

CHAPTER 2.5: ROOFS AND CHIMNEYS

INTRODUCTION

Rooflines define a building's style and its relationship with the streetscape. The pitch, orientation to the street, height, eave depth, roof decoration, and materials are elements that make historic resources unique. When repeated along the street, the repetition of similar roof forms contributes to a sense of visual continuity for the historic streetscapes. A clay tile roof is a key feature of a Spanish Colonial Revival style building. A long, low gable is common in a Craftsman building. Maintaining the traditional pattern of roof configurations is an important goal in the preservation of neighborhood character. Historic roof details include dormers, eaves, gutters, downspouts, chimneys, ventilation, skylights, and solar panels.



Santa Barbara is known worldwide for the many terra cotta roofs that adorn our Spanish Colonial Revival historic resources.



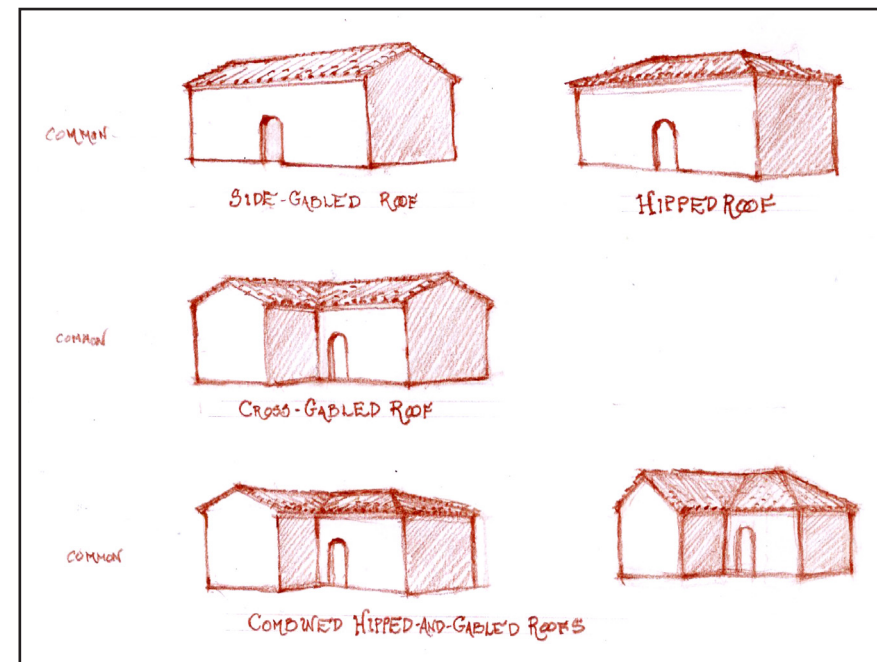
This late 1920s Spanish Colonial Revival building features a low-pitched, cross gabled, red tile roof.



The hipped roof with a brick chimney is a character-defining element of this Folk Victorian style home.

COMMON HISTORIC ROOF FORMS

The historic roof form is critical to the understanding of a building's type and architectural style. Alterations to a roof's shape can have a negative impact on the building's appearance. Roof forms can have various pitches and are often combined in different manners to provide numerous roof types.



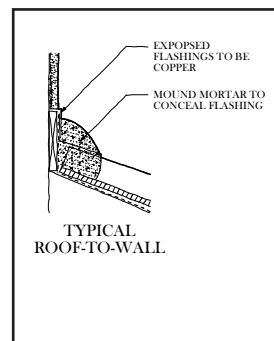
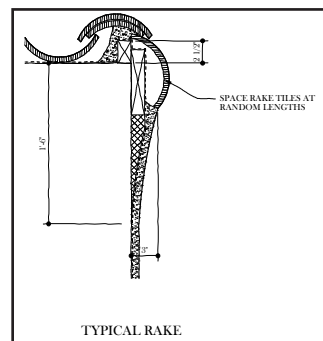
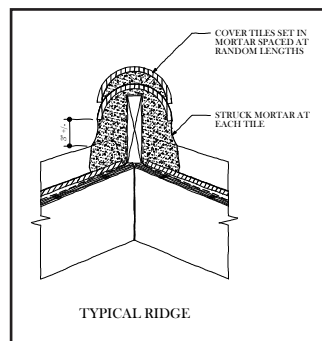
Different styles of roof forms.

COMMON HISTORIC ROOF MATERIALS

The pitch or slope of a roof helps define the appropriate materials for the roof. Low-pitched to flat roofs depend on a continuous or nearly continuous roof surface to minimize moisture infiltration. Material options for low pitched roofs include built-up hot tar roofing or single-ply roofing. Materials for steeper sloped roofs include terra cotta and composition/asphalt shingles.

TILE

Santa Barbara is defined by its beautiful terra-cotta tile roofs. A terra-cotta tile roof can last over 100 years. Problems with tile are often due to failure of the underlayment below the tile. Existing tiles can usually be salvaged, and new pans can be used to allow existing pans to be repurposed as tile caps. Use two-piece cap and pan, red, terra cotta tile. The starter course should be doubled with booster tiles and mortar used as bird-stops at the eaves. Field tiles are often laid with staggered butts, and a portion lifted with mortar under the tiles. At gable ends, stucco is often trowelled to merge with the rake tiles.



The starter courses of two-piece cap and pan terra-cotta roofs in Santa Barbara are double tiled.



Side profile of clay tile along a gable end.

Measured drawings and sketches reprinted courtesy of Craig Shallanberger.



This dormer protrudes out of a composition roof that mimics the color and shape of original wood shingles.

COMPOSITION ROOFS

Many historic houses originally had wood shingle roofing that was aged to dark brown to dark grey. Due to fire prevention codes, many of the wood roofs in Santa Barbara have been replaced with asphalt composition shingles that are appropriate for historic resources.

- Use composition roofs in the colors of dark grays, charcoals and dark browns that are typical of many historic roofs.
- Avoid light colored asphalt shingles as well as earth tones such as rusty reds, greens, and light browns.
- There are many new fireproof wood shingles that allowed on building not in the high fire area that may be appropriate for your building and can be reviewed on a case-by-case basis.

DORMERS

Dormers protrude from the roof surface with a window providing light and additional headroom under roof eaves. Dormers have various roof shapes but are typically gabled or hipped.

EAVES

Many historic roofs in Santa Barbara broadly overhang the façade, creating deep shadows. These broad eaves are also a location for important detailing such as brackets, exposed rafters and intricate rafter tails, cornices, and fascia boards. The depth and décor of eaves define a building's style and the shadows created by traditional overhangs contribute to the perception of the building's scale.

Wide, overhanging eaves protect the house from water intrusion.

Brackets with exposed rafter tails are typical features of Arts and Crafts bungalows.



GUTTERS, DOWNSPOUTS AND LEADER BOXES

Gutters and downspouts protect historic resources from water damage to walls, foundations, and piers. Built-in gutters are hidden from view from the ground within or behind architectural features such as cornices or parapets. Hanging gutters are metal with a half-round or profiled cross section. Gutter and downspout materials have different life spans. Generally, copper has the longest potential life span. Steel is prone to rust, and aluminum is prone to dents. Many Santa Barbara's Craftman-style historic resources do not have gutters because wide eaves protect the house, though building codes may still require them.

Leader boxes are sheet metal (preferable copper) box elements that conceal the roof drains from view. Typically the drain lines are placed inside the wall framing, but often are visible.



CHIMNEYS



Chimneys made of brick, stone, and stucco made with excellent craftsmanship are character-defining elements of the architectural style and should be maintained.

Chimneys are strong architectural elements on the exterior of historic resources. They are made of varying materials, such as brick or stone, with a variety of cap treatments, including simple brick, stepping (or corbelling) of courses of brick or stone, terra-cotta caps, bishop's cap (a pointed brick arch), flat stone coping, or a simple metal cap. Mortar joints on masonry chimneys need to be maintained and repaired to match the original in composition in order to maintain the structural strength of the chimney.

Historic chimneys constructed of brick and the softer mortars used a century ago often need lining to prevent fire or smoke damage due to deteriorated mortar joints. This can be done without changing the exterior of the chimney. Replacement chimneys should reflect the form and material of the original, or suitable, style of the building.



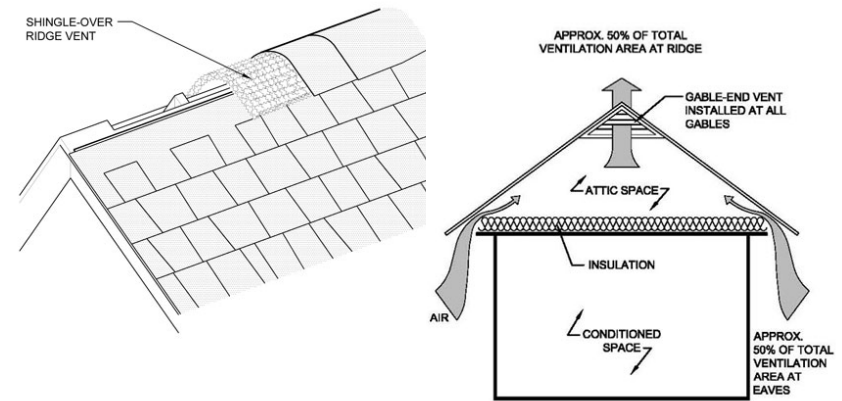
The chimney was covered in a stucco that is not compatible with the wood Craftsman style bungalow. The original chimney was either brick or stone.

ROOF VENTS

Attic ventilation is important to remove heat and humid air from buildings. While there are commercially available products that may be discreet and low-profile, attic ventilation is also an opportunity for creative design expression, using terra cotta tiles or wood lattice in gable ends. When using manufactured metal products, locate them away from the front of the building to minimize their visibility, and paint them to blend with the roofing material.

SKYLIGHTS

Skylights should be flat glass, not plastic or domed, and not visible from the front of the building and street, or screened by the building form, landscaping, or parapet.



Drawings courtesy of National Roofing Contractors Association.



The Spanish Colonial Revival house features decorative venting in the gable that is unique to the style.



The Craftsman home features original, decorative venting in the gable that helps vent the attic space.



Above and below: The owners of this Tudor Revival have successfully installed solar panels that are set back on a rear slope that is not visible from the streetscape.



SOLAR PANELS

Solar panel system installations may be installed on historic structures so that the front elevation of the historic resource visible from a public-right-of-way is not impacted. If solar panels are placed on roofs; place panels as flat to the roof as possible and located facing a rear yard or as far back on a side sloping roof. If panels are placed on south facing roofs that are highly visible the installation will negatively impact the integrity of the resource.

All electrical equipment and conduits should also be painted or screened from view so that the equipment is effectively screened.

Consider placement of solar panels behind parapet walls. Some historic buildings in Santa Barbara have parapets, which can be used to hide solar energy systems.

Building integrated solutions such as photovoltaic shingles, laminates and glazing may be appropriate on historic structures where they are minimally visible. Depending on system design, historic significance of the host building, and visibility, building-integrated technology may sometimes be acceptable on visible portions of historic structures, but these proposals would be evaluated on a case by case basis. Please see the Santa Barbara Solar Energy System Design Guidelines for more information.

Large, freestanding structures to hold solar panels adjacent to historic resources should be constructed with materials compatible to the adjacent historic resources in materials and proportions.

REPAIR AND MAINTENANCE

A building's roof provides the first line of defense against the elements. When a roof begins to experience failure, many other parts of the structure may also be affected. For example, a leak in the roof may lead to damage of rafter tails or even wall surfaces. Common sources of roof leaks include:

- Cracks in chimney masonry.
- Loose flashing around chimneys and ridges.
- Loose or missing roof shingles.
- Cracks in roof membranes caused by settling rafters.
- Water backup from plugged gutters.

GUIDELINES

- 2.5.1 Preserve original roof form and roof details. When repairing or altering a roof, it is important not to alter the pitch of the historic roof or its orientation to the street.
- 2.5.2 Avoid use of other materials that simulate terra cotta. Many do not have the same dimensional characteristics of the historic material.
- 2.5.3 Preserve the original chimney.
- 2.5.4 Rebuild the chimney, if necessary, to match the original form, materials, and detail as closely as possible. If available, use original brick or stone as a veneer.
- 2.5.5 Protect against water leaks by maintaining chimney flashing and mortar joints.
- 2.5.6 Replace original roof details if they are lost and must be replaced. Base designs on historic photographic evidence. If no such evidence exists, base the design of replacement details on a combination of physical evidence (indications in the structure of the house itself) and evidence of similar elements on houses of the same architectural style in the neighborhood.
- 2.5.7 Preserve the original depth of the overhang of the eaves.
- 2.5.8 Protect rafter tails from rot.
- 2.5.9 Avoid cutting back roof rafters and soffits.



This Craftsman home features modern half round roof vents that were installed back from the streetscape to be minimally visible while helping vent the attic.



For in-depth technical recommendations on restoration of roofs, the National Park Service, The Secretary of the Interior has published "Preservation Briefs" to help historic building owners recognize and resolve common problems prior to project start. Please see Preservation Briefs 4, 19, 30, and 47 at <http://www.nps.gov/tps/how-to-preserve/briefs.htm>

GUIDELINES CONTINUED



The dome highlights the beauty and craftsmanship of the red clay tile roofs that characterize Santa Barbara.

- 2.5.10 Retain existing dormers.
- 2.5.11 Reconstruct dormers on historic resources where there is clear evidence that they existed.
- 2.5.12 Construct new dormers to match the style of the building in form, spacing, dimensions, proportions, style, and detailing.
- 2.5.13 Avoid adding roof dormers to the front elevation of the roof and that are out of scale with the original building.
- 2.5.14 Install inconspicuous attic venting under the eaves or with low profile ridge vents or low profile power vents in non-visible locations, set back at least ten feet from the front elevation.
- 2.5.15 Install roof-mounted equipment (including mechanical equipment) such as; vents, television dishes, antennae, solar panels, and skylights in a manner that is as visually unobtrusive as possible from the street.
- 2.5.16 Install skylights so they are not obtrusive.
- 2.5.17 Install solar panel equipment facing a rear yard, or as far back on a side slope as possible.
- 2.5.18 Repair/replace gutters to match any special molding, strap, or bracket used to support or attach the gutter to the historic resources.
- 2.5.19 Ensure that gutters are maintained and functional in order to protect the house from damage that can quickly become costly to repair.
- 2.5.20 Install downspouts so they do not detract from character-defining features and mount them to the building, rather than a porch.
- 2.5.21 Avoid installation of plastic gutters and downspouts as they easily become brittle and fail.
- 2.5.22 Avoid use of manufactured bird stops, use mortar instead.
- 2.5.23 Avoid addition of fascia boards on eaves where none previously existed.
- 2.5.24 Avoid use of clapboard, shingles, or other wood siding materials on the exterior of new wood-frame (prefabricated metal firebox) chimneys. Although stucco is preferred over wood siding materials, new wood-framed chimneys should be covered in brick or stone for a more authentic look.
- 2.5.25 Avoid installation of wind turbines as roof vents.