THE OLD CITY
Historic District

A Guide for Property Owners

Philadelphia Historical Commission

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INTRODUCTION

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

There are other benefits to being part of a Philadelphia historic district. Property owners and architects, developers, and contractors working in the district can consult with the Historical Commission for technical, architectural, and historical advice. Experience in other cities has shown that historic district designation often boosts property values and stimulates investment. *Economic Benefits of Preserving Philadelphia's Past*, a study published by the Preservation Alliance for Greater Philadelphia in 1998, demonstrated that Philadelphia's historic districts are more stable and retain more of their residents when compared to the city as a whole. They also attract more new residents than other neighborhoods, and 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 Old City Historic District. It explains the regulatory process involved in obtaining approval for projects in the historic district, and lists the types of work that may require Historical Commission review. It addresses the issues that most commonly confront the historic property owner, but old buildings often present unique and unpredictable situations that may not be included here. Nor does the general guidance provided here constitute or guarantee specific Historical Commission approval for a particular project. The best strategy is to consult the staff of the Historical Commission early on when you are planning to do work on your property.

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

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

What is Regulated?

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

Building permit applicants start at the Department of Licenses and Inspections (L&I, Concourse Level, Municipal Services Building, 1401 John F. Kennedy Boulevard) and are referred routinely 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 that affect the exterior appearance of a designated property – back, sides and roof, as well as the street façade – 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 façades. 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 affected adversely. For example, a new air-conditioning system may involve an exterior condenser.

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. This may involve retaining the services of a professional architect, engineer, preservation consultant or attorney depending on the extent of the proposed work. Contact the Historical Commission for further details before you plan to submit an application for review.

The timetable for approval depends on the complexity and nature of the project. Alterations to secondary elevations that are not visible from public right-of-ways or for interior work that will not affect the exterior are reviewed and approved within five (5) 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 consider the recommendations of the Architectural Committee and Commission staff with its own judgment at its next monthly public meeting, usually within two (2) 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 sixty (60) days of receiving the completed application.

If the Historical Commission approves the proposal, a permit may 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 fifteen (15) days.

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

by Elise Vider, Center City District

OLD CITY HISTORIC DISTRICT

HISTORY

Philadelphia is, perhaps, the most healthy city in the United States. The air is sweet and clear, the sky serene and seldom overcast. The streets are wide and airy, crossing at the right angles; they surpass all others in the world in their convenience for trade and accommodation for passengers, and are well paved and kept remarkably clean. At night they are well lighted with gas. ("The Stranger's Guide in Philadelphia", 1863)

As one of the most historically significant neighborhoods in the City of Philadelphia, the Old City Historic District contains approximately 800 buildings and structures as well as historic piers, plots, plazas, streets, and other sites. European settlers arrived in the Delaware River Valley in the early 17th century and established permanent outposts in what would become Philadelphia in the second half of the century. By 1676, James West ran a shipyard, which grew into a large maritime complex, at what is now the corner of Vine and Water Streets in Old City. West's shipyard is an important archaeological site that contains the buried remains of a shipyard, ropewalk, tavern, wharves, and other maritime enterprises.

From the beginning, Old City's riverfront area was Philadelphia's center of residential and commercial development. Samuel Carpenter, a wealthy West India merchant, constructed the town's first wharf along the Delaware River at Walnut Street in 1685, and many others followed. The wharves and ferries spawned numerous related businesses and industries. Merchants and laborers alike lived together on the eastern edge of Old City.

During the 18th century, as the population of the city grew, Philadelphians opened side streets and alleys as they divided and subdivided lots in the bustling Old City area. The neighborhood developed quickly into a maze of alleys, passageways, and courts lined with row houses. Along the Delaware, sets of steps were installed to link the city with the riverbank. The last surviving set of these 18th-century stone steps sits at Wood Street and serves as a reminder of Old City's connection to the waterfront.

From the city's founding, Old City flourished as a retail and wholesale marketplace. The High Street Market stood in the center of Market Street from the late 17th century to the middle of the 19th century. For nearly two hundred years, it marked the center of Philadelphia's commercial district, which extended throughout much of the Old City neighborhood.

Old City's 18th-century houses typically included commercial space on the first floor and living quarters above. Even wealthy families often used portions of their residences as

workplaces. The District's many 18th-century residences include the Henry Harrison Houses at 112-124 Cuthbert Street; Loxley Court; a row of houses on the 300 block of Lawrence Street; and the noteworthy mixed use buildings at 314-322 Market Street, which were erected by Benjamin Franklin and his family. Perhaps the most remarkable residential settlement in Old City is the collection of 18th- and early 19th-century brick houses on Elfreth's Alley.

William Penn's guarantee of religious freedom was reflected by the many faiths that settled in Old City. Several congregations including the Quakers, Presbyterians, and Jews built significant churches and temples in Old City that no longer stand. Other important church buildings have survived, including Christ Church on North 2nd Street; St. George's Methodist Church and St. Augustine's Roman Catholic Church on North 4th Street; the Arch Street Meeting House, the

largest Quaker meeting house in the world at North 4th and Arch Streets; and the Old First Reformed Church at North 4th and Race Streets.

During the 19th century, Old City's waterfront continued to develop. New wharf construction prompted the filling of the Delaware to create more land for warehouses and storage yards. Powerful merchant Stephen Girard bequeathed funds at his death in 1831 to create Delaware Avenue to alleviate congestion.

Old City became a highly organized and segregated neighborhood with warehousing and light manufacturing north of Market Street and financial and commercial establishments south of Market. In addition to the many new manufacturing establishments, the neighborhood was transformed with the construction of many buildings designed specifically for commercial purposes. Typically four or five stories in height with one large room per floor, new loft buildings in the Greek Revival and then Italianate styles sprouted up on many of the District's major thoroughfares. Before about 1850, commercial buildings in the District were constructed of brick. After 1850, cast iron replaced brick on many façades. What survives in Old City is one of the country's greatest collections of cast-iron and industrial loft buildings. As Old City's industries and retail trades flourished, bankers and financiers moved their activities from the neighborhood's taverns and coffee houses to new permanent quarters around the corner of 3rd and Chestnut Streets. The area developed into an important financial district eventually known as Bank Row.

As the century progressed, with the advent of mass transportation, many of Old City inhabitants migrated to newer, more fashionable residential neighborhoods to the north and west. In their wake, more and more financial and commercial establishments settled in the southern half of the District while wholesale and light industrial firms colonized the northern half. During the decades surrounding the Act of Consolidation in 1854, Old City continued to change dramatically. A multitude of industries flourished in the area, including garment producers, boot and shoe makers, bookbinders, paper box fabricators, glass manufacturers, coopers, brewers, and cigar manufacturers. During the last quarter of the 19th century, factories and warehouses for food stuffs, cotton and wool, and paints and pharmaceuticals surrounded the waterfront.

At the turn of the 20th century, several important industrial complexes were built in Old City. In 1900, Arthur Moore constructed a large factory building for his company, Moore Wireworks, to fabricate insulated electric wire; H. O. Wilbur & Sons, a chocolate manufacturer, erected another important industrial complex; and Leas & McVitty established a leather goods company in 1901. Another significant factory, the William Boekel & Co. building, represents the final phase of industrial development in Old City. William Boekel founded his company, which produced plumbing supplies, in 1868, but built the large, ornamented, concrete-frame factory building in 1922 at Vine and Randolph Streets.

In addition to light manufacturing, wholesaling businesses prospered in the District. Wholesalers did not build large complexes but instead adapted older structures and constructed smaller infill buildings. The many Tapestry Brick style buildings, faced with textured brick ornamented with patterns and shaped parapets, stand as monuments to the wholesaling community that thrived until the end of the twentieth century.

Although Philadelphia ranked among the world's busiest ports by the close of the 19th century, the harbor area was still relatively inadequate despite more than two miles of water frontage. In 1907, the City created a port authority known as the Department of Wharves, Docks, and Ferries. The City built several modern structures including Piers 3 and 5 North. Completed in 1923, these piers are more than 500 feet long, 185 feet wide, and include two decks for rapid loading and unloading. The construction of the twelve municipal piers transformed Delaware Avenue into one of the greatest shipping locations in the country. Yet, despite the new port facilities, Old City did not prosper. With the direct links between ships and railroads, large-scale commerce bypassed the neighborhood, leaving it to small-scale wholesalers.

The construction of the Delaware River Bridge, renamed the Benjamin Franklin Bridge, also had a profound effect on the Old City neighborhood. Its massive western approach, which is a city-block wide and several stories tall, cuts the District north of Race Street both visually and physically. Designed by bridge engineer Ralph Modjeski in collaboration with architect Paul Cret, the longest suspension bridge in the world at the time of its completion in 1926, it was a technological and architectural marvel. The completion of the bridge resulted in the immediate demise of the thriving ferry businesses and within a few years, most commuters and other travelers bypassed Old City as they traveled by newer modes of transportation. After the construction of the bridge and the stock market crash in 1929, large-scale investment and construction in Old City dwindled. Like the bridge, Interstate 95, part of the post-war highway boom, had a profound impact on the neighborhood. The construction of the highway, which runs north-south along the eastern edge of the District, was approved by the federal government as part of the Interstate Highway Act in 1956 and was completed in the 1970s.

The resulting Old City neighborhood is a low-scale, dense development that reflects over three hundred years of evolution. Old City maintains the grid of streets from Thomas Holme's 1682 plan for Philadelphia, as well as the intricate pattern of smaller alleys and courtyards of the area's early development. Thirty-six blocks in the District still have historic street paving materials, such as granite block, cobblestone, or blue-glazed block. Many of the sidewalks consist of large granite slabs, many with channels for drainage. Several unique elements also appear on the streets of Old City. In the 300 block of Arch Street a series of bullet glass panels line the sidewalk to provide light into the basements below. Two horse troughs still exist, offering reminders of the animals necessary for the transportation of goods before the advent of the truck.

Today, new museums, office buildings, restaurants, and condominiums occupy some of Philadelphia's best examples of 18th-, 19th-, and early twentieth-century architecture, and the District serves as one of the City's most eclectic neighborhoods.

adapted from the Old City Historic District nomination

ROOFS, CORNICES, AND RELATED ELEMENTS

The Roof of a House is only next in importance to the foundation. A good Roof can only be obtained by the selection of proper material and careful workmanship. (Advertisement for T.S. Johnson, Metal Roofer, Philadelphia Real Estate Record and Building Guide, April 23, 1890)

The roof of a historic building, along with the cornice, pediment, dormer, and/or other ornamental details, is critical to the architectural character of the structure and urban streetscape. The shape, material, pattern, color, and texture of a roof greatly affect a building's appearance. The function of the roof is also essential, serving as a building's first line of defense against the weather, and taking the heaviest beating from the sun, wind, rain, snow, and ice.

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

What Causes Leaks?

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

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

Routine Maintenance

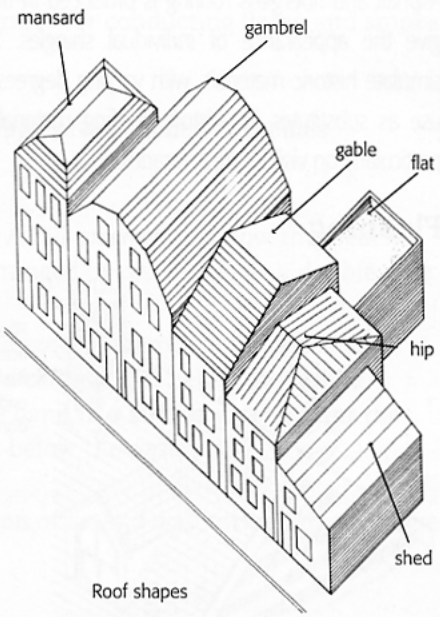
Even the highest quality roof will not protect a building effectively from the elements without proper maintenance. All roofs should be inspected at least twice a year. Look for slipped, missing, or damaged shingles, which should be repaired or replaced as quickly as possible to prevent leaks and water damage. Periodic inspections of the underside of the roof from the attic space after 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. Pressurized water flushing of the rainwater conveyance system is desirable, if possible.

Roofing Materials

The mix of residential and commercial buildings in Old City provides a variety of roof shapes throughout the district.

"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; however, after two layers, the Philadelphia Building Code requires removal of the old roof coverings down to the underlying wood sheathing before applying a new roof to keep things watertight and to reduce the weight of the roofing material.



Roof shapes

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

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

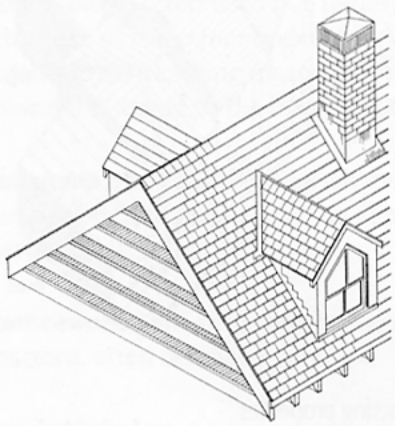
Clay or **terra cotta tile** roofs also appear on some historic Philadelphia houses. If maintained properly, their life span is approximately 125 years. Like slate, tile is resistant to erosion; however, tiles are very brittle and can easily crack or shatter.

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

Asphalt and **fiberglass** are modern roofing materials, with a life span of about 15 to 40 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 multi-tab 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 generally discouraged, particularly on visible street façades.

Flashing



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

Flashing, one of the most important and vulnerable parts of a roof system, consists of strips of sheet metal or coated felt material 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 owing 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 and its installation in maintaining a watertight roof.

Rainwater Conduction System

An inappropriate gutter treatment.

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

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

If it is necessary to add gutters and downspouts, they should be visually unobtrusive, have historically appropriate forms, and should not obscure the architectural detail or character of the building. To the greatest extent possible, all downspouts should be located at inside corners and on side elevations, rather than on the front façade of the building. They should be painted to blend with the façade or other trim, or be made of materials that weather to a natural "patina" (finish).

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

Cornices

Original cornice

Aluminum cladding hides the original cornice details.

Roof cornices and parapets are major architectural features and contribute significantly to the rhythm and continuity of Philadelphia streetscapes. Removing or covering them with aluminum or vinyl siding devastates the appearance of the individual building, accelerates deterioration, and compromises the entire block; their partial or full removal exposes the building façade to excessive weathering.

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

Cornices are usually constructed of wood or formed sheet metal, although there are cornices of cast iron throughout Old City. 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, matching historic profiles, 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 (top metal cover) 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 Decorative Roof Elements

Dormers, chimneys, and roof ornaments such as finials, iron cresting, crickets, 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, but may be surface coated with stucco.

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 ensure that the chimney operates safely.

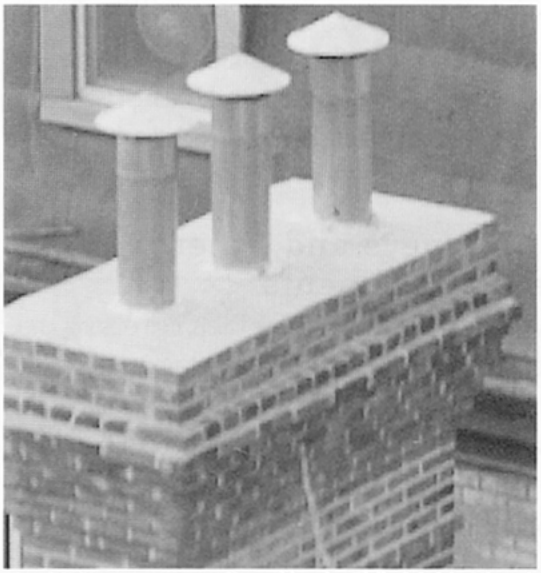
Other sources of water infiltration at chimneys include open and deteriorated mortar joints. These should be repaired as described in the chapter on Masonry to match the color, texture, tooling, and constituent composition of the original mortar. Covering masonry chimneys with tar, cement, or stucco 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 inspected periodically and maintained to stay watertight.

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

A Word About Metal Roofing Materials

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



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

aluminum parts. Similarly, some roofing materials will corrode metal fasteners or flashing. It may be necessary to coat any such dissimilar metal parts in replacement roofing or drain systems.

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; however, eventually all roofs require replacement. New work should be compatible with the historic and architectural character of the building, and original detailing should be saved or replicated wherever possible.

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

Slate, clay, or terra cotta tile roofs are brittle and cannot be walked on without the risk of cracking and breaking. To perform 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 that does not prevent water infiltration and accelerates rot and deterioration from trapped moisture.

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 usually have a far longer life span. Clues to the appearance of the original roof may be obtained by studying neighboring or similar houses, from historic photographs, or by consulting with the staff of the Historical Commission. Often, the historic roof is still in place, hidden under layers of newer roofs, and can be studied by removing a section of the later material. When a roof is being replaced, it is advisable to go to the extra expense of removing all old roofing so that the underlying sheathing material can be inspected and repaired or replaced if necessary. Built-up layers of roofing also make it difficult to trace and correct leaks later.

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

by Lisa Soderberg, Hillier

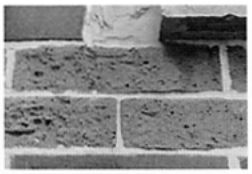
Not Subject to Philadelphia Historical Commission Approval

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

Subject to Philadelphia Historical Commission Approval

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

MASONRY



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

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

Maintaining Masonry

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

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

Common Masonry Materials

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

The hardest, best quality bricks were reserved usually to face exposed façades, hence the term "face brick". Softer, so-called salmon 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, especially sandblasting, makes bricks more susceptible to this type of deterioration. (See section on Cleaning.)

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

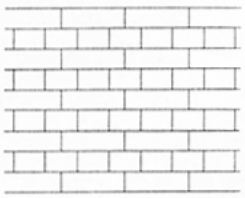
Terra cotta is a man-made clay product often used to imitate carved stone for decorative elements, although it was used occasionally as a veneer for entire façades. Terra cotta may be glazed or unglazed, molded or carved, and may be any color from white to brownish red.

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

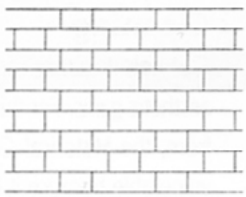
Limestone was used commonly for lintels, windowsills, and watertables and occasionally as face material on important institutional buildings and some late 19th-century homes. Limestone is easy to work with, but vulnerable to pitting, staining and to acid rain, which converts it to friable gypsum. Limestone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

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

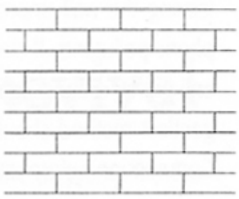
Brick bond patterns



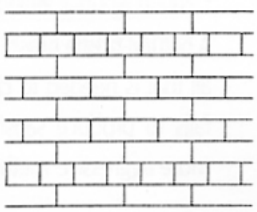
English bond



Flemish bond



Running bond



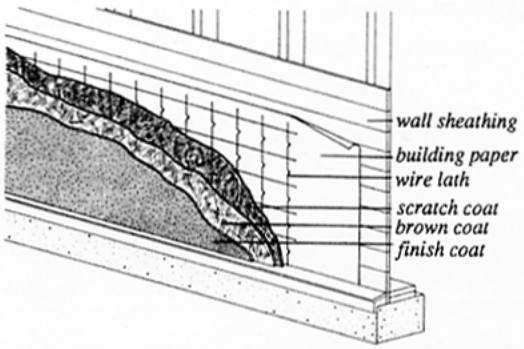
Common bond

Sandstone has a coarse, grainy texture and matte appearance. **Brownstone** is the common name for the brown (or, occasionally, red, purple, or green) sandstone that was popular as both trim and thin veneer facing in the late 19th century and abounds in the district today. A porous material, brownstone easily absorbs moisture. The absorbed moisture can cause subsurface freezing and expansion that causes erosion and spalling, in which the stone comes apart layer by layer.

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

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.

Layers of stucco.



Cleaning

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

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

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

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

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

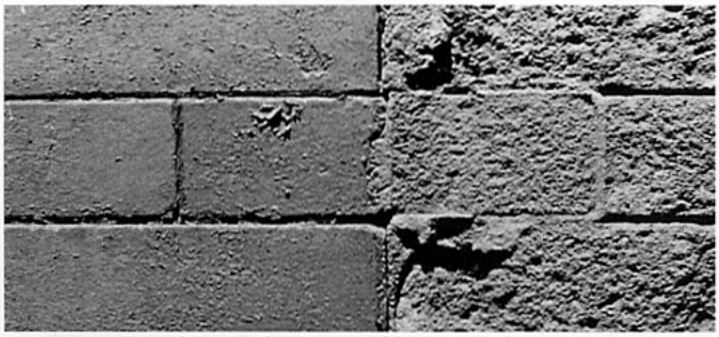
Depending on its nature, graffiti can be removed from masonry surfaces with various methods. Use the gentlest method possible and test carefully on a small, inconspicuous area. Small amounts of graffiti can often be removed by a capable do-it-yourselfer, using readily available commercial products. Do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

Removal of more extensive graffiti is a job best left to a skilled professional. Make sure the contractor tests carefully, paying particular attention 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.



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

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

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

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

However, if a masonry wall is already painted, it is rarely advisable to remove the paint. Paint that is firmly adhered may actually protect poor quality or damaged masonry. And many paint-removing techniques are destructive to brick and other masonry surfaces. If painted masonry needs repainting, consult with the Historical Commission before proceeding. 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.

In Old City, many of the buildings have signs painted on their façades advertising the various wares the companies offered. These signs have historic significance and should not be removed or obscured.

Masonry Repair

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

Broken masonry can sometimes be repaired using new or salvaged materials by attaching broken elements with non-corroding pins or a non-rusting material scored for proper anchorage. Use epoxy mixed with the powder of the masonry to be patched to bond the joint between the two pieces. Care should be taken not to patch across mortar joints, because these joints need to remain flexible. The mortar joint should be filled with a matching mortar and the masonry patch should replace only the material that is missing. This method is best used for decorative pieces and is not practical for repairs of masonry that cannot be matched, such as brownstone, which is no longer quarried.

An alternative method for more general use, particularly effective with brick, is to remove the unit of masonry that is damaged to its full depth or to sound subsurface material. Replace the unit 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.

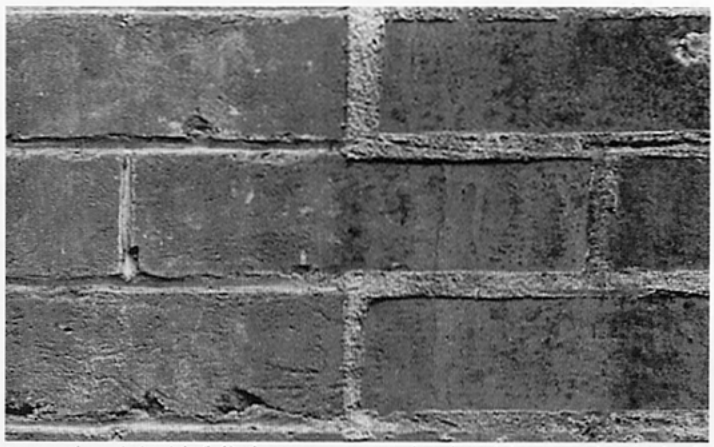
The procedure for patching damaged areas of stone or resurfacing an entire façade is essentially the same. Because the repair of small patches of deteriorated stone is as complicated as resurfacing a whole façade, qualified contractors should be retained for any work involving stone repair. To retain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

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

Repointing

Like the flexible tendons 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 tendons – be flexible to protect the masonry – the bones – that surrounds it. Masonry walls must be able to



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.

move slightly in response to the small movements caused by fluctuations in temperature, building settlement, and vibration. If the mortar is too strong, such movements will cause the masonry to crack or spall. Instead, the mortar should be sufficiently soft to absorb such movements. It is much less expensive and invasive to repoint a wall than to rebuild it.

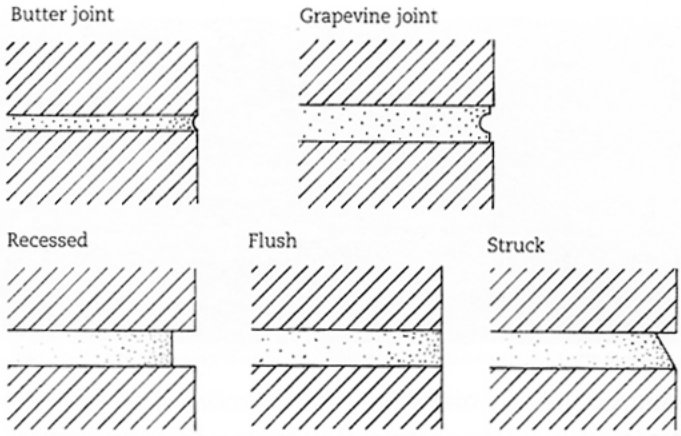
Removal of the mortar is best done by hand; however, mechanical removal for horizontal joints only may be attempted if a thin diamond or carbide blade is used and sufficient skill can be demonstrated by the mechanic on a test patch at the site and on past projects to avoid damage to brick face edges. 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 because the absence of the protective skin of the brick will lead to failure.

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

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

1 part Portland cement (ASTM C - 150, Type I)
2 1/2 parts lime
5-6 parts sand
- parts are by volume;
- mix dry ingredients first before adding potable water;
- use dry pigments (natural or synthetic stable oxide pigments) to tint or color mortar;
- mix all ingredients thoroughly

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

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

Air Conditioners

The insertion of an air-conditioning unit through a hole cut into the façade 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 carefully affixed to the mortar joints only – not into the masonry.

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

Procedures Not Subject to Philadelphia Historical Commission Approval
- None

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

CAST IRON

I have Surveyed a Building Known as the Cornucopia Hotel belonging to Charles P. Fox, situate on the West side of Third Street, south of & near Mulberry Street Being 65 1/2 feet front, 31 feet deep, Five storys [sic] high... the front being of cast iron all painted and sanded in imitation of stone. (Fire insurance survey for 60-66 N. 3rd Street, 22 October 1851)

The Old City Historic District contains many buildings with cast iron architectural elements, including some outstanding examples of cast iron façades, with some being the oldest in the United States. To find so many buildings with cast iron façades constructed in Philadelphia in the period between the early 1850s and early 1900s should come as no surprise. As the pioneering building material of its time, cast iron offered the 19th century Philadelphia architect fire-resistive components easily cast into shapes imitating their hand-made counterparts in stone or wood. Unlike a masonry façade, components of a cast iron façade could be manufactured in a factory and assembled on site by semi-skilled laborers with speed and efficiency. Along with the repetitive production process, these efficiencies of labor translated into a reduction in overall construction costs, an issue no less significant for business owners and developers in 19th century Old City than it is today.

The relative structural strength of cast iron allowed for thinner exterior walls and more openness than masonry. This openness provided increased visibility into ground-floor storefronts and an increase in natural light for office workers on the upper floors. Perhaps this new sense of openness and light, along with the repetitive process of foundry casting, appealed to the progressive minds of those 19th century Old City business owners and developers who envisioned the rise of a modern world with buildings constructed of mass-produced interchangeable parts. For these reasons, for a period of approximately fifty years, cast iron was the premiere building material on façades in Philadelphia, as well as in other cities in the United States. Its position was lost in the early 20th century to the more versatile and cost-competitive structural steel. Although cast iron continued to be used for ornamental and architectural purposes, the age of the magnificent iron fronts disappeared in direct proportion to the rise of structural steel. Many of the cast iron façades remain, and the responsibility for maintaining, preserving, and restoring them belongs to the current generation of Old City property owners and developers.

Cast Iron versus Wrought Iron

Because it needs to be made in a blast furnace, cast iron is a product of the modern industrial age. Liquid iron is cast, or poured, and hardened into crude ingots called pigs. The pigs are melted subsequently, along with scrap and alloying elements, and recast into molds producing a variety of products. Cast iron contains two to four percent carbon, varying amounts of silicon and manganese, and traces of impurities such as sulfur and phosphorus. During the 18th and 19th centuries, cast iron was a less expensive material than wrought iron because it required less intensive refining and working by hand. Although inferior in tensile strength and more brittle than wrought iron, cast iron's compressive strength and relative ease of manufacture made it the first important structural metal to be used in building construction.

Compared with wrought iron, cast iron is relatively hard and brittle. Unlike wrought iron, cast iron is less malleable and cannot be worked by hand. One way of identifying the difference between wrought iron and cast iron in building elements is through close visual inspection. Wrought iron elements are typically less uniform and often reveal the marks of hand working. Cast iron elements are typically uniform in appearance and often reveal mold lines and other casting flaws. Wrought iron elements are usually welded or riveted together, while cast iron elements are typically bolted together. The Philadelphia region is fortunate to have a unique tradition of wrought iron, exemplified in the works of the ironworker Samuel Yellin, and numerous buildings incorporate cast iron architectural elements, including a significant number of cast iron façades.

Maintaining Cast Iron

Although the word "iron" denotes strength and indestructibility, when exposed to weather and time, cast iron is no less fragile than any other building material. By far, the most common problem with cast iron is corrosion. Corrosion, or rusting, occurs when cast iron is unprotected by paint and exposed to moisture. Often the decorative details or the construction joints in the cast iron elements create crevices that trap water. If these crevices are not protected properly by caulk and paint, rust forms. If the rust is not removed, and the cast iron is not protected properly, the destructive process will continue until the cast iron is consumed entirely by corrosive action.

Deteriorated cast iron.

Before paint and caulk are applied, the rust and old paint must be removed. The techniques for cleaning and paint removal include wire brushing, grit blasting, and chemical cleaning. The determination of the appropriate technique for cleaning and paint removal should be made by an experienced professional who will take into account the condition of the cast iron, adjacent materials, cost, and other factors. Generally, wire brushing by hand or with a cut wheel is the best option in terms of cost and the protection of neighboring buildings. Regardless of the technique, an alkyd rust-inhibiting primer must be applied to the bare cast iron immediately after cleaning. Make sure the cast iron has completely dried before the applying the primer.

Because most cast iron building elements are bolted together, the joints need to be caulked to prevent water penetration and rusting on the inside of surfaces. Water that penetrates a joint and then freezes can crack cast iron. Cracks provide for other points of entry for moisture and may reduce the strength of the entire cast iron assembly. All joints should be inspected periodically and deteriorated caulking should be replaced with an architectural-grade sealant. Epoxy filler and polyester-based automobile-body putties can be used to patch nonstructural cracks.

A protective coat of paint is the most common and effective way to preserve cast iron. Prior to painting cast iron, all flaking paint and dirt must be removed. Preparation of the cast iron surface is critical. Alkyd paint, rather than latex, should be used on cast iron. Although latex paint can be used over an alkyd primer, the water in the latex paint will cause immediate oxidation if used on any bare cast iron surfaces. Even the best quality alkyd paints will fail if applied to an improperly prepared surface. Brushing is the most common technique for applying paint to cast iron because it fills pits and cracks better than the use of spray guns. The primer and paint manufacturers' specifications should be followed to ensure compatibility with each other and the surface conditions.

A word of caution: never fill hollow cast iron columns, newel posts, balusters, and other cast iron elements with concrete. As the concrete cures and shrinks, a space is left between the concrete and the cast iron. The evaporation of moisture from this space could be retarded by the presence of the concrete and promote rust. In addition, the alkaline nature of concrete accelerates corrosion.

Stabilizing Cast Iron Façades

Periodic inspections of the façade should be undertaken by an experienced contractor or structural engineer to ensure that the various parts are in good condition, and are plumb and level. Over time, cast iron façades may become unstable owing to poor construction, or if nuts and bolts, or shims – thin pieces of wood which are used to level or tighten a stair or other building elements – deteriorate or fall from their position over time.

Make sure all of the bolts are tightened. If necessary, replace shims in areas where the old ones have slipped or install them in places where new ones are needed. Many times, tightening the connecting bolts will stabilize the entire cast iron assembly, but in some instances the elements may be too far out of plumb to be stabilized by the existing bolts.

If this should be the case, there are two options for preserving the historic façade. One option entails drilling holes in the cast iron from the exterior to bolt the panels to the interior wooden floor joists. However, cast iron is brittle, especially in cold weather, and there is a great chance that the elements might crack or shatter during the process. The better option would be to erect an independent structural steel frame behind the cast iron façade extending from the foundation to the roof. The wooden floor joists brace the steel frame while the loose façade elements are connected to the steel frame through adjustable steel clamps. This method does not require drilling into the cast iron. Once the cast iron elements are pulled into place by the adjustable clamps, the original bolts can be tightened and the entire assembly stabilized.

The preservation of most cast iron assemblies usually do not require such an elaborate technique for stabilization, but understanding the characteristics of the material and the techniques of its assembly is essential to the success of any effort to maintain, preserve, and restore architectural cast iron.

by Richard Wesley, A.I.A.

WINDOWS

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

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

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.

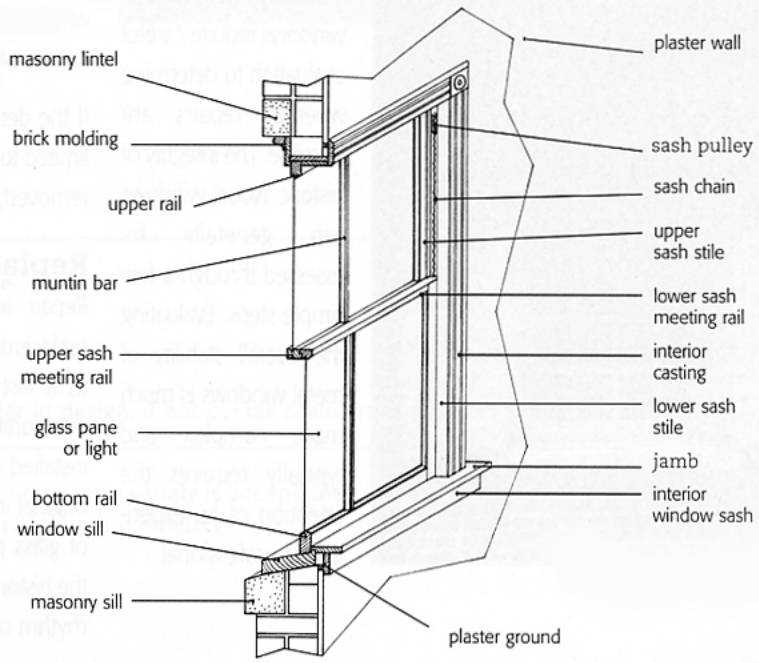
Many windows in the Old City Historic District have been replaced over the years, often with inappropriate substitutes. Studying the neighboring buildings for clues to the original windows' appearance can be misleading; if replacements are contemplated, consult with the Historical Commission staff.

Routine Maintenance

Windows that seem beyond saving often require only basic maintenance and repairs to reestablish their smooth operation and improve their energy efficiency. Deterioration to windows is caused primarily 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 should be primed and repainted. Bare wood and metal are particularly susceptible to decay and should never be left exposed to the elements. However, re-finishing surfaces with formed aluminum capping is not recommended.

Over time, old windows can become difficult to operate owing 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 because the glass will break if heated. Take care to follow safe lead paint removal procedures, and follow the manufacturer's recommendations for the safe use of chemical strippers. Although heat guns are effective at removing old paint, their improper use by an inexperienced operator may result in the scorching of wooden elements and can also be a fire hazard. Paint removal can be hazardous; be sure to follow all safety precautions.

Windows that bind, have become inoperable, or will not remain open may require repairs to the operating system. On most double-hung windows with a counterweight and pulley system, an experienced do-it-yourselfer can attend to these problems by removing the interior trim and jamb or the jamb access panel to examine the pulley and rope. First, examine the condition of the pulley. If it is coated with layers of paint, tie off the sash cord, remove the pulley, strip the paint layers, lubricate the pulley, and reinstall it in the jamb. If the pulley is unrepairable, replace it with a new, matching



element. The other potential problem is a broken and/or damaged sash cord or chain. Stripping the chain of interfering paint layers or replacing the sash cord or chain with a new element can re-establish smooth operation.

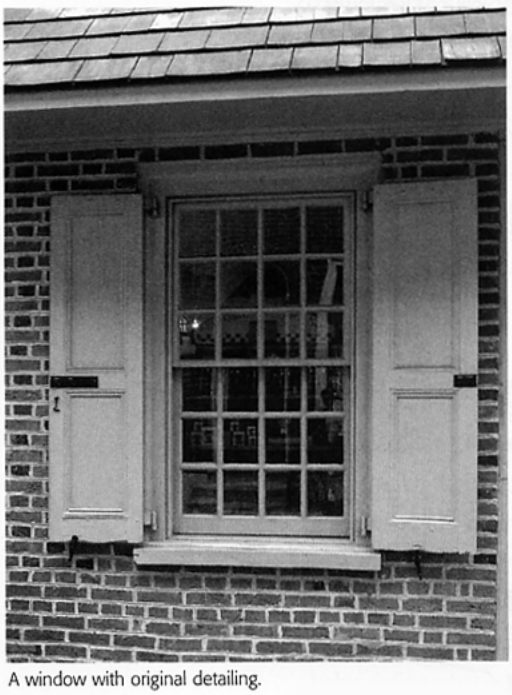
Storm Windows and Weather Stripping

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; however, exterior storm windows have a detrimental impact on the historic appearance of a building. Exterior storm windows can be obtrusive and unsightly and can cause reflections, which obscure the configuration and detail of the historic windows. To minimize these undesired effects, 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.

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

Other options, such as the installation of thermal glass into existing or internal glazing panels (IGPs), may also be available to preserve old windows while increasing their energy efficiency.



A window with original detailing.

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. Evaluating the overall stability of metal windows is much more complex and typically requires the attention of an experienced professional.

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

An inappropriate window replacement and treatment.

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

Methods of Repair

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

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

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

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 façades, 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 muntins hold 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 found typically 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; however, if replacement is necessary the new grilles should match the originals, and installed without damaging the window frame or masonry.

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

Awnings, Exterior Shutters, and Flower Boxes

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

Make the new shutters operable, or at the very least, appear operable, and sized to fill the entire window opening when closed. In addition, the shutters must be mounted with the appropriate hardware such as hinges, shutter dogs (hold-backs), and bolts. Fortunately, on most historic buildings that had shutters, the shutter pintles or hinges are often still in place, simplifying installation of new shutters. Lock rails of new shutters must fall below the window sash meeting rails.

Fixed aluminum awnings are not appropriate for any historic building.

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

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

Window openings give a rhythm to the streetscape.

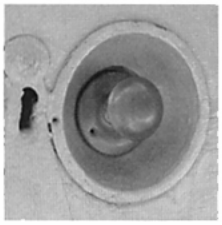
Not Subject to Philadelphia Historical Commission Approval

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

Subject to Philadelphia Historical Commission Approval

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

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, 21 March 1887)

The doorway to a building reveals much about their original builders and owners. The elaborate entry of a residence, like that of the Fife House on the 100 block of Race Street, signals wealth and opulence; the less ornamented doorway of a storefront on South 3rd Street may reflect the utilitarian nature of the building. Yet even on the plainest structure, the greatest attention to detail was usually lavished on the doorway.

Door Construction

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

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

Maintenance and Repair

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

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

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

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

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

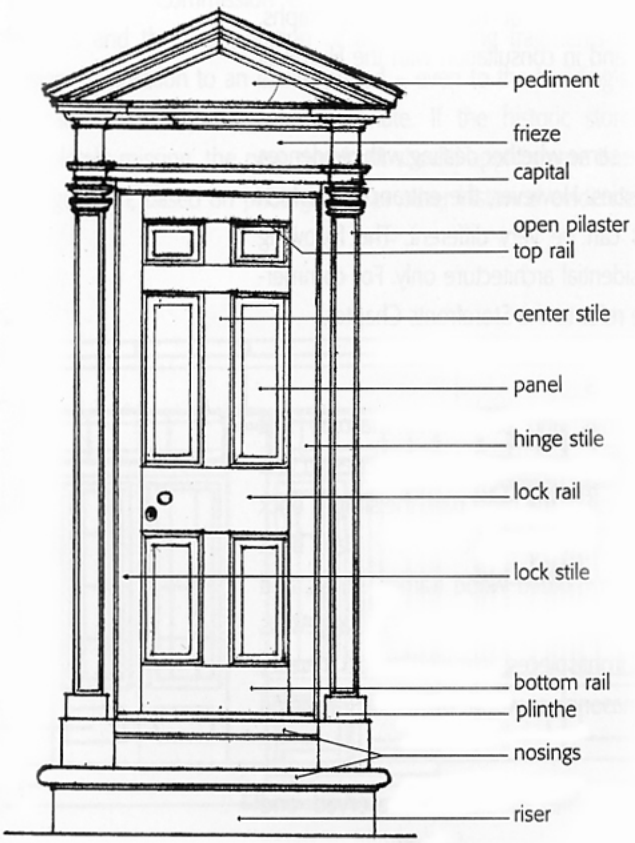
Door elements are the same whether dealing with residences or commercial properties. However, the entrances in which we find those doors can be very different. The following section deals with residential architecture only. For commercial properties, please refer to the Storefronts Chapter.

Door Surrounds

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

This architectural ensemble should be preserved and restored. Removal without replacement of eroded or rotted elements, removal of the entire surround, or sheathing it in another material are inappropriate. So is adding an architec-

An inappropriate door replacement, on the right, radically changes the look of the house.



tural element that was never there or is of the wrong style. A "Victorian"-style surround added to a Federal house, for example, confuses the style and meaning of the house's architecture. If you suspect that a more modern piece has been added to the original doorway, contact the Historical Commission if you are interested in removing and replacing it with something more appropriate.

The exposed elements surrounding historic doorways often deteriorate over time, and their restoration is rarely a do-it-yourself job. Stone ornamentation can be restored using masonry consolidants such as silanes, acrylics, and epoxies that penetrate the pores of the stone, making it stronger and resistant to further deterioration. Missing masonry elements can be replaced with molded cement-based patches. (For more details, see the chapter on Masonry.) Similarly, rotted wood elements can be treated with wood epoxy consolidants that permeate porous or decayed wood. Gaps in the wood can be filled with epoxy paste which, when dried, has characteristics similar to wood and can be worked with ordinary tools, primed, painted or varnished. Almost all of these repairs will require the skills of experienced restoration masons or carpenters.

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

Hardware

The style of the hardware on a door should be compatible with the age and style of the door and dwelling. Generally, residences have simple round or oval knobs made of easily cleaned materials like brass, bronze or glass. If the original hardware is missing, you can determine an appropriate replacement by looking at a similar house in the neighborhood and by consulting with the Historical Commission.

Storm and Screen Doors

Prepainted aluminum doors, especially those with added scalloped or "colonial" ornament, are not appropriate. Consider weather stripping as an alternative.

Lighting and Electrical Devices

Most buildings in Old City were built before the widespread use of electricity became common. Buildings 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 and are required by code in some situations.

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.

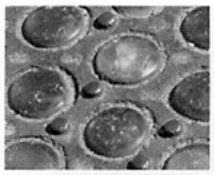
by Charles A. Evers, AIA,
Atkin Olshin Lawson-Bell Architects

Not Subject to Philadelphia Historical Commission Approval

- Painting wood elements
- Sanding or refinishing
- Repairing wood door and/or frame
- Replacing or installing locks/hardware
- 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 and/or surround
- Altering door material or configuration (size, number of doors, transoms, or glazing)



STOOPS, RAILINGS, GARDENS AND ALL THE REST

Wood & Perot Ornamental Iron Works. 1136 Ridge Avenue, Philadelphia. Manufacturers of Iron Railings for Cemetery Enclosures, Public Squares, Churches and Private Residences, Iron Verandahs, Balconies, Bank Counters, Stairs (in every variety), Mausoleums or Tombs, Chairs, Settees, Tables, Tree Boxes, Hitching Posts, Lamp Posts, Brackets, Statuary and all other Iron Work of a decorative character. Drawings furnished to those who wish to make selections. (Philadelphia and Its Manufactures, 1858)

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

Stoops and Railings

Original stoops and railings were designed to harmonize with the building façade. Front steps, cellar entrances, and basement-level watertables were often constructed of the same material. Railings might also exhibit patterns and shapes associated with the style of the building. Stoops are usually one or two steps only in this area, consisting of a single stone slab placed at the main door.

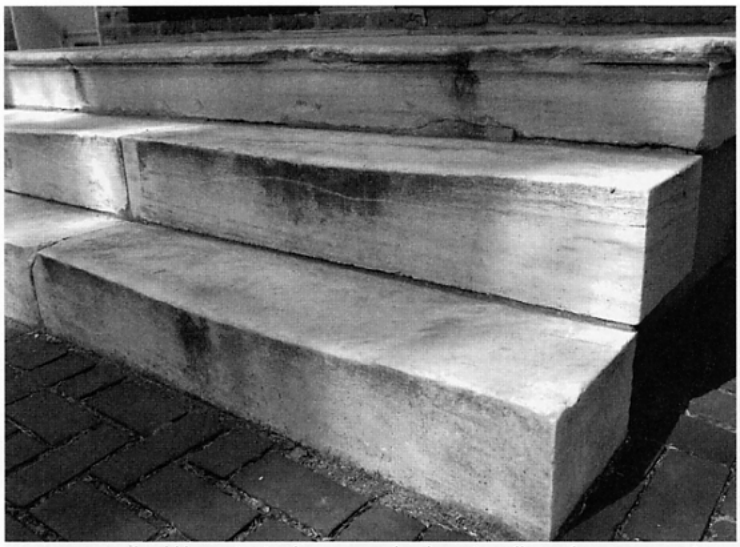
Stoops in the historic district are constructed of various masonry materials, most commonly marble or granite. As with all masonry surfaces, painting is not recommended. Paint can trap moisture in the masonry, which can lead to deterioration, and painted masonry will also have to be repainted periodically.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

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

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

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

Rusting of these metal pieces, caused by moisture on bare metal, is the primary cause of deterioration. Keeping your cast or wrought iron railings and gates painted is a simple and



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

Damaged steps.

effective way to preserve them. Rust can be removed by hand scraping and wire brushing. This should be followed immediately with an application of a rust-inhibiting primer and a compatible finish coat. Small voids may be repaired with plumbing epoxy or auto body putty; be sure to maintain the original profile of the metal. Replacing screws and bolts with new stainless steel ones may repair loose connections in cast iron assemblies.

Sidewalks

Many sidewalks in Old City are made of large slabs of granite or flagstone, which is extremely durable. Some have scoring to provide traction in poor weather and many have channels for water drainage from a building's gutters. These pieces of stone require little maintenance but add a great amount of historic importance to the district's streetscape.

Under many of the granite sidewalks, one can still find the old vaults used for the storage of goods for the stores above. The large stone slabs provided secure coverage of these underground hideaways. Maintenance of the joints between these slabs is critical to keep moisture from weakening the support structure underneath.

Some of the historic sidewalks in the district are made of brick pavers. Historic sidewalk paving may require repair if there are cracks, sunken, or raised areas that make the walkway hazardous to pedestrians. Repair by removal and reinstallation of original materials is recommended because it retains the actual historic fabric of the sidewalks. Damaged or missing pavers should be replaced with new or salvaged material that matches the original.

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

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

Another unique sidewalk material that can be found in front of several buildings in Old City is a cast iron grate with round or "bullet" glass inserts. This allowed natural light to enter the basement level of the building, further utilizing that space for activity during the day without the expense of artificial light.

Concrete remains the most common sidewalk material in Old City. Although the material dates to Roman times, it was not widely used until the 20th century. Unlike granite or even brick, concrete is not highly durable and if not installed properly can deteriorate as a result of the freeze/thaw cycles.

Granite is the primary material for curbing in the district. Bluestone, although more fragile, is also a historic curbing material. The most common replace-

Brick sidewalk paving

ment for these original materials is concrete, which, while initially less expensive, is not as durable. Nor does concrete have the character and texture of historic paving materials. Original curbing can be patched and reset with new foundation support. It can also be cut for vehicular and disabled access.

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

Procedures Not Subject to Philadelphia Historical Commission Approval

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

Procedures Subject to Philadelphia Historical Commission Approval

- Repairing or repointing masonry steps
- Painting or cleaning masonry steps, cheek walls or railings
- Replacing or removing steps or railings
- Repaving a sidewalk with new materials
- Major sidewalk repairs, including sidewalk vaults

STOREFRONTS

Unlike many other neighborhoods where storefronts were added later to residential properties, the Old City Historic District has a rich collection of buildings that were constructed specifically for commercial purposes. The multitude of storefronts throughout the Old City neighborhood reflect the many changes in architecture throughout the history of the area. Shaped by ever-changing commercial tastes, storefronts require special consideration by owners of historic buildings, but their sensitive preservation contributes to both the retail atmosphere and the integrity of the historic district.

Storefront Configurations

In the 18th century, many houses also functioned as shops, such as the properties along Elfreth's Alley, which served as the homes of wood workers, furniture makers, and other tradespersons.

A majority of mid-19th century buildings in Old City were constructed as commercial properties, rather than residential. They contained manufacturing on the upper floors and sales on the first floor. The early storefronts were made of granite, or less commonly marble, but in the mid-19th century cast iron became the popular material, often with rather decorative details. These storefronts usually contained a pair of doors leading to the upper floors and a pair of doors serving the ground floor. Between these was a pair of doors leading to the basement level, accessed by a stair beneath the sidewalk, covered by bulkhead doors in the sidewalk. Above the basement doors at the ground floor, were a lintel/sill and a pair of casement windows, often matching the glazing pattern of the flanking doors.

Late-19th and early-20th century storefronts are generally characterized by large plate glass windows supported by spindly wooden piers. Many of the wooden components included decorative cornices, paneled bulkheads below the display windows, and half-glazed paneled doors. Modern materials such as pigmented structural glass, baked enamel panels, ceramics, and stainless steel made possible the sleek streamlined storefronts of the 1930s and 1940s.

Maintenance of Historic Storefronts

Storefronts are susceptible to deterioration, primarily because of water infiltration and weathering. Water penetration behind the storefront, possibly into the supporting building, can cause unseen damage. The primary areas of concern include the storefront's cornice, which requires proper flashing and water conduction, and the joints between components. (For more information, see the Roof chapter.) On wooden and cast iron storefronts, moldings traditionally were used to cover joints. Seams and joints in storefronts made of stone, metal and other materials should be sealed with caulk. Regular painting will help protect wooden elements from water infiltration and rot, and will prevent metal components from rusting. Granite, marble or other stone elements should never be painted.

Historic storefronts should be retained, repaired or restored with matching materials. An existing storefront may not appear to be historically significant, but historic fabric may be

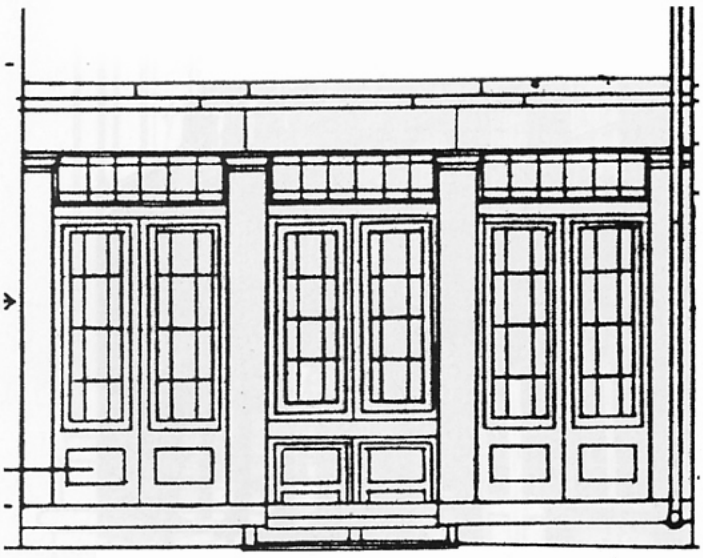
The retailer, recognizing the general interest of the public in things artistic, especially those things of an architectural nature, realized that a shop possessing architectural value and decorative interest, both inside and out, would appeal to his prospective customers and increase business by luring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

Thin wood muntins and decorative cornices are typical storefront details.

Original door.

hiding under later alterations. Consult the staff of the Historical Commission before planning any changes.

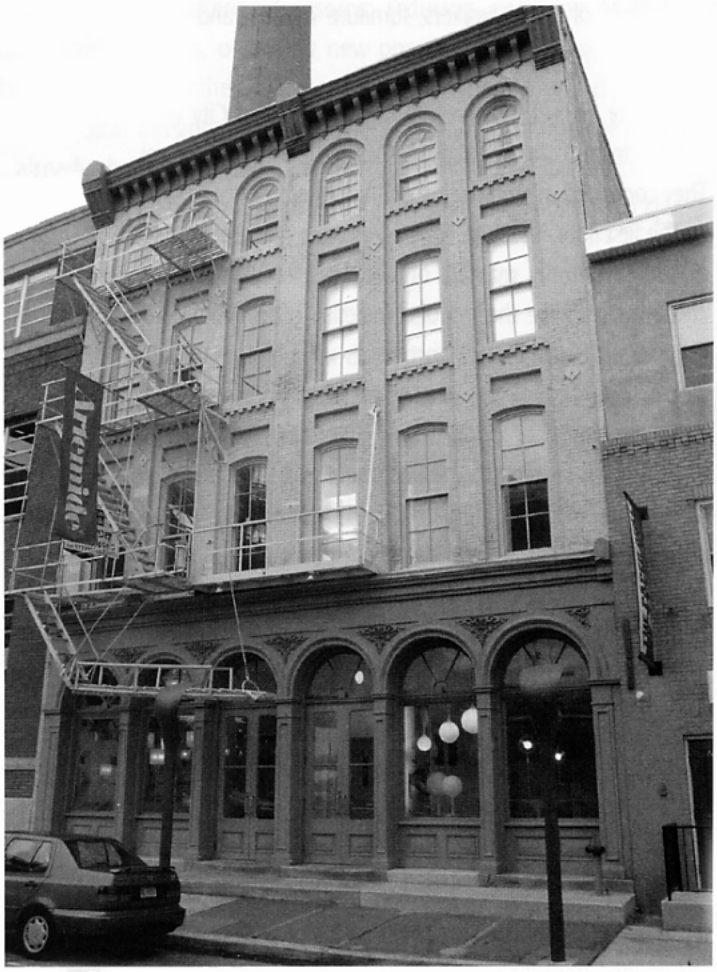
The Historical Commission encourages the repair of early storefront features and the incorporation of any remaining fragments into new design. Restoration to an earlier period – even to the building's original appearance – may not be appropriate. If the historic storefront is completely missing, the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



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

Signage and Awnings

All signs and awnings in the historic district – including banners – require the approval of the Historical Commission. The size, shape, design, material, location and method of attachment of commercial signs have a large impact on historic storefronts. Signs should be to scale with the building and storefront, and should be placed within the historic "signboard" area – the fascia under the storefront's cornice. Signs must not obscure, damage or destroy any of the character-defining features of the building. If the cornice is made of granite or marble, take care in designing a sign that



could reuse existing holes already in the stone or limit creating new ones. Illuminated box signs are not allowed.

A single projecting sign may also be appropriate for the building. The support structure must be attached into mortar joints, not into actual masonry, and be small enough that it does not become too conspicuous. Again, consult with the Historical Commission staff when in the design phase for guidance.

Most awnings should have a shed-type shape and fabric-like material. If there is any signage on the awning it should be placed on the apron, not on the slope. Depending on the architecture of the storefront, the size of the awning should be consistent with an individual window or doorway and should be attached below the cornice. Again, the least number of penetrations in the stone storefront is preferable.

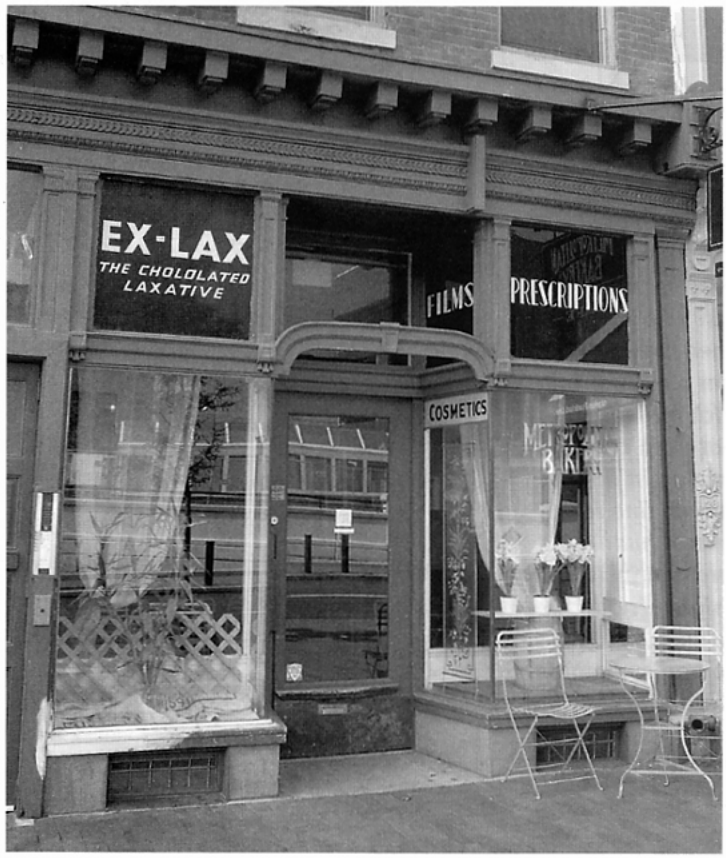
Signs and awnings may also require the approval of the Art and Zoning Commissions.

Security Grilles and Bars

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

Disabled Accessibility Compliance

Any significant changes to building entrances, major alterations to the interior or a "change of use" of the building, as defined in the Building Code may trigger compliance with disabled accessibility laws and codes. These ordinances include local and state accessibility sections of the building codes as well as the 1991 Federal "Americans With Disabilities Act" (ADA), a national civil rights law. These have been enacted to insure equal opportunity for access by all citizens to any buildings open to the public, but differ on specific dimensional requirements, overlapping jurisdictions and administrative regulations.



Meeting the requirements of these laws can be a major challenge for renovators of historic properties. For example, narrow leaf doors, monumental entry steps and lack of building setbacks can make it difficult to achieve disabled access without seriously compromising historic façades and interiors. All of the ordinances have made some provision for administrative or appeals-board relief where achieving full accessibility compliance would significantly alter, or cause the removal of important architectural elements on historically designated properties. It is very important to consult with the staff of the Historical Commission and the Department of Licenses & Inspections early in the planning stages of the project.

by Sara Jane Elk and Richard Thom

Not Subject to Philadelphia Historical Commission Approval

- Painting wood or cast iron components

Subject to Philadelphia Historical Commission Approval

- Painting masonry
- Removing, replacing or altering storefronts
- Installing or replacing signage
- Removing, replacing or installing awnings
- Installing or replacing security grates, grilles or bars
- Installing or replacing accessibility features, such as ramps, railings or lighting

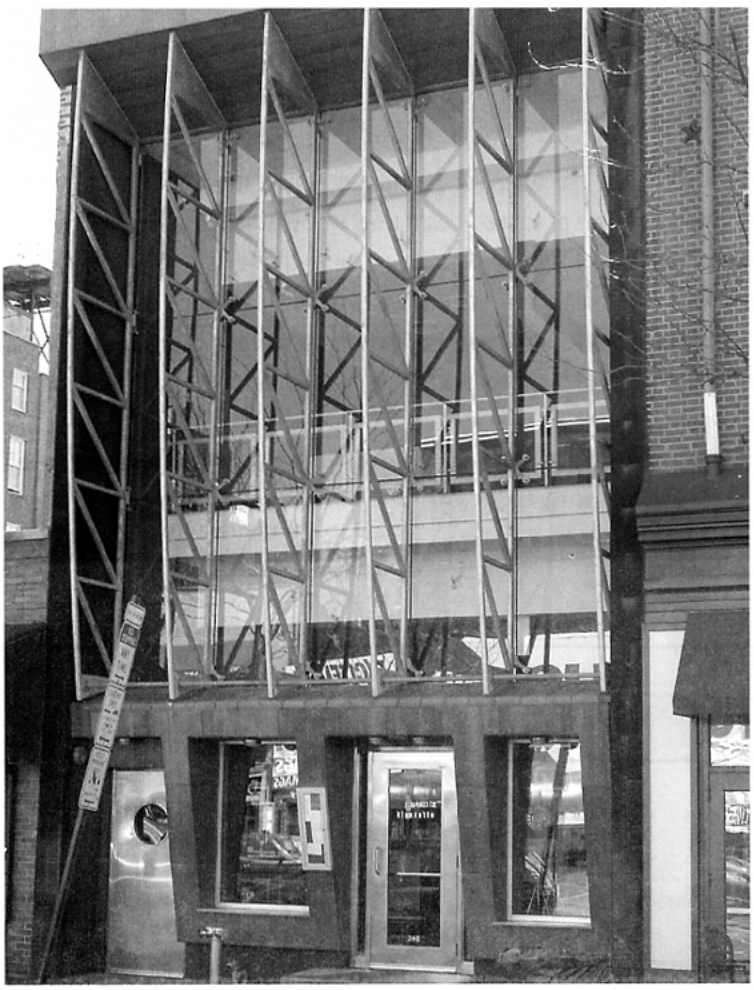
NEW CONSTRUCTION

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

The architecture of Old City Historic District represents virtually all of Philadelphia's 300 years of history; it is a unique aspect of this district. The variety of scale, from the intimacy of Elfreth's Alley to the industrial buildings of the 19th century to the grandeur of the Benjamin Franklin Bridge and the Delaware waterfront, contribute to the rich and varied character of the district. These multiple historic styles and varieties of scale present a particular challenge in designing new and infill construction that both harmonizes with the existing context and enhances the vital eclectic mixture of styles and uses.

New construction in the district should not obscure, damage or destroy character-defining features. Additions to historic buildings should not exactly duplicate older structures, and new additions should be designed so that the historic and new construction can be clearly distinguished. Good architecture is representative of its time; it is better for new construction to reflect our time than to give a false historical impression. At the same time, all new construction should be compatible with the size, scale, color, material and character of the property and neighborhood.

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



Where to Begin?

Among the variety of building types, two particular building types are predominant in Old City: the rowhouse and the 19th century industrial "loft" building.

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, which were almost always some form of masonry, such as brick, stucco, or stone. Look at special features, such as windows, dormers, the number of window panes, and style of windows.

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

Design Considerations

Height In the Old City Historic District, consistency of building height is typically block by block. Building height is one of the strongest design guides for new construction. Streets with rowhouses are typically two to three stories, often with a pitched roof and dormers. Loft buildings are typically five to six stories. Zoning also plays a major role in dictating building heights and massing. Although building heights vary considerably along some streets, most builders in the past put up structures similar in height to adjacent structures. The height of adjacent buildings will help dictate the height of your new construction. There is currently a 65' height limit north of Market Street to Wood Street.

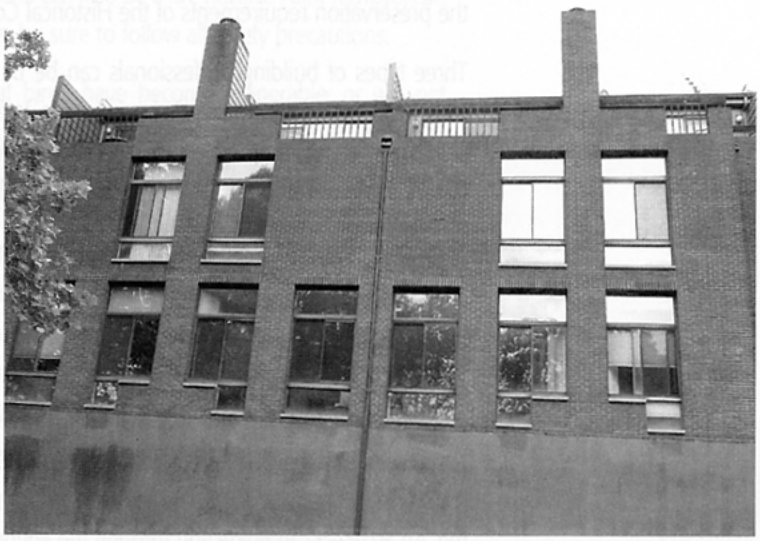
Materials Brick is the most common building material found in the district. Most brick is typically a rich reddish-brown in color, although some 20th century buildings use other colors. Try to use brick that is similar in color to that found on adjacent buildings. Also consider the variety of materials in neighboring buildings. Loft buildings often have granite at the ground floor and masonry or cast iron designed to look like masonry on upper levels. These can be matched in new materials. Although stone is desirable, carefully detailed stucco or concrete can be made to match stone or cast iron.

Street Wall and Cornice Line A uniform setback of the buildings as they line the street creates the "street wall" and is essential to preserving the character of the district. New construction should respect the street line created by its neighbors. The cornice line should remain consistent with adjacent buildings.

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

A design professional can juggle all of these ideas while creating an addition or new building that will meet the owner's needs. Sympathetic new construction can add significantly to the richness and vitality of the historic district.

by Michael Stern, AIA, Community College of Philadelphia



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

Not Recommended
- Misalignment with adjacent building height and cornice line; some variety is acceptable
- Window height, size and design radically different from neighboring buildings
- Dissimilar roof profile and design

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

SELECTING AND WORKING WITH BUILDING PROFESSIONALS

Building maintenance and many routine repairs lie within the capabilities of the typical old-building owner, however, there are instances when professional help is advisable. Some of the areas in which building professionals can prove invaluable are the assessment and correction of structural problems (why is a wall bulging?); the assessment, specification, and correction of major repairs (the replacement of a roof, for example); and the design and specification of additions or alterations to ensure that they meet the preservation requirements of the Historical Commission.

Three types of building professionals can be of help: architects, engineers, and experienced contractors. In each profession there are skilled people 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. Do not 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. A structural 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 prepare contract documents, plans and specifications (instructions to contractors) for repair projects, and can also design a sensitive addition or alteration to your historic house.
- Maximize your construction dollar. The architect and engineer can help you select appropriate materials, workmanship, and systems at a fair price, and can help you avoid unnecessary or inappropriate work and costly mistakes. For example, an architect may advise on how to save money by repairing, rather than replacing, an old slate roof. By producing contract documents for competitive bidding, the architect helps ensure that contractors are bidding on identical work, potentially controlling construction costs.
- Manage the project. From conception to completion, the architect protects your interests and pursues ways to make the design and construction processes go smoothly. The architect can help you find qualified contractors based on your requirements. During construction, the architect visits the site to verify that the project is 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. Most importantly, from an historic district perspective, the architect can manage the Historic Commission review and approval process, including preparation of all needed documentation materials.

If you are contemplating a project that may involve an architect, consider seeking architectural consultation early in the process. Most 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 who has

both experience with, and appreciation of, historic buildings. Request that a prospective architect supply references for similar projects that he/she has done. Check these references and, if possible, visit the projects.

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

Working with Contractors

Contractors perform 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 building owner – 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 buildings and historic properties. Obtain referrals from your architect, the Historical Commission, the Preservation Alliance for Greater Philadelphia, other homeowners in the historic district, or published resource guides. The Historical Commission also has product information. Referrals by these organizations do not constitute endorsement.

- Ask for references for several, recent projects that are similar to yours. If possible, try to make arrangements to see these projects, and check these references for quality of work, attention to the historic fabric of the building, finishing on budget and on time, and willingness to work with the building owner.

- Narrow the possibilities by concentrating on reputable companies that have been in business for several years. A newly formed company could be considered if its principals and staff come highly recommended and have done projects similar to yours.

- 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 for you, including plans and specifications. Do not 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 building.

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 all permits, arbitration of disputes, time of completion, and acceptance and occupancy by the client.

Remember that the building owner has ultimate responsibility to obtain Historic Commission reviews and approvals and the 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 building owners in the historic district can ensure that their homes meet their present and future needs, while preserving the charm and architectural integrity of their historic properties.

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

ARCHITECTURAL STYLES IN THE OLD CITY 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 densely developed blocks of Old City reflect the evolution of architecture in Philadelphia from its earliest days through the mid-20th century. Within its boundaries stand everything from modest Georgian houses to Greek Revival warehouses to high style Victorian Eclectic commercial buildings to Red and White industrial buildings. But very few buildings represent pure expressions of particular styles.

For this reason, the Historical Commission rarely takes purity of architectural style into account in its deliberations. Documentary evidence – old photographs, drawings, and other accounts, with many available in the Commission's archives – is far more reliable as a basis for rehabilitation, as is a careful study of similar buildings within the district. Observation and solid historical evidence not blind adherence to the dictates of style will yield clues for appropriate treatments for each building.

What follows is a very brief look at some of the styles found in the Old City Historic District. For a more thorough discussion of architectural styles, refer to the books in For Further Reading.

Red & White

This style takes its name from the white, steel-reinforced concrete and red brick-infilled walls of these industrial buildings built in the first quarter of the 20th century. These massive buildings have large steel windows and simple, streamlined decorative details.

509-19 VINE ST.

Greek Revival

Simple and refined Greek Revivial buildings incorporate motifs from Greek temple architecture. Typical elements include marble entablatures, six-over-six double-hung windows, and denticulated cornices.

102 CHESTNUT ST.

Italianate

Influenced by the Italian Renaissance, Italianate architecture is characterized by bold, projecting ornamentation, including window and door hoods and bracketed cornices.

261 N. 3RD ST.

Victorian Eclectic

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

30-32 S. 2ND ST.

Renaissance Revival

Buildings of the Renaissance Revival Style have decorative façades influenced by 15th and 16th century Italian architecture. Details include ornate carvings, festooning, and elaborate window hoods.

427 CHESTNUT ST.

Georgian

Typical characteristics of the Georgian style include bold Flemish-bond, red brick walls with glazed headers, steeply pitched gable roofs, and multi-pane windows, as well as Renaissance elements such as doorways with columns and entablatures, pedimented dormers and modillioned cornices.

CHRIST CHURCH

Federal

Federal buildings also have Flemish-bond brick patterns, gabled roofs, and classical ornaments like Georgian buildings, but larger, flatter and more attenuated details.

109 ELFRETH'S ALLEY

Queen Anne

An eclectic style combining motifs from the late Medieval and early Renaissance periods, the Queen Anne style mixes materials, colors and textures, and window types.

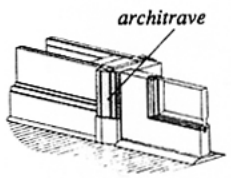
233-35 MARKET ST.

Tapestry Brick

The style basically describes the material of the building, tapestry brick, which became popular in the 1920s and 1930s. These low-rise buildings often have shaped parapets, large plate-glass windows and little decoration other than the brick laid in various patterns, especially a basket weave.

137 ARCH ST.

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 façade, 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 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.

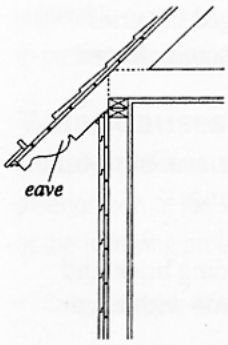
dormer A vertical structure, usually housing a window, that projects from a sloping roof and is covered by a separate roof structure.

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.

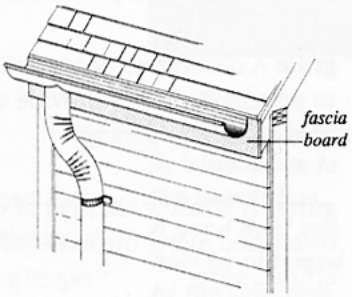
English bond A pattern of brickwork with alternate courses of headers and stretchers.

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.

façade 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 is such a manner is keyed to the masonry; see *quoin*.

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

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

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

leader See *downspout*.

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

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

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

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

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

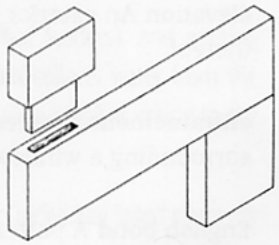
meeting rail The horizontal rail of a *double-hung* window sash designed to align with the adjacent rail of the other *sash*.

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

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

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

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



mortise-and-tenon

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

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

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

oriel A projecting bay window carried on corbels or brackets.

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

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

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

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

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

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

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

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

pintle Vertical rod attached to window frame to attach shutter.

pitched Sloping, especially referring to a roof.

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

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

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

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

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

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

repointing See *pointing*.

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

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

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

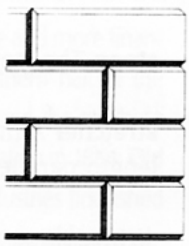
rosette A round floral ornament, usually carved or painted.

round arch A semicircular arch.

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

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

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


rustication

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

secondary façade The façade or façades 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 façade, which can be flush or projecting, and flat surfaced, molded, or richly carved; also called a "beltcourse."

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

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

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

surround The ornamental frame of a door or window.

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

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

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

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

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

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

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

tuck-pointing See *pointing*.

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

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

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

voussoir A wedge-shaped component of an arch.

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

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

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

PRESERVATION RESOURCES

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

GOVERNMENT AGENCIES

Philadelphia Historical Commission
Room 576 City Hall, Philadelphia, PA 19107
215-686-7660
website: www.phila.gov/historical
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, 300 North St.,
Harrisburg, PA 17120
717-787-3362
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, 200 Chestnut St., 5th Floor,
Philadelphia, PA 19106
215-597-7013
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
website: www.preservationalliance.com
The Alliance is the Philadelphia region's non-profit preservation organization, dedicated to the protection and appropriate development of Greater Philadelphia's historic resources — buildings, communities, and landscapes. A membership organization, Alliance programs include public advocacy, the acquisition and maintenance of façade easements, and the provision of rehabilitation grants and technical assistance to stewards of historic religious properties and house museums.

Preservation Pennsylvania
257 North St., Harrisburg, PA 17101
717-234-2310
website: 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
AIA Philadelphia, 117 South 17th St., Philadelphia, PA 19103
215-569-3186
e-mail: architect@aiaphila.org
website: www.aiaphila.org
The local chapter of the national organization has a long history of preservation advocacy: its Preservation Committee monitors endangered landmarks, advises the chapter on important issues and policies, and bestows the annual Landmark Building Award. Résumés 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
Northeast Field Office,
6401 Germantown Ave., Philadelphia, PA 19144
email: adrian_fine@nthp.org
website: www.nthp.org
The field office of this private, non-profit organization chartered by Congress in 1949, serves Pennsylvania, Delaware, and New Jersey. The Trust encourages public participation in preservation, provides limited financial assistance through grant and loan programs, and produces numerous preservation publications.

Partners for Sacred Places
1700 Sansom St., 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 and www.philadelphiabuildings.org

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

Fisher Fine Arts Library, University of Pennsylvania
220 S. 34th St., Philadelphia, PA 19104
215-898-8326
e-mail: finearts@pobox.upenn.edu
website: 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, 1901 Vine St., 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
website: www.hsp.org

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

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

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

Philadelphia Department of Records
City Hall, Room 154, Philadelphia, PA 19107
215-686-2260
website: www.phila.gov

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

Urban Archives, Temple University
Samuel Paley Library, ground floor, Philadelphia 19122
215-204-8257
e-mail: urban@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-nineteenth 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.

FUNDING

Several City Housing and Economic Development agencies administer various programs funded by the Department of Housing and Urban Development that can assist eligible property owners in maintaining or rehabilitating historic buildings. Although most of the housing funding is based on a property owner's income, rather than the historic nature of the property, the following agencies and organizations offer grant programs, low interest loans, and need-based services.

Office of Housing and Urban Development (OHCD)
1234 Market St., 17th floor, Philadelphia, PA 19107
215-686-9721
website: www.phila.gov/ohcd

OHCD plans and sets housing and community development policy for the City. This city department receives and allocates federal and state funding to a variety of city and quasi-public agencies and community development corporations.

Philadelphia Housing Development Corporation (PHDC)
1234 Market St., 17th floor, Philadelphia, PA 19107
215-448-3100
website: www.phdchousing.org

PHCD develops and rehabilitates existing buildings and builds new construction for affordable housing. Other programs provide basic system repairs and weatherization services to eligible homeowners.

Redevelopment Authority of the City of Philadelphia (RDA)
1234 Market St., 16th floor, Philadelphia, PA 19107
215-854-6500
website: www.phila.gov/rda

The RDA facilitates the development of underutilized property. In addition to financing the development of affordable housing, the RDA can condemn and acquire property through its power of eminent domain. The RDA also administers the Philadelphia Home Improvement Loan Program (PHIL).

Philadelphia Corporation for the Aging (PCA)
642 N. Broad St., Philadelphia, PA 19130
215-765-9000
website: www.pcaphl.org

PCA provides support services to older Philadelphians and people with disabilities including housing repairs and accessibility modifications.

As of this printing, a stated goal of the Mayor's Neighborhood Transformation Initiative proposes to reorganize and consolidate OHCD, PHDC, and the RDA into one Office of Housing and Neighborhood Preservation. Although many functions and programs will most likely continue, the above addresses and phone numbers are subject to change.

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

Introduction:

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

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

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

Leeke, John. "Controlling Old-House Maintenance." *Old-House Journal* (July-August 1993) pp. 40-45.

Preservation Sourcebook. Mid-Atlantic Edition. Vienna, Va.: Preservation Publications, 1997. To order call (703) 255-6803.

Roofs, Cornices, and Related Elements:

Cotton, J. Randall. "Flashing Points: A Primer on Protecting Roof Junctures." *Old-House Journal* (November-December 1995) pp. 42-45.

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

Levine, Jeffrey S. "Slate from the Source." *Old-House Journal* (July-August 1997) pp. 36-39. "The Repair, Replacement, and Maintenance of Slate Roofs." Preservation Brief # 29. Technical Preservation Services, National Park Service, US Department of the Interior, 1992. GPO stock number: 024-005-01109-9.

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

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

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

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

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

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

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Cast Iron:

Badger, Daniel D., with a new introduction by Margot Gayle. *Badger's Illustrated Catalogue of Cast-Iron Architecture*. New York: Dover Publications, Inc., 1981: reprint of 1865 edition published by Baker & Godwin, Printers, New York.

Howell, J. Scott. "Architectural Cast Iron: Design and Restoration, *The Journal of the Association for the Association* Preservation Technology. Vol. XIX, Number 3 (1987), pp. 51-55.

Southworth, Susan and Michael. *Ornamental Ironwork: An Illustrated Gide to its Design, History, and Use in American Architecture*. Boston: David R. Godine, 1978.

Waite, John G. "The Maintenance and Repair of Architectural Cast Iron," *Preservation Brief #27*. Technical Preservation Services, National Park Service, US Department of the Interior, 1991.

Windows:

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

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

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

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

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

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

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

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

Selecting and Working with Building Professionals

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

Architectural Styles

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

McAlester, Virginia and Lee McAlester. *A Field Guide to American Houses*. New York: Alfred A. Knopf, 1984.

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

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