

3/26/15

Kraemer Design Group  
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Job Name: Vinton Building  
Job Location: Detroit, MI

### **HISTORIC WINDOW SITE REVIEW:**

The following is the written Historic Window Site Review for the existing wood double hung windows for the Vinton Building at 600 Woodward Ave, Detroit, MI. This information is based on a physical site visit, and discussions with Nicole Eisenmann, Architect at Kraemer Design Group. Our review considers the National Park Service guidelines for restoration and replication as provided in the Wood Window Preservation NPS Brief #9. Likewise, in providing our recommendation for the restoration or replacement we are adhering to the guidelines that meet NPS and SHPO standards. Please note this review is our opinion based on over 25 years of historic window restoration and replication experience; however, you must have written approval from NPS to be assured of the projects tax credit approval.

**I. Existing Conditions: (212) Wood Double Hung Windows @ (7,163 Sq. ft.); includes (19) Half Round Double Hung Windows.**

The existing wood windows are located on the primary facades of the West and South Elevations of this 12 story masonry building [Photo 1]. These windows are true double hung with both the upper and lower sash operation using a chain, weight, and pulley balance system [Photo 2]. One of the complexities of this project is a previous window restoration project that incorporated the retrofit of the existing monolithic ¼" annealed glazing to a ½" insulated glass unit. The work appears to have been done in the last 5 to 8 years, and was poorly executed. The existing wood sashes were altered by cutting a glazing pocket for the insulated units with a routing tool. The glazing units were set with silicone and stopped in from the exterior with a wood stop. The exterior stops are warping and failing; many of the insulated glass units are failing because of improper spacing, as well as being sized incorrectly allowing the edge banding to be exposed to ultraviolet exposure causing premature aging and breakdown.

This results in seal failures that show up as moisture between the interior and exterior glass in the air space. The millwork is poorly done with many components out of tolerance and thickness, and altering the existing profile. The upper and lower sashes are not mating well and fit loosely in the sash pockets. The new trim components such as the interior sash trim and parting bead are poorly cut and fit to the existing assembly, resulting in a poor fit and excess air infiltration.

Over 50% of the exterior sills are failed and splitting or show the presence of epoxy patching but this has cracked and failed also [Photo 3]. At least 35% of the frames have failed joinery at the jamb and sill intersection, and there is evidence of dry rot. The end result of this work is that all sashes would need to be replaced as well as the trim components. The frames likewise, are failing and would require replacement.

The existing windows have a critical site line dimension from the masonry jamb to the glass edge of 4 1/2". The sash are 2 1/4" thick and fit in a 2 3/8" sash pocket. The blind stop is 7/8" x 1/2", the parting bead is 1/2" x 1/2". The sash top rail and side rail are 2 1/4", the bottom rail 3 3/4", and the meeting rail is 1 7/8". The exterior brick mould is 1 1/2" x 2 5/8". The interior and exterior finishes are painted but in fair condition [Photo 4]. I would suggest that the material is tested for the presence of Lead and Asbestos.

## **II. Existing Conditions: (50) Aluminum Single Hung and Fixed Windows @ (1,900 Sq. ft.), on the North and East Elevations.**

These windows appear to have been installed during the previous retrofit work on the building. There are various conditions, but the most common is the removal of cold rolled steel window sashes followed by the installation of a new aluminum window; direct set and caulked in the remaining hollow metal steel frame. These windows were installed in a very poor fashion and the remaining steel frames are exposed and rusting on the exterior side. The windows on these elevations were most likely a fire rated double hung window required at the time of the original construction of the building in the early 1900's. Since the original sashes or in some cases the sash and frames were removed, we are unable to establish the actual dimensions and profiles of the original windows. The workmanship is fair at best with interior stops missing, gaps between the retrofit aluminum window and the steel frames, as well as poorly applied or missing exterior perimeter sealant.

**Recommendation: Replication with an Aluminum Thermally Broken Single Hung window.**

BlackBerry recommends the full replacement of all existing restored and retrofitted windows, with an historical Single Hung Thermally Broken replica product. We see this as the best option considering the very poor condition of the existing wood windows and the poorly fitting and shoddy installation of the aluminum retrofit windows. We would anticipate the approval of this replacement by SHPO and NPS under the circumstances. I believe this work was performed by a local Detroit glazing company called IXL; I am not aware if they are still in business.

The replica product I would suggest would be based on the Traco TR-9700 NPS Single Hung window. The product would require an exterior historic custom panning and sill assembly as well as an interior box trim. A new die would be required in order to match the site lines, dimension, and profile of the existing wood components. The product would be thermally broken and include insulated glass with high performance low-e argon glazing package, I would suggest PPG Solar Ban 60 on the #2 Surface. Likewise, I would suggest an AAMA 2650 painted finish. This type of window product is available from other manufacturers, we are suggesting this product for the included budget pricing since it has been approved many times for projects with this type of existing windows. I will note the Half Round Single Hung windows can pose a design problem, since every manufacturer has minimum widths for each product offering in regards to the bending radius. This will need to be confirmed in the design phase to determine if an appropriate product is available that will meet SHPO and NPS guidelines.

**Budget Pricing: Full Replication with Thermally Broken Aluminum Single Hung Window.  
\$680,000.00**

Our budget pricing is based on the over 25 years' experience in completing historic restoration and replication projects. I would caution that we have only been able to use an approximate square foot pricing estimate because of the duration of time we were provided to complete this information. To establish accurate pricing we would need accurate design parameters and firm quotations from manufacturers for our materials. Our budget pricing allows for the design, fabrication, and material, tax on material, labor (non-union/non-prevailing wage), employment, staging, delivery, shop drawings, and supervision. Note Bonding, and Permits not included.

Please contact me with any questions.

Sincerely,

\_\_\_\_\_MKS\_\_\_\_\_

Michael K. Shields

President

BlackBerry Systems, Inc.

\_\_\_\_\_3/26/15\_\_\_\_\_

Date

## Vinton Building—Typical Window Photographs



1. Double-Hung Wood Window



2. Wood Double-Hung interior view—Chain and Pulley, Meeting Rail, and Dog Lug



3. Wood Double-Hung Sill



4. Wood Double-Hung—Sill, Jamb, Brick Mould, Parting Bead and Stop Bead,