The White Stag Block design team faced a major challenge in balancing structural performance with historic aesthetics. Constructed at the turn of the century, the Bickel, Skidmore, and White Stag buildings have experienced several structural challenges since that time. Structural improvements and replacements were complicated by the strict historic preservation guidelines required for the buildings to retain their listing on the National Register of Historic Places, as part of the historic Skidmore District.

**Structural Improvements**

The need to preserve the buildings’ historic exteriors required that all of the structural improvements to the buildings be made internally. This greatly increased the cost of the renovation. It is more expensive to insert a complex interior cross-bracing system than to shore up the corners of a building externally. The interior structural improvements include:

- the use of massive steel beams in a post and lintel system to open up load bearing brick walls;
- the reinforcing of brick walls around stairwells and elevators with concrete;
- the shoring of the building foundations;
- the re-pointing of all the mortar on the original brick walls;
- the designing of complex steel moment frames that secure multiple building floors; and
- the restoration and reuse of original cast-iron support columns.

**Structural Shoring on Burnside Street**

An interesting story stems from the 1926 removal of the south façades of the White Stag and Skidmore buildings to make way for the construction of the Burnside Bridge. These façades had actually been load-bearing walls, meaning that they helped support the floor slabs. So removing the walls overloaded the wooden capitals of the interior columns. In subsequent years, the load of the buildings crushed and twisted the column capitals. The renovation process involved shoring up the buildings beyond the fourth floor and replacing the crushed timber capitals with added steel reinforcing plates.

**Structural Replacement – Cast-Iron Columns**

Behind the restoration of the cast-iron columns and frontage doors on the Bickel Block lies another fascinating story. As previously noted, the 1958 owner had pieces of the cast-iron façade smashed off in order to fully encapsulate that pre-existing façade within a new masonry storefront without overstepping the property line. In 1972, a subsequent owner set fire to the building in order to collect on his insurance policy.

During the renovation process, the masonry wall was removed to reveal these damaged cast-iron and...
charred wooden doors. Smashed capitals were replaced with new capitals, cast in aluminum and then treated to prevent chemical interactions between new aluminum and old iron. New capitals were created by Barr Casting, Inc., based in Portland, Oregon. After the capitals were repaired, the columns were repainted in a color scheme representative of the time period in which the building was first constructed. The entire process took three months due to the complexity of creating and correctly placing the moldings. In summary, the buildings’ structural integrity was greatly increased while their historic character was enhanced.

~ Casey Kleinhenz, Michael Wilson, Diana Fischetti and Nancy Cheng

Photos: Venerable Properties Inc, School of Architecture and Allied Arts/UO, Ray Neff, Dawn Aurora O’Connor, Diana Fischetti, Green Building Services, Richard Gehrke

Graphic Design: Ray Neff

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