REGAL PLACE HOTEL – COST-EFFECTIVE HERITAGE FAÇADE REHABILITATION

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ABSTRACT

In fall 2013 WSP Canada Inc. (WSP) was retained by Metro Vancouver Housing Corporation (MVHC) to review exterior cladding deterioration at Regal Place Hotel in Vancouver's downtown eastside. WSP found significant deterioration of the concealed steel truss system, and exterior cladding attachment. The widespread deterioration and potential safety risk prompted the client to pursue a full façade rehabilitation strategy at the effected elevations. From 2014 until late 2016 WSP worked with MVHC, David Norman Architect Inc, the City of Vancouver, and specialty contractors to design and implement a cost-effective repair strategy that would both restore the integrity of the structure and meet Heritage Planning Department requirements.

REGAL PLACE HOTEL – A BRIEF HISTORY

Regal Place Hotel was originally constructed in 1908 as the Vancouver Stock Exchange to provide risk capital in Western Canada. Located on West Hastings Street in the business district of the day, this eight storey Edwardian commercial building featured advances in steel girders and concrete in the structural system. The character-defining elements of this historic place include rectangular form and massing, significant scale, Edwardian detailing, and relationship to the Victory Square neighborhood. The project was built on a narrow footprint right to the lot line with no setbacks and contains characteristics of Edwardian commercial architecture, including the pattern of fenestration, mullions and pilasters. The building has gone through a series of transitions over the years, changing its use and appearance. In the mid-1980's the interior was converted into a hotel and since the early 2000's has been used as a social housing and support facility (Norman, 2014).

Figure 1: Regal Place - Photo Timeline 1908-2014 (Norman, 2014)

FAÇADE REHABILITATION

General Strategy and Selection of the Restoration Period

The 100 plus years of weathering and alterations has left the Regal Place Hotel worn and modified from the original form and features. In 2013 WSP completed targeted evaluations of the north structural steel trusses. From 2014 to 2015 WSP worked with MVHC, David Norman Architect Inc, and the City of Vancouver to design and tender the general restoration strategy focusing on north elevation repairs, with smaller repair scopes at the east and west elevations. To facilitate an accurate and sustainable appearance, the façade as it appears in the early 1920's was selected as the aesthetic benchmark of our Heritage Façade Restoration.

Figure 2: General Condition in 2013 vs. Targeted Restoration Appearance

Spandrel Panel Repair Strategy

Cement plaster spandrel panels ran between the bands of windows on the Hastings St. façade at the upper floors. The spandrels were constructed of cement plaster formed over wire mesh, and were integral with the window sills above, and interior plaster finish. The panels were tied-back to structural steel trusses in the wall cavity behind. The original cement plaster was cracked and spalling in several locations allowing rainwater penetration into the wall cavity resulting in damage to structural elements (see below). Hoarding had been installed at the sidewalk below for pedestrian protection from falling debris.

Our early design phases explored matching the original plaster, or hanging custom precast concrete sections. In the end we found using custom shaped exterior insulation and finish (EIFS) sections met our aesthetic requirements while helping us avoid expensive sub-trades and complicated cladding attachments.

Figure 3: Spandrel Panel Repairs - Before & After

Concealed Steel Truss Repair Strategy

The structural system is comprised of concrete mass walls embedded steel columns and lateral steel trusses across the north and south elevations. The concrete structure was generally intact and unaltered but deterioration of the steel trusses behind the facade was found throughout the building. At some localized areas as much as 50% of the cross sectional area had been lost.

We opted for a unit rate type repair to control quantities. The repair included welding reinforcement sections on site which avoided wholesale replacement of truss chords and associated shoring. Coating was added to protect the steel from future decay.

Figure 4: Localized Steel Truss Repairs – Before & After

Double-Hung Window Repair Strategy

The windows from the 3rd to the 8th floor were the original wood double hung windows; Only 2 of the windows had been replaced with aluminum inserts but luckily they were set in the original wood frame. The 2nd floor casement windows were a mixture of wood windows dating from the 1920's, and aluminum inserts in the original wood frame. We found the wood windows were generally intact, with localized frame deterioration varying from mild to severe. Window pulleys were broken throughout and the paint finish was poor.

Early options included aluminum clad wood factory reproductions but sourcing proved to be difficult. As an alternative, WSP was happy to find and work with local experts who crafted new wood sashes with IGU's and installed them into the restored wood window frames to retain the original appearance. A low-e coating was added to the IGUs to increase heat gain. Further, WSP tested the windows to confirm air and water penetration performance equivalent or better to the reproduction windows and minimum code levels.

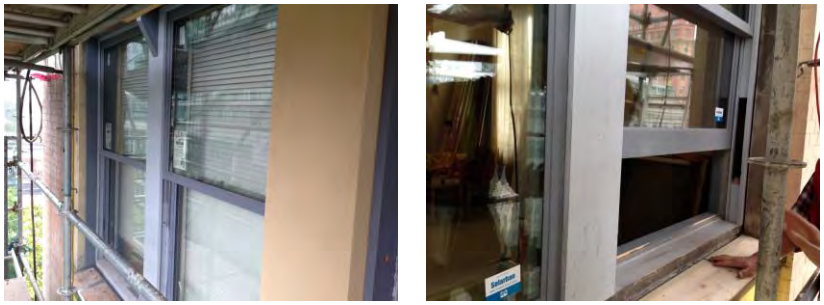

Figure 5: Restored Original Wood Window Frames with New Sashes

Cornice Reinstatement

The missing classical sheet metal roof cornice was a major character defining element of the original building. As such, we agreed with the City to reinstate the cornice. Photographic and original drawing evidence was used to design the replacement cornice appropriate to the restoration period. The original drawings indicated cornice modillions with ornate Corinthian detailing and it was our preference to have detailed modillions versus simple flat sections. While the sheet metal fabrication techniques for elaborate detailing are a largely lost art, the project team was lucky to work a specialty fabrication trade and supplier to restore the cornice in line with the original 1908 building drawings, including hand hammered metal modillions.

Figure 6: Heritage Cornice Reinstatement

Storefront Restoration Strategy

Since the original storefront of the building had been altered multiple times during the building life we had more options to best meet the needs of the current tenants. Our new aluminum framed storefront design harmonized the 1920's Restoration period with current security and vandal resistant requirements of the SRO hotel. The storefront included aluminum framing, "storefront" style sections and fibre cement panels. Further, the new storefront accommodated for modern security and safety equipment including CCTV, access card reader, intercom, hose bib, Siamese connection, and HVAC louvres.

Figure 7: Upgraded Storefront - Before & After

NEIGHBORHOOD CONTEXT OF THE RESTORATION

The south side of the 100 block of Hastings Street is a largely intact original streetscape that dates from the early 20th century. Originally the block was at the heart of commercial activity in Vancouver, and hence our building was chosen to house Vancouver's first Stock Exchange office in 1909. From the 1920's on the character or the neighborhood became more retail focused, anchored by the Woodwards Department store across the street. For a variety of social and economic reasons, the vitality of the neighborhood began to decline after World War II. The Block became associated with drug use and related crime. By the 1980's the retail vitality of the block was gone. Regal Place was renovated from retail/office use to an SRO hotel.

A consequence of the social decline of the neighborhood was that most of the heritage buildings on the Block remained intact with their form and massing unaltered. Until recently there was little economic impetus to demolish and redevelop. Hence today the 100 Block of West Hastings street remains one of the few early 20th century streetscapes in the City that has remained intact. The past 10 years has seen significant heritage restoration along the street, spurred by the Woodwards redevelopment across the street. The relationship of Regal Place with the surrounding streetscape is a key character defining element of the historic place. (Norman, 2014) With its rehabilitated façade Regal Place recaptures its impressive stature on the block while remaining true to the tenants and the vibrant downtown eastside community.

CONCLUSION AND FINAL REMARKS

The combination of the major repair strategies above allowed us to meet the needs of the diverse stakeholders in the project and proved to be cost-effective. Compared to our early design iterations which projected costs over $2 million dollars, the Façade rehabilitation project roughly totaled $900,000. The project was completed in approximately 11 months and wrapped up in late 2016.

REFERENCES

Norman, D. September 9, 2014. Regal Place Façade Conservation Plan. David Norman Architect Inc, North Vancouver, BC. pp. 5-11.