

Yale Union Window Assessment

This report format is directly inspired by Amy McAuley of Oculus Fine Carpentry.



The Condition Assessment

Guide:

- **22X 2nd floor windows are numbered North to South W201-W222.**
- **4X First Floor Windows included in the survey labeled W108-W111.**

The terms used to describe conditions in this report are:

- Critical: Needs to Be addressed first, hazardous if not addressed
- Poor: In state of localized decay and significant deferred maintenance is evident. Damage has occurred and will continue without active prevention.
- Fair: Material is in overall sound condition, surface preparation and coatings may be all that are required to complete repair.

This survey includes West Facing 2 over 2 Double Hung windows with Half-Round Transoms on the second floor and West Facing 4 over 4 Mulled Double Hung windows with Half-Round 5 spoke-hub transoms on the first floor.

The remaining windows and doors in the building were not included in this survey.

The 2 over 2 windows on the West Elevation are Double-Hung windows with a stationary half-round transom above. The windows are cased with a brick mold on the exterior and a non-profiled trim detail on the interior.

At some point the North facing end of the building was moved in to accommodate property line adjustment and to allow what is now Morrison St. to form the Northern boundary of the current structure. The first four openings(W201-W204) are unlike the others (W205-W222) in that they are not "mulled" by a center masonry column with a fluted detail between each pair of double hungs. In all other ways architecturally speaking, the entire group of W201-W222 are identical.

Exterior:

The overall condition assessment for the 22 West Facing 2 over 2 with transom is fair leaning towards poor. A few locations are critical as referenced in the survey. The windows have had extensive glass replacement over the years and have missed many maintenance periods for coatings. The result of coating failure is quite a bit of substrate material(wood) being weathered away from UV damage. Seasonal rain and sun, coupled with the fact this elevation is West facing has caused weather-checking on approximately 30% of all flat and profiled exterior surfaces. The weather patterns most evident from this survey are isolated to the left-hand side of the sash, frame, horizontal mullion and the left-hand side of the half-round transom and curved brick mold.

This image was converted to black and white to help indicate typical failure locations of coatings from UV damage and subsequent loss of historic substrate material where coatings are missing altogether. This is W214, and is used as an example for a baseline assessment of all of the W201-W222 windows.

Red indicates severe/high UV Damage, resulting in poor condition assessment.

Yellow indicates moderate/medium UV Damage, resulting in poor to fair condition assessment

Green indicates fair/minimal UV Damage, resulting in fair condition assessment



BAD

Poor

Fair

Sill: Overall the Sills are in Poor condition and all should be treated with epoxy consolidates to fill weather checks and voids as well as a borate fungicide to prevent the formation of rot. The coatings are mostly gone, and this should warrant some form of UV protective coating to be applied in the next round of repairs to arrest any UV decay that has already taken place.

All sills are repairable and need attention.

Frame/Trim: Overall the frames/trim are in Fair condition and should have all paint removed. The Frames have localized decay happening in typical locations where joints are formed and places where water can sit, and enter. Specifically the places that are the most in need of attention are the left (all from the outside) frame to sill connection, the blind-stop on the left side continuing up to the left half of the transom, the brick mold on the left side and the brick mold in the same pattern of the blind-stop. See the red areas in the photo above.

Careful epoxy work or replacement of these elements is recommended.





The Sash: The overall condition of the sash is Poor and removal of all coatings is recommended. The left hand side of the sash joinery connections are the worst and the condition improves as we follow the direct sun path from the left hand side to the right of the sash(north to south).

The double hung sash lower rail joints are in need of repair on nearly every window, followed by the meeting rail joinery on the majority needing repair and then lastly the top rail joinery is in slightly better condition on the whole than either of these other joints, but again, the trend to note is that where decay or damage is visible it follows a left to right pattern of worst to best.

The Half-Round Transom sash here are the unfortunate bearers of bad news. The original manufacture of these sash placed a long grain joint next to a short grain joint at the worst possible location for these windows resulting in an extra high-likelihood of failure if exposed to any stressors. The common theme in these joints is indicated in the following photos.



Again, left to right we have found that the grain orientation of the curved work on the transom sash and the transom brick mold to be incompatible



with the high-weather exposure location and a systematic approach to remedy this failure prone area is recommended. The replacement of the transom sash, the curved blind stop and the curved brick mold on all 22 of the West transoms is worth weighing against the repair durability and expense that will be incurred. Careful attention must be paid that the new sash and millwork are continuous and do not have splices in the material



on the left hand side of the work. The highest grade of lumber must be select for this repair to be effective.



Glazing Putty: The glazing putty is either failing or replaced with incompatible putty and the re-puttying of all sash is recommended.

100% replacement of putty is recommended.

Glazing: The survey indicates the amount of new vs. old glass that is present. Many pieces of glass have been replaced over time and the amount of historic glazing fabric left is about 50% for all 22 locations.

It is recommended to repair the broken glazings listed in the survey.

Hardware: Nearly all of the locks and lifts are missing and will require replacement. The pulleys are all present for the lower sash and it is presumable that all of top sash pulleys are present.

Exterior awning arms and cleats are present on most of the windows and are covered run many layers of paint. Stripping and restoring the awning hardware to show original hardware decoration is recommended.

It is recommended to restore the pulley hardware and replace the missing locks and lifts.

The Interior of the windows warrants paint stripping from the sash and frames, and is in Fair condition over all. The bulk of the work on these windows resides in the execution of durable exterior repairs.