



Photo D.2 - Foursquare style brick residence
- 219 N. Brainard Street



Photo D.3 - Colonial Revival style brick residence
- 18 S. Columbia Street

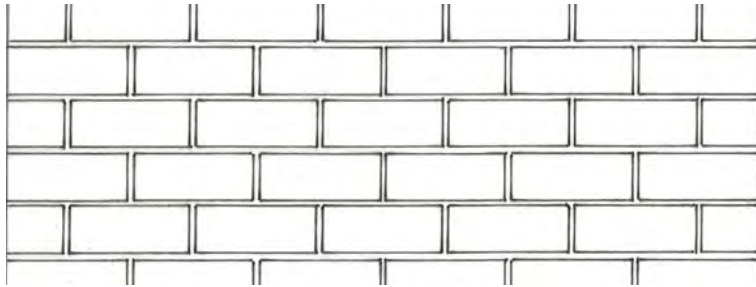


Illustration D.1 - Brick running bond pattern

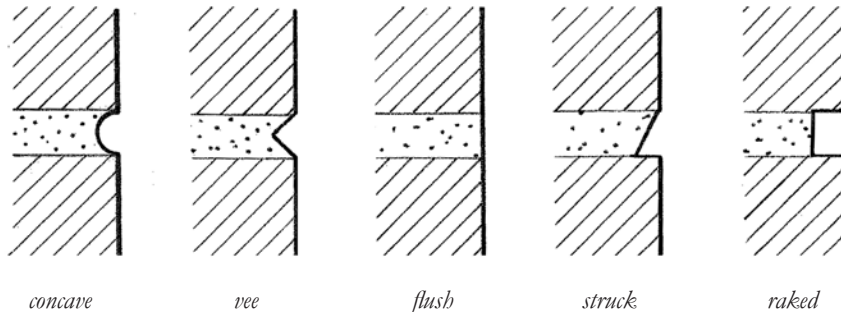


Illustration D.2 - Common brick mortar joint profiles

D.1 FOUNDATIONS AND WALLS

Walls and above ground foundations are among the most important character-defining elements of historic buildings. The design of walls and foundations is influenced by the types of materials used, the location, proportions and scale of openings for doors and windows, massing and rhythm of features such as bays and porches, and details and ornamentation. Above ground foundation walls are often visually distinguished from the main wall by a change of material.

D.1.1 MASONRY

Masonry construction refers to a building or structure built with individual masonry units laid and bound together by mortar. Masonry is a highly durable form of construction. With proper maintenance and care, masonry can last indefinitely. The most common masonry materials used in Naperville are brick, limestone and concrete blocks.

- *Brick* - Brick is manufactured from clay that is formed into rectangular blocks and then fired in a kiln to acquire hardness and weather resistance. Local clay gives the majority of brick a red color, although other colors can be fabricated. In Naperville, brick is most commonly used for structural exterior walls, chimneys, and porch elements and is found on Prairie, Craftsman/Bungalow, and Mid-Century Modern style homes. Brick can be laid in different patterns or coursings, with the most common being a running bond. In addition to the coursing, the width, color and profile of mortar joints contribute significantly to the appearance of a brick structure. Brick mortar joints can range from 1/8" to 1/2" in width, and can utilize a variety of profiles.

- *Limestone* - Limestone was commonly used for foundation construction in Naperville until the early 1900's. It may also be found on chimney walls, as an aesthetic accent on window sills, and on porch elements. How the limestone is finished, and the width, color and mortar joint profiles all contribute to the appearance of an exposed foundation. When used to construct foundations, limestone was typically laid in a running bond coursing pattern with beaded mortar joints.
- *Concrete Block* - Concrete blocks were initially used in the early 1900's as an inexpensive substitute for natural stone. They were often finished with an exposed rock-like face to resemble stone materials. In Naperville, "rock face" concrete blocks were used extensively for the foundation walls of Stick, Queen Anne, and American Foursquare style homes.

Guidelines for Masonry Maintenance, Repair and Replacement

Depending on the exposure conditions and mortar materials used, the longevity of mortar joints will vary. The typical lifespan of mortar joints will, in most cases, exceed 25 years. Since most masonry will last 100 years and beyond with proper care, it is extremely important that mortar joints be maintained periodically to ensure the integrity of the wall system.

Encouraged

- Identify, retain, and preserve original masonry materials.
- Clean masonry materials only if there is a major stain or paint build-up. If the staining or dirt is limited, it is best to leave it alone. Avoid sandblasting or subjecting masonry materials to any kind of abrasive cleaning. Brick should never be cleaned with high pressure water that exceeds 300 pounds per square inch (psi). Introducing water or chemicals into masonry features is also discouraged.
- If cleaning is necessary, clean masonry features with mild detergent cleaners. Only use chemical removers if you wish to remove paint from brick. This is a job that usually requires professionals.



Photo D.4 - Limestone foundation wall

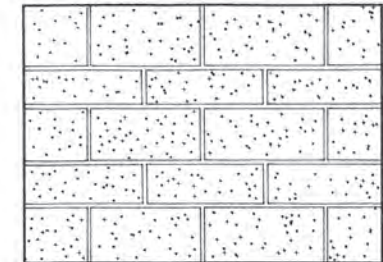


Illustration D.3 - Limestone running bond pattern



Photo D.5 - Stamped concrete - rock face finish foundation wall example



Illustration D.4 - Stamped concrete - rock face finish



Illustration D.5 - Beaded mortar joint profile, typical of stone masonry in the Historic District

- Tuckpoint mortar when there are signs of crumbling, cracks, and mortar voids of 1/4” in depth. Tuckpoint masonry joints using mortar that matches the original in composition, color, width and profile. For most pre-1920 homes, use soft mortars to match the original composition. If the original composition cannot be determined, use a historic compound such as one part lime and two parts sand. Do not use Portland cement or other hard mortars unless they are original to the home.
- Repair only the damaged portion of original masonry with reclaimed materials if possible.

Acceptable -

- Use new or replacement masonry materials that match the original in size and texture, as well as mortar joint profile and width.

Discouraged -

- Paint over masonry exterior, unless it was originally painted.
- Use stone, brick, or concrete block veneer to imitate original masonry application. Masonry veneers require additional back-up support to be installed, which could change the character of the home.
- Cover masonry walls in stucco or other coating materials that are not original.
- Conceal foundation windows with masonry, glass block or concrete block.
- Coat the interior or exterior of masonry foundations and walls with water sealants or repellants.

Internet Resources:

- The Cast Stone Institute: www.caststone.org.
- [*Preservation Brief #2 - Repointing Mortar Joints in Historic Masonry Buildings.*](#)
- [*Preservation Brief #42 - The Maintenance, Repair and Replacement of Historic Cast Stone.*](#)
- The Brick Industry Association: www.gobrick.com.
- Old House Journal Web Site: [*Short Course of Historic Mortar.*](#)
- Keyword search on Internet: “historic stamped concrete block”.
- When selecting cleaning products, there are a number of manufacturers who produce environmentally friendly cleaners. Keyword Search on Internet: “environmentally friendly masonry cleaners”.

D.1.2 CHIMNEYS

Chimneys and fireplaces were used to provide heating for homes before the advent of central heating. Most homes in Naperville built prior to 1950 have chimneys. Historically, chimneys were built with brick or stone, and sometimes were clad with stucco.

Guidelines for Chimney Maintenance, Repair and Replacement

Encouraged:

- Inspect chimneys for damage (exterior and interior) annually.
- Clean and tuckpoint chimneys in accordance with masonry guidelines (D.1.1).
- Rebuild chimneys using salvaged brick from disassembling the existing chimney if rebuilding is necessary.
- Install proper flashing at the point where the chimney meets the roof to prevent water from infiltrating the structure:
- Use metal flashing instead of caulking material or bituminous coating, which can deteriorate due to weathering and allow moisture damage.

- Install both base flashing and cap flashing that should overlap the base by at least 4”.
- Use step flashing instead of box flashing (see Photo D.8).
- If a chimney is no longer being used to provide heating, cap the chimney to prevent windblown debris from entering and animals from building nests on top or inside the chimney, as well as to help seal the home. If a chimney is used on an intermittent or frequent basis, clean the interior walls of the chimney to prevent the build-up of creosote which can cause dangerous chimney fires. Flue liners can be applied to the interior wall of the chimney to prevent creosote build-up. A local chimney cleaning company should be contacted for this work.

Acceptable

- Remove a chimney that is not a significant feature of the home.
- Rebuild the chimney to match the original design in accordance with the masonry guidelines (D.1.1).

Discouraged:

- Remove or alter a chimney that is a significant feature of the home.

D.1.3 WOOD SIDING APPLICATIONS

The majority of historic Naperville homes are of frame construction with various types of wood siding. Each type of siding imparts a unique character and is usually associated with a particular building period or style. Horizontal clapboards (i.e., long, narrow wood boards with one edge thicker than the other) are the most common material used for exterior wall construction and can be found on almost any residential style in Naperville, with the exception of Prairie style. Varieties and forms of historic wood siding include beveled, german, simple-drop, ship lap, and v-rustic (see Illustration D.7). In addition to clapboard, some walls are clad with wood shingles. Wood shingles were primarily used on Stick and Queen Anne style homes in various overlapping patterns, shapes, and colors to produce interesting surfaces. Some of those patterns include fish scale, hexagon, plain, and staggered.



Photo D.6 - Stucco house with brick chimney - 141 N. Brainard Street



Photo D.7 - Stucco house with brick chimney - 125 S. Columbia Street



Photo D.8 - Step flashing where chimney meets roof

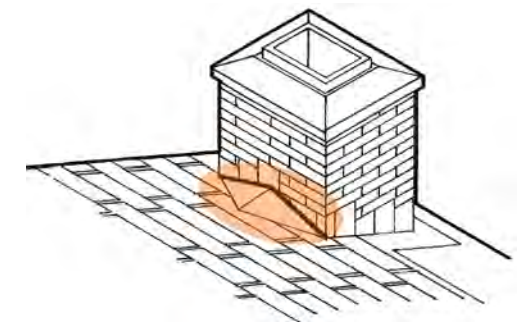


Illustration D.6 - Flashing "cricket" used to divert water away from the face of the chimney

Illustration D.7 - Common Wood Siding Forms

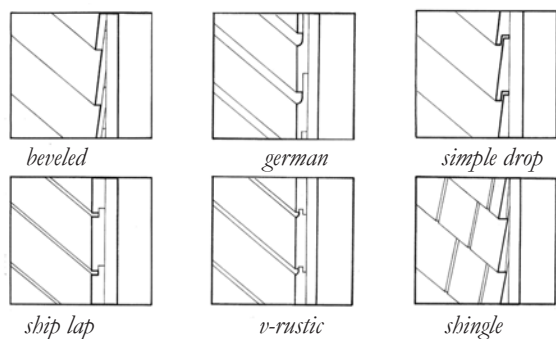


Illustration D.8 - Decorative Wood Shingle Patterns

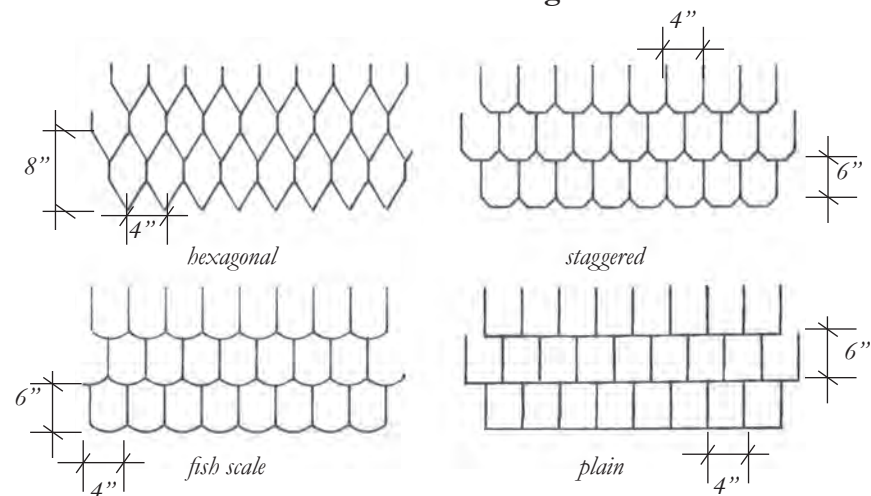


Photo D.9 - Decorative wood siding example
- 151 N. Ellsworth Street



Photo D.10 - Wood siding example - 151 N.
Ellsworth Street

Beside form and pattern, an important feature of wood siding is its reveal. “Reveal” or “exposure” refers to the distance of overlap between boards. In Naperville, siding reveal typically varies from 3” to 5” depending on the style of the home. In many Queen Anne homes, the lower story has a wider reveal than the upper stories.

Guidelines for Wood Siding Maintenance, Repair and Replacement

Encouraged

- Maintain original wood siding by cleaning and repainting when peeling or cracking paint is observed. In general, wood siding used on historic homes was fabricated of hardwood species that are naturally resistant to rot.
- Before repainting, scrape off any loose and peeling paint. Remove paint in heavily coated areas down to bare wood. An appropriate chemical stripper is preferred over sandblasting or power sanding since these methods weaken the materials and destroy detailing. Then, prime and repaint wood surfaces to extend the life of the material. Historically, wood siding was painted for weather protection.
- Repair original wood siding instead of replacement. If rotten sections of 6” x 6” or smaller are discovered consider repairing sections with two part epoxy prior to using replacement wood. If the rotten section is larger than 6”x6” use the “Dutchman” repair method to only remove the damaged material and replace in kind (matching the material, form, pattern, and reveal). A “Dutchman repair” is the “piecing-in” of a localized area of wood siding deterioration by cutting out the decayed area and carefully installing a matching wood replacement plug or splice.
- Remove synthetic sidings (e.g., aluminum or vinyl) that conceal original wood sidings. Following the removal of synthetic sidings, repair, caulk and paint the original siding. If the “ghosts” or outlines of decorative missing features are revealed, consider replicating and reinstalling them.

- Restoration of historic siding or shingle patterns where such features were previously removed. Siding restoration should be based on evidence (historic photos or “ghosting” under existing siding) and be consistent with the historic style of the home.

Acceptable

- Replace original wood clapboard siding and shingles with new wood or fiber cement board that match the original in size, pattern, form, and reveal.
- Fiber cement board is an exterior siding material made from Portland cement mixed with ground sand, cellulose fiber and other additives and textured to have a natural, wood-like appearance. This material is durable, termite resistant, non-combustible, and has an estimated lifespan of up to 50 years. Fiber cement board siding can be installed to the exact reveal profiles of the historic wood siding. Most fiber cement board manufacturers carry both 9-1/4” and 5-1/4” wide boards as standard sizes. By cutting a 9-1/4” wide board into two 4-5/8” wide sections, overlap 1-5/8” to achieve a 3” exposure or use the 5-1/4” board and overlap by 2-1/4” to achieve a 3” exposure.

Discouraged

- Through the application of replacement materials, conceal or remove original decorative detailing or trim including window and door surrounds.
- Clad over original wood siding with synthetic siding materials such as vinyl and aluminum siding, asphalt siding, metal siding, and artificial stone.

Internet Resources:

For more information on substitute wood siding and painting historic buildings refer to [Preservation Brief #16 - The Use of Substitute Materials on Historic Building Exteriors](#), and [Preservation Brief #10 - Exterior Paint Problems on Historic Woodwork](#).

D.1.4 STUCCO SIDING APPLICATION

Traditional stucco is a Portland cement-based coating material that is created from a mixture of water, sand, and lime. Historically, stucco was an inexpensive, non-structural material that could be applied in multiple coats to both the interior and exterior of walls, which were often wood or masonry structural walls. Finishes could be of a variety of textures and sometimes resemble stone. Stucco can be colored by adding stone dust or pigment to the mixture or by painting the surface after it hardens. In Naperville, the material is often associated with the Prairie, Bungalow, and American Foursquare architectural styles.

Guidelines for Stucco Siding Maintenance, Repair and Replacement

Stucco is a material of deceptive simplicity. In most cases its repair should not be undertaken by a property owner unfamiliar with the art of plastering. Successful stucco repair requires the skill and experience of a professional plasterer.

Encouraged

- Retain the original stucco siding.
- Repair damaged sections by removing the original and patching areas with stucco that match the original in color and texture. The most frequent type of damage to stucco usually appears as cracks, which can allow moisture to seep into the wall system.
- Install control joints to alleviate cracking if no control joints exist.

Acceptable

- Remove and replace stucco.

Discouraged

- Apply synthetic stucco, such as EIFS (Exterior Insulation Finish System) which does not provide the same characteristics and durability as traditional stucco.