

6. COA-054512-2019

PUBLIC HEARING DATE

March 28, 2019

PROPERTY ADDRESS

401 North 27th Street

DISTRICT

Church Hill

APPLICANT

L. Hembrick

STAFF CONTACT

C. Jones

Commission of Architectural Review

STAFF REPORT



PROJECT DESCRIPTION

Repair exterior stucco and structural masonry.

PROJECT DETAILS

- The applicant proposes to repair a brick wall at 401 N. 27th Street. The existing building is a Federal style, two-story brick grocery store built between 1813 and 1815 by Charles Willis. At the rear of the building is a frame addition built between 1858 and 1860. Alterations to the building include the application of stucco over the brick and the replacement of windows and doors.
- The applicant proposes to remove the old stucco and concrete on the south elevation, and parge and replace it with a mortar mix of Portland cement, hydrated lime, and buff colored sand.
- In order to remove the stucco the applicant proposes to chip away at the stucco in four foot intervals and then re-mortar the area, moving to the next section when dry.
- The applicant will submit paint colors to Commission staff for review and approval.



The City of Richmond assumes no liability either for any errors, omissions, or inaccuracies in the information provided regardless of the cause of such or for any decision made, action taken, or action not taken by the user in reliance upon any maps or information provided herein.

STAFF RECOMMENDATION

APPROVE WITH CONDITIONS

PREVIOUS REVIEWS

The Commission approved the rehabilitation of the structure in 2011 and 2012; though not all the work associated with the approved rehabilitation has been completed. The Commission again approved rehabilitation work in April 2018 in anticipate of a commercial use for the brick portion of the building. The approved work included repairs to the stucco, wood siding, and trim work; restoration of the windows and door openings; painting the stucco and wood trim; and other repairs as needed. Exterior cracks and pre-existing repairs were noted in the application and were to be addressed with this approval. The Commission approved the application for rehabilitation with conditions. In August 2018, staff approved a building permit for the repairs to the corner post. In February 2019, the building permit was extended 180 days. In April 2019, work to stabilize the corner beam began and in May 2019 the work passed inspection. On April 30, 2019, a stop work order was issued for work outside the approved building permit.

Staff and community members continue to monitor the building and have observed additional cracking and deterioration. In May 2019, at the request of City Staff, the applicant submitted plans to fix the exterior of the

building, as described above.

In addition to the *Guidelines*, staff utilized the directions found in *Preservation Brief #2: Repointing Mortar Joints in Historic Masonry Buildings* and *#22: The Preservation and Repair of Historic Stucco*. Both are available at: <https://www.nps.gov/tps/how-to-preserve/briefs.htm>.

Staff has consulted with professional architectural conservators who examined the exterior of the building. The conservators confirmed that the cracking, bulging brickwork, and displaced structural members are signs of serious structural issues. They recommend that the rehabilitation be approached with the utmost care and caution. The conservators believe the greatest concern is the corner entrance and that a thorough analysis by a reputable structural engineer who specifically has experience with historic structures be conducted followed by a recommendation from a preservation mason for guidance on an appropriate mortar and stucco. They also confirmed that the previous repointing work is incompatible with the historic materials, which will further exacerbate structural problems due to brick deterioration.

SUMMARY STAFF RECOMMENDATIONS:

Staff recommends that due to the age and significance of the building, the applicant take a holistic approach to the rehabilitation of this building. Staff recommends a structural engineer perform additional investigations to determine the cause of cracking and deterioration, develop a plan to address the causes, and fix any structural deficiencies. The plan should provide information about appropriate repairs to the mortar, bricks, and stucco, including how the damaged materials will be removed, the type of replacement materials, and how they will be applied. Finally, staff requests that all stabilization and repairs be completed in a timely manner with approved building permits.

STAFF RECOMMENDED CONDITIONS:

- The applicant submit a comprehensive report on the condition of the building prepared by a qualified structural engineer and an application to address all of the structural issues with the building.
- The applicant work with a preservation mason to identify appropriate methods for the removal of the stucco and mortar that will not damage the historic masonry in order to prevent further damage to the brick.
- The applicant work with a preservation mason to determine the appropriate replacement mortar and stucco with the details submitted to staff for review and approval.
- The damaged or missing bricks be replaced with a suitable replacement found in consultation with a preservation mason.

STAFF ANALYSIS

Maintenance and Repair, pg. 85

The most important aspect of preservation is maintenance and repair. With proper attention, the life of Richmond's historic buildings can be extended for generations. Through careful selection of materials and repair techniques, historic buildings can be preserved appropriately and economically, avoiding the necessity of major, costly rehabilitations in the future. The most expensive repairs are those that must be made twice.

Staff recommends that due to the age and significance of the building, the applicant take a holistic approach to the rehabilitation of this building. Staff recommends that a structural engineer perform additional investigations to determine the cause of cracking and deterioration and then develop a plan to address the causes and any structural deficiencies. The plan should also provide information about appropriate repairs to the mortar and masonry including how the damaged mortar and stucco will be removed, the type of replacement materials, and how they will be applied.

Masonry, pg. 88-90

Cracks may indicate serious structural problems. They are often found over windows where lintels have been damaged and at window corners where settlement has occurred.

Staff has serious concerns about the cracking evident on the west exterior wall that has visibly expanded over the last several months. Staff believes that the cracking is an indication of greater structural damage. Staff recommends the applicant

submit additional information and an application to address any structural problems with the building.

Loose or sandy mortar is an indication that mortar composition has broken down or that the mortar has been washed away by exposure to weather. Repointing, or replacement of old mortar in joints, may be necessary.

Staff recommends repointing in all areas where the mortar is deteriorated or missing including the lower portion of the north elevation and areas revealed when the stucco is carefully removed.

The repointing of masonry is necessary in cases where there is evidence of deterioration (i.e. disintegrating mortar, mortar joint cracks, loose bricks or damaged plaster).

Do not repoint with mortar that is stronger than the original mortar or the existing brick. Mortar is not glue but a cushion that allows masonry units to expand and contract in periods of freeze and thaw.

Staff has concerns about the proposed mortar mix and recommends the applicant work with a preservation mason to determine an appropriate mortar for a building of this age.

Replacement mortar should duplicate the original in strength, composition, color and texture.

Remove mortar by hand-raking the joints, and never use electric saws or hammers that can easily damage sound masonry

Staff recommends that the applicant utilize the gentlest means possible to remove the existing stucco and mortar. Staff recommends against any removal methods that could damage the historic masonry including saws or grinders.

Stucco and stone repair may require hiring craftsmen trained in the application of substitution infill materials that mimic the original, while providing durability.

Staff has also observed damaged and missing bricks. As part of the stabilization of this building, staff recommends that the bricks be repaired or a suitable replacement be found in consultation with a preservation mason.

Repointing Mortar Joints in Historic Masonry Buildings

The traditional manner of removing old mortar is through the use of hand chisels and mash hammers. Though labor-intensive, in most instances this method poses the least threat for damage to historic masonry units and produces the best final product.

Staff recommends that the applicant utilize hand chisels and other low impact methods of removing the historic stucco and mortar in order to prevent further damage to the brick.

In creating a repointing mortar that is compatible with the masonry units, the objective is to achieve one that matches the historic mortar as closely as possible, so that the new material can coexist with the old in a sympathetic, supportive and, if necessary, sacrificial capacity. The exact physical and chemical properties of the historic mortar are not of major significance as long as the new mortar conforms to the following criteria:

- *The new mortar must match the historic mortar in color, texture and tooling.*
 - *The sand must match the sand in the historic mortar.*
-

Staff recommends the applicant work with a preservation mason to determine the appropriate mortar, with the details submitted to staff for review and approval.

- *The new mortar must have greater vapor permeability and be softer (measured in compressive strength) than the masonry units.*
- *The new mortar must be as vapor permeable and as soft or softer (measured in compressive strength) than the historic mortar.*

Repairing
Deteriorated
Stucco

- *Most stucco deterioration is the result of water infiltration into the building structure, either through the roof, around chimneys, window and door openings, or excessive ground water or moisture penetrating through, or splashing up from the foundation. After the cause of deterioration has been identified, any necessary repairs to the building should be made first before repairing the stucco. Such work is likely to include repairs designed to keep excessive water away from the stucco, such as roof, gutter, downspout and flashing repairs, improving drainage, and redirecting rainwater runoff and splash-back away from the building. Previous repairs inexpertly carried out may have caused additional deterioration, particularly if executed in Portland cement, which tends to be very rigid, and therefore incompatible with early, mostly soft lime-based stucco that is more "flexible." Before beginning any stucco repair, an assessment of the stucco should be undertaken to determine the extent of the damage, and how much must be replaced or repaired. Testing should be carried out systematically on all elevations of the building to determine the overall condition of the stucco. Some areas in need of repair will be clearly evidenced by missing sections of stucco or stucco layers.*

Staff has concerns about the cracking and peeling of the exterior stucco. The applicant has not provided information about how the stucco will be removed or the composition of the replacement stucco. Staff recommends the applicant utilize the gentlest means possible to remove the stucco and that the replacement stucco is appropriate for a building of this age and significance.

It is the assessment of staff that, with the conditions above, the application is consistent with the Standards for Rehabilitation and New Construction outlined in Section 30-930.7 (b) and (c) of the City Code, as well as with the Richmond Old and Historic Districts Handbook and Design Review Guidelines, specifically the pages cited above, adopted by the Commission for review of Certificates of Appropriateness under the same section of the code.

FIGURES



Figure 1. South wall, April 2018.



Figure 2. Corner detail, April 2018.



Figure 3. Evidence of cracking, January 2019.



Figure 4. Hole and cracking, corner supports, January 2019.



Figure 5. Cracking, March 2019.



Figure 6. Cracking, March 2019.



Figure 7. Deterioration around the door, April 2019.



Figure 8. Detail of deterioration around the door, April 2019.



Figure 9. Additional deterioration, May 2019.



Figure 10. Detail, of additional deterioration, May 2019.



Figure 11. Additional cracking on the west wall, May 2019.



Figure 12. Detail of additional cracking on the west wall, May 2019.