



**KNOXVILLE HISTORIC ZONING COMMISSION  
STAFF REPORT - CERTIFICATE OF APPROPRIATENESS APPLICATION**

**PROPERTY ADDRESS:** 1400 Grainger Ave 37917

**FILE NO.:** 3-H-16-HZ

**DISTRICT:** Old North Knoxville H-1

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**MEETING DATE:** 3/17/2016

**APPLICANT:** Clint Wyrick (owner-contractor)

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

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**PROPERTY DESCRIPTION:** Bungalow (c. 1890)

Two-story frame with aluminum siding. Hip-roof attic dormer asphalt shingle roof covering. One-over-one double-hung windows (original or early on second level and replacements on first level.) One-story full front porch with hipped roof and central gable. Battered columns on brick piers are alterations from the original --likely sometime between 1920 and 1940. The two interior offset chimneys were removed prior to this owner. Brick foundation. Late, full-façade hipped-roofed addition on rear.

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► **DESCRIPTION OF WORK:**

**WINDOWS**

Front

1st level - replace non-original in-kind with wood sashes

2nd level- repair originals

Attic level - repair or replace in-kind

West side

1st level - replace paired windows in-kind with wood sashes

1st level - replace modern square double-hung with single-light wood casement

2nd level - repair front window in-kind with wood sashes

2nd level - replace back window in-kind with wood sashes

Rear

1st-level addition - replace non-original square double-hung with single-light wood casement

1st-level addition - remove small non-original windows to east side of the rear addition

1st-level addition - install 3x6 double-hung 1/1 wood window to align with original 2nd-level window

2nd level - repair originals

East side

1st level - repair 3x6 window closest to the rear in-kind with wood sashes

1st level - remove small non-original bathroom window at end of addition; install siding

Repair remaining 1st- and 2nd-level original windows

**MISCELLANEOUS Level II**

Clean and repoint brick column bases and foundation on front porch and paint

Install half-light wooden door with panels below on rear addition

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**MISCELLANEOUS Level I**

Remove aluminum siding and repair and replace existing wood siding as needed  
Patio - 13'x13' with salvaged/distressed brick pavers (centered on back door)  
Repair front porch tongue-and-groove floor in-kind  
Re-roof with dimensional shingles  
Install full-light storm door on rear door  
Repair/refinish front door and install wood screen door  
Install new gutters

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► **APPLICABLE DESIGN GUIDELINES:**

Old North Knoxville Design Guidelines, adopted by the Knoxville City Council on November 25, 2004.

**WINDOWS**

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

5. 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.

7. 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.

8. Reuse existing, serviceable window hardware.

**MASONRY (see attache Design Guidelines)**

**Mortar Mix**

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.

**ENTRANCES**

6. Service (rear) entrances may not be altered to make them appear to be formal entrances by adding paneled doors, fanlights, transoms or sidelights.

7. Secondary entrances must be compatible with the original in size, scale and materials, but clearly secondary.



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8. 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.

**SECRETARY OF INTERIORS STANDARDS FOR REHABILITATING HISTORIC BUILDINGS**

6. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old design, color, texture, and other visual qualities and, where possible, materials. Replacement or missing features shall be substantiated by documentary, physical or pictorial evidence.

**NATIONAL PARK SERVICE PRESERVATION BRIEF NO. 11**  
Excerpt on cleaning brick:

. . . individual pieces of stone or bricks that have been damaged by inappropriate alterations may be cut out and replaced with new pieces that duplicate the original. However, since an exact match will be nearly impossible to achieve, it may be necessary to paint the repaired masonry in order to create a harmonious facade. Replacement of a large area with new materials may not be acceptable as it may give the building a new, non-historic appearance inappropriate to the building style and period.

**COMMENTS:**

**STAFF FINDINGS:**

- 1) The description from the 1986 historic resource inventory indicates that there were 1/1 windows in the house, the style of which is proposed to be retained.
- 2) There are currently 1/1 windows on all sides of the house, with the lower level exhibiting replacement windows and the second level retaining original windows.
- 3) The rear addition is noncontributing due to late age, as are its windows. The windows on the rear addition are inappropriately small and square.
- 4) The front porch was enclosed at one time; therefore, the porch posts are not original. The current battered wood columns on brick piers are alterations from the original. The bricks and bungalow-type columns appear to date from between 1920 and 1940 and have acquired significance in their own right.
- 5) The mortar on the foundation and porch piers has crumbled and weakened the structure.
- 6) A half-light wooden door with panels below is an appropriate door for the rear of the house.

► **STAFF RECOMMENDATION:**

Approval of the all aspects of the proposal. Paint or stucco parging may be utilized on the brick foundation and porch column piers due to the poor condition of and residue on the brick. Cleaning and repairing the brick according to the National Park Technical Procedures is preferred. Since the brick is not uniform, stained and unsightly painting it is preferred, with assistance from staff on the paint color.

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, and a fire extinguisher should be included in the paint removal equipment. This method can also cause lead additives in old paint to vaporize and be inhaled, leading to lead poisoning.
- Repaint with colors that are historically appropriate to the building and district; however, the final color decision is left up to the property owner. Before repainting, the surface should be gently cleaned. Appropriate primers, caulking and a good outdoor paint should be used.

- 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 joints and seams, plant material growing too close to wood surfaces, or insect or fungus infestation.
- Maintain a good coat of paint or apply a chemical preservative that is environmentally safe to wood features such as ends of beams or rafters that are exposed to decay hazards.

## **HISTORIC CHARACTERISTICS OF MASONRY WALL S**

*Masonry was used in some way on nearly all of Old North Knoxville'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 it is used, is usually ashlar faced.*

### **Mortar Mix**

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 stocked ordinarily. 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 to the freeze and thaw cycles that are 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 causing the architectural feature to fail.

### **Cleaning**

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. It 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;

- 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.

## **REHABILITATION & NEW CONSTRUCTION**

### **F. Masonry Wall Coverings**

1. Never waterblast masonry surfaces.
2. Never sandblast brick or stone surfaces using dry or wet grit or other abrasives, including walnut casing, seashells, glass pellets, or any other material that cleans through abrasion.
3. Evaluate the overall condition of the masonry to determine whether more than protection and maintenance are required.
4. 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.
5. 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.

6. If historical, pictorial or physical documentation cannot be found about a masonry feature, 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.

7. 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.

8. Never repoint with mortar of high Portland cement content, unless that is the content of the original mortar.

9. Historic masonry shall not be coated with paint, stucco, vapor permeable water-repellent coatings or other non-historic coatings.

(NOTE: Coatings are frequently unnecessary, expensive, and may change the appearance of the historic masonry as well as accelerate its deterioration.)

10. Split-faced block shall not be used in new construction or as a replacement for deteriorated masonry units.

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

12. Stucco surfaced masonry can be an appropriate for foundation in new construction. Brick and stone can also be appropriate.

## MAINTENANCE SUGGESTIONS

*Careful maintenance and evaluation of historic masonry can result in avoiding 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 developed over time and are a part of the building's historic character, should not be removed.
- Clean masonry only when it is necessary to stop deterioration or to remove paint or heavy soiling due to pollution. Do not introduce unnecessary moisture or chemicals into the building.

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to old. Examples can include large sections of a wall, a cornice, balustrade, columns, stairways or chimneys.

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- 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 developed over time and are a part of the building's historic character, should not be removed.
- Clean masonry only when it is necessary to stop deterioration or to remove paint or heavy soiling due to 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 a period of 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 a matching material or with a compatible substitute material that gives the same appearance as the original in size, scale, composition and color. This replacement should only be done where the masonry elements are extensively deteriorated or missing and when there are surviving examples or good photographic evidence of original materials.

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**KNOXVILLE-KNOX COUNTY HISTORIC ZONING COMMISSION**

**APPLICATION FOR  
CERTIFICATE OF APPROPRIATENESS**

**Date Filed:** 2/29/2016

**File Number:** 3-H-16-HZ

**Application Accepted By:** Kaye Graybeal

**HZC Meeting Date:** 3/17/2016

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**APPLICANT INFORMATION**

**Name:** Clint Wyrick  
**Address:** 8121 A.M. Luttrell Rd Knoxville, TN 37924  
**Phone:** 865-567-9340 **Email:** clintwyrick@gmail.com  
**Relationship to Owner:** owner-contractor

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**OWNER INFORMATION**

**Name:** Clint Wyrick  
**Address:** 8121 A.M. Luttrell Rd Knoxville, TN 37924  
**Phone:** 865-567-9340 **Email:** clintwyrick@gmail.com

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**LOCATION OF PROPERTY**

**Address:** 1400 Grainger Ave 37917  
**District:** Old North Knoxville H-1

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**LEVEL OF WORK**

Level II. Major repair or replacement of materials or architectural elements

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**DESCRIPTION OF WORK**

WINDOWS

Front

1st level - replace non-original in-kind with wood sashes  
2nd level- repair originals

West side

1st level - replace paired windows in-kind with wood sashes  
1st level - replace modern square double-hung with single-light wood casement window  
2nd level - repair front window in-kind with wood sashes  
2nd level - replace back window in-kind with wood sashes

Rear

1st-level addition - replace non-original square double-hung with single-light wood casement  
1st-level addition - remove small non-original windows to east side of the rear addition  
1st-level addition - install 3x6 double-hung 1/1 wood window to align with original 2nd-level window  
2nd level - repair originals

East side

1st level - repair 3x6 window closest to the rear in-kind with wood sashes  
1st level - remove small non-original bathroom window at end of addition and install siding

Repair remaining 1st- and 2nd-level original windows

MISCELLANEOUS

Remove aluminum siding and repair and replace existing wood siding as needed

Patio - lay 13x13 patio with salvaged/distressed brick pavers (centered on back door)

Repair front porch tongue-and-groove floor in-kind

Repoint brick column bases and foundation on front porch and paint

Re-roof with dimensional shingles

Install half-light wooden door with panels below and full-light storm door on rear addition

Install new gutters

Repair/refinish and install wood screen door on front

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**SIGNATURE OF APPLICANT** \_\_\_\_\_

**Date:** \_\_\_\_\_

***Return application to:***

Knoxville-Knox County Historic Zoning Commission  
Suite 403, City-County Building, 400 Main Street  
Knoxville, Tennessee 37902

**See Part 2 for submittal information requirements. Incomplete submittals will not be accepted.**

## PART 2 - INFORMATION REQUIRED FOR CERTIFICATE OF APPROPRIATENESS SUBMITTALS

A copy of all information submitted with an application must be retained by the Historic Zoning Commission. Incomplete submittals will not be accepted. All required information must be submitted before the application and fee will be accepted for the next available Historic Zoning Commission agenda. Checks mailed with an incomplete application will be returned.

### A. EXTERIOR ALTERATION OR REPAIR

Check each work item for which approval is requested:

- |  |   |  |
|--|---|--|
| <input type="checkbox"/> Accessory structure   | <input checked="" type="checkbox"/> Masonry repair/painting                     | <input type="checkbox"/> Shutters                          |
| <input type="checkbox"/> Additions             | <input checked="" type="checkbox"/> Material changes (wood, brick, metal, etc.) | <input checked="" type="checkbox"/> Siding                 |
| <input type="checkbox"/> Architectural feature | <input type="checkbox"/> Mechanical system unit                                 | <input type="checkbox"/> Signs                             |
| <input type="checkbox"/> Awning or canopy      | <input type="checkbox"/> Parking lot or driveway paving                         | <input type="checkbox"/> Skylights or solar collectors     |
| <input type="checkbox"/> Deck                  | <input checked="" type="checkbox"/> Porch elements                              | <input checked="" type="checkbox"/> Storm windows or doors |
| <input checked="" type="checkbox"/> Doors      | <input checked="" type="checkbox"/> Roofing                                     | <input checked="" type="checkbox"/> Windows                |
| <input checked="" type="checkbox"/> Guttering  | <input type="checkbox"/> Satellite dish   | <input type="checkbox"/> Other: brick patio                |

Describe the proposed work in detail and include the following information:

- Sketches, photographs, manufacturer's specifications, illustrations, and detailed drawings are required for major changes in architectural features and materials.
- Samples, description, and specifications for proposed materials.

### B. NEW CONSTRUCTION

Describe the proposed project in detail and include the following information:

- Dimensioned site plan.
- Dimensioned elevation drawings that clearly show the exterior appearance of the project.
- Samples, description, and specifications for proposed materials and architectural features.
- Description and drawings or photographs of site improvements such as fences, walls, and sidewalks.

### C. RELOCATION OF STRUCTURE

- Description of structure and its condition and reason for relocation.
- Photographs of the structure.
- Photographs and site plan of proposed location.
- Description of site features that will be disturbed such as topography, retaining walls, fences, trees.

### D. DEMOLITION OF STRUCTURE

- Description of the condition of the structure and reason for proposed demolition.
- Photographs of overall structure and its details.



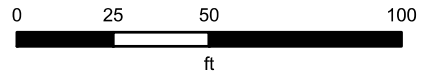
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1400 Grainger Avenue  
Old North Knox H-1

**Knoxville - Knox County - KUB Geographic Information System**



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1400 Grainger Ave. – Front and west side from street corner

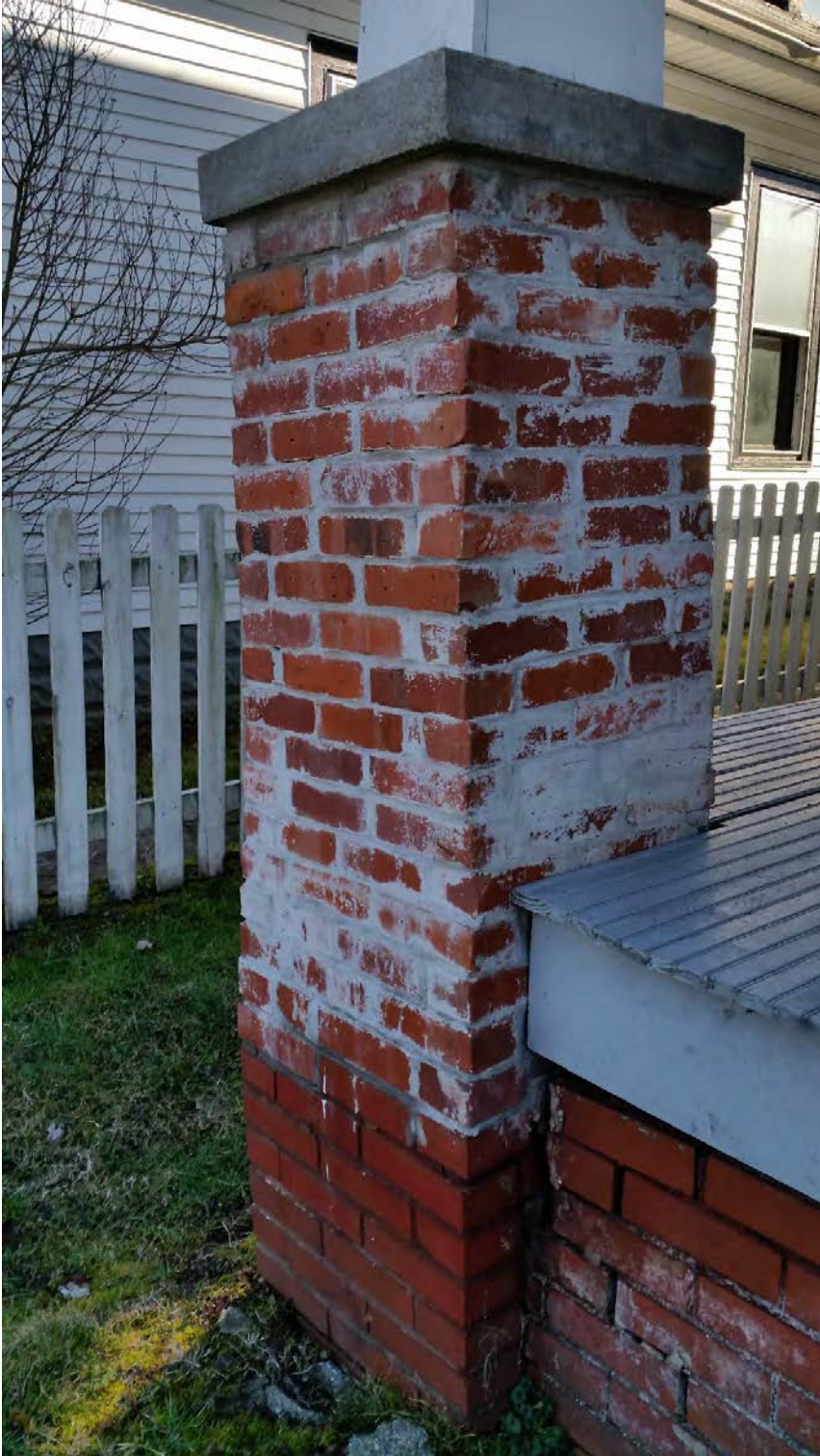




1400 Grainger Ave. – Front door to be repaired



1400 Grainger Ave. – Porch support bases to be repointed and painted



1400 Grainger Ave. - Porch support bases to be repointed and painted



1400 Grainger Ave. - Porch support bases to be repointed and painted



1400 Grainger Ave. – Aluminum siding to be removed



1400 Grainger Ave. – Rear and west sides from Luttrell St.



1400 Grainger Ave. – Rear elevation



1400 Grainger Ave. – West elevation



1400 Grainger Ave. – Rear and east side

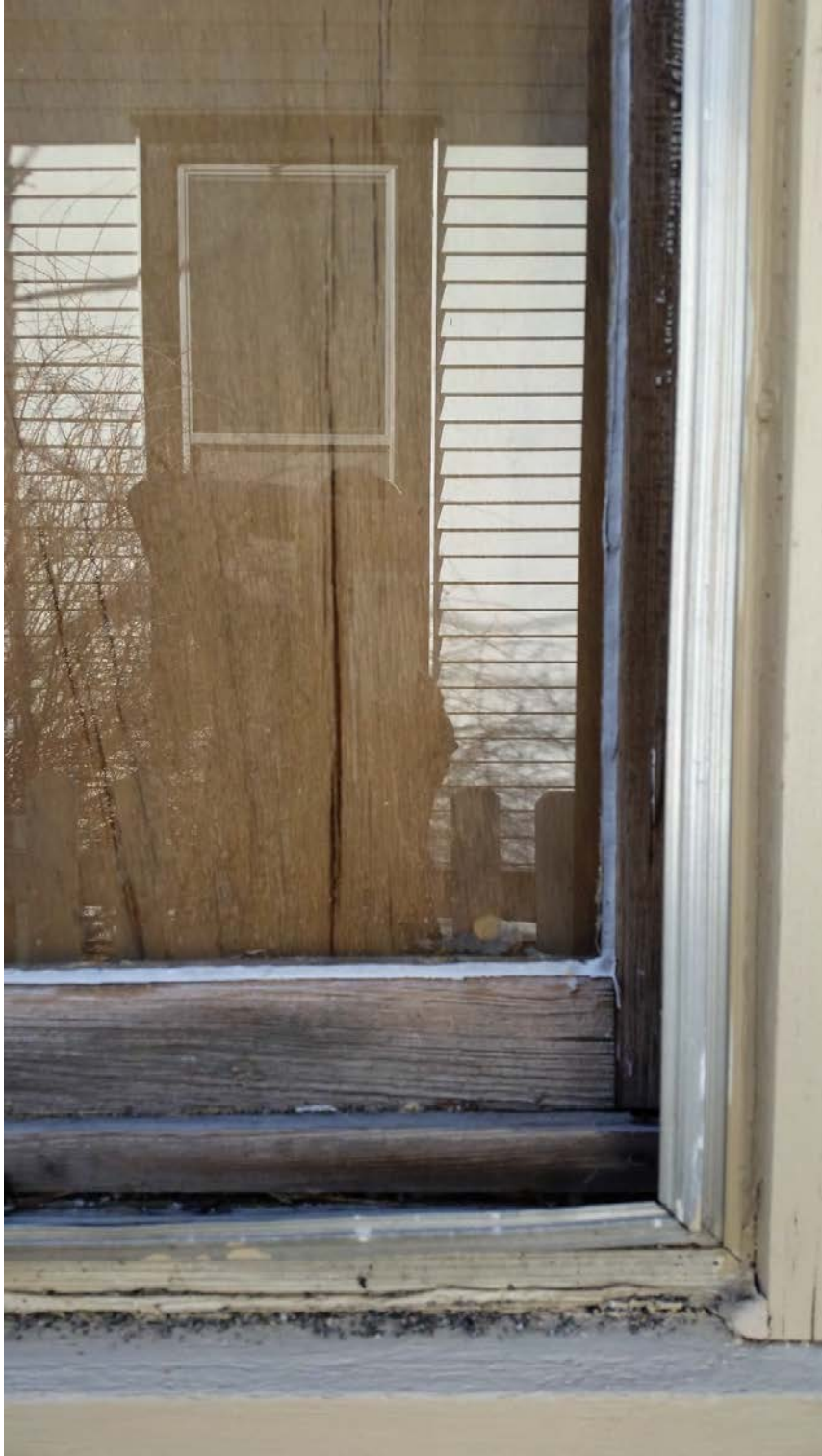




1400 Grainger Ave. – Front and east side



1400 Grainger Ave. – Non-historic front window to be replaced



1400 Grainger Ave. – Original east side window to be replaced



1400 Grainger Ave. – Original east side window to be replaced 2



1400 Grainger Ave. – Detail of original of east side window to be replaced



1400 Grainger Ave. – Detail of original of east side window to be replaced

# Historic Preservation - Technical Procedures

Spec title:

Guidelines For Rehabilitating Historic Buildings: Masonry

Procedure code:

0109106S

Source:

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Guidelines For Rehabilitating Historic Buildings: Masonry

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## GUIDELINES FOR REHABILITATING HISTORIC BUILDINGS: MASONRY

U.S. Department of  
the Interior National  
Park Service  
Preservation  
Assistance Division

## BUILDING EXTERIOR

MASONRY: Brick stone, terra cotta, concrete, adobe, stucco and mortar

Masonry features (such as brick cornices and door pediments, stone window architraves, terra cotta brackets and railings) as well as masonry surfaces (modelling, tooling, bonding patterns, joint size, and color) may be important in defining the historic character of the building. It should be noted that while masonry is among the most durable of historic building materials, it is also the most susceptible to damage by improper maintenance or repair techniques and by harsh or abrasive cleaning methods. Most preservation guidance on masonry thus focuses on such concerns as cleaning and the process or repointing.

## IDENTIFYING, RETAINING AND PRESERVING

### 1. Recommended:

- Identifying, retaining, and preserving masonry features that are important in defining the overall historic character of the building such as walls, brackets, railings, cornices, window architraves, door pediments, steps, and columns; and joint and unit size, tooling and bonding patterns, coatings, and color.

### Not Recommended:

- Removing or radically changing masonry features which are important in defining the overall historic character of the building so that, as a result, the character is diminished.
- Replacing or rebuilding a major portion of exterior masonry walls that could be repaired so that, as a result, the building is no longer historic and is essentially new construction.
- Applying paint or other coatings such as stucco to masonry that has been historically unpainted or uncoated to create a new appearance.
- Removing paint from historically painted masonry.
- Radically changing the type of paint or coating or its color.



## PROTECTING AND MAINTAINING

### 1. Recommended:

- Protecting and maintaining masonry by providing proper drainage so that water does not stand on flat, horizontal surfaces or accumulate in curved decorative features.

### Not Recommended:

- Failing to evaluate and treat the various causes of mortar joint deterioration such as leaking roofs or gutters, differential settlement of the building, capillary action, or extreme weather exposure.

### 2. Recommended:

- Cleaning masonry only when necessary to halt deterioration or remove heavy soiling.

### Not Recommended:

- Cleaning masonry surfaces when they are not heavily soiled to create a new appearance, thus needlessly introducing chemicals or moisture into historic materials.

### 3. Recommended:

- Carrying out masonry surface cleaning tests after it has been determined that such cleaning is necessary. Tests should be observed over a sufficient period of time so that both the immediate effects and the long-range effects are known to enable selection of the gentlest method possible.

### Not Recommended:

- Cleaning masonry surfaces without testing or without sufficient time for the testing results to be of value.

### 4. Recommended:

- Cleaning masonry surfaces with the gentlest method possible, such as low pressure water and detergents, using natural bristle brushes.

### Not Recommended:

- Sandblasting brick or stone surfaces using dry or wet

grit or other abrasives. These methods of cleaning permanently erode the surface of the material and accelerate deterioration.

- Using a cleaning method that involves water or liquid chemical solutions when there is any possibility of freezing temperatures.
- Cleaning with chemical products that will damage masonry, such as using acid on limestone or marble, or leaving chemicals on masonry surfaces.
- Applying high pressure water cleaning methods that will damage historic masonry and mortar joints.

5. Recommended:

- Inspecting painted masonry surfaces to determine whether repainting is necessary.

Not Recommended:

- Removing paint that is firmly adhering to, and thus protecting, masonry surfaces.

6. Recommended:

- Removing damaged or deteriorated paint only to the next sound layer using the gentlest method possible (e.g., handscraping) prior to repainting.

Not Recommended:

- Using methods of removing paint which are destructive to masonry, such as sandblasting, application of caustic solutions, or high pressure waterblasting.

7. Recommended:

- Applying compatible paint coating systems following proper surface preparation.

Not Recommended:

- Failing to follow manufacturers' product and application instructions when repainting masonry.

8. Recommended:

- Repainting with colors that are historically appropriate to the building and district.

Not Recommended:

- Using new paint colors that are inappropriate to the historic building and district.

9. Recommended:

- Evaluating the overall condition of the masonry to determine whether more than protection and maintenance are required, that is, if repairs to the masonry features will be necessary.

Not Recommended:

- Failing to undertake adequate measures to assure the preservation of masonry features.

## REPAIRING

1. Recommended:

- Repairing masonry walls and other masonry features by repointing the mortar joints where there is evidence of deterioration such as disintegrating mortar, cracks in mortar joints, loose bricks, damp walls, or damaged plasterwork.

Not Recommended:

- Removing non-deteriorated mortar from sound joints, then repointing the entire building to achieve a uniform appearance.

2. Recommended:

- Removing deteriorated mortar by carefully hand-raking the joints to avoid damaging the masonry.

Not Recommended:

- Using electric saws and hammers rather than hand tools to remove deteriorated mortar from joints prior to repointing.

3. Recommended:

- Duplicating old mortar in strength, composition, color, and texture.

Not Recommended:

- Repointing with mortar of high Portland cement content (unless it is the content of the historic mortar). This can often create a bond that is stronger than the historic material and can cause damage as a result of the differing coefficient of expansion and the differing porosity of the material and the mortar.
- Repointing with a synthetic caulking compound.
- Using a "scrub" coating technique to repoint instead of traditional repointing methods.

4. Recommended:

- Duplicating old mortar joints in width and in joint profile.

Not Recommended:

- Changing the width or joint profile when repointing.

5. Recommended:

- Repairing stucco by removing the damaged material and patching with new stucco that duplicates the old in strength, composition, color, and texture.

Not Recommended:

- Removing sound stucco; or repairing with new stucco that is stronger than the historic material or does not convey the same visual appearance.

6. Recommended:

- Using mud plaster as a surface coating over unfired, unstabilized adobe because the mud plaster will bond to the adobe.

Not Recommended:

- Applying cement stucco to unfired, unstabilized adobe. Because the cement stucco will not bond properly, moisture can become entrapped between materials, resulting in accelerated deterioration of the adobe.

7. Recommended:

- Repairing masonry features by patching, piecing-in, or consolidating the masonry using recognized preservation

methods. Repair may also include the limited replacement in kind - or with compatible substitute material - of those extensively deteriorated or missing parts of masonry features when there are surviving prototypes such as terra-cotta brackets or stone balusters.

Not Recommended:

- Replacing an entire masonry feature such as a cornice or balustrade when repair of the masonry and limited replacement of deteriorated or missing parts are appropriate.
- Using a substitute material for the replacement part that does not convey the visual appearance of the surviving parts of the masonry feature or that is physically or chemically incompatible.

8. Recommended:

- Applying new or non-historic surface treatments such as water-repellent coatings to masonry only after repointing and only if masonry repairs have failed to arrest water penetration problems.

Not Recommended:

- Applying waterproof, water-repellent, or non-historic coatings such as stucco to masonry as a substitute for repointing and masonry repairs. Coatings are frequently unnecessary, expensive, and may change the appearance of historic masonry as well as accelerate its deterioration.

## REPLACING

1. Recommended:

- Replacing in kind an entire masonry feature that is too deteriorated to repair - if the overall form and detailing are still evident - using the physical evidence to guide the new work. Examples can include large sections of a wall, a cornice, balustrade, column, or stairway. If using the same kind of material is not technically or economically feasible, then a compatible substitute material may be considered.

Not Recommended:

- Removing a masonry feature that is unrepairable and not replacing it; or replacing it with a new feature that does not convey the same visual appearance.

NOTE: THE FOLLOWING REPRESENTS PARTICULARLY COMPLEX TECHNICAL OR DESIGN ASPECTS OF REHABILITATION PROJECTS AND SHOULD ONLY BE CONSIDERED AFTER THE PRESERVATION CONCERNS LISTED ABOVE HAVE BEEN ADDRESSED.

#### DESIGN FOR MISSING HISTORIC FEATURES

1. Recommended:

- Designing and installing a new masonry feature such as steps or a door pediment when the historic feature is completely missing. It may be an accurate restoration using historical, pictorial, and physical documentation; or be a new design that is compatible with the size, scale, material, and color of the historic building.

Not Recommended:

- Creating a false historical appearance because the replaced masonry feature is based on insufficient historical, pictorial, and physical documentation.
- Introducing a new masonry feature that is incompatible in size, scale, material and color.

END OF SECTION