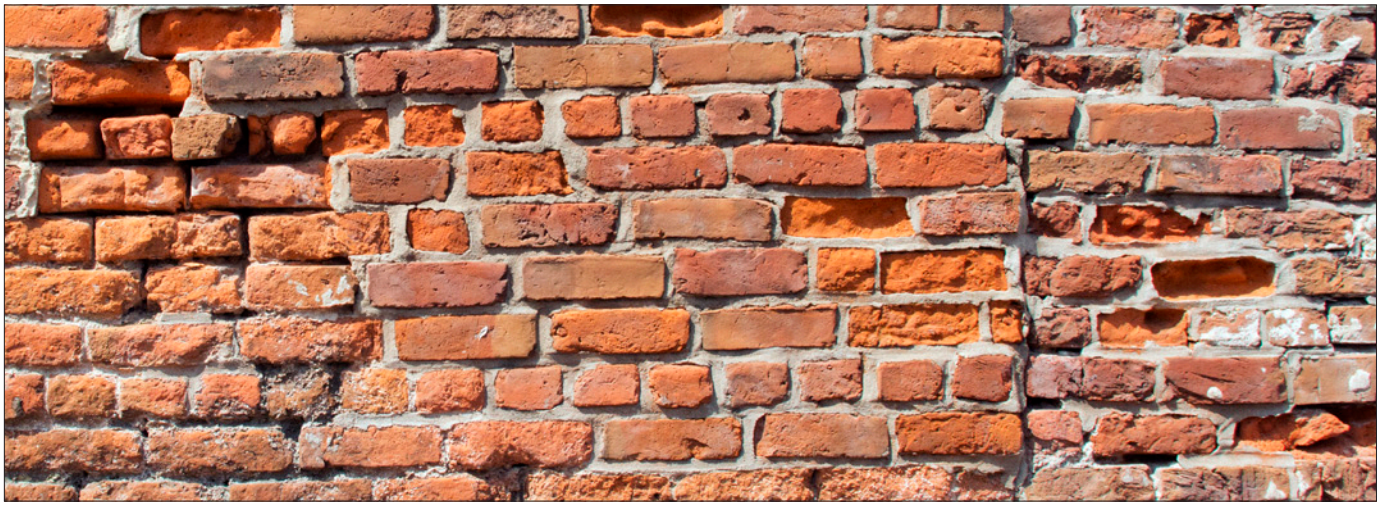
CITY OF NEW ORLEANS

Vieux Carré Commission

Guidelines for Exterior Maintenance



BUILDING MAINTENANCE

The historic architecture of the Vieux Carré features a well-constructed building stock from the late 18th through the mid 20th centuries. Many of these buildings continue to serve residents because they have been maintained by previous and present owners.

A building is typically a family's or business owner's largest single investment. One of the best ways to help a property retain its value in the marketplace is to complete regular and preventive maintenance. Unlike the buyer of an automobile, a new property owner is not provided with an operator's manual or warranty book outlining a recommended maintenance schedule. As a result, many owners do little or no regular maintenance or repair until a serious problem develops. When the problem is finally noticed, the associated repairs can be more involved and costly to address. A regular property maintenance program can help to catch problems early, before they become significant.

SECTION INDEX

The Vieux Carré Commission (VCC) reviews all exterior maintenance at buildings and properties including within carriage ways and courtyards.

All applicants must obtain a Vieux Carré Commission (VCC) permit as well as all other necessary permits prior to proceeding with any work. Review and familiarity with this information during the early stages of planning your project can assist in moving a project quickly through the approval process, saving applicants both time and money. Staff review of all details is required to ensure proposed work is appropriate to the specific property.

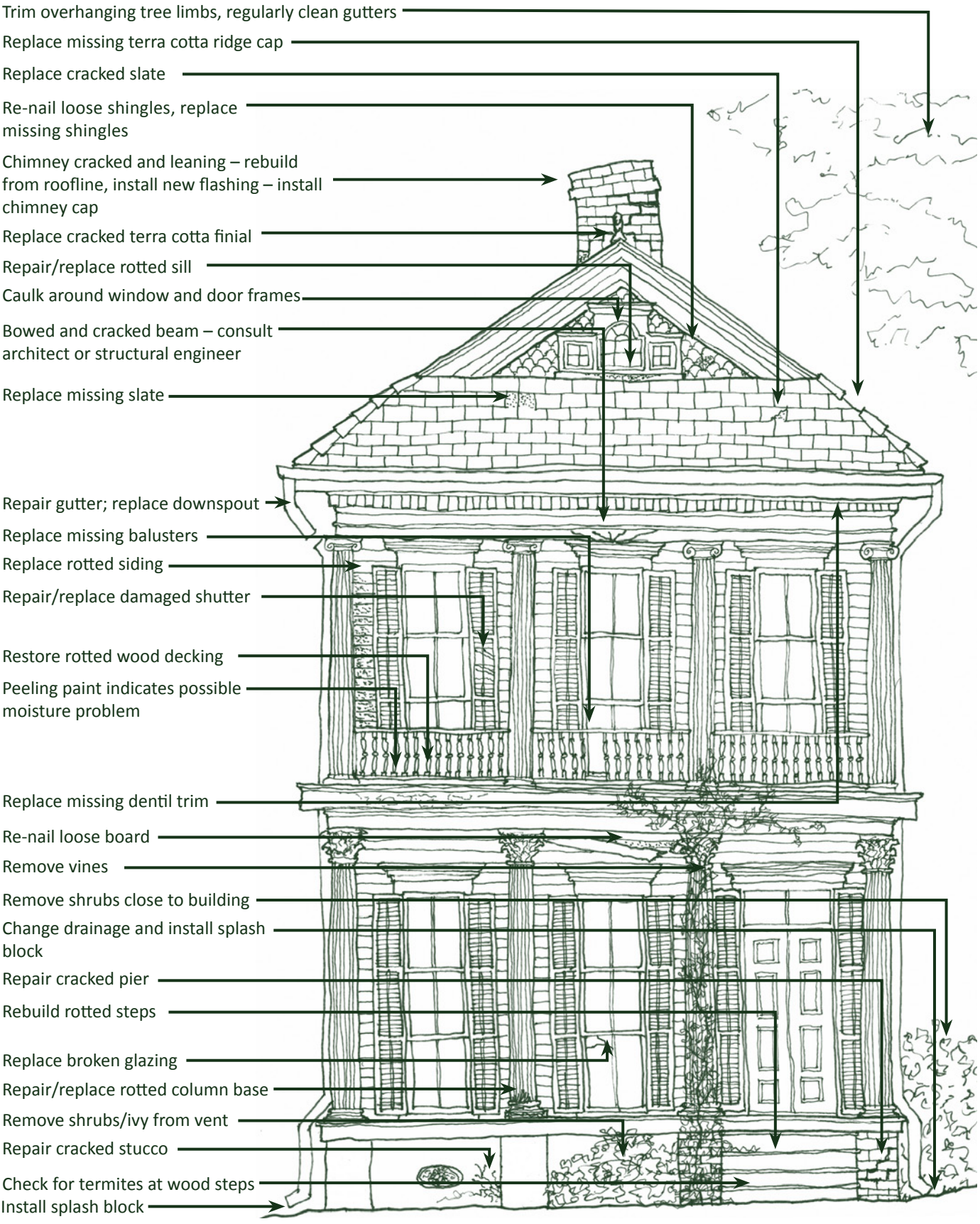
Guidelines addressing additional historic property topics are available at the VCC office and on its website at www.nola.gov/vcc. For more information, to clarify whether a proposed project requires VCC review, to obtain property ratings of significance or permit applications, contact the VCC at (504) 658-1420.

The first step in using these *Guidelines* is to understand a property's rating. The rating corresponds to the historical and/or architectural significance and determines what types of changes will be permitted and review process required at each property under the jurisdiction of the VCC.

Review boxes throughout the *Guidelines* indicate the lowest level of review required for the specified work. Staff can forward any application to the Architecture Committee and/or the Commission for further consideration.

TYPICAL BUILDING MAINTENANCE NEEDS

Property Owners must obtain a VCC Permit as well as all other necessary permits prior to proceeding with any work on a property.



REGULAR MAINTENANCE IS GOOD PRESERVATION

Regular maintenance helps preserve buildings, structures and properties; helps protect real estate values and investments; and keeps the Vieux Carré an attractive place to live, work and visit. Lack of regular upkeep can result in accelerated deterioration of a building's or property's elements and features. Small openings or unpainted surfaces can allow moisture penetration and eventually rot. In the case of historic buildings, character defining elements that are difficult and costly to replace are often lost due to lack of maintenance. Long-term lack of maintenance can impact a building's structure, resulting in significantly more expensive repairs.

It is prudent for property owners to inspect their buildings and properties regularly to identify potential problems. If problems are detected early, smaller investments of money may not only improve a property's overall appearance and value, but can prevent or postpone extensive and costly future repairs. Regular maintenance items include painting, and cleaning gutters and downspouts. It is prudent to inspect the roof for any signs of moisture infiltration, open joints, missing components, and cracks or bulges.

Maintenance Review

Complete regular maintenance or in-kind replacement

1 **2** **3** Staff

MAINTENANCE GUIDE

THE VCC RECOMMENDS:

- Regular reviews of buildings, structures and site features to identify maintenance and repair needs, generally early spring, prior to hurricane season, and late fall (Refer to *Top 5 Maintenance Tasks* below)
- Prolonging the life of original materials on historic property through regular maintenance
- Avoiding replacement of original materials with modern or substitute materials

TOP 5 MAINTENANCE TASKS

Regular reviews can alert property owners to potential problems early before they become costly repairs.

1. Review roof for signs of deterioration
2. Clean and review gutters and downspouts for proper drainage away from building
3. Review condition of exterior woodwork, windows, and doors for detached or loose elements, the need for repainting and signs of termite damage or rot
4. Review condition of masonry piers, walls and chimneys including plaster and mortar
5. Remove and/or review behind vegetation growing on or adjacent to buildings

STORM PREPAREDNESS

Regular maintenance should be an integral part of storm season preparation. One of the best ways to reduce the potential risk to life and property is to regularly maintain buildings. This could be as simple as ensuring that shutters are operational and can be closed to protect windows from wind-blown objects or verifying that roofing is secure to prevent the entry of wind-driven rain. Although there are several new hurricane-prevention measures or products on the market, the level of protection, associated costs, and impact on the historic materials and character of the building must also be considered. To provide guidance to property owners, the individual sections of the *Guidelines* include information regarding alternatives for mitigating the potential effects of storms.

The edge of the roofing at this gallery is bent and not secure. Strong storm winds can peel the roof off of the building.

PREVENTIVE MAINTENANCE CHECKLISTS

These *Guidelines for Exterior Maintenance* include preventive maintenance checklists to assist property owners in recording the current condition of their buildings, as well as keeping track of maintenance tasks as they are performed.

The checklists refer to typical problems associated with various materials and possible recommended actions. The checklist should be modified to address the specific materials found at each property. If a building has serious problems, a more detailed inspection can be performed by a qualified architect or structural engineer who can recommend an appropriate treatment approach. (Refer to *Cyclical Maintenance Plans, Page* 03-14.)

It is recommended that owners conduct three yearly property reviews, before winter, in the early spring, and before hurricane season. The fall review will assist in identification of weatherization projects needed before winter, as well as the identification of projects to be scheduled for the following year; the spring review will help identify work that should be completed during the warm weather months; and the pre-hurricane season review can identify needed areas of work that could be impacted by high winds and rain. Areas of deterioration or problems should be photographed during each inspection. Dating of the photographs can help document an ongoing problem's progression and assist in planning future repairs. (Refer to *Page* 03-14 for information on creating a Maintenance Manual.)

For more specific information regarding the various materials identified, please refer to the *Guidelines* brochures available at the VCC office or on its web site at www.nola.gov/vcc.

Damage is evident along the roof overhang due to moisture infiltration. The gutter has been dislodged, several soffit boards are missing or displaced, and vine growth is progressing on and between building components.

BUILDING ENVELOPE DETERIORATION

The exterior envelope of a building consists of various components that typically include roofing, walls, windows and doors. Each of these building components can be constructed of various materials within the same building envelope, such as a combination of shingle roofing at sloped surfaces and rolled roofing at flat surfaces. Overall, these components of various materials act together as a system to protect both the building and the interior from exterior environmental extremes. Some of the environmental influences affecting the exterior building envelope include:

- Moisture, storm water, humidity and groundwater
- Wind
- Sunlight
- Temperature variations
- Atmospheric chemicals and acid rain
- Insects, birds and rodents
- Vegetation, molds, algae, and fungi
- General material degradation due to aging

All building materials, new or old, will deteriorate over time. Each of the environmental influences listed above, individually and in combination, has the potential to react differently with materials and compromise a building's exterior envelope and cause deterioration. The potential reactions are further complicated by the way the materials are installed, joined together and their relative locations. By implementing a regular maintenance and repair program, the rate of deterioration can be slowed dramatically, allowing the Vieux Carré's historic buildings to last for centuries.

SALVAGED MATERIALS

Although the VCC encourages the use of salvaged materials, care should be taken if considering the use of building materials salvaged from other properties. To be appropriate, any salvaged material needs to match the historic characteristics of the property to which they will be relocated. In addition, it is also possible that salvaged materials, particularly wood elements, can introduce pests, such as termites, to a building site.

REPAIR VS. REPLACEMENT

One of the essential missions of the VCC is to protect and preserve historic properties, which includes all exterior historic materials found within the district for the benefit of future generations. To preserve the authenticity of the French Quarter, the VCC strongly encourages the retention of historic materials or replacement in-kind whenever work on a property is considered. Therefore, the VCC recommends repairs focused at the specific areas of deterioration rather than wholesale replacement of a historic building material, understanding that additional care and attention might be required as part of the effort. This approach allows the historic essence of the buildings to be maintained for future generations.

Repairs are intended to make a building weather-resistant and structurally sound by concentrating specifically on areas of deterioration. Regular maintenance can minimize the need for repairs and timely repairs can minimize large repair costs and additional deterioration. As an example, it might be possible to repair an existing wood window sash rather than incur the much higher expense of purchasing and installing replacement windows.

When repair is not possible, property owners are encouraged to replace in-kind. Although it is tempting to use an off-the-shelf solution for a problem, it can cause damage to the remaining historic building fabric. A common problem in the Vieux Carré is the use of commercially available Portland cement based mortar at historic brick walls. Because the mortar is substantially harder than the brick, the mortar will accelerate the crumbling of the brick over time. Therefore, it is important for property owners to understand the technology of a building's construction to minimize the potential for long-term harm and costly future repairs.

REPAIR & REPLACEMENT GUIDE

THE VCC RECOMMENDS IN PREFERENTIAL ORDER:

1. Non-intrusive repairs, focused at deteriorated areas, stabilizing and protecting the building's important materials and features
2. When repair is not possible, replacement in-kind to the greatest extent possible, by reproducing new construction the original feature exactly – using similar techniques to match the original material, size, scale, finish, detailing, and texture
3. When replacement in-kind is not possible, the use of compatible materials and techniques that convey an appearance similar to the original feature, similar in design, color, texture, finish, and visual quality to the historic elements

THE VCC DISCOURAGES:

- Introducing modern materials that can accelerate and hide deterioration
- Removing or encapsulating decorative building features

Prior roof patching evident in multiple roof locations. Note the poorly executed expanded ridge joint repair of the ridge tile.

ROOFING & RELATED ELEMENTS CHECKLIST

As a general rule, roofing and the associated components should be reviewed every fall and spring, as well as prior to hurricane season, corresponding with the regular cleaning of leaves and debris from gutters and downspouts. In addition, it is best to review the gutters, downspouts and attic areas during a rainstorm to determine whether they are functioning properly. Flat roofs are best reviewed immediately following a rainfall to determine whether standing water or ponding is present. Care should be taken when reviewing or maintaining roofs since they are potentially dangerous, particularly when wet.

If there are questions regarding whether the severity of deterioration warrants replacement of an element, consultation with a professional is recommended. It is usually less costly to fix a small problem than to delay action resulting in more extensive deterioration and repair needs. For further information, please refer to the *Guidelines for Roofing*. For further information regarding hurricane preparation, refer to *Roof Systems & Storm Preparedness, Guidelines for Roofing,* Page 04-02.

MATERIAL / LIFE SPAN	INSPECTION REVIEW	RECOMMENDED ACTION
Roofing – General	• Sagging or bowing of roof ridge, surface or rafters	□ Can indicate significant structural problems – Consultation with an architect or structural engineer is recommended, particularly if condition worsens
Slate, Terra Cotta Tile, Concrete Tile or Ridge Tiles 50+ years	• Laid on open sheathing or batten strips – verify from attic	□ If not, provide proper ventilation in attic
	• Broken or missing slates or tiles	□ Re-attach, re-secure or replace loose or missing slates or tiles in kind
	• Units delaminating or flaking apart	□ Replace deteriorated individual slates or tiles in-kind
	• Slate or tile particles in valleys, gutters and downspouts	□ Consider roof replacement when over 20% of slates or tiles are split, cracked, missing or deteriorated
Asbestos Shingles 30+ years	• Nails popping or deteriorated	□ Re-fasten or replace affected nails
	• Moss, mold, algae growing on roof surface	□ Clean and treat surface to inhibit future growth □ Trim back overhanging tree limbs to allow direct sunlight onto roof surface
	• Individual shingles are cracked or uniformly thin from erosion	□ Consider roof replacement with appropriate non-asbestos roofing if deterioration is substantial or prevalent
Faux Slate – Rubber or Plastic/Polymer Shingles Varies based on manufacturer	• Individual shingles are cracked	□ Replace deteriorated shingles with visually similar
	• Individual shingles are curled, warped or bent	□ Consider roof replacement if deterioration is substantial or prevalent
	• Shingles are faded or discolored	□ Consider roof replacement if deterioration is substantial or prevalent

MATERIAL / LIFE SPAN	INSPECTION REVIEW	RECOMMENDED ACTION
Flat Roofs Varies based on product	• Bubbles, separation or cracking of the asphalt or roofing felt • Roof feels loose or spongy underfoot • Water ponding on roof • Mineral granules or gravel worn away • Roofing felt looks dry or cracked	□ Consider patching of seams with compatible materials if area is isolated □ Consider roof replacement if deterioration is substantial or leaking is observed – Verify condition of roof substrate including rafters and plywood sheathing
Metal Roofs 60+ years	• Substantial number of rust or corrosion spots • Signs of previous tar patch jobs	□ Tin, terne-coated steel and terne-coated stainless all need regular repair and painting every 5-10 years and can last for decades if properly maintained □ Consider patching with compatible materials if area of deterioration is isolated □ Consider roof replacement if deterioration is substantial or prevalent
	• Punctures in the metal • Broken joints or seams	□ Consider patching or re-soldering with compatible materials if area is isolated □ Consider roof replacement if deterioration is substantial or prevalent – Verify condition of roof substrate
	• Bounce in surface of flat metal roof • Ponding or standing water on surface	□ Consider roof replacement if deterioration is substantial or prevalent – Verify condition of roof substrate
Flashing (Formed sheet metal at joint intersections to prevent moisture penetration)	• Loose, corroded, broken or missing flashing • Roofing cement or tar on flashing • Openings or gaps at the tops of flashing • Vertical joint does not have both base and counter flashing	□ Consider patching or replacement with compatible materials if area of deterioration is isolated, such as around a chimney □ Consider roof replacement if deterioration is substantial
Roof Projections (Dormer, TV dish, antenna, vent, pipe, skylight, solar or mechanical equipment, lightning rod, cupola, etc.)	• Connections around roof projections are not properly flashed and watertight	□ Consider patching with compatible materials if area of deterioration is isolated □ Consider flashing replacement if deterioration is substantial
Chimneys	• Flashing around chimney is not watertight • Mortar joints in chimney are open or badly weathered • Masonry or stucco coating is cracked or crumbling • Chimney is leaning	□ Consider patching with compatible materials if area of deterioration is isolated □ Re-point deteriorated or open mortar joints □ Consider replacement if deterioration is substantial or prevalent – Replacement might necessitate chimney rebuilding from the roof surface up – Replicate all chimney detailing in reconstruction
	• Chimney is not properly capped • Chimney is not properly lined	□ Install an appropriate chimney cap for the building style □ Install a chimney liner if wood-burning fireplaces are used or if masonry inside of flue is crumbling

MATERIAL / LIFE SPAN	INSPECTION REVIEW	RECOMMENDED ACTION
Gutters & Downspouts	• Clogged gutters or downspouts	□ Review roof drainage during a rainstorm – Water should collect in gutters and flow through downspouts without "spilling over" roof edge □ Clean out debris at least twice each year, in the spring and fall, or more frequently based on tree proximity and debris accumulation □ Install screens over length of gutters and/or strainers over downspout locations
	• Rusty, loose, askew, tilting gutters or downspouts • Open or missing seams in hanging gutters • Missing sections	□ Consider repairing or patching with compatible materials if area of deterioration is isolated □ Consider gutter or downspout replacement if deterioration is substantial or sections are missing
	• Broken seams in metal lining of built-in box gutter	□ Re-solder open joints □ Consider replacement if deterioration is substantial or prevalent
	• Cast iron downspout boots are rusted	□ Remove rust to bare metal – Apply rust-inhibitive primer and paint
	• Water ponding adjacent to foundation	□ Re-grade area at foundation to direct water away from building □ Verify water exiting from downspouts is directed away from building foundation - Install splash blocks or downspout extensions at base of downspouts to direct water to drain

The crushed downspout is impeding water flow.

The rear chimney has collapsed and there is significant mortar loss at the remaining two chimneys.

A splash block can direct storm water from a downspout away from a building.

The vines on the chimney can clog the flue and dislodge the mortar.

EXTERIOR WOODWORK CHECKLIST

Generally, exterior woodwork should be reviewed every fall and spring, as well as prior to hurricane season. The fall review allows a property to be prepared for winter and allows the owner to plan for spring repair and painting. The spring review will alert a property owner to damage that occurred over the winter months and allow for immediate repair. The review prior to the storm season will identify any loose elements that could be blown-off or openings that could provide a path into the building for wind-driven rain.

If there are questions regarding whether the severity of deterioration warrants replacement, consultation with a professional is recommended. Painting of exterior wood elements should be completed when the temperature and relative humidity are within the paint manufacturer's recommended ranges. For further information, refer to the *Guidelines for Exterior Woodwork*, *Guidelines for Windows & Doors* and *Guidelines for Exterior Painting*.

Wood in contact with the ground is more susceptible to damage from storm water, termites and fungi, requiring more frequent maintenance. The larger opening can also allow rodents and pests to nest under the display window.

MATERIAL	INSPECTION REVIEW	RECOMMENDED ACTION
Exterior Walls – General	• Exterior walls not plumb or vertically straight • Bulges visible at exterior walls • Door and window frames out-of-square • Siding has wavy surface	□ Can indicate differential or uneven foundation settlement or significant structural problems – Consultation with an architect or structural engineer is recommended, particularly if condition worsens
Wood Siding, Shingles & Decorative Woodwork (Refer to *Guidelines for Exterior Woodwork* for more information)	• Loose, cracked, missing or open joints at wood siding, shingles, or decorative woodwork	□ Could lead to water infiltration and rot – Repair or replace in-kind as appropriate □ Apply caulk to open joints – Verify compatibility with adjacent materials
	• Thin or worn shingles	□ Attempt patching with compatible materials if area of deterioration is isolated □ Consider replacement in-kind if deterioration is substantial or prevalent
	• Open joints around window and door frames • Open joints between dissimilar materials (such as wood siding and gallery roof)	□ Re-caulk, apply sealant, repair or replace deteriorated flashing as appropriate – Verify compatibility of caulk or sealant with adjacent materials – Select paintable caulk or sealant if possible
	• Mold, algae or mildew on siding or trim, especially on north side or shady areas • Vines growing on walls	□ Indication of potential moisture problem – Verify if a vapor barrier is present in wall and remove if possible □ Clean and treat surface to inhibit future growth – Do not use high pressure water since this could result in more significant problems □ Remove ivy and scrub surface with a stiff brush to remove roots on wall surface after they have dried □ Trim back shrubs and overhanging tree limbs to allow air circulation and sunlight to hit surface
	• Original siding or trim has been covered with vinyl or aluminum siding	□ Vinyl and aluminum siding and capping can trap moisture and hide rot and damage – Vinyl or aluminum siding and capping should be removed and woodwork inspected for damage and repaired

MATERIAL	INSPECTION REVIEW	RECOMMENDED ACTION
Water & Termite Damage (Refer to *Guidelines for Exterior Woodwork* for more information)	• Signs of dirt veins on exterior walls, particularly near foundation, steps, under galleries, porches, etc.	□ Possible indication of termite damage – Contact extermination company to determine if there is active infestation and extent of damage
	• Wood is soft when stuck with a small blade or ice pick, particularly window sills, galleries, porches, steps, sills, and siding (Refer to G*uidelines for Exterior Woodwork*, Page 05-__ for *Wood Rot*)	□ Possible indication of wood rot or insect infestation – Eliminate source of moisture to control rot and replace defective elements in-kind, contact an extermination company for potential infestation
	• Wood is located on masonry foundation or pier or within 6-inches of ground (Refer to G*uidelines for Exterior Woodwork*, Page 05-__ for *Termites*)	□ Wood on masonry foundations or piers or close to the ground can be a target for rot and termite infestation – Review appropriate alternatives and conduct regular inspections □ Retain a pest management company to provide regular inspections
	• Vegetation, such as shrubs, are located immediately adjacent to foundation • Vines climbing on building	□ Vegetation can trap moisture in woodwork by blocking sunlight and air circulation – Remove or thin vegetation close to a building or conduct regular inspections for rot behind vegetation □ Climbing vines can trap moisture and grow behind siding – Remove vines to allow air and light
Windows & Doors (Refer to *Guidelines for Windows & Doors* for more information)	• Windows and doors do not fit or operate properly	□ Verify whether frame is wracked or out-of-square – Possible indication of differential or uneven foundation settlement or deteriorated wall framing □ Verify whether windows are painted shut and hardware (including sash cord or chains) is operational
	• Wood rot, particularly at sills and lower rails	□ Repair or selectively replace deteriorated components in-kind □ Following repairs, verify deteriorated areas are well painted and joints caulked
	• Window is not operational	□ Verify whether window has been painted shut □ Verify whether sash cords are attached to sash weights
	• Glass is cracked	□ Replace glazing to match existing
	• Glazing putty is missing, cracked, or deteriorated	□ Replace glazing putty – Verify compatibility with adjacent materials
	• Screen windows or doors are missing, deteriorated or non-operational	□ Repair or replace deteriorated units as appropriate □ Consider installing interior screen windows and doors
Painting (Refer to *Guidelines for Exterior Painting* for more information)	• Chalky or dull finish	□ Surface cleaning might be all that is needed □ If repainting, additional preparation might be required
	• Paint surface worn	□ Wood generally needs repainting every 5 to 8 years
	• Peeling, curling, crazing, and blistering	□ Possible indication of non-compatible paint for surface – Review type of finish on existing material and confirm type of preparation required for new paint, might include surface sanding and/or application of primer □ Possible indication of a moisture problem – Review drainage, potential leaks and whether there is a vapor barrier within the wall – Remove vapor barrier if possible □ Paint failures near roofs, downspouts, porch and gallery ceilings are often the result of drainage problems
	• Caulk or sealant not adhering	□ Verify compatibility with caulk or sealant and surface material – Select paintable caulk or sealant if possible

EXTERIOR MASONRY & STUCCO CHECKLIST

Masonry is present in almost all buildings, typically as a foundation, pier, or chimney, and sometimes as the wall material. Since masonry is often part of the structural system of older buildings, it is critical that it is maintained to prevent serious problems. Masonry and stucco repair and cleaning should be conducted when the temperature is consistently between 40 and 90 degrees Fahrenheit to minimize potential spalling and problems associated with colder temperatures and shrinkage with warmer temperatures. Painting or coating of masonry and stucco, where appropriate, should be completed when the temperature and relative humidity are within the paint or coating manufacturer's recommended ranges.

If there are questions regarding whether the severity of deterioration warrants replacement of an element, consultation with a professional is recommended. It is usually less costly to fix a small problem than to delay action resulting in more extensive deterioration and repair needs. For further information, please refer to the *Guidelines for Masonry & Stucco*.

The stucco is cracked to revealing loss of mortar and brick damaged by water infiltration.

MATERIAL	INSPECTION REVIEW	RECOMMENDED ACTION
Exterior Walls & Piers – General	• Cracks in masonry wall	□ Can indicate differential or uneven foundation settlement or significant structural problems – Consultation with an architect or structural engineer is recommended, particularly if condition worsens □ Vertical and/or diagonal cracks or cracks that split individual bricks or stones tend to represent a more significant problem, such as differential settlement □ Horizontal cracks or hairline cracks limited to mortar joints or individual stones or bricks tend to be less severe □ Monitor and photograph condition after repair to see if cracks return
	• Bows or bulges in wall plane • Leaning walls	□ Can indicate differential or uneven foundation settlement or significant structural problems – Consultation with an architect or structural engineer is recommended, particularly if condition worsens
	• Water ponding adjacent to foundation • Vegetation, such as shrubs, are located immediately adjacent to foundation • Vines growing on walls • Damp walls • Moss or algae on masonry surface	□ Verify water exiting from downspout is directed away from building foundation – Install splash blocks or downspout extensions to direct water away from wall □ Vegetation can trap moisture in masonry by blocking sunlight and air circulation – Remove or thin vegetation close to a building or conduct regular inspections for algae and mold behind vegetation – Remove vines □ Re-grade area adjacent to foundation to direct ground water away from building □ Remove ivy and scrub surface with a stiff brush to remove roots on wall surface after they have dried □ Clean moss or algae from wall surface with low pressure water, with the possible use of gentle detergent and brushing
	• Efflorescence, i.e. water-soluble salts, leached out of masonry and deposited on a surface by evaporation, usually as a white, powdery surface	□ Clean efflorescence from wall surface with low pressure water, with the possible use of gentle detergent and a natural bristle brush □ Review area for possible additional sources of moisture

MATERIAL	INSPECTION REVIEW	RECOMMENDED ACTION
Mortar	• Soft and crumbling • Open joints or broken joint bonds	□ Consider patching with compatible mortar if area of deterioration is isolated – Mortar should match original in appearance, profile, hardness, and composition □ Consider replacement if deterioration is substantial
Stones & Bricks	• Spalling, chipping, flaking, cracking, or crumbling of surface • Loose or missing stones or bricks	□ Consider patching with compatible materials if area of deterioration is isolated □ Consider replacement if deterioration is substantial
	• Pitted surface from sandblasting or pressure wash	□ Masonry with a damaged surface is more likely to absorb moisture leading to accelerated deterioration – Consult a professional □ Monitor and photograph condition to see if surface continues to deteriorate □ Review adjacent materials and interior finishes for signs of moisture infiltration and rot
Stucco	• Cracks in surface	□ Consider patching with compatible stucco if area of deterioration is isolated □ Consider replacement if deterioration is substantial □ Substantial cracks might indicate differential or uneven foundation settlement or severe structural problems – Consultation with an architect or structural engineer is recommended, particularly if condition worsens
	• Bulges in wall	□ Verify keying of stucco to lath or underlying substrate – If wall area moves when pushed, stucco is not bonded and should be replaced with compatible material to avoid potential surface collapse
Painted Masonry	• Chalky or dull finish	□ Additional preparation might be required prior to repainting – Preparation dependant on surface
	• Peeling, flaking, curling and blistering	□ Possible indication of a moisture problem – Review drainage, potential leaks and for presence of a vapor barrier in the wall – Remove vapor barrier if possible □ Paint failures near the roof edge, downspouts, gallery, and porch ceilings and foundations are often the result of drainage problems
	• Paint surface worn	□ Similar to woodwork, painted masonry tends to need repainting every 5 to 8 years with compatible paint

This brick between posts exterior wall, now exposed to the elements, was designed to be protected with a coating of stucco. Without this layer, the soft brick substrate quickly starts to deteriorate. Wood repairs and replacement bricks are evident.

The area around a building should be cleared of debris and plant growth should be minimized to allow clear flow of storm water.

PROPERTY CHECKLIST

Exterior maintenance extends beyond a building's perimeter to include the surrounding property. Seasonal property maintenance includes cutting grass and raking leaves. Larger maintenance issues include: water management on the site, trimming trees, and regular repairs to metal galleries, fences, walls, walkways, and paved surfaces. Specific maintenance might be required for specialized site elements such as water features. Prior to anticipated storms, secure furnishings and features that could become airborne in high winds. For further information, please refer to the *Guidelines for Site Elements.*

MATERIAL	INSPECTION REVIEW	RECOMMENDED ACTION
Water Management	• Groundwater directed towards building foundation	□ Re-grade area at foundation to direct ground water away from building
	• Water ponding adjacent to foundation	□ Verify water from exiting downspouts is directed away from building foundation – Install splash blocks or downspout extensions to direct water away from wall
	• Vegetation, such as shrubs, are located immediately adjacent to foundation or vines are climbing on buildings	□ Vegetation can trap moisture in wall surfaces by blocking sunlight and reducing air circulation – Remove or thin vegetation close to a building or conduct regular inspections for rot, algae, fungus, and mold behind vegetation – Remove climbing vines
	• Tree limbs extend over roof	□ Trim limbs 5-feet away from building – Shade from the sun that can lead to the formation of moss, fungus, mold or algae – Leaves and debris collect and clog gutters and downspouts – Tree limbs can cause severe damage if they fall during a storm
Metal Galleries, Metal & Wood Fences	• Metal galleries • Metal fences	□ Check for rust spots or bare metal – Remove rust, prime and repaint every 5 to 8 years □ Verify metal anchors are securely fastened to walls
	• Wood fences	□ Check for deterioration, follow recommendations in the *Exterior Woodwork Checklist,* Page 03-08 □ Anticipate repainting or staining every 5 to 8 years
Sidewalks, Walkways, Patios, & Pavers	• Brick, flagstone, or concrete pavers cracked or missing	□ Verify the condition of the sub-base and replace deteriorated or missing units in-kind
	• Water ponding on paved surface • Subsidence of paved surface	□ Verify the condition of the sub-base and reset individual units to allow appropriate drainage
	• Vegetation growing between individual units	□ Some vegetation has a substantial root structure that can dislodge individual paving units – Remove vegetation if appropriate
Asphalt Paving & Driveways	• Cracked asphalt	□ Seal cracks to minimize potential water infiltration □ Consider sealing or repaving entire surface if cracks are substantial or prevalent
	• Water ponding on paved surface • Subsidence of paved surface	□ Verify the condition of the sub-base and patch to allow appropriate drainage
Pests	• Rodent droppings • Holes from burrowing animals	□ Possible indication of pest infestation – Contact pest management company to determine if there is active infestation or nesting birds – Review appropriate alternatives and conduct regular inspections

INTERIOR CHECKLIST

Exterior maintenance problems can be most evident at the interior of a building. The areas most likely to demonstrate exterior problems tend to be the least-visited parts of a house, such as the attic and crawlspace. It is important to remember that attics and crawlspaces are unique spaces with distinct conditions. Attics sit directly under roofs which can be highly susceptible to moisture infiltration. Similarly, crawlspaces are susceptible to moisture and pest infestation and damage. Since these spaces typically do not have heat, air conditioning and moisture control at the same levels as the rest of the building, problems can fester and become more severe before being noticed.

The dark areas at the top and side of the diagonal wood brace indicate moisture. The end of the diagonal wood framing is rotting. The cause of the moisture infiltration should be addressed and the wood framing repaired.

MATERIAL	INSPECTION REVIEW	RECOMMENDED ACTION
Attic Space	• Water stains on rafters or roof boards – Probably indicated by either a dark patch on the wood or plaster or possibly a white bloom representing salt crystallization	□ Review during or immediately following a rainstorm to understand whether staining is active or a past problem – Pay particular attention to flashing locations around roof penetrations such as vent pipes, chimneys and dormer windows, as well as at valleys and eaves, especially prior to hurricane season
	• Mildew on underside of roof structure • Dampness in attic space • Overheated attic	□ Verify whether the attic is sufficiently ventilated
	• Broken or missing collar beams • Cracked or sagging rafter	□ Potential structural problem – Consultation with an architect or structural engineer is recommended, particularly if condition worsens
	• Inadequate insulation at attic floor or between rafters	□ Install appropriate insulation without a vapor barrier – Select insulation that is reversible and will not cause damage if wet (Refer to *Guidelines for Exterior Woodwork*)
Crawlspace	• Mortar of walls or piers is soft and crumbling • Damp or moldy smell • Evidence of dampness under first floor framing or around pipes • Evidence of wood rot or insect infestation at wood sills on top of foundation walls or first floor joists • Periodic flooding	□ Review for potential moisture infiltration □ Verify water exiting from downspouts is directed away from building foundation – Install splash blocks or downspout extensions at base of downspouts □ Re-grade area at foundation to direct ground water away from building □ Verify that foundation vents are clear of debris □ Check underground water supply and drainage systems for cracked or clogged pipes □ Re-point areas of deteriorated mortar □ Apply stucco to brick piers if appropriate □ Retain a pest management company to provide regular inspections and contact immediately for potential infestation
	• Inadequate insulation	□ Install insulation under first floor framing □ Install appropriate insulation around pipes, heating and air conditioning ducts – Condensation can form on uninsulated equipment and pipes

The foundation vent is cracked, rusting, and the grille has been blocked from behind reducing air circulation in the crawlspace. Also note the loss of mortar at the brick joints.

MAINTENANCE MANUAL

It can be helpful for property owners to develop a maintenance manual or property scrapbook to keep track of conditions, problems, maintenance tasks and contractors who performed the work. The information in the manual generally falls into three categories:

1. **General information** should include the names and telephone numbers for emergency services and repairs, as well as basic information on specific building equipment.
2. **Documentation** information should include historical, construction, alteration and legal information that is specific to the property's past and current conditions.
3. **Inspection and Maintenance Requirements** should include the preventive maintenance checklists and include items to be inspected; how often inspections occur; and information on repair and upkeep techniques of particular components, materials, and equipment.
4. **Photographs** of the overall buildings as well as detailed problems that are dated can indicate if specific problems are worsening over time.

It is useful to assemble this information in a way that can easily be updated and referenced, such as a three-ring binder. If regularly updated, this manual of conditions will assist property owners in diagnosing problems, tracking changes over time, prescribing remedies, and evaluating the effectiveness of those remedies in a similar manner that a physician tracks a patient's health.

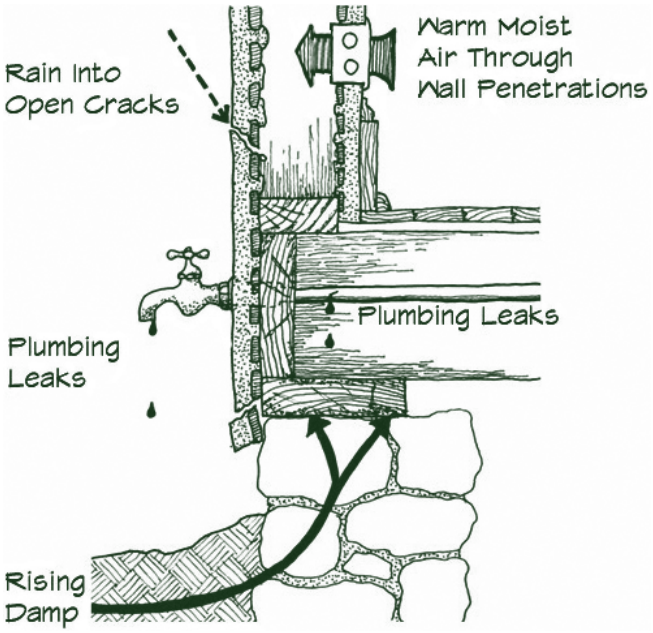
CYCLICAL MAINTENANCE PLANS

Although a maintenance manual can provide a good record, property owners can consult with an architect or engineer for a more property-specific building evaluation or cyclical maintenance plan that is customized to their needs.

MOISTURE

Moisture is the primary agent of decay in a building and it can promote a wide range of deterioration including termite infestation. No matter how "waterproof" a building is, water vapor will find its way into the structure. Moisture saturated building materials can:

- Make wood desirable "food" for insect consumption
- Promote the growth of mold, algae and fungi
- Cause wood and masonry to swell when wet, exerting additional pressures, particularly during freezing temperatures
- Compromise the structural integrity of the building
- Cause chemical reactions that might deteriorate materials by transmitting salts and minerals through walls, particularly in masonry
- Damage or destroy interior finishes and furnishings



Rain and Precipitation *can enter the exterior envelope through damaged or cracked surfaces and crevices with adjacent materials including window and door frames.*

Rising Damp *is the migration of moisture from the soil into the building structure through capillary action. The soil adjacent to the foundation can become saturated through improper drainage from gutters and downspouts and vegetation planted adjacent to the foundation.*

Plumbing Leaks *include leaking bathroom fixtures, kitchen and laundry appliances, as well as both interior and underground piping.*

Condensation *occurs when warm moist air from kitchens, bathrooms and laundry facilities comes in contact with cold surfaces and changes to water droplets.*

TERMITE PREVENTION CHECKLIST [1]

Do not give termites easy access to the house:

- Eliminate wood to soil contact.
- Install wood siding, door and window frames and latticework at least 6 inches above ground level.
- Support outdoor wood porches and steps on a concrete base extending at least 1 inch above ground level.
- Do not allow any non-structural wood and tree branches to touch a house.

Do not provide termites with moisture:

- Place gutters and slope yard so that surface water drains away from the house.
- Be sure air conditioning condensate drains away from the house.
- Be sure moisture does not enter around windows, doors and siding.
- Repair leaks of roof, gutter, downspouts and plumbing promptly.
- Ensure sufficient clearance between soil and structural wood in crawl space to have adequate cross-ventilation.
- Keep mulched beds and gardens at least 12 inches away from foundation.

Eliminate hidden access to a house:

- Do not fill dirt beneath porches, terraces or steps.
- Do not extend stucco or foam insulation below the ground.
- Do not disturb the chemical barrier after soil treatment.
- Prevent and fix cracks in concrete walls, piers and slabs.

Minimize the amount of wood available for termites:

- Remove all scrap wood, form boards and grade stakes used in construction.
- Remove wooden debris and cellulose material from under and around the house.
- Replace rotten or destroyed structural wood with properly pressure-treated wood or non-cellulose material.
- Store woodpiles away from the house, and make sure they are raised off the ground.
- Paint or seal all exterior wood.

Inspect your property frequently for termites:

If a property is to be treated, get at least three licensed companies to inspect the property. They will make a diagram of the property showing proposed treatments and give you an estimate. Ask for a copy of the company's bond, insurance and contract. Ask to see copies of the labels and material safety data sheets (MSDS) for the termiticides to be used. With the above information, you are able to compare the services offered and the prices the companies want to charge. Read the contract carefully. Remember, it is a LEGAL contract.

[1] From: *A Guide for Integrated Pest Management of Termites,* www.agctr.lsu.edu, Publication 2979. April 2000. Refer to *Guidelines for Exterior Woodwork,* Page 05-__ for additional information.

Improperly maintained paint along the bottom of the door leaves the door susceptible to damage from moisture, termites and other pests.

PAINTING

Paint is one of the most common ways to protect exterior materials from the elements. When the painted surface has been compromised, moisture and the elements can infiltrate the underlying material and accelerate potential deterioration.

In general, exterior surfaces should be repainted every 5 to 8 years, with touch-ups of high traffic, worn or deteriorated areas. If the need and frequency of complete repainting is greater, this may indicate a problem such as:

- Presence of excessive moisture
- Paint applied with inadequate surface preparation or under adverse conditions, such as high temperature or relative humidity
- Paint is not compatible to underlying material or previously applied paint

For further information regarding painting, including how to determine whether painting is necessary and appropriate preparation techniques, refer to the *Guidelines for Exterior Painting* and *Guidelines for Masonry & Stucco*, Page 06-__.

PAINT REMOVAL SAFETY

Paint removal is potentially hazardous work, especially at historic buildings. Keep children and pets clear of work areas. Property owners should consult a professional for work that is unfamiliar or potentially unsafe. (Refer to Page 03-16 for *Safety Precautions*.)

- Always wear safety goggles
- Avoid heat tools – When using, wear appropriate clothing and keep a fire extinguisher nearby
- Paint dust from older buildings can contain lead – Wear a dust mask, avoid open food or beverage containers in area of paint removal, and thoroughly clean exposed skin and launder work clothes

SAFETY PRECAUTIONS

Building repair and maintenance can be potentially be dangerous work. It is recommended that all manufacturers' recommendations be followed and appropriate safety precautions with ladders, tools, materials, and processes be taken. Property owners should consult a professional for work that is unfamiliar or potentially unsafe.

Older buildings can contain dangerous materials such as asbestos, lead, and mold that might be uncovered during work. Property owners should hire licensed professionals and familiarize themselves with these materials and the building's conditions before beginning work.

Information about potentially hazardous materials can be found from the following organizations:

Asbestos

Great care should be taken when working with broken asbestos products and during its removal.

US Environmental Protection Agency Hotline

(800) 368-5888 – www.epa.gov/asbestos

Louisiana Department of Environmental Quality

(866) 896-LDEQ

www.deq.louisiana.gov/portal/tabid/2883/Default.aspx

Lead

National Lead Information Clearinghouse

(800) 424-LEAD – www.epa.gov/lead

Louisiana Department of Environmental Quality

(866) 896-LDEQ

www.deq.louisiana.gov/portal/tabid/2883/Default.aspx

City of New Orleans Office of Safety & Permits

(504) 658-7130

Mold

Indoor Air Quality Information Clearinghouse

(800) 483-4318

www.epa.gov/iaq/molds/index.html

For additional questions or information, please contact:

- New Orleans Office of Safety and Permits at (504) 658-7130 for general questions; or
- Your personal physician for health-related concerns.

These asbestos shingles are cracking and wearing. Prior patching is evident. Removal and proper disposal should be completed by a licensed contractor as part of roof replacement.

BUILDING CODES

In the completion of construction projects, The City of New Orleans refers to The International Building Code, Residential Code, and Existing Building Code with local amendments. The intent of the Code is to protect the public health, safety and welfare of citizens against the hazards of inadequate, defective or unsafe conditions. The Code addresses the interior and exterior conditions of buildings, building systems and the surrounding property. Some additional items to keep in mind when undertaking a project:

- When completing significant repairs where roof or wall framing is exposed, it is recommended that appropriate shoring and bracing be installed until work is completed
- The property owner is responsible for complying with all applicable zoning and building codes and obtaining all required approvals and permits prior to commencing with work
- Property owners are responsible for ensuring that all asbestos and lead removal and disposal is handled in accordance with all applicable regulations and procedures. It is recommended that all asbestos related work be undertaken by a licensed contractor and lead by a certified contractor.

HIRING A CONTRACTOR

- All contractors are not necessarily experienced in historic buildings or building materials
- Verify whether contractor is licensed to work in the City of New Orleans
- Verify contractors are experienced in meeting VCC requirements and will obtain required approvals and permits
- Request a written estimate detailing the work
- Verify extents of warranty for both materials and labor
- Check references, especially from 5 years prior, to understand how well their work has held up
- Hold final payment, such as 25%-30% of project cost, until all work has been completed properly

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