TOWN OF RYE
HISTORIC DISTRICT COMMISSION

Exterior Woodwork

Clapboard siding can be found at the wall surface while flush siding is located in the pediment. The narrow spacing of the siding enhances the shadow lines on the wall surface.

Wood Siding Types

Use of wood siding is widespread on the Colonial and Victorian era buildings of Rye, particularly clapboard siding. Clapboard siding (also known as weatherboard or beveled siding), is made from long boards, tapered across the width. Flush siding is composed of tongue-and-groove boards of uniform width that are stacked and form a uniform surface.

These *Guidelines* were developed in conjunction with the Town of Rye's Historic District Commission (HDC). Please review this information during the early stages of planning a project. Familiarity with this material can assist in moving a project forward -saving both time and money. The Building Department is available for informal meetings with potential applicants who are considering improvements to their properties.

Guidelines and application information are available at the Rye Town Hall and on the Commission's website at www.town.rye.nh.us/historic-district-commission. For more information, to clarify whether a proposed project requires HDC review, or to obtain permit applications, please call the Building Department at (603) 964-9800.

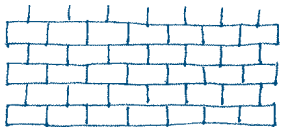
EXTERIOR WOODWORK

Wood siding, shingles, cladding and trim on a building's wall surface serve both functional and aesthetic purposes. Functionally, exterior woodwork acts as the skin of a building, shedding water and deflecting sunlight and wind. Aesthetically, woodwork is an important design feature that can be applied as siding, shingles, ornamental trim and as larger elements such as porches.

Exterior woodwork and cladding:

- Establishes a weather-tight enclosure, providing protection from rain, wind and sun
- Are affected by temperature variation and building movement
- Establish a building's scale, mass and proportion, adding visual interest to the streetscape
- Act as important design features, helping to define a building's architectural style while adding pattern and casting shadows on wall surfaces

With proper maintenance, exterior wood elements can last for centuries; however, improper maintenance can result in problems and deterioration from water, fungus, mold, and insects. Other forms of cladding can also be susceptible to deterioration, depending on their properties and the installation conditions.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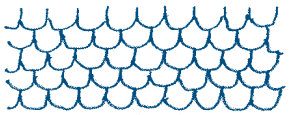
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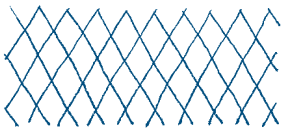
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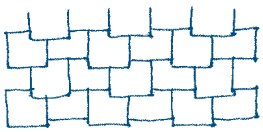
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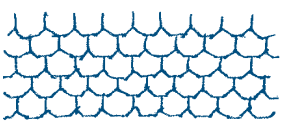
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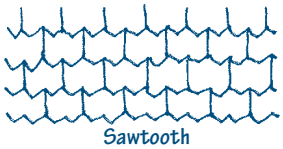

Sawtooth

Shingle Types

Decorative wood shingles provide a highly textured wall finish and were used as a cladding material most often in historic Rye homes of the Victorian era. Similar to clapboard siding wood shingles are tapered and installed in an overlapping pattern with staggered joints to minimize potential moisture infiltration.

Leaking plumbing, including exterior hose bibs, can regularly expose woodwork to moisture, eventually resulting in rot. Wet wood can also be a desirable home for pests such as termites.

Exterior Wood Review

Property owners may not notice their exterior woodwork unless a problem occurs, or there is desire to improve the appearance or reduce maintenance. Typical exterior woodwork concerns include lack of regular maintenance, peeling paint, rot or deterioration, infestation or loose, cracked, or missing elements. Hiding these problems with materials such as vinyl without addressing the root cause of the problem will result in further deterioration.

Even when poorly maintained exterior wood appears severely deteriorated, it is often not beyond repair. In addition, a deteriorated component or area typically does not necessitate the replacement or covering of all exterior woodwork. In most instances, selective repair or replacement of damaged parts and implementation of a regular maintenance program is all that is required. Full exterior woodwork replacement is rarely necessary and should be avoided whenever possible. Encapsulation with artificial siding or another material is never appropriate.

The following approach should be considered to maintain exterior woodwork:

- **Conducting semi-annual inspections of all exterior wood elements to verify their condition and determine maintenance needs**. Look for signs of deterioration including excessive paint peeling that might indicate moisture problems. Look for veins of dirt on the exterior walls that might be termite mud tunnels. (Refer to *Wood Rot*, page 03-3.) Clean exterior surfaces annually in warm weather with a garden hose, household detergent and a bristle scrub brush. **Avoid using power washers that can force water into wall cavities through crevices and damage decorative details.**
- **Maintaining and repainting exterior woodwork on a regular basis**. A high-quality paint job can last 5 to 8 years. For best results, address any moisture or deterioration problems prior to painting. Hand scrape and sand where possible to avoid removing or damaging decorative details with power tools or burning. Apply high quality and compatible primer and paint to clean and dry surfaces. Paint colors and luster should be appropriate to the building style. (Refer to *Exterior Paint*, page 03-8.)
- **Repairing smaller areas of deterioration by reinforcing or patching as required**. Small cracks and checks can be repaired with an exterior wood filler, glue, or epoxy. Loose elements can be refastened with careful nailing or drilling and screwing. (Refer to *Wood Repair Options*, page 03-4.)
- **Selectively replacing deteriorated wood elements when they are beyond repair**. Replacement wood pieces should be the same size, profile and character as the historic wood element. It might be helpful to take a sample of the historic wood to the lumber yard or millwork shop for the best match. Wood filler in the joints between the new and old wood will help provide a smooth finish. (Refer to *Wood Repair Options*, page 03-4.)
- **Replacement wood elements should have the same visual characteristics as the historic woodwork including its dimensions, profile, and materials.** Large scale or significant replacement of exterior wood might be necessary if deterioration of exterior woodwork is severe and extensive. Replacement wood elements should have the same visual characteristics as the historic woodwork, including its size, profile and visual characteristics. Replacement wood siding materials should be installed in the original pattern being as careful as possible to match the original exposures and alignments relative to historic building elements such as door and window frames. Select replacement wood species appropriate for exterior use and location.

Selective replacement of deteriorated woodwork should endeavor to match the visual characteristics of the historic woodwork in dimension, profile, and materials.

Wood Rot

Almost all wood rot is caused by fungi that break down dead wood to return it back to the earth. Spores of decaying fungi are continuously produced and airborne at the interior and exterior of buildings. Rot-causing fungi need four basic elements to thrive: oxygen, moisture, a food source, and moderate temperatures. If one of these elements is missing, rot can be controlled. Since oxygen and moderate temperatures are prevalent in the environment and most historic buildings are full of wood, an excellent food source, the best hope to minimize rot is to control moisture. Moisture that leads to wood rot generally comes from one of four sources: ground/surface water, precipitation, plumbing leaks, and condensation.

Ground water can migrate from the soil into a building by: direct contact between wood and soil; improper drainage away from the foundation; vegetation that is too close to the foundation or growing on the building; and capillary action or rising damp in masonry foundation walls or piers carrying water several feet up to wood sills.

Precipitation in all of its forms, such as rain, snow, hail, and mist, can find its way into a building through small openings and crevices, trapping moisture within a wall cavity. Painted surfaces and caulked joints can reduce the potential for moisture infiltration. Blocked or undersized gutters and downspouts can overflow and direct water towards building surfaces. Rainwater splashing on hard ground surfaces can rebound, saturating exterior woodwork. In cold weather, ice build-up along roof eaves without appropriate flashing could back-up under shingles and melt.

Leaky plumbing can be both sudden, such as a cracked pipe; or slow, where a gradual, unnoticed leak can soak a wood structure until significant damage occurs. Cracks in grout and tiles on floors and around bathtubs, sinks and washing machines can admit enough water to rot wood framing. Periodic inspections for signs of leaking behind bathtub access panels, within sink vanities and around washing machines and dishwashers can help catch a problem before it becomes serious.

Condensation is an insidious source of moisture since the water comes from air vapor rather than an obvious source such as rain or a cracked pipe. Condensation occurs when warm moist air contacts a cold surface. Warm air can hold more moisture than cold air. If warm moist air comes in contact with a cold surface that is below the dew point temperature, the excess moisture changes to water droplets on the cold surface. Some common areas for condensation and possible solutions include:

- High humidity in kitchens, bathrooms and laundries – **Consider:** Exhaust fans directing humid air to the outside and exterior clothes dryer vents (May be required by the Building Code if renovating a bathroom or kitchen)
- Cold water pipes in humid weather and frozen pipes in winter – **Consider:** Pipe insulation
- Basements and crawl spaces beneath a building where water can condense on framing members such as sills and joists, especially in corners with poor air circulation or if occupied spaces above are air conditioned – **Consider:** Plastic sheathing on the ground in a basement or crawl space
- Exterior wood framed wall on top of foundation wall or piers – **Consider:** Exterior wall insulation with no vapor barrier or an exterior-facing vapor barrier, painting of interior wall surface with latex paint and installation of interior humidity control

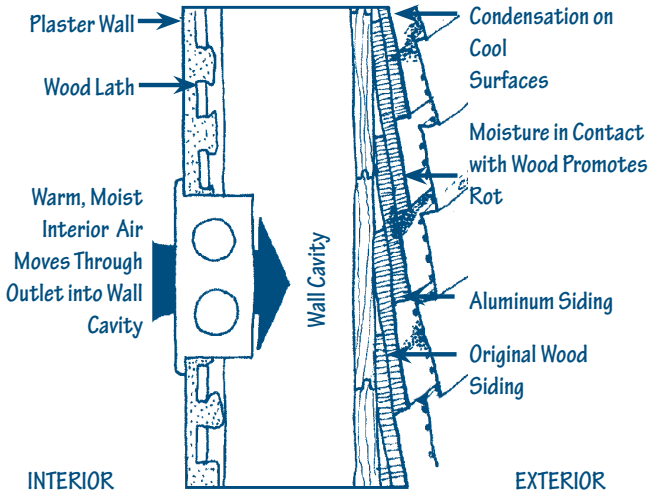
Porches, steps and other areas where the woodwork is laid horizontally or located close to the ground are often the first to deteriorate. Ongoing exposure to moisture can lead to rot of the column bases, porch deck and apron.

Decay Resistant Wood

Readily available new growth timber tends to be much softer and susceptible to deterioration than hardwoods of the past. Some types of wood, generally hardwood, are naturally decay resistant, while others have a higher propensity to rot. Naturally decay-resistant woods tend to be denser than woods less-resistant such as pine. In some cases, these naturally decay-resistant woods are more expensive than common woods but are not necessarily suited for all uses, such as detailed trim work. Therefore, it is prudent to understand the proposed location and final finish of exterior woodwork when considering wood for a project, to ensure the greatest longevity. Available decay-resistant woods include:

- Cedar
- Mahogany
- Redwood
- Air-dried, pressure-treated, southern yellow pine
- Pressure-treated wood for framing members

Note that pressure-treated wood should be thoroughly dried before applying paint, generally two to three months after installation. Specially formulated paint is required for best results.



Condensation

As a result of changes in our living standards, condensation has become a significant problem in historic buildings. Today's buildings include air conditioning and central heating to stabilize indoor temperatures and relative humidity, as well as insulation that can trap moisture. Buildings also include moisture-intensive conveniences such as plumbing, bathrooms, laundry, and cooking facilities. While interior conditions have stabilized and moisture-laden activities have increased, exterior temperatures and relative humidity are continuously changing. The more extreme the differences between interior and exterior conditions, the higher the likelihood of condensation. The differences in temperature and relative humidity between the interior and exterior of buildings is "bridged" through the thickness of the exterior building walls. If the temperature is below the dew point at any location within the wall, condensation will occur, causing evaporated moisture to change into water droplets. Wall insulation can adjust the dew point location. When combined with a vapor barrier, integral on most batt insulation, it can reduce moisture migration through a building's envelope. It is recommended that property owners consult www.energystar.gov for insulation types, levels, and installation recommendations applicable to specific locations and construction conditions.

Although the installation of window-mounted portable air conditioning units does not require a Certificate of Appropriateness from the HDC, it is advisable to consider their potential to generate condensation when locating, installing, or maintaining a unit, how the condensate is to be directed away from building elements, and the structural effect on the window sash and frame.

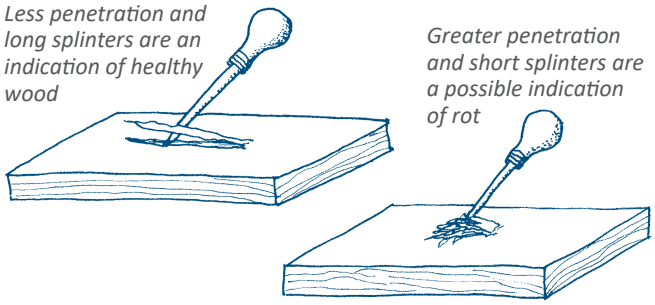
In addition, installing artificial siding or impervious coatings over wood can make a condensation problem worse and conceal deterioration until it is severe. Unlike wood, vinyl and aluminum do not "breathe" and can trap moisture within a building's wall cavity, leading to rot, mold and insect damage of the wood structure. As a result, it is important to inspect and repair potential water sources to minimize the moisture within the wall cavity.

Detecting Wood Rot

A simple means of testing for rot is to stab the wood member perpendicular to the grain with an awl or ice pick, particularly in areas where the wood appears darker in color, then measure the penetration depth. Evaluate the depth of splintering using the following criteria:

- If the penetration is less than 1/4", the component does not need replacement
- If the penetration is more than 1/4", the component might need replacement
- If long, dry splinters are produced, the wood is healthy and the component does not need replacement
- If short sections broken across the grain are produced, the component might need replacement

If replacement is required, it is recommended that the replacement wood be decay resistant and match the size, profiles and detailing of the historic woodwork.



Wood Repair Options

If a portion of a decorative exterior element is deteriorated beyond repair, it is often possible to replace only the deteriorated sections. Replacement of the entire component or unit might not be necessary. (Refer to *Detecting Wood Rot*, above.) The two most appropriate methods of repair are epoxy consolidation and Dutchman repair.

Epoxy consolidation can be performed in place in the early stages of wood deterioration, where the deteriorated area is small or at decorative or ornate elements that can be costly to replace. The process involves inserting penetrating liquid epoxy into porous wood, generally by injection through small drilled holes. As the epoxy dries, it hardens and strengthens the deteriorated wood, allowing the maximum amount of historic fabric to be retained.

A Dutchman should be used for larger areas of deterioration and involves removing the deteriorated portions of wood, not necessarily the entire element, and replacing the removed section in-kind. The replacement piece should match the original in design, shape, profile, size, material and texture. The deteriorated section is removed with a sharp-edged recessed cut and the Dutchman is installed with a tight joint. Replacement siding sections should be a minimum of 5-feet in length to minimize the opening of joints over time. When painted, the Dutchman and the existing building fabric should appear continuous.

Incompatibility of Artificial Siding

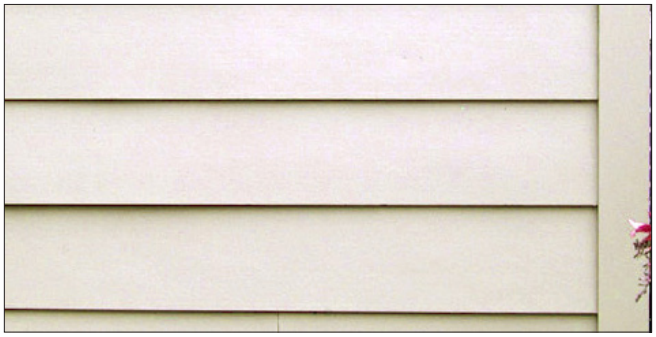
The installation of artificial siding is often sought by property owners as a means of providing an updated appearance and minimizing periodic exterior maintenance and repair needs. Artificial siding materials include asphalt and asbestos and, more commonly, vinyl and aluminum siding and "capping" applied over trim. These materials can significantly change a building's character and appearance and are not maintenance free. Most forms of artificial siding can trap moisture within a wall thickness, accelerating potential rot and decay.

To maintain the integrity of Rye's historic resources, all siding must be wood, including siding installed on non-visible elevations, additions, new construction, and secondary buildings.

Replacement of this aluminum siding is the best way to repair this puncture. A wood-grained texture is inappropriate.

Vinyl and Aluminum Siding

Vinyl and aluminum siding often attempt to simulate a clapboard pattern. Because vinyl and aluminum are extruded pieces of plastic and metal, they are thinner and visually lighter than wood. It should also be noted that in the event of a fire, the fumes from vinyl can be very hazardous.



Fiber-cement siding and trim generally do not have the same dimensions as traditional wood elements including the width of corner boards and the depth of individual clapboards. This results in visual differences when compared to wood siding.

Fiber-Cement Siding

Unlike vinyl and aluminum siding, which are both sheet materials, fiber-cement siding is a lightweight, solid material that is manufactured in similar sizes and shapes to wood products including siding, shingles, and trim. The installation method is similar to wood, and it can be cut to shape on-site using hand tools, and unlike vinyl and aluminum, it can be painted to match any color scheme.

Aluminum and vinyl siding were sometimes installed to conceal an underlying problem. In some cases, removal might be necessary to repair a deteriorated condition.

In Rye, many of the historic framed buildings were originally clad with wood clapboard, which allowed some flexibility in installation by carpenters. Most artificial siding materials, particularly vinyl and aluminum siding, must be installed at a consistent vertical spacing as defined by the manufacturer. They do not allow flexibility to accommodate historic alignments at existing building fabric such as at window and door frames. (In historic buildings, siding was typically installed with a horizontal band aligning with the top and bottom of window and door frames.)

Most historic buildings have wood door and window frames, moldings and trim that can be damaged or concealed in inappropriate artificial siding installations. The loss of these features can significantly alter the character of a building. Artificial siding installation over existing materials can also increase the wall thickness, causing the wood trim to appear set back from the wall rather than projecting from it. This can further diminish the visual characteristics of the building.

Removing Artificial Siding and Veneer

Rye's property owners should consider removing artificial siding and restoring underlying woodwork. Artificial siding removal allows buildings to function as originally designed and exposes problems that might have developed since its installation. If removing artificial siding from woodwork:

- Expect to replace about 20% of woodwork
- Anticipate surprises such as removed ornament and trim
- Sell aluminum siding for recycling

Trim and ornament can help to define a building's architectural style.

Wood Trim at Siding and Shingle Walls

Wood trim elements provide an end termination to most wood siding and/or shingle installations. Types of vertical trim can include window and door casings as well as corner boards (vertical wood boards at outside corners) or trim at inside building corners. In these installations, the side edges of the siding or trim are butted against the sides of vertical boards. Caulking is often installed between the siding and vertical trim elements to provide a weather-tight joint. However, caulk and sealant can affect paint adhesion, and care should be taken to minimize application to finished surfaces. (Refer to *Weather Stripping and Caulk, Guidelines for Windows and Doors*, page 05-7.)

Historically, the wood siding and shingles at most buildings were installed to allow a full-height exposure above window and door heads, even if they required altering the spacing or exposure of rows. Because of the standardized size of aluminum and other artificial siding, this is often not possible with newer forms of siding.

Corner boards are typically found at all wood siding applications. In this case they separate the clapboards to the left from the wood shingles to the right.

Wood Shingles vs. Wood Shakes

A wood shingle is sawn while a wood shake is split, historically by hand, resulting in more variable thickness and more surface texture. In these *Guidelines*, the term wood shingle is used to refer to either wood shingles or shakes.

Wood Trim and Ornament

Wood trim includes window and door surrounds, corner boards, rake boards, and wood sills. Similar to exterior woodwork and cladding, wood trim typically serves multiple purposes. Visually, exterior wood trim frames areas of wood siding or shingles and serves as the transition to building elements such as doors, windows, cornices, and porches. Functionally, it seals siding and shingles at joints, corners, and openings, providing a weather-tight building enclosure.

In addition to wood trim, there are numerous types of wood ornament, some of which are also functional, including porch posts and columns, brackets, balustrades, newel posts, spindles, and other decorative details. Historically, wood trim and ornament profiles, details and sizes varied with building styles and whether a building was "high-style" or vernacular. As a result, wood trim and ornament are considered architecturally significant features.

Artificial Trim and Ornament

One of the newest types of synthetic trim and ornament is made from PVC. Similar to wood, PVC trim can be cut and shaped, however it tends to lack the visual qualities and irregularities of wood. In addition to trim, PVC ornament is also available. Although PVC products are meant to replace wood elements, the dimensions and profiles of PVC trim and ornament often vary from their historic counterparts.

Although PVC products are rot-resistant, the expansion and contraction of PVC tends to be greater than wood, resulting in larger gaps required in running trim. This can be minimized if paint colors are limited to light and medium tones, reducing expansion. For the best visual likeness to wood, artificial trim and ornament should be painted in-place, following installation. The paint tends fill-in minor gaps between components and provide a more traditional, and unified appearance.

PORCHES

Historically, porches were an outside room where residents could find a sheltered transition into their homes, exterior living space, and a place to meet and converse with neighbors. When they were constructed, their form, details and decorative elements were often intended to complement the style of the house. Porches are one of the most visible house elements and play a significant role in the appearance of the house and the streetscape. They can act as an extension of a home, providing a welcome for visitors. Unfortunately, porches today can be one of the most altered components of a building, either because they are not properly maintained or they are viewed as potential enclosed indoor space.

Because of the importance porches play in the perception of historic buildings and streetscapes, original materials and details should be preserved. Typically, areas covered by a porch roof tend to require less maintenance; however, steps, railings and roofs are usually exposed to the weather and might require additional maintenance. One of the best ways to preserve wood porch features is regular painting. If a component is deteriorating, repair or replacement in kind is recommended as part of the porch's regular maintenance.

STOOPS

With most of Rye's buildings located adjacent to the sidewalk or street, many of the Town's historic buildings do not have front porches at their façade, but instead have steps, also known as stoops, leading directly to a small landing or the entrance door. In many cases, these homes will often include a porch at a rear or side elevation.

DECKS

In the late-20th century, decks became a more prevalent constructed form of outdoor space, beginning with decks located above the ground, and, later, roof decks on top of buildings. Decks are typically wood-frame construction, using stock lumber and components that are generally stained or sealed rather than painted. One of the critical differences between a deck and a porch is that a porch is integrated into the overall design of a building, while a deck, although attached, is stylistically different. As a result, they must be carefully considered relative to their visibility from the public right-of-way.

Porches, particularly those facing the street, can play a significant role in defining the architectural character of a building while providing a welcoming for visitors.

Enclosing Porches

Porches were intended to be open exterior spaces. Enclosing a front porch is a radical change to the building and its visual perception from the streetscape. If considering porch enclosure, it is recommended that this occurs only at a side or rear elevation porch. If enclosing a porch, it is recommended that the finished space look more like a porch than an enclosed room.

Evidence of Prior Porches

It is important that documentation be found when replacing a missing porch. This can be physical evidence that a porch was present or documentation that shows or describes a porch, such as:

- Visible building evidence (such as an outline) on the wall or trim from roofs, posts or railings, evidence of nailing patterns on siding, repairs to masonry walls and evidence of former porch foundations in the landscape
- Historic photos, drawings, or maps and original components that may be visible from attics or garages
- Comparable porches on neighboring buildings of similar type, design, style, and date of construction

There are times when property owners might consider the construction of a new porch. This can occur when a previous porch is reconstructed; a new porch is added onto an existing house or is part of an addition; or when a new residence is erected.

The paint is blistering and peeling exposing the underlying siding to the elements and moisture infiltration. Complete removal of the paint down to bare wood and repair of areas of deterioration is recommended prior to the application of a high-quality wood primer followed by two coats of compatible paint.

EXTERIOR PAINT

Paint is one of the most common ways to protect exterior materials from the elements, particularly wood without natural or chemical preservatives, and metals that would otherwise rust. When the painted surface has been compromised, moisture and the elements can infiltrate the underlying material and potentially accelerate deterioration.

Exterior paint provides a layer of protection to a building by adding a barrier that limits moisture infiltration and damage from the sun, pests, and other forms of deterioration. Exterior woodwork, without natural or chemical preservatives, is susceptible to moisture-related deterioration of the exterior envelope and underlying framing, and many metals are susceptible to rust. Although paint is an important protective layer that improves the longevity of a historic resource, it must be viewed as a temporary barrier that is subject to deterioration through cyclical temperature and humidity changes, and requires re-application to maintain its shielding properties.

In addition to providing a protective layer, paint colors can highlight a building's architectural features and style, visually tie the parts of a building together, and reflect personal taste. A building's style, period of construction, materials and setting can all help identify appropriate paint colors.

In general, exterior surfaces should be repainted every 5 to 8 years, with intermediate touch-ups at high traffic, worn or deteriorated areas. If a building requires frequent repainting, it might be an indication of another problem such as moisture, inadequate surface preparation or non-compatible paint.

It can be problematic to use encapsulating paints that can trap moisture in woodwork and promote rot. These are often referred to as "liquid siding," "liquid stucco" or "liquid ceramic coatings." Painting of previously unpainted masonry is strongly discouraged. (Refer to *Masonry and Stucco Painting, Guidelines for Masonry and Stucco* and *Removing Paint from Masonry,* page 04-7 for more information on masonry paint removal and application.)

Oil and Latex Paints

Essentially, there are two types of wood paint for buildings, oil and latex. Both types consist of three principal components: a pigment, a binder to adhere the pigment to a surface as the paint dries, and a solvent that makes the mixture loose enough to apply with a brush. Even though latex was developed in the mid-1940s, oil was the dominant paint type until about 1970 and is found on many historic homes today.

Oil and latex paints act differently when applied to a surface. Oil paint forms a tough plastic film as the binder reacts with oxygen in the air. The binder can be natural oil, such as linseed, or oil modified with alkyds. Early latex paint used synthetic rubber as the binder, while latex paint today uses acrylic, vinyl-acrylic, or vinyl acetate binders. As the water in latex paint evaporates, it forms a flexible film, and the binder and pigment move closer together until a protective surface is formed. Critical differences between oil and latex paints are that they do not cure in the same way and they adhere differently to substrata. As oil paint ages, it continues to cure and oxidize. It becomes increasingly more brittle to the point that it can no longer expand and contract with the underlying substratum through temperature and humidity cycles. By contrast, latex cures in about two weeks and remains more pliable.

Generally, oil paint adheres better to problem surfaces because the oils are small enough to seep into the wood or microscopic openings in old, even chalky, paint. The resins in latex paint are generally too large to seep into the substratum, allowing water vapor to pass through. This makes latex less likely to peel from a building with excessive interior moisture, although multiple layers of paint can create an impermeable moisture barrier. Another characteristic of latex paint is that its flexibility can impose surface tension to underlying layers of paint, particularly oil, and pull the paint away from the substrate.

In Rye's climate, it is generally recommended to apply an oil or latex bonding primer to provide a smooth finish, followed by two coats of acrylic latex paint. Property owners should consult with a paint professional to obtain the best recommendation for each specific paint project.

The body of Colonial-era buildings was often painted a light color including shades of white, gray, yellow, and pale blue.

Paint Colors

The selection of color can be a daunting task for many property owners. Although there is no single way to pick paint colors, there are some general guides that can help in the process.

1. **Identify the Architectural Style:** Selecting colors that were intended for a building's particular style tends to show the building in its best light. It is important to keep in mind, however, that many houses include elements of more than one style and it might be necessary to define the prominent style when selecting a palate. Additionally, house styles tended to be constructed after their typically identified period, so it tends to be most appropriate to select paint colors based upon the stylistic elements rather than the specific date of construction.
2. **Study the Details:** Study the general arrangement and details of the building including the shape, mass, type of roof, arrangement and type of windows, shutters, porches, bays and other projections to better understand the role that different colors will play. For example, a white Greek Revival house with white trim appears very different if visually contrasting green or black shutters are installed.
3. **Understand the Givens:** Some elements at the exterior of a building have intrinsic color and are typically not painted. These elements include brick and stone foundations and chimneys and roof surfaces. Therefore it recommended that the colors of the non-painted surfaces be considered when selecting the painted finish colors.
4. **Color Balance:** It is important to distribute color evenly over a building to achieve visual unity between the top, middle and base, as well as horizontally across the façade. For example, a building with a light colored base and dark top might appear top-heavy, or a dark bay projecting from an adjacent light-colored wall might make the building appear to be vertical striped.
5. **Light and Color:** Colors tend to appear to vary in different light. It is therefore important to select exterior colors in natural daylight in sunny, shaded and clouded conditions, rather than indoors in artificial light. Also keep in mind that the shadows caused by direct sunlight tend to highlight irregular surfaces. This can be beneficial to draw attention to a unique shingle pattern but negative if attempting to minimize the appearance of surface irregularities such as cracking.
6. **Start with the Body:** Begin by selecting body colors that are durable and neutral to minimize large surface areas that can have a faded appearance that is typically associated with bright, pure color tones.
7. **Accent Colors:** Accent colors, often a more saturated color, can enhance surface texture and increase visual depth. Since they tend to fade, they generally should be utilized for smaller areas where they can age more gracefully within a larger neutral body color.
8. **Experiment:** Before undertaking a major painting project, particularly if contemplating a color change, painting a sample area with the proposed colors can be very informative and give a better sense of the finished appearance than paint chips.

Victorian period buildings were traditionally painted with earth tones. Note the accent color on the flared shingles at the projecting bay.

Repainting

When considering repainting, the following five steps are recommended:

1. **Determine whether repainting is necessary:** Prior to beginning a painting project, it is appropriate to determine whether complete repainting is required or if cleaning or spot repainting is more appropriate. By painting more often than is necessary, paint layers can build up, increasing the potential for future paint failure. A dingy finish might only require washing with a mild detergent solution and natural bristle brushes to freshen the appearance.
2. **Inspect existing paint for causes of failure:** To assure the new paint will last as long as possible, property owners should inspect the existing paint for causes of failure. Some common paint problems are:
   - **Peeling** - possible causes are painting under adverse conditions, inadequate surface preparation or moisture infiltration
   - **Cracking or crazing** - typically the sign of a hard surface that does not expand and contract with underlying material; sand and repaint if cracking and crazing is limited to the surface; remove paint if it extends down to the wood
   - **Wrinkling** - typically the result of the top coat drying before the underlying coat; sand smooth, repaint
   - **Blistering** - air bubbles under the paint; cut into blister, and if wood is visible the problem is probably moisture related; if paint is visible, the problem area was probably painted in direct hot sun
   - **Alligatoring** - severe cracking and crazing; remove all paint down to bare wood

Specialty Paints

Elastomeric or Encapsulating Paint

Encapsulating paints can trap moisture in woodwork, promote rot and/or provide a desirable environment for pests such as termites. These paints are often referred to as "liquid siding," "liquid stucco" or "liquid ceramic coatings." **Use of encapsulating paint is strongly discouraged by the HDC**.

Masonry Paint

Refer to *Removing Paint from Masonry* and *Masonry and Stucco Painting, Guidelines for Masonry and Stucco*, page 04-7. **Painting previously unpainted brick or stone is strongly discouraged by the HDC.**

Metal Painting

The paint selected must be compatible with the type of metal and any existing coatings. In the case of iron-based metals, typically found at railings and grates, paint preparation should include the removal of rust to bare metal, cleaning the surface and promptly applying a rust-inhibiting primer to prevent corrosion.

The paint on this door has alligatored, and severe cracking is visible. Removal of paint down to bare wood and proper door repair are recommended prior to repainting.

3. **Repair causes of failure:** Before repainting, the causes of paint failure should be addressed. The most common cause of paint failure is moisture. The most typical causes of moisture problems are ground water; rain or storm water; leaking plumbing; and condensation. (Refer to *Wood Rot*, page 03-3 for additional information on how to identify moisture-related problems and some suggestions that might alleviate the situation.)

   Portions of the building that are most susceptible to moisture and its related problems include: areas near rooflines, gutters, and downspouts; areas near the ground; horizontal surfaces such as window and door sills, porches and wood steps; and areas or walls adjacent to high humidity including kitchens, bathrooms, and laundry rooms.
4. **Prepare surface:** To ensure a long-lasting painted surface, appropriate surface preparation should be undertaken before repainting.
   - Begin by washing the painted surfaces with a mild detergent solution and a natural-bristle brush
   - Carefully scrape and sand for a smooth finish, removing any paint that is not tightly bonded to the surface
   - Putty or caulk countersunk nails, window glazing, gaps, joints, and openings
   - Allow substrate to dry thoroughly before applying primer or paint
   - Spot prime bare wood, areas of repair and wood replacement
5. **Repaint:** High-quality paint appropriate for the substratum applied in accordance with manufacturer's recommendations should improve the longevity of a paint job. In general, it is best to use compatible primer and paint from the same manufacturer, and apply at least two coats of paint to previously bare wood or metal.
   - For best results, apply paint during appropriate weather conditions, generally 50˚F to 90˚F, less than 60% relative humidity, with no direct sunlight

Complete Paint Removal

It is important to remember that any method of paint removal can result in harm to historic building fabric. Therefore, complete paint removal from a surface should only occur under limited circumstances.

Complete paint removal might be necessary in circumstances in which the existing paint on a surface has completely failed. Examples where complete paint removal would be appropriate include:

- Wholesale blistering or peeling that reveals the underlying substrate
- Continuous patterns of deep cracks in the surface of painted wood
- Windows, doors or shutters that have been painted shut
- To achieve a smooth transition when a new wood element is being installed as a repair
- To prevent deterioration of historic building features
- To prevent deterioration of masonry

If the existing paint has failed, it might be necessary to strip all or portions of the paint from the surface. There are a variety of tools and chemicals available to strip paint, many of which are potentially hazardous and can cause significant damage to exterior surfaces and the surrounding environment.

Paint Removal Safety

Paint removal is potentially hazardous work. Keep children and pets clear of work areas. Property owners should consult a professional for work that is unfamiliar or potentially unsafe.

- Paint removal, particularly of lead-based paint, must comply with all safety requirements - owners are strongly encouraged to contact the lead safety organizations found in the *Design Guidelines Introduction,* page 01-4, for information prior to completing work potentially involving lead paint
- Always wear safety goggles and a mask or respirator
- Avoid using heat tools - users should always wear appropriate clothing, keep a fire extinguisher nearby and monitor areas of work for at least one hour after stopping work
- Paint dust from older buildings can contain lead - wear a dust mask or respirator, avoid open food or beverage containers in area of paint removal, thoroughly clean work area and exposed skin, launder work clothes

Paint Color Guidance

The HDC recommends referencing appropriate historic exterior paint colors for specific building types and architectural styles. Consultation with the HDC or reference books is recommended. Property owners seeking historically accurate paint colors for a project can also complete a paint analysis.

Exterior Woodwork Review

Exterior Woodwork Maintenance

The HDC encourages:

- Following the recommendations in *Exterior Wood Review*, page 03-2

The HDC discourages:

- Removing or encapsulating siding, trim, decorative features and trim elements such as brackets, spindles, cornices, columns, posts, balustrades, etc.

Siding and Shingles

The HDC encourages:

- Retaining and maintaining existing exterior woodwork including siding and trim
- Repairing or replacing wood siding and trim in-kind
- Installing wood siding and shingles at all existing and new construction

The HDC discourages:

- Installing aluminum or vinyl siding or coatings
- Installing fiber-cement siding or shingles

Wood Trim and Ornament

The HDC encourages:

- Retaining historic wood trim and ornament
- Following guidelines for maintenance and repair of historic wood trim and ornament as outlined in the *Exterior Wood Review*, page 03-2

When replacement of wood ornament and trim is warranted, the HDC encourages:

- Reusing original window frames and trim when replacing windows, or exactly replicating the dimensions and profiles of original frames
- Using field painted, modern composite materials as an alternative to wood only in locations where rot is a severe problem, or in areas that are minimally visible

When replacement of wood ornament and trim is warranted, the HDC discourages:

- Removing, altering, or concealing original trim and detailing including window and door trim, corner boards, soffits, porch posts, railings, etc.
- Applying historically inappropriate ornament or trim or applying it where it did not historically exist
- Installing wood-grained trim or ornament

Porches

The HDC encourages:

- Painting porches regularly to preserve wood
- Applying a painted finish complementing the architectural characteristics of the house - refer to *Exterior Paint*, page 03-8
- Identifying deteriorated elements

- Finding and correcting sources of deteriorated elements, such as cracked, blocked, inappropriately hung, broken, or missing gutters or downspouts
- Replacing only those parts which cannot be repaired - in some instances, such as columns and posts, where the base can be replaced at a fraction of the cost without replacing the entire column or post
- Replacing missing or deteriorated materials with similar, new materials - avoid replacement of a wood railing with a metal or vinyl railing system
- Repairing damaged elements using standard repair techniques for that material (Refer to the *Guidelines* section appropriate for each material, particularly *Guidelines for Roofing* and *Guidelines for Masonry and Stucco*) and restoring the porch to its original historic appearance
- Replacing only original elements that are beyond repair using elements of the same material, size, profile, and other visual characteristics
- Rebuilding a porch based on appropriate documentation
- If a substantial portion of the porch is deteriorated and cannot be repaired or replicated, or if a porch is missing, creating a simplified design using stock lumber and moldings that convey similar visual characteristics as the original porch, duplicating the dimensions and materials but not necessarily all of the detailing

The HDC discourages:

- Replacing wood porch posts and railings with metal
- Replacing wood steps with concrete or brick - wood steps are typically appropriate for wood porches
- Using"natural" or stained wood at a porch is generally not appropriate for a porch on a painted historic building

If constructing new porches, the HDC encourages:

- New front elevation porches are encouraged where there is evidence of a historic porch
- At existing buildings, new construction should not damage, destroy, conceal, or negatively affect existing historic material and features
- On additions, porches should be simple in design and relate to the existing building
- Side and rear elevation porches should typically be simpler in design than front elevation porches
- On new buildings, porches should visually relate to the proposed building in a manner similar to historic porches on neighboring buildings
- The size, shape, scale, massing, form, materials, and color of the design and its appropriateness to the house and streetscape should be considered
- Porches at framed buildings were historically made of wood; stone or brick porches are not appropriate

If constructing new porches, the HDC discourages:

- New decks visible from the streetscape

If enclosing a porch, the HDC encourages:

- Retaining porch elements in place and constructing enclosure framing inside of porch columns and railings
- Temporary, reversible enclosure systems, such as screens or glazing that can be removed seasonally that does not damage decorative or unique historic building fabric
- Translucent enclosure systems, with large screened or glazed openings
- Vertical and horizontal framing members that align with porch elements like columns and railings

If enclosing a porch, the HDC discourages:

- Enclosing porches, particularly at the front elevation

Paint

The HDC encourages:

- Hand cleaning with mild detergent and bristle brush
- Hand scraping and hand sanding
- Following all manufacturer's safety recommendations
- Selecting paint colors compatible with building style

The HDC discourages:

- Rotary tools - can leave circular marks and wires can tear into surface
- Heat guns and heat plate - can ignite paint or underlying surface if left in one location too long
- Chemical paint removers - can raise grains, be expensive and potentially volatile; runoff can be hazardous and should be collected to reduce harm to children, pets, vegetation, and ground water
- Flame tools such as blowtorches to soften paint - smoldering sparks can start a potentially devastating fire; lead components in paint can vaporize and create toxic fumes
- Sandblasting - can be abrasive to surface, wear away protective exterior coating and raise the wood grain
- High-pressure water wash - forces water into open joints affecting interior finishes and structural framing; can be abrasive to exterior surface and raise the grain

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