or unpredictable situations that may not be included here. Nor does the general guidance provided here constitute or guarantee Historical Commission approval for a particular project. The best strategy is to consult the staff of the Historical Commission when you are planning to work on your property.

The 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 prevents 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 as historic in its own right or situated in a historic district, that alters the exterior appearance or for which a building permit is required.

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 rights-of-way 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 review body, 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.

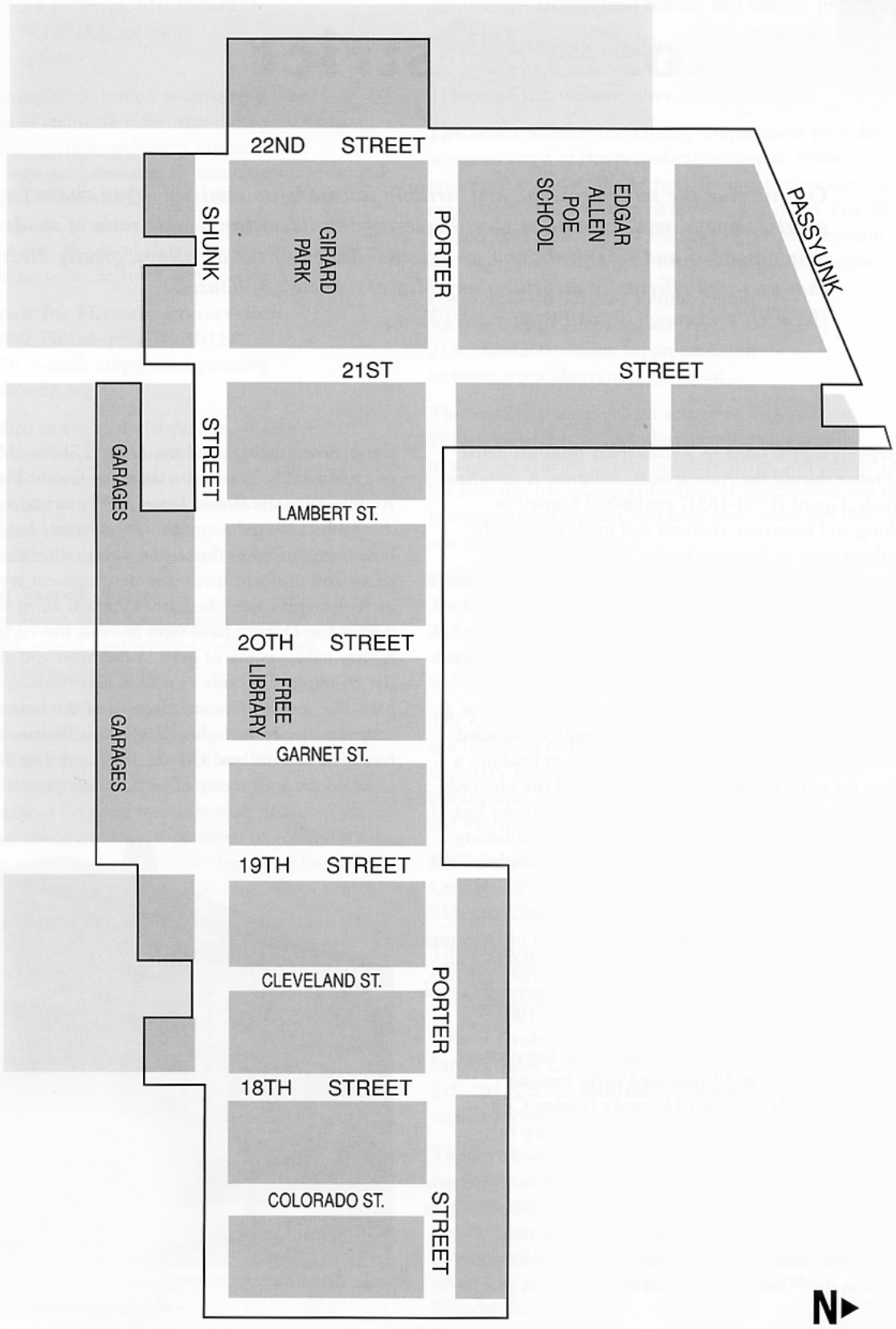
The Historical Commission will weigh the recommendations of the Architectural Committee and Commission staff with its own judgment at its next monthly public meeting, usually within two weeks, and will decide whether to approve, reject, defer (for not more than six months), or request resubmission of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

If the Historical Commission accepts the recommendations of the Architectural Committee, 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

Girard Estate Historic District



The Girard Estate Historic District

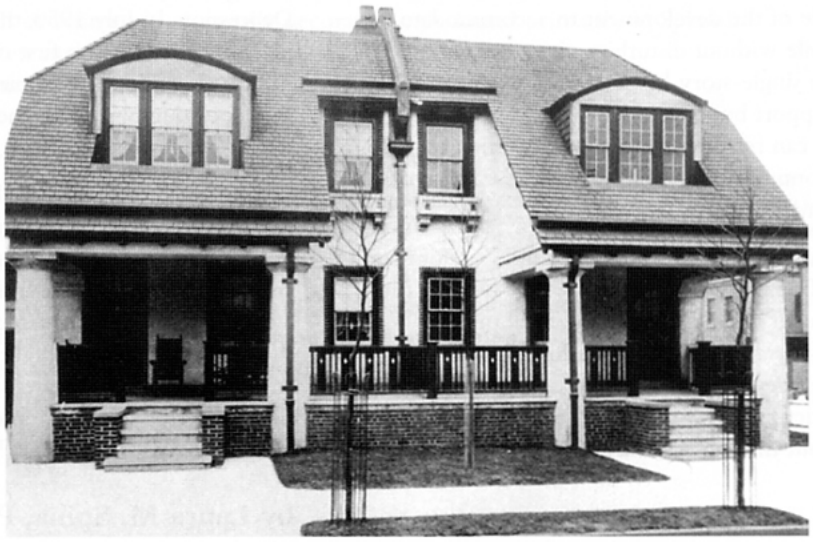
On entering the settlement, the first striking feature is its semi-suburban character, broad streets, smooth, well-kept grass plots bordering the sidewalks, double rows of shade trees, ample porches and side yards, and an external design of the dwellings, greatly diversified in character and effectually dispelling any idea of a "row" of houses.
(Ideal City Homes, Girard Estate, c. 1912*)*

Stephen Girard came to Philadelphia from his native France during the American Revolution. A merchant by trade, Girard (1750-1831) established himself in banking and insurance ventures and made himself the wealthiest man in America by the time of his death. Although he had property scattered around Pennsylvania and other states, Girard's country residence was the farm and house in Passyunk Township, now South Philadelphia, known as *Gentilhommiere*. Upon his death in 1831, Girard left his estate, valued at approximately $6 million, to various philanthropic institutions; however, the bulk of it went to the City of Philadelphia. The bequest included several conditions. The City was obligated to establish a college for poor, orphaned, white boys, and the proceeds and profits of any business and investment ventures had to support the College. The City complied by establishing Girard College. Another stipulation in the will stated "that no part thereof shall ever be sold or alienated." Therefore, the City could not sell any property, including Girard's house and farm. This restriction led the Board of Directors of City Trusts (the "Board"), the body responsible for the oversight of the estate, to create the development of Girard Estate as a community of rental properties in 1906.

Design elements such as curvilinear streets, low-density, cottage-like houses and landscaped parks became synonymous with Ebenezer Howard's Garden City movement at the turn of the twentieth century in England. Howard (1850-1928) espoused a new formula for cities, to be built on publicly owned land, with citizens as tenants, laid out on a radial plan with public buildings at the city center, residences radiating out and a rural, agrarian belt surrounding the city. This design became known as the "Garden City" and was copied in part throughout England and the United States. Many features of Howard's design can be found in Girard Estate. The Architect for the Board, James H. Windrim, along with his son John, designed a community of semi-detached twin houses in various architectural styles rather than the more dense and uniform rowhouse development typically found in Philadelphia neighborhoods. Almost all of the streets within the District have trees lined at the curb, many houses have a patch of grass at the front and almost all of the buildings have side as well as rear yards, creating a park-like setting. The architecture of the houses has a wide variety of styles, including Bungalow, Prairie, Mission, Jacobean Revival and Colonial Revival. The Board wished to avoid the monotony of other developments proudly

Mission Style houses

claiming that the "exterior appearance is varied and ornamented, affording a pleasing view of the block." Taken together these elements provided a suburban-like atmosphere for those who needed to live close to Center City.



Craftsman Bungalow houses

The design of the houses in Girard Estate resulted from a father-son architectural team. After graduating from Girard College, James H. Windrim (1840-1919) apprenticed with John Notman and his firm in Philadelphia. There he gained a strong background in drafting and design. In 1867, he opened his own firm and won the competition for the Masonic Temple in Philadelphia, establishing his career. Windrim became a Director of the City Trusts in 1871 for a term that lasted four years, and the Board appointed him as the official architect for Girard Estate in 1885. Windrim's son, John Torrey Windrim (1866-1934) began working for his father in 1882 and soon established himself as an accomplished architect. By 1892, few of the firm's projects could be attributed solely to either father or son. The work in the Girard Estate Historic District probably resulted from that collaboration, but it also may reflect their individual styles. The earliest houses, built in 1906 and 1907 along the north side of Porter Street, reflect a late nineteenth century view of architecture. The stepped parapets and the attachment of the bay windows show an attempt to create something new, but demonstrate the lack of a modern vocabulary. Later houses, in which the Arts and Crafts and Praine styles are evident, represent a twentieth-century approach to house design. This shift of architectural styles may illustrate the difference between the work of father and son.

The turn of the century fostered an atmosphere of reform, and the housing industry did not escape change. Advocates of the new Garden City planning philosophy also stressed the importance of clean, open-planned houses with a full array of amenities. The Board agreed, stating in the brochure for the new houses that, "the almost alarmed awakening of public opinion upon the subject of sanitation has led to widespread distrust of the old-fashioned ideas concerning the disposal of waste and the toleration of dust and ashes within the home." As an answer to reformers' demands, the houses in Girard Estate had fully appointed kitchens and baths. A central heating plant, now demolished, provided heat to all buildings within the development, eliminating the need for individual furnaces. Reformers emphasized the need for a healthy environment, and the elimination of the ashes from individual furnaces helped keep each house clean. Numerous windows admitted light and air, yards on two or more sides and front porches were included in the design of each house for the comfort and health of the tenants. The Board took pride in the workmanship and use of innovative mechanical systems. In the belief that well-constructed houses would fare better and require fewer expensive repairs, the Board chose the best possible materials and employed its own builders.

As a part of the self-contained community, the development's design also included a school and library within its boundaries. In 1913, the Board of Education built the Jacobean Revival school on the southeast corner of 22nd and Ritner Streets. The school, designed by Henry deCoursey Richards, follows the "Gary Plan" for school design and is identical to five other schools in the City. William Wirt had invented the "Gary Plan" for the School District of Gary, Indiana. His revolutionary plan included auditoriums, gymnasia, libraries, spaces for home economics and shop, and specialized interior spaces for various curricula. Also in 1913, construction finished on a library on the northeast corner of 20th and Shunk Streets. The Passyunk Branch of the Philadelphia Free Library was one of twenty-five libraries built by the City of Philadelphia using a grant from Andrew Carnegie. Along with his generous funding for these libraries, Carnegie suggested that their design include a large well-lit reading space, open book stacks, public meeting spaces, and a central librarian's desk all within a classically designed rectangular building.

The Board also added four rows of garages at the south side of the development to accommodate the automobile without disturbing the gracious street plan. The single-story, brick garages reflect the design of the support buildings found at *Gentilhommiere*. Area residents can rent these garages still owned by the Board, continuing the tradition of the City's role as landlord.

By 1916, Girard Estate reached its full development, and the Board did not add to the site. Despite the development's grand success, the ideal public landlord-private tenant relationship espoused by Howard suffered its own problems. Rent increases caused friction between tenants and the Board throughout the subsequent decades, and Girard Estate did not escape the financial troubles of the Depression. In July 1950, the Board sought court permission to sell the first of the 481 houses within the development. Like their rentals, these houses sold in record numbers, with the entire development sold in just over two years.

Girard Estate was and is a clear departure from the two-story, brick rowhouse development typically found in South Philadelphia. The garden-like setting and architecturally mixed, semi-detached houses create a neighborhood unique in character. The influence of the Garden City movement and the vision of James and John Windrim, created a rare example of a suburban-type of development in an urban area.

by Laura M. Spina, Philadelphia Historical Commission

Early method of trash removal.

Roofs, Cornices, and Related Elements

Water from a slate roofed building, if allowed to run into a cistern (after the first shower has washed the slate), is the purest and best water that can be used for drinking. Allowed to run off from buildings into tubs or barrels, it serves for watering cattle or horses, and the beasts will drink it in preference to any other. *(Bangor Excelsior Slate Co.,* Easton, Pennsylvania, 1897 trade catalog)

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 sloped roof greatly affect a building's appearance. The function of 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 destructive leaking.

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, or 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.

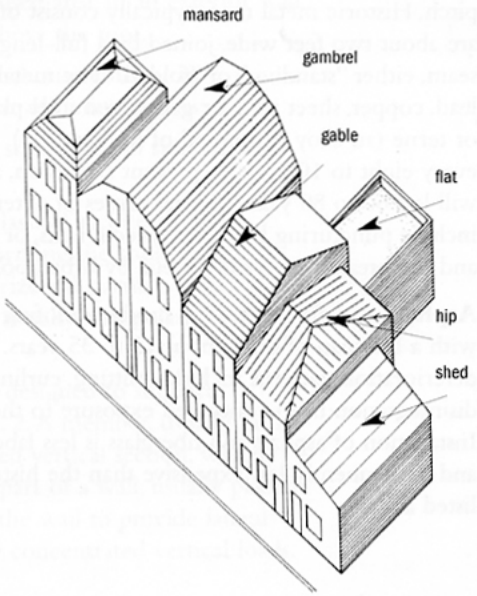
Gutters and downspouts should be inspected at least twice a year, more if they clog with leaves and debris from nearby trees. The installation of gutter screening at downspouts and over the full length of open gutters can minimize such clogging, although they will still need frequent cleaning.

Roofing Materials

The typical Girard Estate house has a pitched roof with several intersections and penetrations, covered with a variety of roofing materials.

Historic roofing materials for **sloped** roofs that are typical to Philadelphia and to the Girard Estate

Roof shapes.



Historic District include slate, tile, and metal. The life span of each roof material depends on many factors, including its weathering properties, the method used to fasten the material, and the roof configuration and orientation.

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

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 only 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.

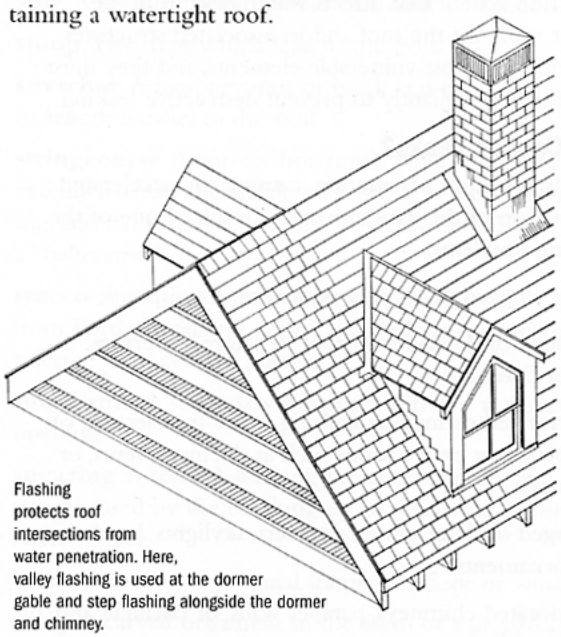
Asphalt and fiberglass roofing is produced in long sheets, designed to give the appearance of individual shingles. Some varieties purport to simulate historic materials, with varying degrees of success. However, their use as substitutes for historic roofing materials is usually discouraged, particularly on visible street facades.

Flashing

Flashing, 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.



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

Inappropriate gutter treatment

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 and 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.

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

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; their removal exposes the building facade to excessive weathering.

Cornices should be kept well sealed and periodically repainted. Their removal, alteration, or obliteration

Original cornice

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.

Aluminum cladding hides the original cornice details

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 allowing water 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 to make sure that the chimney operates safely.

Other sources of water infiltration at chimneys include open and deteriorated mortar joints. These should be repaired as described in the chapter on Masonry to match the color, texture, tooling, and constituent composition of the original mortar. 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.

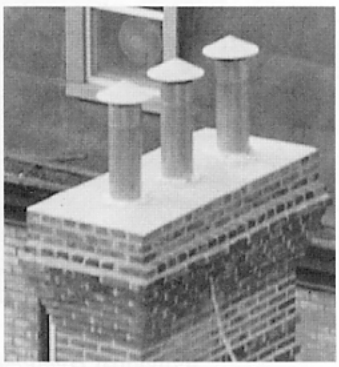
Antennae and satellite dishes should be installed so they are not visible from the street.

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

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.



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

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 consultating 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 cornices or other decorative elements to restore their original appearance
- Replacing or repairing flat built-up bituminous roofs

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 and parapet walls
- Installation of antennae or satellite dishes

Masonry

Stone has been used as a building material for the finest buildings in many lands, buildings that endured where structures of other materials decayed. *(Introduction to Early American Masonry: Stone, Brick, Mortar and Plaster,* by Harley J. McKee, 1973.*)*

The houses in the Girard Estate Historic District have a unique mixture of masonry materials, including brick, schist and stucco. This variety complements the different architectural styles found within the district and contributes to the neighborhood's rich textures 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, it 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 or 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

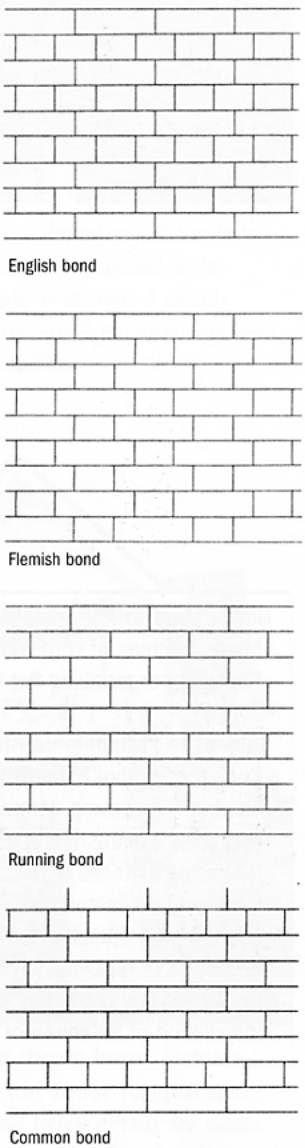
Brick is the predominant building material throughout Philadelphia, testimony to the abundance of good, cheap local clay. Until just before the Civil War, brick was molded by hand, resulting in a relatively soft and porous brick that was somewhat irregular in shape and color. Machine-made brick is harder,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

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, such as sandblasting, makes bricks more susceptible to this type of deterioration. (See section on Cleaning Masonry)

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

Brick bond patterns.



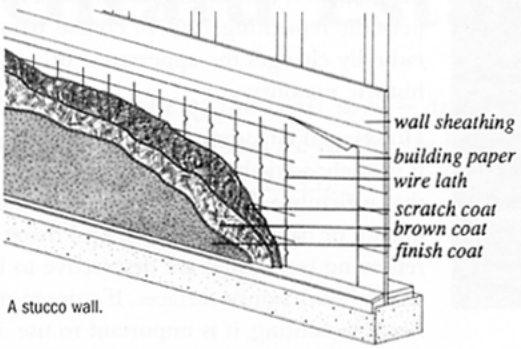
English bond

Flemish bond

Running bond

Common bond

allows moisture to pass to the wall surface and evaporate. Nevertheless, it is not advisable to stucco a brick facade, since it may damage the brick and conceal structural problems.



A stucco wall.

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 a curbing material.

Limestone was commonly used for lintels, window sills, 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 and to acid rain, which converts it to friable gypsum. Limestone colors include brilliant white, cream, and gray.

Marble is used primarily as building ornament and is susceptible to damage by airborne pollutants.

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

Cleaning

Cleaning masonry can result in serious problems that far outweigh any aesthetic gains. Brick, especially, has a hard, protective surface that is formed when fired during the manufacturing process and can be damaged by cleaning, leaving the wall vulnerable to 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 most gentle 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 test patch before proceeding.

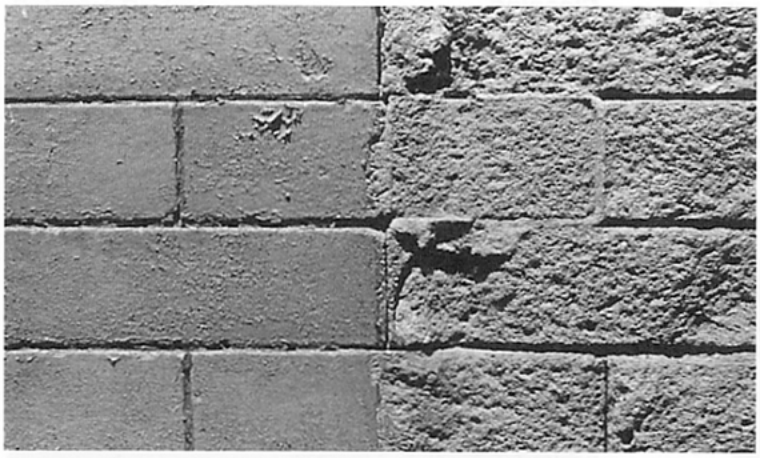
A natural-bristle brush, mild household detergent, and buckets of water are all that is needed in a majority of cases. If this method fails to produce satisfactory results, a practiced contractor can test more aggressive methods.

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. 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 of time avoids the abrasive effects of pressurized washing but saturation of the facade may cause mildew, rusting of any metal in the wall, or damage to the building interior. Steam cleaning is another option, used only for special problems of oily stains or intricate surfaces, since it is really 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 a problem.

Depending on its nature, graffiti can be removed from masonry surfaces with various methods. Use the most gentle 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,



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

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 to whether the product leaves a faint image (a "ghost") or causes 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, too, can create an impermeable film and cause serious moisture problems and spalling. Painting also creates unnecessary maintenance; like all surfaces, masonry will need periodic repainting. And, of course, 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, or 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 subject to damage by frost. Missing masonry elements can also 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. Epoxy mixed with the powder of the masonry to be patched bonds 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 materials that cannot be matched, such as brownstone.

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 a constant 45-degrees Fahrenheit or above for a 72-hour period from the commencement of work, or the materials will not properly cure. The Historical Commission requires that a patch be reviewed and approved by the Commission staff before the work begins.

Repointing

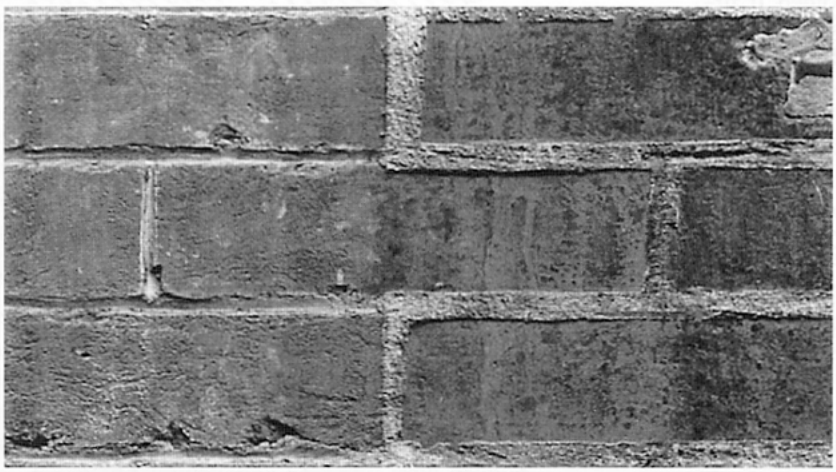
Like the flexible ligaments that bond bone to bone in the human body, mortar is a malleable substance that bonds bricks or masonry units to one another. Repointing, sometimes called tuck pointing, is the process of removing deteriorated mortar, and replacing it with new mortar.

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 with the slight movements caused by fluctuations in temperature, building settlement, and vibrations. 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.

Removal 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 removal of the protective skin of the brick will lead to failure.

Application of new material should also 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 buildings, recommended by the New York City Landmarks Preservation Commission, is as follows:



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.

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

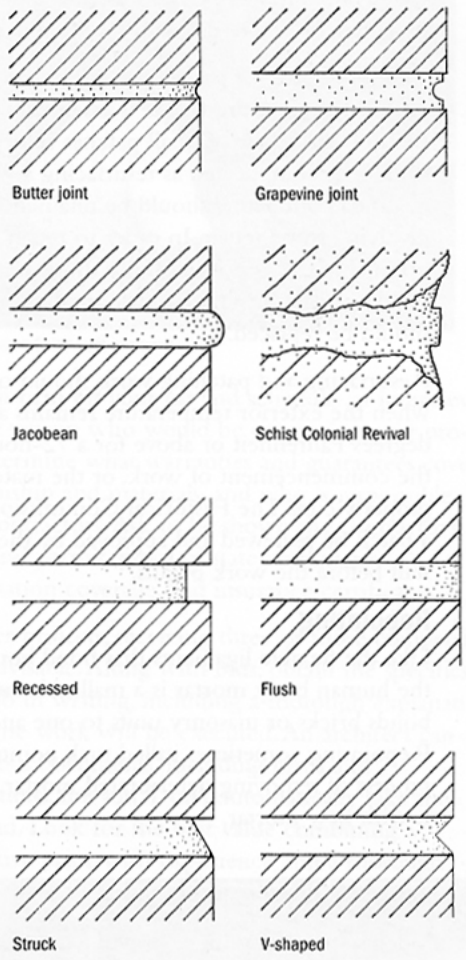
Encasing a masonry structure in aluminum or vinyl is not allowed in the historic district. Siding obliterates the historic appearance of the building and masks any potential problems on the building surface.

Repaired stucco must have a smooth finish; special decorative finishes, such as swirls, 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.

Mortar joint profiles.



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

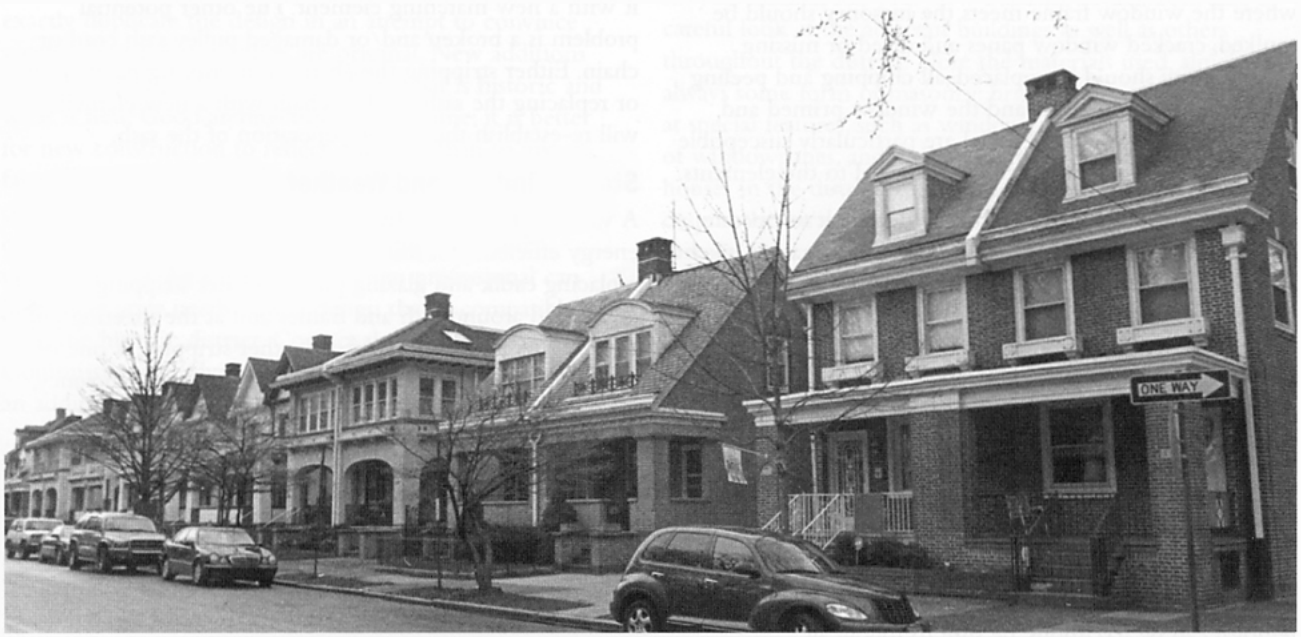
Windows

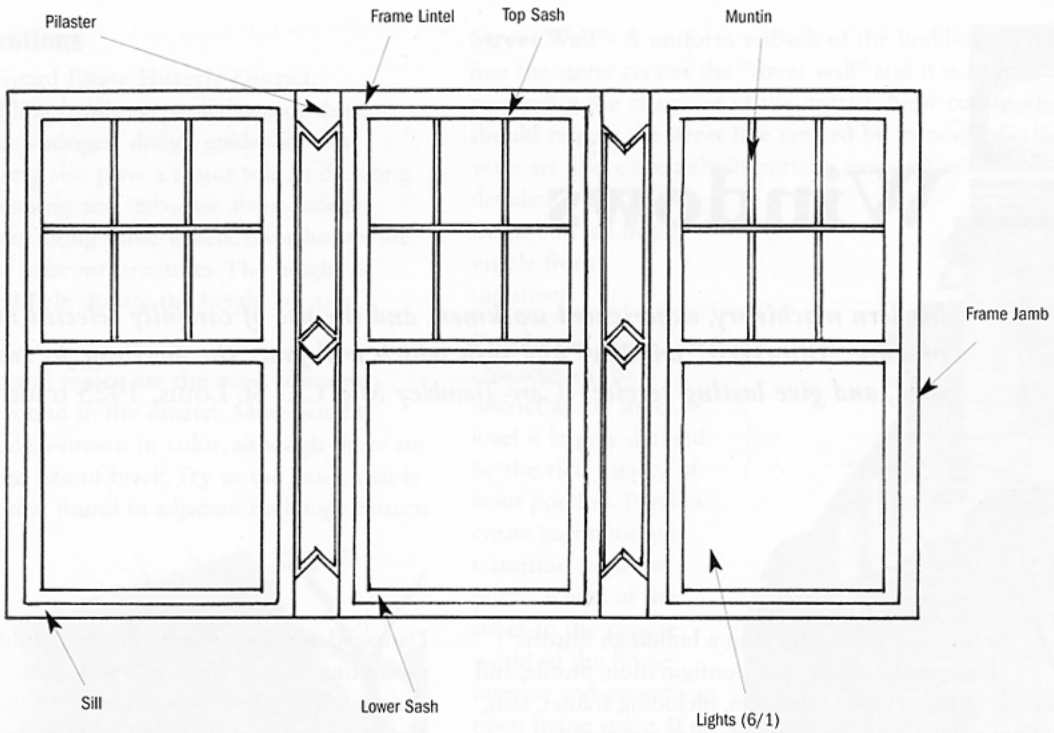
Modern machinery, experienced workmen, and the use of carefully selected materials produce "Bilt-Well" windows and sash which will grace the dwelling, fit snugly where used, and give lasting service. *(Carr-Trombley Mfg. Co.,* St. Louis, 1925 trade catalog*)*

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 Girard Estate Historic District have been replaced over the years, often with inappropriate substitutes. Many houses, for example, were fitted with bay windows on the first floor. Studying the building's twin or 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 system. 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

Left, preserve original windows. Right, an inappropriate window replacement.

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, then the element is beyond traditional repair.

Even then, wholesale replacement may not be required. In many instances, the replacement of several elements may be possible. Intact elements should always be repaired, restored, and reused. Almost always, 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,

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

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.

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 original grilles, 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 contained such features is generally discouraged, and the use of alternative security measures including interior bars, should be explored.

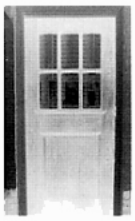
by Robert Powers and Cynthia Rose Hamilton, Powers & Company, Inc.

Not Subject to Philadelphia Historical Commission Approval

- Caulking
- Weather stripping
- Reglazing
- 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



Doorways

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, March 21, 1887*)*

Although the architecture of Girard Estate varies greatly from house to house and street to street, all of the doors in the district have similar characteristics. Each door has some glazing or glass panels to let light into the vestibules as well as wood panels below. Initially, all of the doors were stained, not painted. Many houses in Girard Estate retain the original doors, adding to the district's integrity.

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 result in unattractive paint build-up at the joint where the panels 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 door frame, 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 also useful when locksets or hinges are changed and the mortises of the former hardware exposed.

Original door

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.

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

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 houses in the Girard Estate neighborhood have plain brick reveals at the door, with some molded wood casings and simple lintels and sills.

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 treatments. So is adding an architectural element that was never there or is of the wrong style. An ornate Victorian-style surround added to an Arts and Crafts 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 about its possible removal and replacement 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. 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.

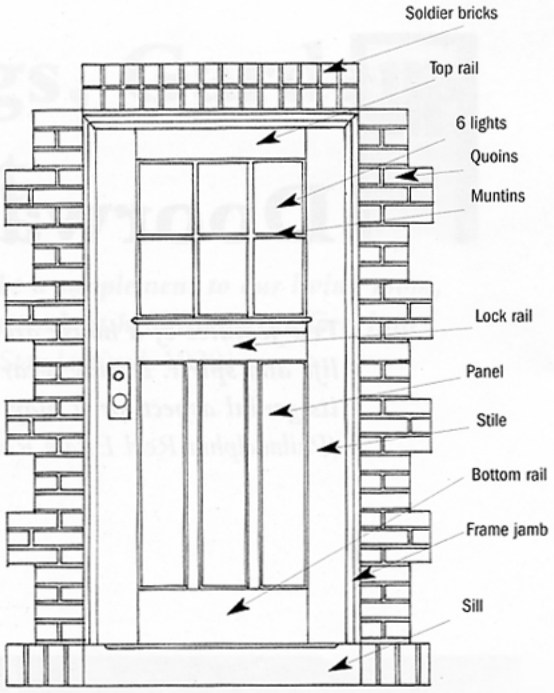
Door Types and Configurations

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 when you wish to change a door for guidance in choosing an appropriate design.

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 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.



How a door is constructed.

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. In the early 20th century, many houses that were designed in medieval Revival styles had wrought-iron hardware reminiscent of the work of medieval artisans. 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.

Awnings, Storm and Screen Doors

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

Fixed aluminum awnings are not appropriate for any historic house.

Lighting and Electrical Devices

Most houses in Girard Estate were built during the period when the use of electricity was becoming common. Nevertheless, the 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 into 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 or frame
- Replacing or installing locks
- Replacing broken glass
- Weather stripping

Subject to Philadelphia Historical Commission Approval

- Installing exterior lighting, intercoms and 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 or surround
- Altering door material or configuration (size, number of doors, transoms, or glazing)

Porches, Railings, Gardens and All the Rest

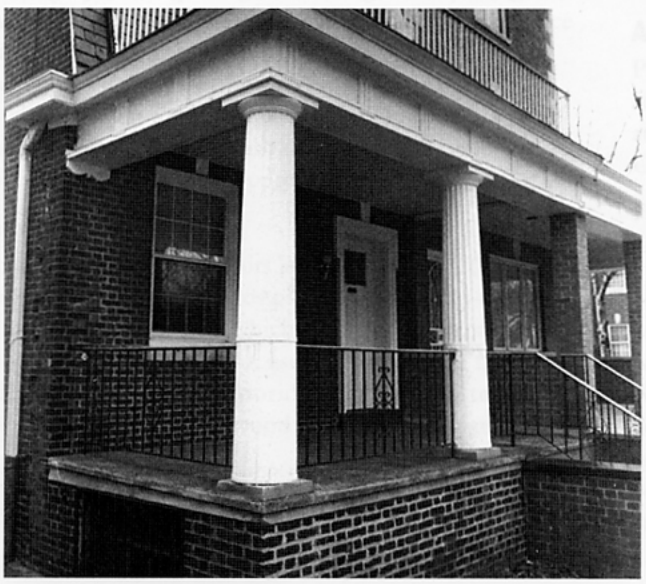
The porch is an American idea. We want the porch to be a supplement to our living room, and we depend upon it to bring the outdoors, with its attendant health and comfort, into our houses. *(Interior and Exterior Architectural Woodwork Standardized,* 1920*)*

The rich and varied architectural character of the Girard Estate Historic District is distinguished by the placement of the houses back from the public walks, the separation of the houses by side yards and the employment of front porches, all of which lend a suburban quality to the neighborhood. The porches, in particular, are an important architectural feature, and play a significant role in defining the streetscape of the district.

Porches

In the northeastern United States, porches have been a popular architectural device since the mid-nineteenth century, when they were used to connect houses and their inhabitants with the landscape. In suburban settings like Girard Estate, the porches overlook tree-lined streets and parks. At the time the Estate's houses were built — before automobiles became the common mode of transportation — the porches also responded to the pedestrian lifestyle, providing places to meet and converse with neighbors and passers-by.

An example of an inappropriate porch enclosure.



An original porch provides a sheltered open space.

For these reasons, the porch is one of the most important defining features of the houses in the neighborhood. The void or open space created by the porches, especially those that are recessed, plays a significant role in the appearance of the houses. The Historical Commission would not approve enclosing a front porch because this would drastically change that appearance and sense of open space.

In keeping with the variety of architectural styles in the Girard Estate neighborhood, porches and their components – ceilings, cornices and brackets, railings or solid walls, columns or posts – were constructed in a range of building materials. However, almost all the houses have porch floors and stairs made of concrete with a prominent stone aggregate.

Steps

Concrete porch steps in the historic district are flanked by side (or cheek or knee) walls of brick or stone. As with all masonry construction, deterioration will occur when cracks develop through settlement or age, and when mortar between bricks or stones erodes. These conditions most often occur due to moisture infiltrating the masonry structure; cracks allow additional moisture to enter the masonry, accelerating the deterioration process.

Mortar in open or deteriorated masonry joints can be replaced, and concrete can be patched. When replacing

Original steps

Altered steps

mortar (repointing) or patching concrete, 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. For more details, see the chapter on Masonry.

Railings

Original porch railings and columns reflect the architectural style of the houses, and were built using similar materials. Tudor Revival houses, for example, may have round stuccoed porch posts with solid or pierced stuccoed railings. Colonial Revival houses in the district are more likely to have wooden porch columns and wooden railings. It is important that these original porch features be preserved.

Painting these exterior building elements on a regular, as-needed basis, is often the easiest and best way to achieve preservation. When deterioration or other damage occurs these features should be repaired rather than replaced. Often only a portion of a wooden railing or a wooden baluster or two may be damaged. Partial replacement is relatively easy with wood. For example, only the deteriorated portion of a railing can be removed and replaced with a piece to match (dutchman repair). New balusters can be made to match exactly the originals. All new wood elements should be primed and then painted to protect the new wood.

Some houses, such as the Mission style houses, have stuccoed porch railings. Stucco is similar to concrete in that it is made from a mixture of lime, sand and Portland cement. Often stucco was given a textured finish and then painted. When making repairs to stucco, it is important to expose a sound substrate (stucco may have been applied directly to a masonry substrate, or to a wood lath substrate) so the new stucco keys (attaches soundly). Use a lime stucco mix and restore the original texture of the stucco in the new work.

In some cases, original wood railings have been replaced with iron ones. Rusting, caused by moisture, is the primary cause of iron deterioration. Keeping iron railings painted is a simple and effective way of preserving them. Rust can be removed by hand scraping and wire brushing, and this should be followed immediately by the 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 can remedy loose connections.

Porch steps or floors may crack at the point where a railing post is set into the surface. Rainwater ponding on the masonry surface at the railing bases 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. 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 hold up under normal thermal expansion and contraction.

Gardens

Another major feature of the Girard Estate Historic District is the many front and side yards. These small plots of grass and trees offer residents a bucolic suburban atmosphere within the city limits and play a major role in the character of the Girard Estate neighborhood. 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.

Garages

Although Girard Estate was begun before the advent of the automobile, the invention became a major part of residents' lives in the 1920s. The Board of Directors acknowledged the existence of the automobile by building garages on the southern boundary of the district. Banks of connected garages with patterned brick end-walls line both sides of the large alley between 19th and 21st Streets just south of Shunk Street. Nearly all of the original wood, paneled garage doors survive, many with one pierced panel at the top for ventilation. Off-site garages such as these were quite acceptable at a time when automobiles were primarily used for Sunday drives. Changes to these garages must be reviewed by the Historical Commission

by Suzanna Barucco,
Martin Jay Rosenblum, RA & Associates

Procedures Not Subject to Philadelphia Historical Commission Approval

- Minor sidewalk repairs
- Repairing or painting wood railings or columns
- Landscaping garden areas

Procedures Subject to Philadelphia Historical Commission Approval

- Repairing masonry steps
- Painting masonry steps, cheek walls or railings
- Removing paint or cleaning masonry porch elements
- Replacing steps or railings
- Major sidewalk repairs
- Paving of garden areas

New Construction

Visitors from out of town are wont to sigh with rapture when they see our trim blocks of tall brick buildings — and exclaim, "Oh, I wish we had something like this in New York!"
("Pine Street," by Christopher Morley, *Pipefuls,* 1921)

The Girard Estate Historic District is highly intact, with almost all buildings contributing to the historic character of the district. Opportunities for new construction are limited since no empty lots exist within the neighborhood. Normally, new construction on empty lots in a district 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; however the Historical Commission does review, for approval, any changes or additions to existing structures within the district.

Additions and alterations should not obscure, damage, or destroy character-defining features, yet they should not exactly duplicate the design in an attempt to convince viewers into believing they are original. 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, materials, 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. Contact the staff of the Historical Commission for advice when you begin to contemplate an addition.

Where to Begin?

The predominant feature of the Girard Estate Historic District is the varied architecture of semi-detached houses with front, side and rear yards. Virtually all houses have front porches, an important defining characteristic of the neighborhood. While built in a rich variety of styles, from Craftsman to Colonial Revival, the houses are remarkably respectful of their neighbors and they share many traits. These shared characteristics 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 stone. Look at special features, such as windows, dormers, the number of windowpanes, and style of windows. Note how most houses in the district are consistent in scale and materials, despite the variety of styles. Taking design cues from the surroundings is a good way to ensure sensitive new construction in the district.

Design Considerations

Height - In the Girard Estate Historic District, consistency of building height, typically two or three stories, is one of the strongest design guides for new construction. (Zoning also plays a major role in dictating building heights, massing and setbacks). Even though building heights vary along some streets, most houses are similar in height to adjacent structures. The height of adjacent houses will help dictate the height of your new construction.

Materials - Brick and stucco are the most common building materials found in the district. Most brick is typically a rich reddish-brown in color, although there are variants in color and size of brick. Try to use brick that is similar in color to that found in adjacent buildings. Stucco

These large-scale additions alter the historic character of the houses and negatively impact the district.

treatments come in a variety of texture and styles, some highly decorative. Again, try to use stucco consistent with that in surrounding buildings.

Street Wall - A uniform setback of the buildings as they line the street creates the "street wall" and it is essential to preserving the character of the district. New construction should respect the street line created by its neighbors. Side walls are also extremely important; most are as richly detailed as the house fronts and are highly visible from the street.

A small rear addition provides more space while retaining the historic integrity of the building.

Porches - The character of the district at the street level is largely defined by the rich variety of front porches. Porches create an important transition from the public world of the street to the private world of the house interior and provide an open living space. If an enclosed rear porch is desired, the new exterior wall should be recessed behind existing porch columns and railings. The new enclosure should be relatively transparent and consistent in detail with the surrounding buildings.

Roofline - The roofline and type of roof should be consistent with surrounding buildings. New roofs should be similar in configuration to the existing roofs in slope, configuration and materials.

Rhythm of Openings - Windows and doors establish a rhythm for the street, and any new construction should be harmonious. Windows should be of similar size and overall placement. Particularly important is matching the window sill and head heights to the adjacent buildings.

A design professional can synthesize all of these design ideas, while at the same time establishing a building that will meet the owner's needs. Just as unsympathetic construction can interrupt the rhythm and historic nature of the district, sympathetic new construction can add to its richness and vitality.

by Michael Stern, AIA,
Foundation for Architecture

Selecting and Working with Building Professionals

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, August 16, 1886*)*

Much home maintenance and even 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 Philadelphia 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 – 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, or electrical or mechanical systems. Through a process called programming, you and your architect discuss your requirements, needs, and budget. The architect then helps define what is to be built and establishes the project's scope. The architect can write contract documents, including 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 being built according to the plans and specifications you approve. 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? Referrals can be given by the AIA (American Institute of Architects) Philadelphia's Architects Resource and Referral Center, which offers information about architectural firms and examples of their work according to numerous project categories (215-569-3186). 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 Philadelphia 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 projects similar to yours.

A mason applying a finish coat of stucco.

- Call each firm on your list and schedule an interview 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 be shown 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, including plans and specifications, for you. 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, Susan Maxman & Partners 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 Girard Estate 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 varied architecture of Girard Estate exemplifies the many styles popular at the turn of the 20th century. Within its boundaries stand houses influenced by 16th century England, the Mission style of the 17th century southwest, 18th century Philadelphia, and the Prairie School of the 20th century mid-west. Many of the buildings have a mixture of elements from various periods of architecture; few of the buildings are pure expressions of an single style.

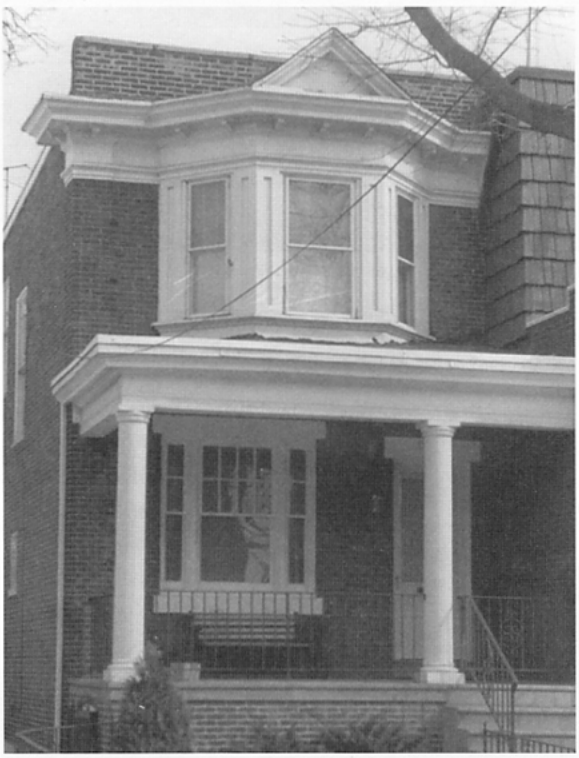
For this reason, the Historical Commission in its deliberations rarely takes purity of architectural style into account. Documentary evidence – old photographs, drawings, and other accounts, with many available at the Commission – is far more reliable as a basis for rehabilitation, as is a careful study 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.

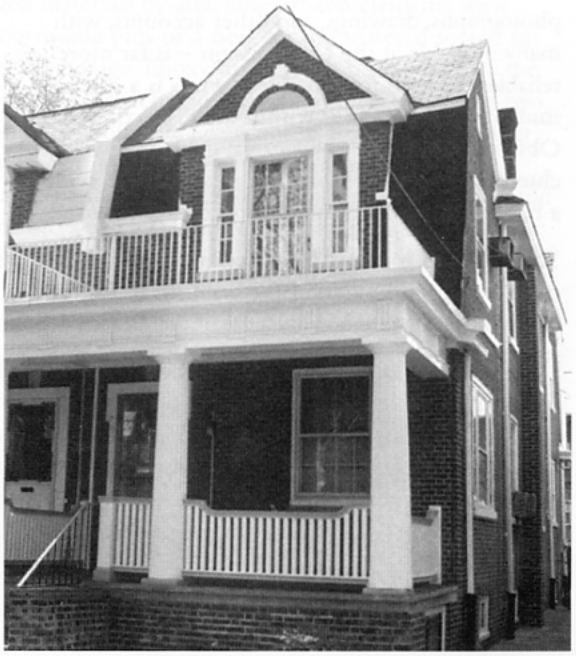
What follows is a very brief look at the styles most often found in the Girard Estate Historic District. For a more thorough discussion of architectural styles, refer to the books in For Further Reading.

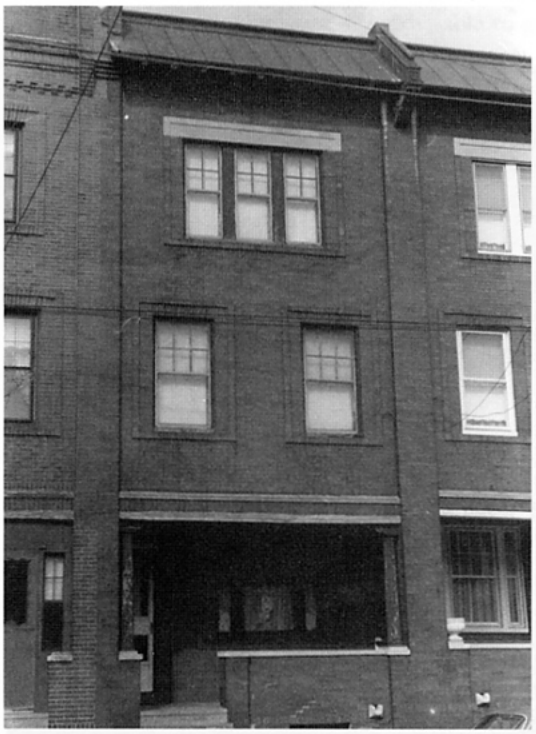
An early photograph of two of the Jacobean Revival Style houses.

Colonial Revival –

Looking back to 17th century American architecture, the Colonial Revival style uses many of the same elements, including classical columns, pediments and denticulated cornices. Four houses in Girard Estate interpreted these elements in very different ways.





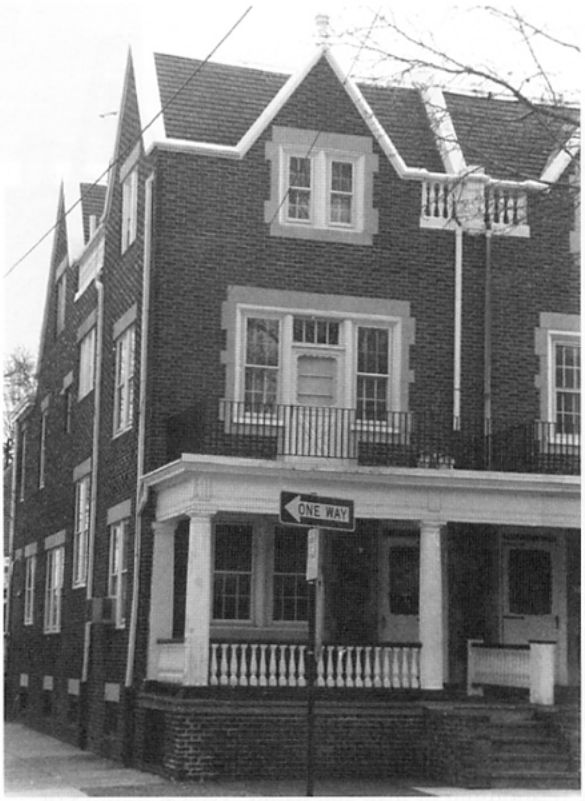


Arts and Crafts – Emerging from the British and American Arts and Crafts movement, this architectural style emphasized the tactile qualities of building materials and incorporated simple "honest" decoration, such as brick patterns, geometric designs and overhanging eaves.

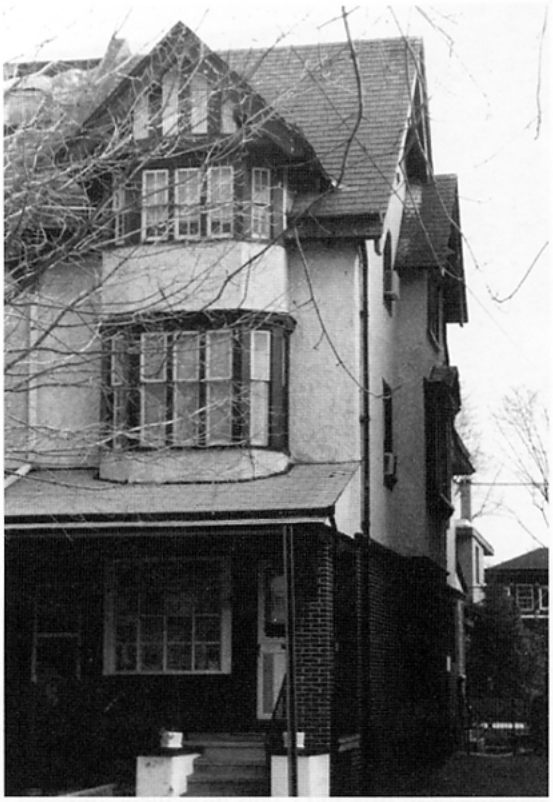
Bungalow – A product of California, the bungalow celebrated the organic relationship of man and nature. Typical features of this style include strong low-slung rooflines with dormers, massive columns, and a mix of materials, including stucco, stone and brick.

Arts & Crafts/Bungalow – This combines two styles, adopting a mixture of materials and brick patterns of the Arts & Crafts style and the strong sloping roofline with a dormer typically found on Bungalows.

Prairie – A mixture of strong horizontal lines, hipped roofs, overhanging eaves, ornate brickwork, and variety of materials characterize the Prairie style. Associated with Frank Lloyd Wright and his followers, this style became popular at the turn of the 20th century, especially in the mid-west.



Jacobean Revival – A revival of this architecture from England, the Jacobean Revival style mixes medieval and renaissance forms; brick walls with stone coping and window surrounds, columned porches and other classical details.

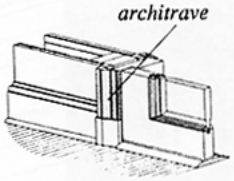


Tudor Revival – Also an adaptation of medieval English architecture, the Tudor Revival style usually has a stucco façade with wood details mimicking half-timbering, small narrow windows and overall strong vertical lines.

Mission – An interpretation of architecture found in America's southwest, the Mission style usually has stucco walls with brick or tile details, a tile roof and broad, low arches.

Mission/Tudor – This stucco house features a unique mix of Mission and Tudor Revival styles. The vigas (joist ends) and brick details are taken from Mission architecture, while the overall verticality and strong gable roofline are found in the Tudor Revival style.

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 crowning a 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 One 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.

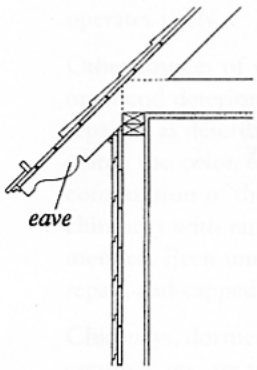
dormer A vertical structure, usually housing a window, that projects from a sloping roof and is covered by a separate roof structure.

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.

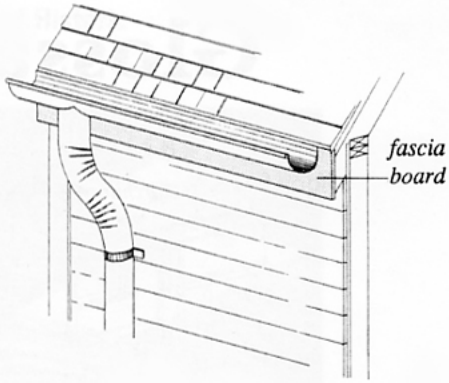
facade The main exterior face of a building, sometimes distinguished from the other faces by elaboration or architectural or ornamental details.

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 pattern composed 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 in 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, a double-sloped roof on the building front, below a flat roof.

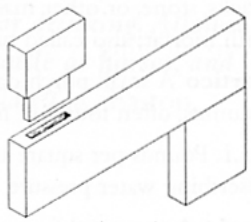
meeting rail The horizontal rail of a double-hung window sash designed to align with the adjacent rail of the other sash.

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.

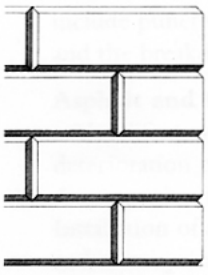
rock-faced Masonry treated as a rough surface that retains or simulates the irregular texture of natural stone.

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

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

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.

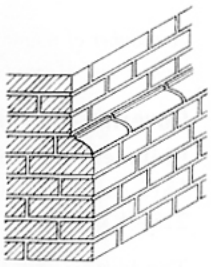
turret A small tower, usually supported by corbels.

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.



water table

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

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Preservation Resources

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

Government Agencies

Philadelphia Historical Commission
1515 Arch St., 13th Floor, Philadelphia, PA 19102
215-683-4590

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: 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: 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 and on the Internet at www2.cr.nps.gov

Membership Organizations and Advocacy Groups

Preservation Alliance for Greater Philadelphia
1616 Walnut St., Suite 2110, Philadelphia, PA 19103
215-546-1146, e-mail: historic@libertynet.org
website: www.libertynet.org/~historic

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.

The Foundation for Architecture
1737 Chestnut Street, 2nd floor, Philadelphia, PA 19103
215-569-3187, e-mail: ffa@dca.net
website: www.foundationforarchitecture.org

The Foundation, a membership organization, promotes appreciation of the built environment and architectural history through its Architecture in Education Program, which brings courses and workshops to schools, and through its extensive roster of walking tours and educational programs available to the public.

Preservation Pennsylvania
257 North St., Harrisburg, PA 17101
717-234-2310, e-mail: info@preservationpa.org
website: 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
117 South 17th St., Philadelphia, PA 19103
215-569-3186, e-mail: architect@aiaphila.org
website: www.aiaphila.org

This 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: 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
P.O. Box 18889, Philadelphia, PA 19119
215-991-5778, e-mail: nthp@libertynet.org
website: www.nthp.org

This field office of the national 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: 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: www.philaathenaeum.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.

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

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: www.phila.gov/phils/carchive.htm

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

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: 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 www2.cr.nps.gov

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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.

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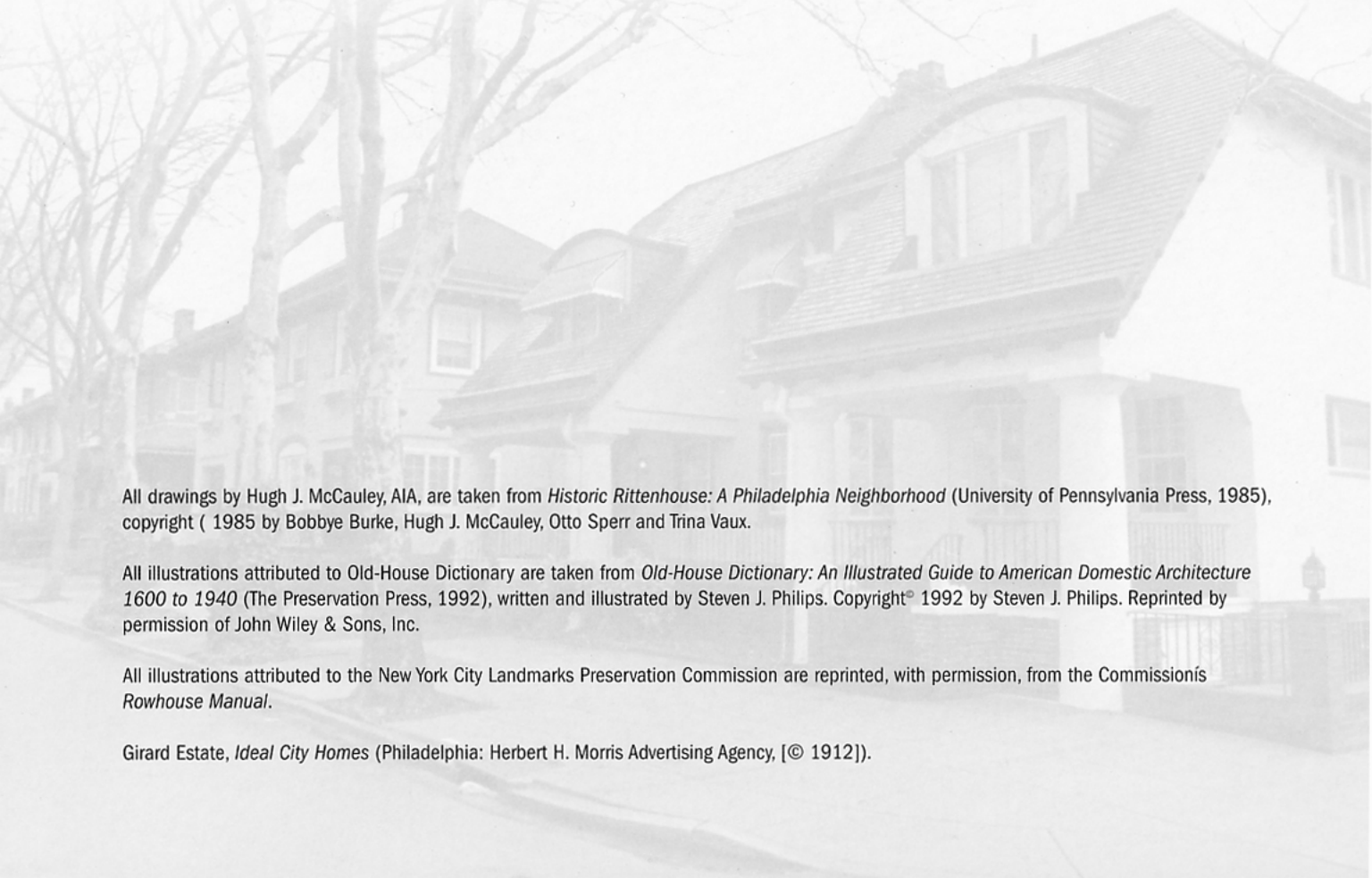

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