

# Wood Siding, Trim & Ornamentation



St. Joseph Landmark Commission

Historically, both brick and wood have been the predominant building materials used in St. Joseph's domestic and commercial architecture. St. Joseph's historic districts display an intermingling of brick and wood structures that reflect the prevailing architectural styles in vogue at the time of their construction.

Most wood frame houses and rare surviving commercial buildings in St. Joseph built before 1940 are made of balloon frame construction which means that the exterior side wall studs in a two story building are continuous from the foundation to the roof rafters. The wood frame skeleton provides the structural support for the walls, floors, and roof. Vertical framing members are called studs, while thick horizontal framing members placed on the edge to support floors and ceilings are called joists. Rafters are the sloping framing members that make up the roof. Buildings of wood frame construction are typically covered in clapboard or weatherboard siding which consists of horizontal boards that overlap. Clapboards are generally tapered with the thicker end found on the lower edge of the board. These boards are sometimes mounted directly to the wood framing of the building. In other cases, clapboards are nailed to underlying sheathing boards that are butted together and help to protect the skeletal frame from the weather. These boards also reinforce the structural integrity of the building frame.

In the late 19<sup>th</sup> century, Victorian builders introduced a variety of siding styles and other wood sheathing types that created exuberantly decorative exterior treatments. Wood shingles, cut in a variety of geometric patterns, were often used in attic gables and as belt courses between floors. These were often combined with clapboard, flush board sheathing, board-and-batten, or other siding types to create a harmonious architectural expression.

In addition to exterior siding, architectural elements such as columns, cornices, doors, sawnwork gable ornamentation, balustrades, and bracketing are but a few of the features that are fashioned from the carving, sawing, splitting, planing, and turning of wood. Known as "trim work", these architectural embellishments were, for the most part, made in mass production and sold within local markets by local milling companies or nationally through catalog distribution. Railroad transportation allowed elements to be shipped to any location in the country, no matter how remote. Such technological advancements transformed architecture, making exterior ornamentation more widespread and allowing homeowners to update their buildings in the latest architectural styles. Today, many of St. Joseph's architectural resources reflect the actions of previous owners to "modernize" their structures in an effort to conform to the prevailing architectural tastes of the time.



Wood clapboard siding, decorative shingle beltcourses, and dormer gable ornamentation embellish the exterior of the George Schneider house, 1921 Francis Street, Harris Addition Historic District.

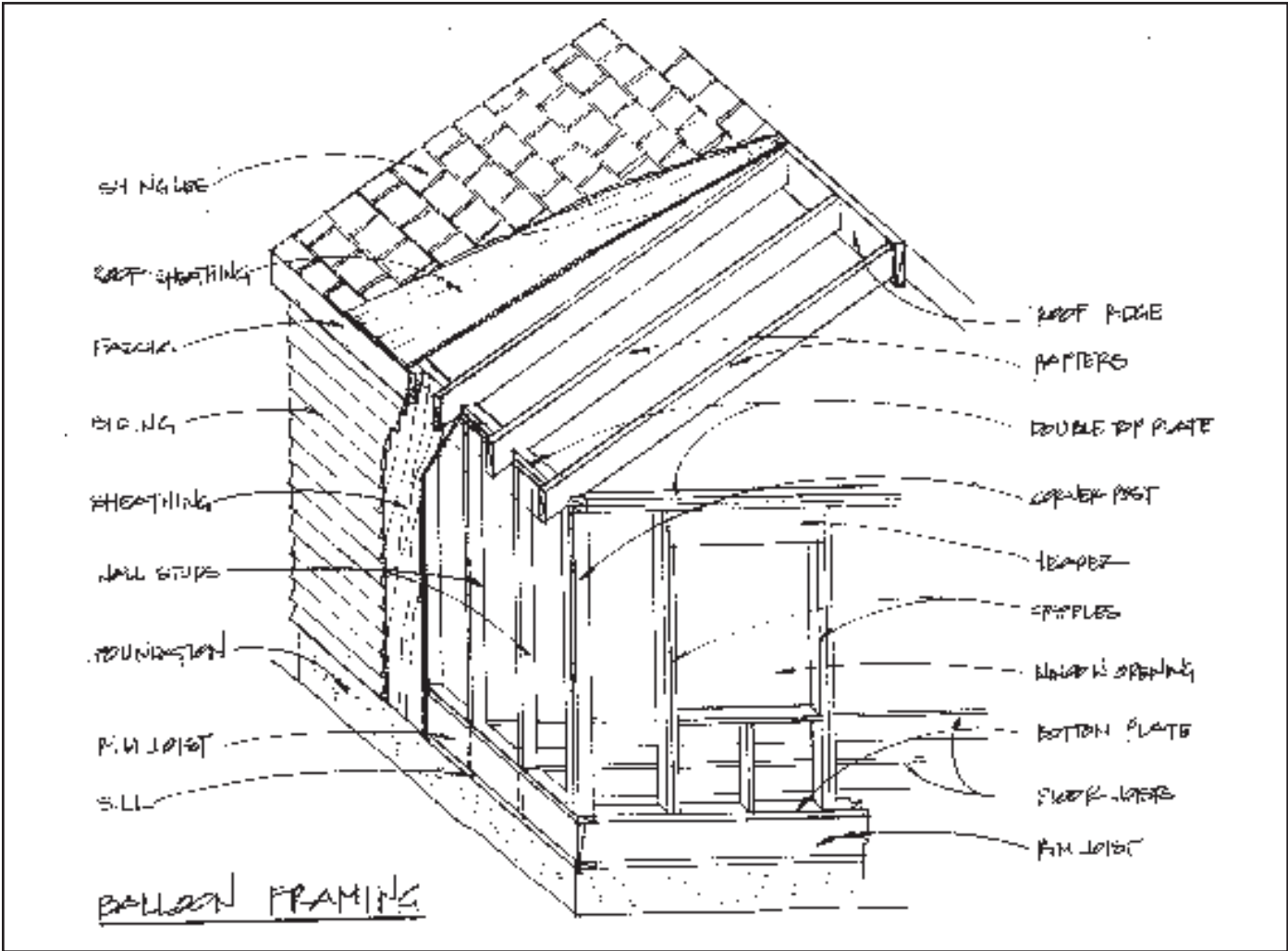


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## Maintenance and Repair

While wood is easily worked, has natural insulating qualities, and is relatively durable, it does require a program of routine inspection and maintenance to keep it in proper condition. Staining or mildew on wood surfaces is indicative of persistent damp conditions which can lead to fungal and insect infestation if not corrected. Wood that is moist, and consequently soft, can attract insects such as carpenter ants that destroy wood by nesting in it or termites which actually eat the wood fibers.

Dry rot is a common type of decay found in Missouri. In general terms, dry rot refers to an advanced state of decay in which wood loses its strength due to prolonged exposure to moisture and can easily be crushed into a dry powder. A roof leak that occurs over a rafter and ultimately reduces the wooden member to a brown, crumbly state is an example of a common dry rot condition. Dry rot can also form inside walls due to condensation from bathrooms or kitchens or improper wall insulation installations.



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Chemical preservatives can greatly prolong the service life of virtually any wood, even if it has poor natural resistance to decay. Common preservatives available at hardware stores can be liberally brushed on or the bare wood can be completely immersed in a preservative solution. In other cases, preservatives are deeply driven into the wood via a high pressure chamber, thus creating “pressure-treated” lumber which is commonly used today in outdoor construction. The most prevalent chemical used for pressure treating is chromated copper arsenate, commonly known as CCA. CCA lumber is an excellent choice for use in inherently damp locations such as the structural framing of a porch or deck, or for fence posts. Due to a heavy moisture content, pressure-treated lumber may shrink, twist, split, and warp as it dries. For this reason, it is not recommended for trim and millwork on buildings. Construction woods classified as resistant to rot such as cedar, old growth cypress, and redwood are preferred for exterior millwork applications.



Conditions such as peeling paint and wood rot are often the result of improper paint preparation, roof leaks, or non-functioning gutters on building exteriors.

Problems such as peeling paint and rot are primarily the result of improper paint preparation techniques. Improperly functioning guttering and flashing systems and the lack of adequate sloping of building elements to shed water can also contribute to the problem. Cracks and joints in wood, particularly where siding and trim pieces abut, should be inspected regularly and caulked as necessary with a high quality sealant. (Horizontal lap joints should not be caulked.) Avoid the use of silicone sealants that are not paintable.

Epoxies and wood consolidants may be used to repair minor damage. Typically, loose wood fibers are removed from the deteriorated area and a wood consolidant is applied to reinforce and strengthen the wood fibers. An epoxy filler is then used to fill voids and cavities, creating a solid mass that can be sanded or shaped to the appropriate contour and painted or, in some applications, stained. When damage is too extensive to warrant repair, damaged boards can be carefully removed and the wall section infilled with siding that matches the profile, dimensions, and spacing of the original. All the surfaces of the new clapboard or trim piece should be treated with a wood preservative or primer before installation.

Trim elements and architectural ornamentation should be properly maintained to prevent their loss through deterioration. If replacement with new materials is necessary, in-kind replacement is the most appropriate course of action. Such in-kind replacement does not require Commission approval.

Loose trim and ornamentation can be re-secured by carefully drilling holes and re-attaching with screws that are counter-bored and then filled with a wood filler. Missing trim can be replicated with modern woodworking tools. Many architectural elements are actually comprised of several pieces of wood trim. When dismantling a complex element for repair, note how it is put together and make sketches or take photographs, if necessary.



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When wooden elements are too deteriorated to repair, remove only those elements that are beyond repair. Splice in new pieces of wood, if possible. Reinforce damaged wooden elements with new wooden elements as another means of retaining original fabric. The availability of wood epoxies in the marketplace today has also made it possible to recondition and rebuild rotted wooden trim and ornamentation. Epoxies, polymers, and synthetic resins can be used to fill cavities and build up partially rotted areas. Impregnation of damaged wood fibers with certain epoxy products will help to ensure the retention of original fabric and will often leave the wood stronger than it was originally.

## Synthetic Sidings

The covering of wood siding and other decorative millwork with synthetic products such as aluminum or vinyl is generally prohibited. Synthetic products have a number of potential negative drawbacks that are seldom mentioned by manufacturers and sales representatives. Whereas wood siding “breathes”, allowing moisture caused by temperature differences on either side of the walls to escape gradually to the outside before buildup and condensation occurs, synthetic sidings do not breathe. Thus, moisture becomes trapped in the walls and rot and deterioration become imminent. Synthetic sidings can hide this problem until it becomes severe, thus warranting complete siding removal to repair the damage.



Vinyl siding is installed on this N. 9<sup>th</sup> Street Queen Anne house resulting in the obscuring of decorative shingles and wood panels in the bay window area.

Poor installation of synthetic sidings is also problematic. Applications frequently result in the damaging, obscuring, or removal of architectural features. Profiles of door and window trim are invariably changed and distinctive building features that can not be replicated with the new product are lost in the installation. Thus, the character of the historic resource is diminished.

Synthetic sidings can also create unsuspected fire hazards. In a fire, aluminum siding will act like an oven wall, retaining and intensifying the heat. Vinyl siding will melt and, in the process, emit poisonous gases as it burns. Synthetic sidings also hide the path of the fire as it travels through the wall, thus complicating efforts to extinguish the blaze.

# Wood Siding, Trim & Ornamentation



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Before



After



Perhaps the greatest misconception about synthetic sidings is that they are “maintenance free”. Because synthetic sidings are commonly installed on existing buildings, they involve a great deal of special cutting to achieve a custom fit. Seams formed where architectural features such as doors, windows, and cornices are located must be routinely caulked to prevent water infiltration. Exposure to ultraviolet rays from the sun will also fade siding, making later piecemeal replacement unsightly. Synthetic sidings may also mildew, crack, and discolor, resulting in a need to repair and paint the surface in time. Once synthetic sidings are painted, the maintenance costs are not significantly less than that of wood.

While vinyl siding is a relatively new synthetic siding application, asbestos concrete shingles and plaster-based Celotex board exterior finishes gained popularity in the 1930s and 1940s. Asbestos shingles gained widespread popularity in the years immediately following World War II and often were applied to Victorian structures to provide an “updated” appearance. Celotex was marketed aggressively for interior and exterior finishes for residential garages. Commercial production of aluminum siding began in 1947 and gradually replaced asbestos as a favored sheathing material for remodelings and new construction applications. Given the fact that these exterior sheathing materials have been in production for over 50 years, they should be carefully evaluated to determine whether or not they have acquired historic significance in their own right before removal is contemplated. In most cases, however, removal of synthetic sidings is favored when original materials are covered and the desire is to restore a building to its original exterior appearance.

The Commission may allow for the replacement of synthetic siding with another synthetic siding if the replacement is more in keeping with the original appearance of the structure. In such cases, the Commission may specify which areas shall be covered in an effort to prevent the indiscriminate removal, damaging, or obscuring of architectural details. This is particularly true if decorative trim work or shingle work is exposed after the old synthetic siding is removed. Applicants are required to arrange an on-site inspection of the property by the City’s Preservation Planner and representatives of the Landmark Commission to assess conditions and to determine an appropriate course of action. In general, the Landmark Commission encourages the rehabilitation or replication of the original sheathing materials. Property owners may choose to consider applying for assistance for exterior rehabilitation through the City’s Residential Historic Preservation or Commercial Façade Improvement Loan programs.

A 1960’s “update” of the Queen Anne style Henry White House, 503 S. 11th Street, Museum Hill Historic District resulted in the loss of the house’s generous wraparound porch, decorative shingle bands and narrow profile wood siding. Current owners plan to restore the house back to its original c. 1888 appearance.



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## Wood Siding, Trim & Ornamentation: Guidelines

1. Retain and preserve original wood siding, trim work, and ornamentation. Care should also be taken to preserve original finishes, whenever possible. If this course of action is not possible, such finishes should be documented through photographs and submitted to the Commission for its permanent files.
2. Use epoxies and other maintenance and repair techniques such as splicing or patching to preserve original fabric. Retention of original fabric is preferred to ensure the authenticity and integrity of the historic resource.
3. Replace wooden features in kind only when the original is too damaged to repair. Use new wood that matches the original in terms of dimension, shape, scale, proportion, detail, and texture.
4. Treat new wooden elements with a chemical preservative prior to installation to ensure longevity.
5. Protect wooden elements through a routine program of maintenance:
  - Inspect wooden surfaces regularly for signs of damage from moisture, mildew, fungi, and insects.
  - Monitor the condition of painted surfaces for signs of peeling paint and uncaulked joints.
  - Slope wooden surfaces to shed water.
  - Prime all exposed wooden surfaces and edges (including the back side of new clapboard siding) before installation.
  - Properly flash intersections and openings to avoid water penetration into the structure.
  - Install gutters, downspouts, water deflectors on roofs, and other devices to prevent water damage to wooden elements.
6. Avoid cleaning wood surfaces with high pressure methods such as sandblasting and waterblasting. Low pressure power washing for cleaning purposes and in preparation for repainting may be permitted as long as the water pressure does not exceed 400 psi. Complete a test wash in an inconspicuous location to determine the effect of said washing on historic building materials.
7. Avoid covering wood siding and millwork with synthetic products such as vinyl siding or aluminum trim. Removal of vinyl siding and trim is encouraged to reveal the original appearance of the structure. Remove later siding carefully to avoid needless damage to the original fabric.
8. Investigate when asbestos shingle and aluminum siding applications were installed. While the Commission generally encourages the removal of later modern siding applications, retention of asbestos, Celotex, and aluminum siding may be warranted if its installation can be tied to a date within the house's period of significance. The 50-year mark is generally the age threshold for assessing historical significance.