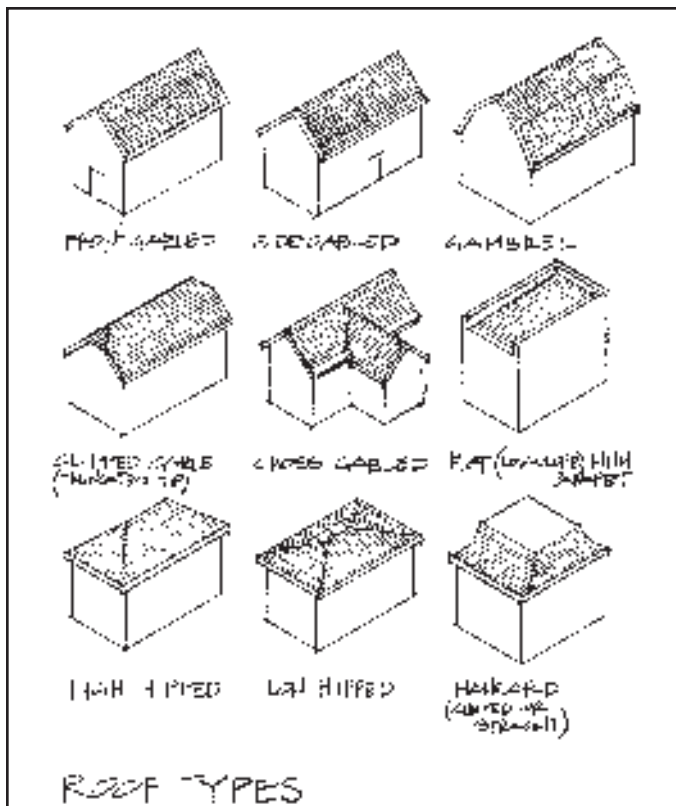


Roofs



St. Joseph's historic districts exhibit a variety of roof shapes and materials that reflect the prevailing architectural tastes of the period of construction and provide visual richness to the City's streetscapes. Although historically the primary purpose of the roof has been to protect a building from water penetration, a roof is also a major design component that plays a dominant role in defining the overall character of a structure. This character is defined by the form, massing, pattern, scale, texture, material, and color of the roof. Changes in pitch, overhang, and roofline can also chronicle changes and additions to a historic building over time.

Gable and hip roof forms are by far the most familiar roof shapes in St. Joseph's domestic architecture. A gable roof consists of two inclined planes that meet at the ridge over the center of the house and slope down to the side walls. At the ends of the house, the inclined planes form a triangular-shaped wall called a gable or gable end. A hip roof is pitched on all four sides, eliminating the gable end, but increasing the amount of roofing material required as compared to a gable roof that would cover the same area. Variations and even combinations of the gable and hip roof forms occur with frequency. Front, side, parallel, clipped, and cross gable forms were popular with the Queen Anne and Romanesque Revival styles, while low sloped hip, truncated hip, and flat roof houses were favored by builders of Greek Revival and Italianate style structures. Mansard roofs with either curved or straight slope profiles, a hallmark of the Second Empire style, are less common. Dormers were frequently incorporated into the roof line to provide added living space in attic stories and to achieve architectural design interest.





Roofs



A significant character-defining feature of the Nathan Ogden house, 809 Hall Street, Hall Street Historic District, is its multiple hipped roof complete with slate sheathing, copper ridging, cresting, dormers, stone finials, and towering corbelled chimneys.



Ornamental iron cresting embellishes the main roof, cupola and dormers of the Adam Schuster Mansion, 703 Hall Street, Museum Hill Historic District.

Roof forms on St. Joseph’s older commercial buildings were typically concealed by parapet walls and cornices. Most buildings have flat or shed roofs that slope to the rear of the structure. Scuppers would channel water to large commercial grade gutters and downspouts that would direct water off the roof. Some of St. Joseph’s earliest commercial buildings have hipped roofs or other roof forms that were more consistent with residential architecture. The presence of these roof forms adds architectural interest to the commercial streetscape and communicates the evolution of the City’s commercial districts.

Roof materials play an important role in defining a building’s architectural character. Historically, wood shingles were the predominant roofing material used in domestic buildings in St. Joseph in the 19th century. Changes in technology during the mid-to-late 19th and early 20th centuries, however, also made possible a variety of other roofing materials such as patterned and multi-color (polychrome) slate, clay tile, pressed tin shingles and tiles, standing and soldered seam tin, asphalt, and asbestos shingle. Asphalt, fiberglass, or composition shingles are acceptable substitutes for wood shakes, metal shingles, or slate tiles. Care should be taken to match the color and texture of the original roof material. For example, many dimensional architectural shingles have a layered appearance that is more in keeping with a wood shingle roof than a slate roof. Additionally, many slate roofs have decorative patterns or colors that should be replicated in any new roof installation. Synthetic slate is also an acceptable substitute for authentic slate. In the case of clay tile roofs, certain metal shingles are available on the market today that resemble the appearance of the clay tile. These may be deemed a compatible substitute. However, every effort should be made to retain and repair clay tile roofs. Metal roofs in St. Joseph were typically limited to flat roofs, porches, and low-

pitched sloped roofs. Soldered seam roofs were commonly placed on flat roof areas and on dormers and bay windows. Larger areas usually were sheathed in standing seam tin. The distance between standing seams typically did not exceed twenty-four (24) inches on center in these applications. Modern day membrane and granular and non-granular modified bitumen (commonly referred to as “torch down”) roof systems are often applied over failing soldered seam metal roofs today. In all cases involving roof replacement, the property owner shall furnish the Commission with a sample and/or information on the roof product to be used. Rooftop features also are important ingredients of building style and character. Dormers; chimneys; towers; cupolas; cresting; finials; parapet cornices; and decorative roof material, color, and patterns (commonly associated with slate and metal shingles) help to define a building’s architectural expression. These elements should be retained and repaired.

Roofs



St. Joseph Landmark Commission

Repair and Maintenance

Because of the important role the roof plays in providing a weather-tight covering for a building, maintenance and repair are essential to the preservation of the structure. Knowledge of the components that make up the roof system is a key to a successful monitoring of the roof to spot potential problems before they become major.

The major components of a residential roof system are the roof covering, flashing, gutters, and downspouts. Most pitched roofs in St. Joseph today are covered with asphalt or more contemporary fiberglass shingles. These roof sheathing products are available in a number of colors, patterns, and textures. Problems arise when these roofing materials lose their textured surface coating and begin to curl or buckle. A high quality asphalt or fiberglass shingle will last 30-40 years. Slate, clay tile, metal shingles, and wood shingles are also in evidence in St. Joseph's historic neighborhoods. Slate and clay tile roofs, in particular, are very durable roofing materials despite their brittle nature. Tiles should be checked regularly for cracking or spalling (flaking). Often problems occur when the original tile fasteners, setting nails, or flashing nails fail, causing leakage or the tiles to become detached. Fortunately, slate and clay tiles can be reset once repairs have been made. Such roofs have an average life expectancy of 100 years. Metal roofing, often with soldered seams, is most commonly used on flat roof decks and bay window projections. Metal roofs require a protective coating of paint to avoid corrosion due to moisture. Care must be taken not to introduce incompatible flashing materials or metal fasteners which can cause galvanic corrosion. Patching roofs with roofing tar also accelerates the deterioration of the metal. Certain elastomeric roof coating systems may prolong the life of a metal roof. A properly maintained metal roof will last an average of 70 years. Flat roofs, often found on commercial buildings and multi-family residential structures, are typically covered with a built up roof system comprised of multiple layers of roofing felt coated with hot tar or asphalt. The top layer is coated with gravel embedded in the tar or asphalt. More contemporary flat roof coverings are made of monolithic rubber-like membrane materials that are installed like huge taps and are either cemented at the seams with a special adhesive or with a torch that bonds the material to the roof (known as the "torch-down" method).

Flashing, usually made of sheet metal, is used to seal out water in areas where the roof comes into contact with rooftop features such as dormers, chimneys, vent pipes, skylights, and in the valleys created where two different roof planes meet. Flashing is one of the most vulnerable aspects of the roof system. Valley flashing if leaking and left unchecked, can cause water penetration and the eventual deterioration of roof structural elements. Because replacement costs can far exceed the initial installation cost, it is important to choose the best flashing material that you can afford from the onset. Patching defective flashing with sealants or cements is only a temporary "fix". 26-gauge galvanized steel and copper are the best choices for flashing due to their durability.



Workers install new slate shingles on the roof of the John Shireman, Jr. house, 120 S. 15th Street, Museum Hill Historic District.



Roofs



Built-in guttering failure often leads to soffit and eave damage if not corrected. Despite the deterioration, note the intact hexagonal slate tiles, metal ridging, and finial on the tower of the Louis Stigers house, 1023 Church Street, Cathedral Hill Historic District.

Guttering systems play an equally important role in protecting a building from water damage. The most common forms of guttering found on older residential buildings in St. Joseph are built-in, yankee, and half-round (eaves trough) types. Each of these guttering systems has its own unique set of maintenance and repair problems. Built-in gutters are typically integrated into a boxed cornice which can then be ornamented with moldings, bracketing, and panels to create a distinctive ornamental feature at the eave line. Many of these cornices are fashioned of sheet metal. Others are made of wood. The major advantage of the built-in gutter is that it is completely invisible from the ground. When repairing or replacing built-in gutters, the new sheet metal material used to line the gutter should be corrosion resistant and all joints and patches must be soldered. This precludes the use of aluminum which can not be soldered. Galvanized steel and copper are the best choices. Care should also be taken to ensure that the wooden boxed frame that supports the gutter is in sound condition. Sagging or deflected structural members can adversely effect the slope and draining capacity of the gutter.

Yankee gutters, also commonly known as *standing roof gutters*, are comprised of an L-shaped piece of metal that stands on the roof surface a foot or more above the eaves. These gutters allow the eaves to be exposed to full view, thus allowing ornament such as crown molding, shaped rafter tails, or other decorative woodwork to be incorporated into the eave design. *Half-round*, or *eaves trough gutters*, are attached to the roof with metal hangers or straps which are typically spaced about three (3) feet apart. Straps should be nailed beneath the shingles to prevent leakage through nail holes. The best material choice for half-round gutters is galvanized steel or copper with soldered joints. Soldered joints will ensure a strong, long-lasting, water tight system. Steel is also a rigid material that will resist damage from sliding snow and ice.

The most popular style of gutter found on the market today is the *K-style* or *ogee gutter*. Gutters and downspouts are typically made of aluminum and are advertised as being “seamless” which is a misnomer as the gutters have seams at inside and outside corners that require a slip joint or a rivet to connect the pieces. This connection should be caulked to keep a weathertight joint. The preferred material for modern guttering is galvanized steel or copper which is fabricated with soldered joints to ensure a strong, long-lasting system.

A roof restoration begins with a thorough examination of the roof. Often, physical evidence will provide a clue to a building’s original roof construction and sheathing materials. For example, many of St. Joseph’s houses were built with wood shingle roofs. More contemporary asphalt shingles often were applied directly over the original wood shingles. Screw holes in the sheathing of the ridge of the roof may indicate that ornamental roof cresting once graced the structure. Structural framing may reveal the location of no longer extant dormers or chimneys.

Gutter systems should be routinely deaned of leaves, branches, and other airborne materials that may cause clogging and the back up of water. Flashing should be inspected regularly for evidence of leakage, particularly around rooftop features such as chimneys. Where a chimney is located below a roof ridge, a special piece of flashing known as a *cricket* should

Roofs



be used on the back side to help divert water and to prevent erosion of masonry joints. Roof sheathing materials should be examined regularly, particularly after strong winds to determine if shingles have been lost or have loosened.

Roofs: Guidelines

1. Preserve original roof shapes and forms. Alterations to roof forms such as changes in roof pitch and the introduction of dormers, skylights, antennae, satellite dishes, solar panels, and other rooftop appurtenances shall not be undertaken in primary areas unless said features have been proven to exist at some point in the structure's history and/or are deemed to have been a feature typically found on structures of that particular architectural style.
2. Locate roof ventilators, antennae, satellite dishes, mechanical equipment, and other rooftop appurtenances on non-character defining roofs or inconspicuously on rear slopes where they are not visible from the public right-of-way.
3. Retain and repair historic roofing materials whenever possible. Consider limited replacement in lieu of complete replacement.
4. Undertake a program of routine inspection, repair, and maintenance of all roof system components – sheathing, gutters, soffits, fascia, downspouts, flashing, and coping.
5. Assess the visibility and prominence of the roof from the front, side, and rear yard areas when contemplating roof material changes and weigh their impact on the character of the building or district.
6. Choose a compatible substitute or replacement for either the original or existing roof material in the event the historic roofing material is too deteriorated to repair. Said substitute shall be compatible with either the original or existing roofing material in terms of composition, size, shape, color, and texture.
7. Metal roofs in St. Joseph were typically limited to flat roofs, porches, and low-pitched sloped roofs. In some cases, the roofs of accessory structures were covered in metal. It is not appropriate to replace a shingle or slate tile roof with a standing or soldered seam metal roof. Such roof installations may be allowed if documentary or physical evidence suggests that such a roof originally covered the structure. In cases where a standing seam roof installation is requested, the distance between standing seams shall not exceed twenty-four (24) inches on center. V-crimped metal may be used as an acceptable substitute for standing seam metal. Membrane or bitumen roof systems are acceptable substitutes for soldered seam flat or shallow sloped roofs, particularly on commercial buildings.
8. Retain rooftop architectural features such as dormers, chimneys, towers, cupolas, cresting, ridge caps, finials, and decorative roof patterns and colors (typically associated with slate roofs and metal shingles).



Roofs

Roofs: Guidelines continued

9. Consider the use of flexible coating systems to prolong the life of metal roofs and built-in gutters.
10. Consider the visual impact of the guttering on the building. Many guttering systems were specifically designed for the building on which they are located. Is the gutter a prominent feature of the roof design and does it possess decorative elements that will be lost if the feature is removed? If so, take steps to repair the feature or replace it in kind. If replacement is necessary, evaluate the impact of alternative gutter styles on the character of the building. For example, will the installation of a hanging gutter obscure crown molding on a cornice or other decorative work? Will the roof style even accommodate a hanging gutter? Is the gutter sized properly to carry the volume of water that will come off the roof? Explore these issues before selecting an alternative gutter design.
11. Avoid the use of PVC and other synthetic guttering systems.
12. Choose half-round guttering over K-style guttering for hanging gutter applications. K-style guttering may be deemed appropriate in certain limited applications where the fascia and cornice detailing of a building dictates a square gutter design.
13. Choose replacement gutters and downspouts that are appropriately sized to accommodate the volume of water anticipated from the roof area. Provide ample downspouts to handle anticipated water volume. Locate downspouts at the corners of the building or in areas that do not obscure or damage character-defining architectural features of the building. Coat replacement gutters and downspouts (excluding copper) with paint or a baked on enamel finish in a color appropriate to the color of the building.
14. Install low profile ridge and roof vents when desired for increased attic air circulation. Said vents should be located in inconspicuous areas and not diminish the original design of the roof or destroy character-defining architectural details. Paint ridge and roof vents a color to match the color of the body of the house. Consider soffit venting in lieu of ridge vents in residential metal roof applications.

