KNOXVILLE HISTORIC ZONING COMMISSION
STAFF REPORT - CERTIFICATE OF APPROPRIATENESS APPLICATION

PROPERTY ADDRESS: 1011 McGhee Ave **FILE NO.: 6-E-14-HZ**

DISTRICT: Mechanicsville H-1

MEETING DATE: 6/19/2014

APPLICANT: Bentley R. Marlow (partner)

LEVEL OF WORK: Level II. Major repair or replacement of materials or architectural elements

PROPERTY DESCRIPTION: Queen Anne Cottage with Craftsman influence

One-story frame with asbestos shingle wall covering. Hip roof with lower cross gables and asphalt shingle roof covering. Circular sawn wood attic vent. Double- hung two-over-two windows. One-story full front porch with splayed wood posts on brick piers. Interior offset brick chimney. Brick foundation. Irregular plan. (contributing)

DESCRIPTION OF WORK:

MASONRY WORK
a. Front Porch take down th front porch brick columns and rebuild them using uniform period appropriate bricks. Ideally we will re-use the bricks from the chimneys at this property.
b. Foundation- Various areas of the brick foundation need attentio -replace bricks as necessary using period appropriate bricks an to repoint the foundation.

CHIMNEY REMOVAL
a. Re-purpose the bricks from the chimneys to re-build the columns of the front porch.
Main chimney, south chimney, cooking chimney

WINDOWS
a. Replace all windows with EnergyStar double hung wooden windows manufactured byMW Windows-- 1- over -1 but would entertain 2 -over -1 or 2- over- 2 simulated divided lights.
b. Windows placed and sized as the original; except in the former kitcen, which is on the back of the house. Along the back wall, install 2 windows that match the rest of the windows we use in the house.

DOORS
a. FRONT/ENTRY DOOR: Restore the original entry door and leave it; install a modern storm door that is full glass in front of it;
b. REAR DOORS:Remove the rea rdoor (it is not original) - install a fiberglass French door from the master bedroom onto the new deck (See DECK below for more details). Install a fiberglass full -light door onto the deck.

SIDING
a. Remove the asphalt shingle siding -remove the original wood siding and replace with a cement board that matches the original lap- retain the proportions of the corner siding, window and door trim and will leave intact all architectural details—wooden vents in the gables.

ROOF
a. Remove the asphalt shingles and replace with a 2-inch wide metal roof in a 5 V pattern.

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DECK

a. Construct a rear deck. The deck will be the width of the house and extend 12 feet into the rear yard. The deck will be at the same level as the floors of the house, therefore: will sit close to the ground --approximately 12-16 feet from the top of the deck to the grade.

APPLICABLE DESIGN GUIDELINES:

Mechanicsville Design Guidelines, adopted by the Knoxville City Council on October 10, 1995.

All Mechanicsville Design Guidelines for Rehabilitation apply.

COMMENTS:

A new owner applicant cannot be required to rebuild chimneys unless the removal is on record as a violation. Therefore, itis staff's opinion that since the three chimney stacks have already been removed to within a couple of feet or less, the applicant may remove the remainder of the chimney stacks. The MPC will retain photos on file that document the chimney locations.

STAFF FINDINGS:

1) The house has three chimneys. Two are not visible from the street from the front of the house; one on the south side can be seen from the corner of McGhee and Clark and from the Helen Ross McNabb parking lot which abuts the property on its right (south) side. All chimney stacks have been reduced in height at some point. No decorative or architecturally interesting design or bricks remain.

2) The cooking chimney is approximately 4 sq feet and is non-functioning. It has no embellishment and has been knocked down to approximately 18" above the roof and is not visible from the ground.

3) The front porch has four brick columns that have been repaired/replaced over the years resulting in a patchwork of various bricks.

4) The original back porch had been enclosed at some earlier point and appears to be in fair condition. The back door to this enclosure is not original.

5) Several nearby homes have metal roofs - some are commercial-grade "ribbed" metal roofs. At least one house nearby on Deaderick has an unpainted 5V-groovemetal roof that appears to be early or original. There is no documentation of a metal roof having been utilized at 1011 McGhee. A 5V-groove metal roof was typically only utilized on outbuildings or porches.

6) The original windows were 2- over- 2 -light windows.

7) Full -single-light french doors have been approved for the rear of houses if significant architectural details will not be lost. IN this case, no significant historic material will be lost. Multi-light doors are not appropriate for the period of the house.

8) New window and door openings may be added to non-character-defining elevations as long as no significant

historic fabric is lost. The sides and back o house exhibit no significant details.

9) The windows are deteriorated to a degree similar to those that have been approved to be replaced in other recent applications.

10) Fiber cement board siding is not recommended by the Mechanicsville Design Guidelines.

STAFF RECOMMENDATION:

Approve rehabilitation as proposed with the exception of the fiber cement board siding and the 5V-groove metal roof.

Knoxville/Knox County Metropolitan Planning Commission

Knoxville/Knox County Historic Zoning Commission

Certificate (File) No.: Date Filed: 23 May 2014

APPLICATION FOR CERTIFICATE OF APPROPRIATENESS

I (we) make application for a Certificate of Appropriateness for the plans and proposals described for the following property.

1. NAME OF APPLICANT: R. Bentley Marlow

Address: 322 Douglas Ave , 37921

Telephone: 865 607 4357 Fax:

Relationship to Owner: Business partner

2. NAME OF OWNER: Phil Bonifacio (under contract from City of Knoxville HomeMaker Progr

Address: 203 Gore Road , 37919

Telephone: 865-329-4002 / cell 865 755-0516 Fax:

***3. LOCATION OF PROPERTY* (Address, Lot, and Parcel No.):**

Address: 1011 McGhee Ave Tax ID: 094FJ013

4. TYPE OF WORK:

Level: Level II

5. DESCRIPTION OF WORK: *(See Part 2 of this application for additional information to be submitted with the application. A copy of all information which is submitted with an application must be retained by the Knoxville/Knox County Historic Zoning Commission.)*

- Replace doors & windows - comply with design guidelines.
- Repair/Repoint brick where needed
- Repair porch & columns to original
- Remove asphalt siding - expose original wood (prefer to replace w/ Hardi if permitted by ordinance)
- Remove chimneys
- Roof - w/ metal
- Deck on rear of house

6. SIGNATURE OF APPLICANT: R Bentley Marlow Date: 23 May 2014

Return application to: Knoxville/Knox County Historic Zoning Commission,
Suite 403, City/County Building, 400 Main Street,
Knoxville, Tennessee 37902.

FOR STAFF USE ONLY
Date Received _____ Approved _____ Disapproved _____ Approved As Modified _____ Date Acted On _____

1011 McGhee Stret

Mechanicsville H-1

HZC item

KGIS - 606 Main St - Suite 150 - Knoxville, TN 37902 - www.kgis.org Printed: 6/2/2014 at 4:14 PM

APPLICATION FOR 1011MCGHEE AVENUE

JUNE 2014

I. SITUATION OF PROPERTY

1011 McGhee is on the east side of McGhee—**it does not abut to any historic building or property**. The neighboring lot on each side belongs to Helen Ross McNabb. To the left of the house is a 'ropes' course—several telephone poles have been erected and connected with steel wires for climbing and such. To the right a parking lot. There are no residences along the eastern side of McGhee on this block—nor are there any other historic buildings on this side of this block. The large Terminex building to the left of the house prevents views of 1011the house and rear yard from Arthur Street; the parking lot and Helen Ross McNabb community center to the right are noncompliant with historic overlay.

II. CONDITION OF PROPERTY

1011 McGhee has been a blighted property for years. It is in very poor shape. The City of Knoxville acquired the property through eminent domain and we—Acadia Construction, Inc.—have a contract with Community Development Dept. HomeMakers program. The requests contained herein are drafted with a mind to having a resulting property that will hit financial targets necessary for the feasibility of this endeavor.

III. MASONRY WORK

a. Front Porch – The front porch has 4 brick columns that have been repaired/replaced over the years resulting in a hodgepodge of various bricks. We wish to take them down and rebuild them using uniform period appropriate bricks. Ideally we will re-use the bricks from the chimneys at this property—see CHIMNEY below for more details.
b. Foundation – Various areas of the brick foundation need attention. We wish to replace bricks as necessary using period appropriate bricks and to re- point the foundation.

IV. CHIMNEY REMOVAL

a. This house has three chimneys. None are visible from the street looking directly at the house; only one—the bedroom chimney—can be seen from the street and only from the Corner of McGhee and Clark and from the Helen Ross McNabb parking lot which abuts the property on its right (south) side. All chimneys have been reduced in height at some point. No decorative or architecturally interesting design or bricks remain. We will re-purpose the bricks from the chimneys to re-build the columns of the front porch.
b. Efficient use of space – the three chimneys occupy approximately 24 sq. ft. The entire house is merely 1,064 sq ft. The removal of the chimneys results in an increase of 2.25% of living space. These square feet are crucial to both the functionality of the new layout and for the economic value as this renovation will

be quite expensive. We expect that when finished each square foot of living space will be valued at $120.00; thus meaning the removal of the chimneys is worth $2,880 plus the savings of re-purposing the historic bricks for the front porch and foundation repairs. Any remaining bricks can be sold for approximately $0.35 per to help offset costs associated with this project. Moreover, the added 24 sq. feet makes possible an additional ½ bath—this is critical to hitting our valuation targets for this project.

This project hinges on the ability to turn this house into a three bedroom 1.5 bathroom house. The added square feet from the removal of the chimneys is critical to this new layout.

c. Main Chimney – the main chimney removed so as to permit the opening of the floor plan – we intend to remove the wall that separates the dining room and living room. We intend to re-purpose the new combined room into a living and kitchen.
d. Bedroom Chimney – the bedroom chimney removed so as to permit larger closets.
e. Cooking Chimney – Our new layout will convert the former Kitchen into a master bedroom. The cooking chimney is approximately 4 sq feet and is non-functioning; uninteresting visibly and has been knocked down to approximately 18" above the roof and is nearly invisible from the ground. It's position makes the conversion of the former kitchen into a bedroom problematic and results in an awkward layout.

V. WINDOWS

a. We wish to replace all windows with EnergyStar double hung wooden windows manufactured by MW Windows. Due to costs we prefer 1 over 1 but would entertain 2 over 1 or 2 over 2 simulated divided lights. **True divided light windows are cost prohibitive and we will not comply with this provision of the Mechanicsville Design Plan.**
b. We will leave windows placed and sized as the original; except in the former kitchen—which is on the back of the house. Along the back wall, in the new master bedroom, we wish to install 2 windows that match the rest of the windows we use in the house.
c. **We note that the previously restored homes near this house have modern wood windows, 1 over 1.** See both houses on Clark Street, and the two story on the corner of Clark and Oak.

VI. DOORS

a. FRONT/ENTRY DOOR: **We wish to restore the original entry door** and leave it; we wish to install a modern storm door that is full glass in front of it;
b. REAR DOORS: We wish to remove the rear door—**it is not original**—the original back porch had been closed in and converted into living space at some point. It will remain living space. We wish to install a fiberglass French door from the master bedroom on to the new deck—See DECK below for more details. We further wish to install a fiberglass full glass door from the kitchen onto the

deck. Both of these doors are to be in the rear wall of the house and not visible from the street nor any other historic property.

VII. SIDING

a. We are going to remove the asphalt shingle siding. We prefer to remove the original wood siding—its condition is unknown but from our limited exploration it is in mediocre shape—and replace with a cement board that matches the original lap. **Cement board, once painted, is indistinguishable by the human eye from wood from 10-12 feet.** Cement board is more environmentally friendly compared to wood as it does not contribute to deforestation nor the hydro-carbon intensive forestry and lumber industry. Cement board requires far less maintenance which increases its eco-friendliness. **We will retain the proportions of the corner siding, window and door trim and will leave intact all architectural details—wooden vents in the gables**.
b. Marlow has installed Hardi brand cement boards on old homes in the neighborhood (albeit not in the overlay) at 322 Douglas Avenue; 224 Douglas Avenue and 241 Douglas Avenue.

VIII. ROOF

a. We wish to remove the asphalt shingles and replace with a 2' wide metal roof in a 5 V pattern.
b. **Many nearby homes have metal roofs**—most are the "Ribbed" metal roofs that look more commercial. The City Firehall has a standing seam metal roof. At least one house nearby—on Deaderick—has an unpainted 5V metal roof that appears to be original, or at least very old.
c. Marlow has installed the proposed roofing material on 322 Douglas Avenue, some 3 blocks from this house but outside the overlay.

IX. FENCE

We wish to build a 6 1/2' (6' pressure treated dog ear pickets with a 5/4" deckboard as a baseboard/kickplate along the bottom—thus providing an additional 5.5" in height) privacy fence that extends from the rear corners of the house to the property line and extending along the property line to the rear corner and across the rear. **This fence will not abut any historical properties and will be mostly unseen from the road**.

X. DECK

We wish to construct a rear deck that will not be visiable from the road nor any historic property. The deck shall be the width of the house and extend 12' into the rear yard. The deck will in plane with the floors of the house and therefore will sit close to the ground (approximately 12-16" from the top of the deck to the grade. The railings will comply with the design guidelines.

Roofs

Historic Characteristics

Roof pitches on Old Mechanicsville's historic houses are often 12/12 (the roof pitch rises one foot in height for every foot in width). Steep sided triangles are formed by these gable roofs. It is also common to find porches with shed roofs and houses with multiple gables.

The roofs in Old Mechanicsville are now nearly all modern asphalt shingles. There were a variety of original roofing materials, such as standing seam metal or metal shingles, wood or slate shingles, large patterned asphalt or asbestos shingles, or shaped roof tiles of terra cotta or concrete. The historic roof colors would have been darker shades of brown, gray, red, green, or black. Unless they were copper, metal roofs were probably painted a dark color to harmonize with the exterior siding and trim colors. Copper roofs were allowed to anodize naturally.

The best roof materials to use when roofing are replicas of the original. If not feasible, metal, asphalt, or fiberglass shingles can be used, but their colors should be carefully selected to reflect the original roofing colors. When building new structures, roofing materials should be selected carefully, suggesting the colors, patterns, and materials that would have been found in the neighborhood originally.

Details associated with the roofs of the houses, such as dentil or other patterned molding, roof cresting or finials, attic vent windows, bargeboards, chimneys, and other features should be saved, repaired, or replaced in kind. All of these features add richness to the architecture of the neighborhood.

Maintenance Suggestions for Roofs

- ☐ Regularly inspect for leaks, repair problems as they occur, and keep gutters and downspouts free of litter and debris.
- ☐ Provide adequate ventilation in the form of soffit vents and ridge vents, which add life to the roof and keep the attic air space dry.
- ☐ Remove previous layers of roofing before installing a new roof so that the structure does not support extra weight and built-up layers do not mask later leaks.
- ☐ Gutters and downspouts can be installed and are important in maintaining the foundations of buildings. Consider repairing built-in gutters rather than roofing over them or hanging an additional gutter system at the edge of the roof.

A. Rules for Roofs

1. The shape of replacement roofs or roofs on new construction shall imitate the shapes of roofs on neighboring existing houses or other houses of the same architectural style. Roof pitch must duplicate the 12/12 pitch most often found in the neighborhood, the roof pitch typical of the style being referenced by a new building, or the pitch of neighboring buildings. Roof shapes must be complex, using a combination of hips with gables, dormers, or where appropriate to the style, turrets, or other features that emphasize the importance of Victorian-era or Craftsman styling.
2. The eaves on additions or new buildings must have an overhang that mimics existing buildings near the property. A minimum eave overhang of at least eight inches must be retained or used on new buildings or additions to existing buildings.
3. Repair or replace roof details (chimneys, roof cresting, finials, attic vent windows, molding, bargeboards, and other unique roof features). Use some of these details in designing new buildings.
4. Do not place solar collectors, satellite dishes, or modern skylights on roof areas that are directly facing the street; and do not install them where they interfere with decorative roof elements.
5. Roofs that are visible from streets must retain their original shapes. Do not introduce roof elements, such as dormers, to a roof shape that is original.
6. Gutters may be half-round, if desired; half-round gutters are appropriate for Mechanicsville's buildings, but are not required.

IMPORTANT: When lead-based paint is present on property elements, care should be taken to follow Environmental Protection Agency (EPA) Rules and Regulations on lead-based paint (www.epa.gov/lead).

Windows

Historic Characteristics

Windows are a very important architectural element of historic buildings. They help to define each building's character. They are usually wood and are hung so that both the bottom and top sash can open (double-hung). Two-over-two or one-over-one sashes are common, but there are also windows with multiple panes. There are also attic windows and some upper sashes with stained glass and irregular shapes. The use of patterned glass is typical in Old Mechanicsville. Transoms and sidelights, sometimes of patterned beveled, leaded, and/or stained glass, are often found at the entries as a way of admitting extra light into the entry halls.

Windows are often a prime target of rehabilitation projects. In order to judge the necessity of replacing windows, a careful survey should be made of the windows and their condition. This survey should include a consideration of the value of the windows in the overall architectural design of the building. It can be cheaper initially, and more energy-efficient over a longer period, to retain and repair existing wood windows. Wood can be repaired easily, painted readily, lasts for a long time, and resists corrosion. The original windows found in Old Mechanicsville are made of old growth wood, which is more stable and resistant to deterioration than much wood in windows manufactured today. While many people assume that removing wood windows is necessary to achieve energy efficiency, many others have found that repairing existing windows will result in equally impressive energy savings. As a general rule, repair to windows includes only replacing missing putty/glazing around the glass, repairing the sash lock, adding weather-stripping, and installing good storm windows. These relatively limited repairs can result in energy efficient, reliable, original windows at a cost that is less than replacement of the windows.

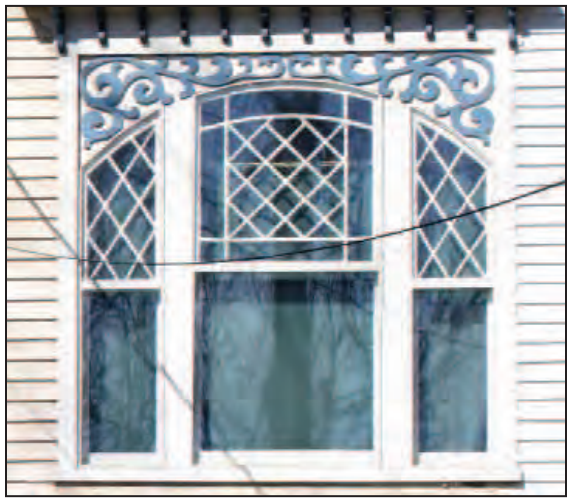
In considering whether to replace windows, it is important to understand the principles that were at work when Mechanicsville's buildings were designed. The people who built them understood that good ventilation, including cross-ventilation, was important in making the homes comfortable. Double-hung windows were normally used, and both the top and bottom sashes were operable. This allowed for the hot air to exit the house through a lowered upper sash and cooler air to enter through the raised bottom sash, making air conditioning less critical in spring and early summer.

Storm windows were also common in houses more than fifty years old, and they were usually made of wood. If it is possible to use wood storm windows, there is an immediate savings over aluminum or vinyl because wood is a better insulator. Even for homes where removing the wooden storms is not practical, it may be possible to install combination wooden storms that have interchangeable glass and screen inserts, so occupants can take advantage of moderate temperature months.

It takes somewhere between 20 and 50 years to save enough energy to pay for new replacement windows with double-paned glass. A restored and weather-stripped original wood window with a storm window is more energy efficient than a replacement window with insulated glass. In addition, most plastic, vinyl, and new stock wood windows have single seal glass units with an average seal life of five to ten years. Those insulated glass units cannot be replaced easily and after they have failed, the only option is to replace the entire window.

Maintenance Suggestions for Windows

- ☐ Make windows weather tight by reglazing, replacing broken panes, and installing weather-stripping, to increase the window's thermal efficiency.
- ☐ Protect and maintain the wood or architectural metal that makes up the window frames, sash, muntins, and surrounds. Use appropriate surface treatments for cleaning; rust removal; limited paint removal; and caulking, priming and painting.



B. Rules for Windows

1. Original windows must be reused if possible. It is much less expensive and much better historically to retain the original windows. It is inappropriate to replace them with new windows that differ in size, material, or pane division.

2. If replacement windows are necessary, they must be the same overall size as the originals with the same pane division and the same muntin depth, width, and profile. They must be the same materials as the original windows, which are generally wood.

3. True divided lights shall be used in replacement window sashes with more than one pane. True divided lights consist of glass panes, whether single glass or double insulated glass that are completely separate units, separated by the window muntins. Double-insulated glass that uses interior and exterior grids to suggest pane divisions is not a true divided light window, although some manufacturers refer to them by a proprietary description of "tru (sic) divided light." If true divided lights are not available, non-divided lights (one over one sashes) may be substituted if windows must be replaced and no alternative exists.

4. It can be appropriate to design and install additional windows on the rear or another secondary elevation. The design must be compatible with the overall design of the building.

5. Windows may not be blocked in. They must retain the full height and width of the original opening. An exception could occur for kitchen and bath windows which face the side or rear of the structure.

6. Storm windows can be allowed as a way to increase the energy savings of a historic house. Interior storms should be considered. Exterior storms can be appropriate, if they are designed so their meeting rail duplicates that of the original window and if they are wood or color clad metal, matching the building's trim. Exterior storm windows shall not be used unless they do not damage or obscure the original window and frames.

7. Reuse existing, serviceable window hardware.

8. Burglar bars and security doors are not permitted.

9. Storm doors, as long as they are full view glass and painted to blend with the trim color of the building, are permitted.

IMPORTANT: When lead-based paint is present on property elements, care should be taken to follow Environmental Protection Agency (EPA) Rules and Regulations on lead-based paint (www.epa.gov/lead).

Porches

Historic Characteristics

Almost every house in Old Mechanicsville has a porch. Porches were a form of air conditioning when the neighborhood houses were built. They shaded the windows and doors. They provided a protected outdoor room that offered entertainment and an opportunity for neighborhood social life in the days before television and radio. They were graceful, welcoming, and introduced the house to passers-by. They could stretch across the full width of the house or wrap around corners. They might even be two story porches with upper story balconies. Enclosing a porch with a visible enclosure detracts from the historic original character and design. In a few Old Mechanicsville houses, the original porches were rebuilt when the house approached fifty years of age, and many of the new porches were of a different design than the original house. These designs are themselves over fifty years old, and have acquired their own historic significance. It is appropriate to maintain them, but it can also be appropriate to replace them with a replica of the older porch, provided photographs or remnants of the original can document its design.

The individual design elements of the neighborhood porches – turned wood columns, elaborate railing and balusters, heavy wood posts or columns, wood bead board ceilings, and tongue-in-groove floors, gingerbread or sawn wood trim – are all important to the style of the houses. These individual details should be repaired and preserved or replicated if good documentation of the original porch exists. New buildings constructed in Old Mechanicsville must include porches, so they blend with the neighborhood. The proportion of new porches must be consistent with those on neighboring houses.

Maintenance Suggestions for Porches

The maintenance of porches shall be an ongoing process of oversight and correction of small problems that can quickly become major ones. The most important part of the process is ensuring that water-related damage does not occur.

- ☐ Perform careful seasonal maintenance to preserve porches and entrances, including installing an adequate gutter and downspouts on porches.

Entrances

C. Rules for Porches

1. Historic porches must be preserved or may be changed to replicate an original porch if documentation of its size and design can be found.
2. Design elements to be incorporated in any new porch design must include tongue and groove wood floors, beadboard ceilings, wood posts and/or columns, and sawn and turned wood trim when appropriate. If balustrades are required, they must be designed with spindles set into the top and bottom rails.
3. In new construction, the proportion of the porches to the front facades must be consistent with the historic porches in the neighborhood.
4. Porches and balconies on elevations visible from the street must not be enclosed. It may be possible to enclose a rear porch and additions that are necessary to improve and/or enhance the livability of the historic building. However, they should be made only at the rear of the building. Care should be taken to protect exterior doors on these rear enclosures, so that maintenance of the wood doors is not made difficult by exposing the historic wood door to the elements.
5. A wood porch floor may not be replaced with a poured concrete or masonry floor, which will absorb and retain moisture and eventually damage the structure, as well as the appearance of the building.
6. Modern wrought iron or ornamental porch railings and porch posts are not acceptable on front porches.

IMPORTANT: When lead-based paint is present on property elements, care should be taken to follow Environmental Protection Agency (EPA) Rules and Regulations on lead-based paint (www.epa.gov/lead).

Historic Characteristics

The doors originally used on Old Mechanicsville houses were wooden, often with beveled glass or stained glass inserts. Screen doors were commonly used. Security or wrought iron storm doors were not used. If storm doors are installed, they should be full-view with a color-clad frame. Before installing storm doors, weigh carefully the expected energy savings. A wooden or insulated door that is weather-stripped is very energy efficient. Little cost savings will result from adding a storm door to a properly weather-stripped entry.

Original doors should be used. Replacement-doors should be wooden or be painted to resemble wood with appropriate recessed panels. Half-view doors are also appropriate for new construction.

D. Rules for Entrances

1. Entry features which must be preserved include sidelights and transoms of plain, patterned, beveled, or stained glass; fan light windows and transoms; entablatures; and the original doors.
2. Contemporary interpretations of stained glass or etched glass entry doors are inappropriate.
3. It may be appropriate to design or construct a new entrance if the historic one is completely missing. Any restoration shall be based on historical, pictorial, or physical documentation, if available. It must be compatible with the historic character of the building or with adjacent buildings.
4. A new entrance or porch must be compatible in size, scale, or material.
5. Service entrances may not be altered or made to appear to be formal entrances by adding paneled doors, fanlights, transoms, or sidelights.
6. Secondary entrances must be compatible with the original in size, scale, and materials, but clearly secondary in importance.
7. Determine if a storm door will be instrumental to saving energy. If a storm door is used, it must have a color-clad frame and a full view glass or be designed to respect the original entry door.

IMPORTANT: When lead-based paint is present on property elements, care should be taken to follow Environmental Protection Agency (EPA) Rules and Regulations on lead-based paint (www.epa.gov/lead).

Wall Coverings

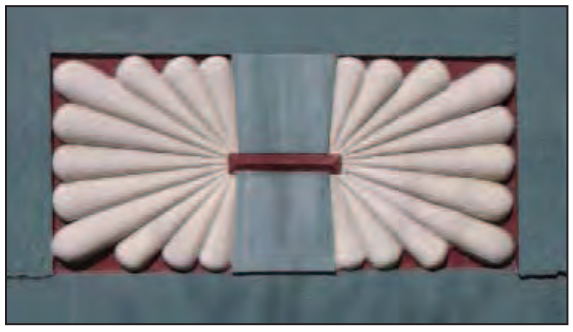
Historic Characteristics

The walls of Old Mechanicsville houses may have been covered with weatherboard wood siding, wood shingles, novelty wood siding, brick or stone veneer, or stucco. (Brick, stone, and stucco are discussed in the Masonry section of these guidelines.) Corner boards, cornices, sawn wood trim, and other details are common and should be retained on existing houses and installed on new ones. Wood shingles, usually used on second stories or in gables, are no wider than four inches and may have been rectangular or shaped in fishscale or diamond patterns. Vinyl, aluminum, or other synthetic sidings are not appropriate for existing or new houses in Old Mechanicsville. They are particularly dangerous for existing houses because they can mask drainage problems or insect infestation and prevent good ventilation. Even on new construction, when the synthetic siding is used in place of wood siding, it is not as easily repaired as wood siding, nor can it be painted easily. Over time, synthetic siding is usually much more expensive than installing or repairing wood siding and maintaining it properly. Synthetic sidings have a different appearance than wood siding and the longevity of new synthetic sidings is untested. Wood siding has been used in this country for over three hundred years, and, if properly maintained, remains serviceable. In Old Mechanicsville, there are many houses and buildings constructed before 1900 that still retain their original wood siding.

Maintenance Suggestions for Wood Wall Coverings

The most important activity in saving historic wood wall coverings and trim is proper maintenance.

- ☐ If paint must be removed from a building, chemical strippers may supplement other methods such as hand scraping, hand sanding, or the use of electric heating devices. If detachable wood elements such as shutters, doors, and columns are chemically stripped, do not allow them to soak in a caustic solution, it will raise the grain and roughen the wood.
- ☐ Use extreme caution when stripping wood with electric heat guns. Historic houses have large amounts of coal soot and debris inside wall coverings; this material can be heated to the point of ignition quickly if agitated by the output of a heat gun. It is best not to use the heat gun where it might blow into wall spaces. Using a heat gun can also cause lead additives in old paint to vaporize and be inhaled, leading to lead poisoning.
- ☐ Stripping flat surfaces with electric heat plates can be effective if they are not held too long in one location. It is fairly easy to ignite paint and the wood surfaces that support it, so extreme caution must be used with a heat plate. A fire extinguisher should always be included with the paint removal equipment. This method can also cause lead additives in old paint to vaporize and be inhaled, leading, to lead poisoning.
- ☐ Protect and maintain a wood feature by providing proper drainage so that water is not allowed to stand on flat, horizontal surfaces or accumulate in decorative features.
- ☐ Identify, evaluate, and treat the causes of wood deterioration, including faulty flashing, leaking gutters, cracks, and holes in siding, deteriorated caulking in joins and seams, plant material growing too close to wood surfaces, or insect or fungus infestation.



E. Rules for Wood Wall Coverings

1. Synthetic siding is inappropriate and is not allowed either as replacement siding on existing buildings or new siding in new construction.
2. Do not use destructive paint removal methods, such as propane or butane torches, sandblasting, or water blasting, that can damage historic wood. Blasting with any material - sand, water, glass beads, walnut shells, etc. - is an abrasive technique, and therefore should not be used.
3. Replacement siding must duplicate the original. Replacing trim and patterned shingles must also duplicate the original material.
4. New construction must incorporate corner and trim boards and appropriate door and window trim to be compatible with the adjacent historic buildings.
5. Wooden features shall be repaired by patching, piecing-in, or otherwise reinforcing the wood. Repair may also include limited replacement with matching or compatible substitute materials, when elements remain and can be copied or when materials are no longer commercially available.
6. Wood features that are important in defining the overall historic character of the building shall not be removed.
7. Replace only deteriorated wood. Reconstructing in order to achieve a uniform or "improved," "new" appearance is inappropriate because of the loss of good historic materials.
8. An entire wooden feature that is too deteriorated to repair or is completely missing must be replaced in kind. If features are replaced, the materials they are made from must be compatible with the original in size, scale, and material. Replacement parts should be based on historical, pictorial, and physical documentation.
9. Paint must not be removed from unprotected wood surfaces in order to apply stain or clear finish that will permanently reveal bare wood. This exposes historically painted surfaces to greatly increased weathering.
10. Retain paint and other coats that help protect wood from moisture and sunlight. Paint removal must be considered only where there is paint surface deterioration and as part of an overall maintenance program which involves repainting or applying other appropriate protective coatings.
11. If artificial siding is present on any elevation of a building and must be removed in order to repair the building structurally, it can be replaced on the building if no more than 25% of any elevation's artificial siding is removed. If more than 25% of the artificial siding on any elevation is removed for repair, it cannot be replaced.
12. Concrete siding (also called Hardi-board) is allowed on outbuildings and garages for new construction only. The material can be used like board and batten if placed vertically. Batten strips of wood must be used, however, to preserve the look of historic materials. If used like normal siding, it must have a reveal of no more that 4.25 inches.
13. When replacing wood lap siding, it is vital the top board not be nailed into the board below. Nails should be placed about one inch above the edge so that they sit above the top edge of the board below. This allows each board to expand and contract. Failure to nail properly will result in cupped and split siding. Eight-penny galvanized siding nails should be used and predrilled on edges or splitting will result. Finish nails must not be used because they will pull through the siding. Wood siding is not straight and should be straightened while being installed.

IMPORTANT: When lead-based paint is present on property elements, care should be taken to follow Environmental Protection Agency (EPA) Rules and Regulations on lead-based paint (www.epa.gov/lead).

Historic Characteristics of Masonry Walls

Masonry was used in some way on nearly all of Old Mechanicsville's buildings. Brick, stone, or stucco may form walls, foundations, chimneys, piers for porch columns, or other features of the historic houses. Concrete block, if used, is usually ashlar faced.

Mortar Mix for Masonry

In order to understand how to maintain and repair historic masonry, it is important to understand the characteristics of the mortar that unifies the masonry units. There is a very low percentage of Portland cement in old mortar, which is made up of much higher percentages of sand and stone than new mortar. This allows the mortar to expand and contract at the same rate as soft brick, stone, or older ashlar-faced concrete. If repointing is necessary, any new mortar should match the old, both in color and in composition. Old deteriorating mortar that must be removed from mortar joints should be removed using hand tools.

Masons and homeowners planning on pointing masonry should use the following mortar mix:

- 9 parts sand
  (Use river sand, rather than builder's sand, to obtain the proper color.)
- 2 parts hydrogenated lime
- 1 part Portland cement

This mix will produce a mortar that blends in color and hardness with the older mortar. This type of mortar mix is called "type O" and is no longer readily available. It can be ordered, but it can also be mixed as noted above.

If a harder, more heavily concentrated Portland cement mixture is used, the mortar will be more rigid than the masonry unit. As the wall absorbs moisture and then is subjected the freeze and thaw cycles so prevalent in Knoxville's climate, the mortar will not move with the stone or brick, causing spalling and deterioration of the masonry units and failure of the architectural feature.

Cleaning of Masonry

Any cleaning of masonry should be done using the gentlest methods available and only to remove any encrustation of dirt or pollutants that are harming the masonry.

Blasting with any material — sand, water, glass beads, walnut shells, etc. — is an abrasive technique and will cause the masonry to deteriorate:

- by removing the hardest protective layer created through firing, in the case of brick, or through aging and weathering, in the case of stone, creating problems with the freeze-thaw cycle and exposing the masonry units to environmental pollution;
- by removing large amounts of mortar, either through abrasion or through a thorough soaking in the case of water blasting, making an entire repointing of the masonry feature necessary.

If chemical cleaners are to be used, they should be carefully tested to assure that they do not harm the surface of the masonry. Chemical cleaners can interact with the chemicals that are present in the masonry wall, causing harm to the masonry. Any testing of cleaning methods should begin with test patches of at least two square feet. After testing, give the cleaned surface adequate time to react to the weather and the chemicals used to clean it, so that any damage can be accurately assessed.

The best cleaning techniques are the least invasive and involve using a soft bristle brush with gentle soap and water and rinsing with a pressure no greater than that of an ordinary faucet.

Maintenance Suggestions for Masonry Wall Coverings

Careful maintenance and evaluation of historic masonry will help prevent expensive repair.

- ☐ Evaluate and treat the various causes of mortar joint deterioration such as leaking roofs or gutters, uneven settlement of buildings, capillary action, or extreme weather exposure.
- ☐ Protect and maintain masonry by providing proper drainage so that water does not accumulate on flat, horizontal surfaces or in curved decorative features.
- ☐ Patinas, which develop over time, are a part of the building's historic character and should not be removed.
- ☐ Clean masonry only when it is necessary to prevent or stop deterioration or to remove paint or heavy soiling caused by pollution. Do not introduce unnecessary moisture or chemicals into the building.
- ☐ Never use a cleaning method that involves water or liquid chemical solutions if there is any possibility of freezing temperatures.
- ☐ Prior to major surface cleaning, use test patches and observe them over time so the unintended consequences of the cleaning method can be observed.
- ☐ Follow manufacturers' product and application instructions if using cleaning or painting products.
- ☐ Repair masonry by repointing mortar joints where there is evidence of disintegrating mortar, cracks in joints, loose bricks, damp walls, or damaged plasterwork or stucco.
- ☐ Remove deteriorated mortar by carefully hand-raking the joints to avoid damaging the masonry joints. Electric tools may damage historic mortar and brick and should not be used. Only repoint the areas that actually have failing mortar.
- ☐ Repair stucco by removing the damaged material and patching with new stucco that duplicates the old in strength, color, composition, and texture.
- ☐ Repair masonry by patching or piecing-in. Repair may also include the limited replacement, with matching material or with a compatible substitute material, which gives the same appearance as the original in size, scale, composition, and color. This replacement should be done only where the masonry elements are extensively deteriorated or missing and when there are surviving examples or good photographic evidence of original materials.

F. Rules for Masonry Wall Coverings

1. Never water-blast masonry surfaces using dry or wet grit or other abrasives, including walnut casing, seashells, glass pellets, or any other material that cleans through abrasion.

2. Evaluate the overall condition of the masonry to determine whether more than protection and maintenance are required.

3. Identify and preserve masonry features that define the historic character of the building, including walls, railings, foundations, chimneys, columns and piers, cornice and door, and window pediments.

4. Replace an entire masonry feature that is too deteriorated to repair. Use the remaining physical evidence to guide the new work and match new to old. Examples can include large sections of a wall, a cornice, balustrade, columns, stairways, or chimneys.

5. If historical, pictorial, or physical documentation of a masonry feature cannot be found, a modern design sympathetic to the building would be more appropriate than a hypothetical historical one. A new masonry feature should be compatible in size, scale, material, and color.

6. Match replacement mortar to the original mortar in color, composition, profile, and depth. If necessary, analyze the original mortar to determine the proportions of lime, sand, and cement. A "scrub" technique shall not be used to repoint. The width or joint profile shall not be changed unless the change will return the joint to its original appearance. Sound mortar should not be removed.

7. Never repair with mortar of high Portland cement content, unless that is the content of the original mortar.

8. Split-faced block shall not be used in new construction or as a replacement for deteriorated masonry units. One exception is split-faced block which can be used as a retaining wall.

9. Before removing paint from historically painted masonry, determine whether paint on that masonry feature is significant to the historic integrity of the building.

10. Stucco-surfaced masonry can be an appropriate for foundations in new construction. Brick and stone can also be appropriate.

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