

4.9 Roof Design Guidelines



A weather-tight roof is basic in the preservation of a structure, regardless of its age, size, or design. In the system that allows a building to work as a shelter, the roof sheds the rain, shades from the harsh sun, and buffers the weather.

During some periods in the history of architecture, the roof imparts much of the architectural character. It defines the style and contributes to the building's aesthetics. The hipped roofs of Georgian architecture, the turrets of Queen Anne and the graceful slopes of the Bungalow designs are examples of the use of roofing as a major design feature.

But no matter how decorative the patterning or how compelling the form, the roof is a highly vulnerable element of a shelter that will inevitably fail. A poor or unmaintained roof will permit the accelerated deterioration of historic interior building materials - masonry, wood, plaster, paint - and will cause general disintegration of the basic structure. Refer to 'Roof Technical Guidelines,' section 5.9 for technical information on historic and new roofs.

4.9.2 HISTORIC ROOFING MATERIALS

Wood shingles and shakes were popular throughout the country in all periods of building history. The size and shape of the

4.9.1 INTRODUCTION

shingles and shakes as well as the detailing of the shingle roof differed according to regional practices.

Commonly in urban areas, wooden roofs were replaced with more fire resistant materials, but in rural areas this was not a major concern. On many Victorian country houses, the practice of wood shingling survived the technological advances of metal roofing in the 19th century, and near the turn of the century enjoyed a full revival in its namesake, the Shingle Style. The Bungalow styles in the 20th century assured wood shingles a place as one of the most fashionable, domestic roofing materials.



WOOD SHINGLES

Metal roofing in America is principally a 19th-century phenomenon. Before then the only metals commonly used were lead and copper. Tin-plate iron, commonly called "tin roofing," was used extensively in Canada in the 18th century, but was not commonly used in the United States until rolling mills were established in this country. The low cost, light weight, low maintenance and ease of shipping of tin plate made it a common roofing material. Embossed tin shingles, whose

surfaces created interesting patterns, were popular throughout the country in the late 19th century. Tin roofs were often kept well-painted in red or green to imitate the green patina of copper. Unfortunately, few of these roofs remain intact today.



METAL ROOF (CORROGATED METAL)

Composition shingles have been a popular and widely used roofing material since the early decades of the 20th century. Asphalt composition shingles have replaced wood shingles and ceramic tile roofs due to their ease of installation, low cost and availability. In addition, they are fire-resistant which in urban areas, is preferred by building officials. Originally available in many patterns – variegated, diamond and plain (or square) – and colors (green, red, greys and browns), these are typically used in patterns and colors to imitate wood shingles. Since the early 1980's, thicker composition shingles styles are available which offer a longer life (30-year), have a more rugged appearance are available in a selection of natural colors (greys and browns), thus giving an appearance of wood shingles; these are typically referred to as 'architectural grade roof shingles'.



**ASPHALT SHINGLE ROOF
(ARCHITECTURAL GRADE SHINGLES)**

Other roofing materials typically used on more elaborate residential and commercial buildings in the early 20th century included ceramic tile (glazed and unglazed), cement tile, stone and slate tiles.



CERAMIC TILE ROOF

Flat roofs, typically used on commercial buildings, utilized rolled or sheet asphalt and built-up roofs since the mid-19th century in north Texas.

Rolled (or sheet) asphalt roofing provided an economical roof for flat or low sloped roofs. Sheets of felt canvas or cloth were impregnated with asphalt, then laid in overlapping strips across the roof, with the joints sealed with a heated asphalt compound.

Built-up roofing was first used in north Texas in the early decades of the 20th century and continues to be the most common roofing type in use today for flat or low-sloped commercial roofs. Built-up roofs are comprised of several layers of roofing felt sealed with a heated asphalt compound and usually protected by

spread gravel on the top surface to protect the layers below. Types include 3-ply (with 3 plies of felt), four-ply.

4.9.3 ROOF STYLES AND ORNAMENTATION

Roofs occur in three fundamental shapes or forms: gabled, hipped and flat.

A gable roof is described as a pitched roof with two inclined planes having equal angles that meet at a peak in the center and terminate at a vertical gable. Variation of this roof form include front facing gable, side facing gable, cross-gable, square gable. The wall that encloses the end of a gable roof is called the 'gable'. This roof form is used often for Victorian and Queen Anne, Arts and Crafts, Tudor and Minimal Traditional-styled houses within the historic areas of Grapevine.

Please note that while houses may have one dominant roof style, they can have minor forms or components of another style. For example, many Tudor Revival houses will have gables at the front elevation, but have hip roofs in the back of the house.



**GABLED ROOF w/ EXPOSED
RAFTERS
(FRONT FACING GABLE AT PORCH)**



**FRONT FACING GABLE ROOF w/ SIDE-
FACING GABLE**



**GABLED ROOF
(FRONT FACING BRICK GABLE)**

A hip roof is a roof that slopes inward from all exterior walls, and forms either a pyramid roof form or one with a ridge that all four (or more) roof planes adjoins. Pyramid roofs are typically found at smaller, square houses while hip roofs with a ridge are used at rectangular or more complex building plans.

Subtypes of a hip roof form include the pyramid, simple hip as well as a cross-hip, dual-pitched hip (mansard) and half-hipped.



**FRONT FACING HIP ROOF w/
ATTACHED PORCH ROOF**



**HIPPED ROOF w/ FRONT AND SIDE-
FACING GABLES AND DORMER**

Flat roofs are roofs with a pitch or slope sufficiently low that it can be walked upon easily; this may be a true horizontal plane or have a low pitch for rainwater drainage. Typically used at historic commercial buildings on Main Street, flat roofs are typically surrounded by a parapet or have only a gravel stop at the rear perimeter (facing the alley).



**FLAT ROOF AT COMMERCIAL
BUILDING**

Other roof components include roof dormers, turrets, chimneys, eaves, multi-level eaves, verge boards (below gables), fake beams, exposed rafters, articulation or detailing at eaves, castellations (typically at commercial parapets) and more. Some of these components have purpose – dormers provide light to the building interior – while others are purely decorative and serve to support the architectural style of the building. Examples

of some of these components found in Grapevine are shown following:



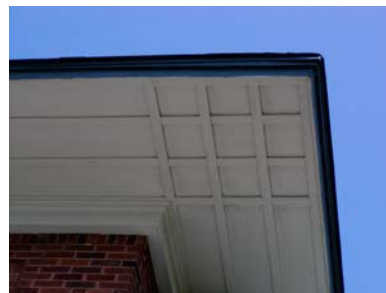
**FISHSCALE WOOD SIDING
AT GABLE (VICTORIAN)**



EAVE RETURN AT GABLE



DORMER AT GABLE ROOF



**ARTS & CRAFT DETAILING
AT EAVE**



**HIPPED DORMER WINDOW w/
ROUNDED WALLS**



EYEBROW DORMER