#### Members

Mark McIntire, Chair
Bret Maddox, S.E., Vice Chair
Edward Echtle
Ken House
Imad Al Janabi, PhD.
Fred King
Megan Luce
Ha Pham
Pamela Sundell
Duke York

## **Agenda**



# Landmarks Preservation Commission Community & Economic Development Department

Marshall McClintock, North Slope Ex-Officio

Staff

Reuben McKnight, Historic Preservation Officer

Date: March 23, 2011 LPC16/11

Location: 728 St. Helens, Tacoma Municipal Bldg North, Room 16

Time: 5:00 p.m.

Please note assigned times are approximate. The Chair reserves the right to alter the order of the agenda.

#### 1. ROLL CALL

#### 2. CONSENT AGENDA

A. Excusal of Absences

Windows

#### 3. DESIGN REVIEW

**Old Business** 

A. 815-819 Pacific Avenue - Olympus Hotel (Old City Hall) Kent McLaren 5 m

**New Business** 

B. Murray Morgan Bridge Tom Rutherford 5 m

Paint color

#### 4. CHAIR COMMENTS

#### 5. BOARD BUSINESS/PRESERVATION PLANNING

A. Old Town 15 m

i. Discussion of Old Town Field Visit

B. Preservation Month

i. Update on Preservation Annual Awards & Activities

ii. Discussion of annual report to Council

#### 6. OLD TOWN HISTORIC DISTRICT PUBLIC INFORMATION SESSION - STARTS AT APPROXIMATELY 6:00 PM

Reuben McKnight Historic Preservation Officer

Next Regular Meeting: April 13, 2011 Tacoma Municipal Bldg. North, Rm. 16 5:00 p.m.

This agenda is for public notice purposes only. Complete applications are included in the Landmarks Preservation Commission records available to the public BY APPOINTMENT at 747 Market Street, Room 1036. All meetings of the Landmarks Preservation Commission are open to the public. Oral and/or written comments are welcome.

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### **Landmarks Preservation Commission**

#### **Community & Economic Development Department**



STAFF REPORT

**LPC 15/11** March 23, 2011

#### **DESIGN REVIEW**

#### **OLD BUSINESS**

#### AGENDA ITEM 3A: 815-819 Pacific Avenue, Olympus Hotel (Old City Hall)

Kent McLaren, BCRA; Matthew Horwitz, Common Ground

#### **BACKGROUND**

At the March 9, 2011 meeting, the Commission deferred a decision on the window replacement proposal and requested additional information as well as a site visit, scheduled on Friday, March 18, 2011 (after the issue date of this report). The applicant provided a revision to the proposal which is enclosed and summarized below.

The current proposal includes rationale to replace the windows, including background on the ownership and objectives of the project, program funding, consultant team information, program analysis, project scope including energy efficiency and resident comfort, durability, moisture resistance and indoor air quality, operability/air quality, operating costs, minimize disruption to tenant, comply with State ESDS mandate. Also included is information on roof repair, boiler and exhaust fan replacements.

Revised Window Replacement Proposal (see page 5 of Olympus Hotel Rehabilitation Proposal Report)

- 1. Pacific Avenue (West) Elevation: replace all existing wood windows on 2<sup>nd</sup> floor and above with custom manufactured, wood replica units w/insulated glass matching existing profiles and lugs on upper sash rails;
- 2. North & South Elevations: existing fire-rated metal windows with new "rated" units; with fixed upper glazing & awning style operation below which adds a safety feature;
- 3. Rear (East) Elevation: replace existing wood windows w/metal clad wood windows matching existing windows, with 6 over 1 pattern with rails, styles and muntins.

<u>Window Sill repair</u> of cracked sills on east and west elevations with Siplast Parapro fluid-applied PMMA product reinforced with polyester mat material, retaining original dimensions, character and color of existing sills. North and South elevations: prefer use of galvanized metal sill covering system for the fire-rated window openings; a slight vertical lip extending over top edge of existing sill would be visible from street.

A copy of the March 9, 2011 Staff Report and summary of Commission comments from that meeting are enclosed at the end of this report.

#### **NEW BUSINESS**

#### AGENDA ITEM 3B: Murray Morgan Bridge

Tom Rutherford, City of Tacoma

#### **BACKGROUND**

Built in 1913, the Murray Morgan Bridge was designed by Waddell and Harrington and is listed on the Tacoma, Washington and National Registers of Historic Places. It is an early example of a center lift bridge, with a high deck and sloping grade, it is the only bridge of its kind in Washington State. In December 2009, the City took over the ownership, operation, and maintenance.

The City is seeking direction and approval regarding final paint color. Several photo simulations are included with the Staff Report. Because the bridge is on the National Register of Historic Places and the City is receiving federal funding for the bridge rehabilitation, the City of Tacoma has signed a Memorandum of Agreement with FHWA, WSDOT, and SHPO that outlines the rehab of the bridge.

The bridge has been painted several colors over the years. WSDOT's cultural resource staff has indicated that the most appropriate color choice would be a color that was used over 50 years ago. This would limit the City to black (the original color) or aluminum/silver, which was on the bridge by the 1940s.

The City needs to direct its contractor regarding paint color soon, because the final paint selection affects the primer color. Work is scheduled to start in the spring.

Because the Murray Morgan Bridge is a skyline feature of Tacoma, and because of the long process that has evolved to preserve the bridge, the choice of color is an important one that is likely to generate significant interest.

#### **STANDARDS**

#### Secretary of Interior's Standards for Rehabilitation to be considered:

Standard #5. Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.

#### **ANALYSIS**

- 1. Built in 1913, Murray Morgan Bridge, formerly the11<sup>th</sup> Street Bridge, is listed on the Tacoma, Washington and National Registers of Historic Places. It is an early example of a center span lift bridge, with a high deck and sloping grade, and is the only bridge of its kind in Washington State.
- 2. The Landmarks Preservation Commission has jurisdiction to review and approve, or not approve, changes to this property per TMC 13.07.095, prior to those changes being made, by virtue of its status as a City Landmark.
- 3. The original color of the bridge was black, which is consistent with bridge architecture of this period. The bridge has been repainted several times, and colors have included silver, gray and light blue. The most recent paint job was in the 1970s.
- 4. The current options for the proposed paint colors for the Murray Morgan Bridge include black with an unpainted span or silver with an unpainted lift span, which both appears to meet Secretary of Interior's Standards for the Treatment of Historic Properties and National Park Service Preservation Briefs, for appropriate methods affecting historic features.

#### RECOMMENDATION

Staff recommends adoption of the above analysis as findings, and defers recommendation to the Commission.

#### **BOARD BUSINESS**

#### **AGENDA ITEM 5A: Old Town Historic District**

i. The Commission will discuss the proposed Old Town Historic District, which they visited on March 16, 2011.

03/16/11 Notes from the visit to the Old Town Neighborhood follow:

Commissioners McIntire, Sundell, House, Echtle and York attended the tour along with Kathy Ursich, coapplicant of the proposed Old Town Historic District. The purpose of the tour was to become familiar with the area of the proposed historic district; the appropriateness and rationale for the boundaries of a historic district in that neighborhood, and to return to the full Commission on March 23rd, with those ideas along with questions they might have for additional information and clarification.

The Commission reviewed the proposed Old Town Historic District boundaries as well as drove nearly every street (within the boundaries).

Ms. Kathy Ursich was helpful in pointing out the various architectural styles and ages of properties, significant residences, designations and markers. The Carr Street extension was proposed by the applicants due to the three houses designed by architects: 627 N Carr (Dugan & Lewis), 708 (Russell & Heath), and 711 N Carr (Tuttle & Woodroofe) on that street.

#### Commission comments:

Would like a copy of early plat of Old Tacoma to overlay on the proposed area; Would like some kind of visual showing the ages of properties in the area

#### **AGENDA ITEM 5B: Preservation Month**

- i. Update from Historic Preservation Month Annual Awards Committee
- ii. Discussion of Annual Report to City Council

#### AGENDA ITEM 6: Old Town Neighborhood Historic District PUBLIC INFORMATION SESSION 6:00 PM

Staff will have information available on the formation of historic districts, requirements, and process, and will respond to questions from the commission and members of the public.

#### **PENDING AGENDA ITEMS**

March 23, 2011 – Old Town: Public Information Session (after regular Commission meeting) April 13, 2011 – Nomination – Preliminary Meeting, J.M. Hendrickson Homestead

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#### Olympus Hotel, copy of March 9, 2011 Staff Report

#### AGENDA ITEM 3A: 815-819 Pacific Avenue, The Olympus Hotel (Old City Hall)

Kent McLaren, BCRA

This item was re-scheduled to this meeting because of the cancellation of the February 23, 2011 meeting of the Landmarks Preservation Commission.

#### **BACKGROUND**

Constructed in 1909, the building at 815 Pacific, the Olympus Hotel, is a contributing structure in the Old City Hall Historic District. The current use for the upper portion of the building includes 49 affordable housing units at 45% of area median income or less to residents of Tacoma. This proposal includes window replacements, minor masonry repair and protective coating on the south elevation; metal cap flashing on sills on North and South Elevations; and full roof and exhaust fan replacements. The purpose of the proposal is to improve energy efficiency of the building to reduce utility and maintenance costs and to address repairs that will improve the comfort of the building occupants. According to the application, state funding for rehabilitation of multifamily buildings requires a measured response to Evergreen Sustainable Design Standards, which typically mandate improvements to the energy performance.

Window replacements will be considered in this review, as follows:

- East and West Elevations: Windows from floors 2 and above are proposed for replacement with metal-clad wood; and
- 2) North and South Elevations: All windows are proposed for replacement with steel for fire code reasons.

The application commissioned a window survey from a wood window expert, providing an overview of the existing conditions of the windows, which is enclosed in the Commission packets. The survey identifies approximately 133 windows proposed for replacement; 83 are considered historic windows in good or fair condition, and the remainder are nonhistoric or considered in poor condition.

The applicant stated that wood window restoration was considered for this project but was not selected for a number of technical and feasibility reasons, including:

- 1) Overall cost
- 2) Thermal efficiency (to meet project requirements for performance as well as to reduce utility costs to residents)
- 3) Operability (as opposed to interior thermally sealed glazing; the plan for the air flow for the building requires operable windows)
- 4) Replacement of windows will occur with all units occupied.

The Applicant will present additional photos of the existing conditions of the windows to the Commission meeting.

#### **STANDARDS**

Secretary of Interior's Standards for Rehabilitation

- 2. The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.
- 6. Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.

<u>Secretary of Interior's Standards and Guidelines</u> If using the same material is not technically or economically feasible, when replacing windows deteriorated beyond repair, then a compatible substitute material may be considered.

#### **ANALYSIS**

1. Built in 1909, the Olympus Hotel building at 815 Pacific is historically significant as a contributing property of the Old City Hall Historic District which is listed on the Tacoma, Washington, and National Registers of Historic Places.

- 2. The Landmarks Preservation Commission has jurisdiction to review and approve, or not approve, changes to this building per TMC 13.07.095, prior to those changes being made, by virtue of its status as a City Landmark.
- 3. The removal of all of the above street level windows, in which approximately 83 are historic and in good or fair condition, which could be repaired, does not meet Secretary of Interior's Standard number 2, specifically, "The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided," unless it is demonstrated that there is not an economic or technically feasible way to meet this standard.
- 4. Windows are generally considered character defining features.
- 5. The Olympus Hotel building has been readapted for low income / affordable housing units serving Tacoma citizens at less than 50% of the area's median income.
- 6. The proposal is financed with State funding for rehabilitation of multifamily buildings which requires a measured response to Evergreen Sustainable Design Standards, which typically mandate improvements to the energy performance.
- 7. The feasibility of repair and maintenance of the windows, improving energy performance while continuing to provide affordable housing and retaining the building's historic character, were factored into the approach selected by the Applicant.
- 8. A survey of the condition of the building windows was conducted by Legacy Renovation, October 2010. A total of 133 windows were reviewed; 83 were reported as historic.
- 9. The application narrative reports that 30 of 40 of the West and 9 of 19 of the East elevation's windows are in fair to poor condition or worse but repairable.
- 10. The survey states that 35 of the 40 on the West elevation are in good or fair condition and could be repaired; the remaining 5 are listed in poor condition.
- 11. There is specific concern stated in the application that the sashes could not be retrofitted sufficiently to install insulated glass.
- 12. The application states, "In accordance with Secretary of Interior Stations and Guidelines for replacing windows in historic buildings, windows will be replaced using the same sash and pane configuration as the original windows."
- 13. Secretary of Interior's Standards and Guidelines states, "...If using the same material is not technically or economically feasible, when replacing windows deteriorated beyond repair, then a compatible substitute material may be considered"
- 14. The Commission has considered the financial feasibility of proposals in the past and approved proposals on replacement substitute materials.
- 15. The project requires review by the Washington State Historic Preservation Officer under Section 106 NHPA because of its Housing and Urban Development (HUD) funding source. This review is pending.

#### RECOMMENDATION

Staff recommends adoption of the above analysis as findings and defers recommendation to the Commission.

#### Olympus Hotel - March 09, 2011 Commission comments:

1. Need additional information on benefit cost ratio on historic windows and energy efficiency, i.e. replacement costs

- 2. Lead Base exposure to occupants: many new technologies that can be used, such as steam or infrared heat, which is onsite that does not require window removal
- 3. Interior Storm Windows: have you looked at the option for interior storms? Have you explored magnetic interior storm, including such window styles as double hung interior storms
  - Ventilation interior storm window technology allows for air circulation and reduces moisture intrusion;
- 4. Application mentions interior storm is not a good option for this population: Interior Storm windows can be removed, to circulate the air
- 5. Have you looked at other funding sources?
- 6. Project Costs: what does it entail; how much is allocated for windows?
- 7. Legacy professional survey definition of good, fair and poor and application proposal (i.e. differences in conclusions)
- 8. Pella Windows: Have you looked at other window manufacturers as an option, such as a local manufacturer Bear Windows?

#### Olympus Hotel - March 09, 2011 Commission requested the following additional information:

- 1. Photos: provide close-up photos of the windows In order to review the structural integrity of the windows, please show more detail of the window components (i.e. sash, etc), because the images provided at the meeting (3/09), show the existing windows in very good condition; Need cross-sections of windows;
- Professional Survey of the Windows by Legacy that was submitted with Application:
   Concern that the Applicant is grouping together both the fair as well as the poor condition rated windows as non-repairable.
  - The Legacy survey defined the "fair condition" windows as repairable; Need clarification on the surveys and conclusions.
- 3. What are other options for air infiltration (other than replacement windows)
- 4. Exterior Repairs: Would like information on the scope of the proposed repairs to the masonry, minor repairs, roof, etc and if this will be submitted at a later date for LPC to review?
  - Note: It was agreed that Staff will review the specifications and recommend the scope in which the Commission has purview:
- 5. Bringing windows up to ENERGY CODE: National Trust for Historic Preservation's green lab is devoted to bringing historic buildings into energy code compliance; have you talked with them?
- 6. Need information on the extent of sill repair.
- 7. Need cost analysis of the repair/replacement of windows.



### Olympus Hotel Rehabilitation Proposal Report to Tacoma Landmarks Commission

**Summary:** On behalf of the Korean Women's Association we are submitting this proposal and report to better explain our recommendation to pursue window replacement as the most sustainable approach to maintaining the historic character of the Olympus Hotel, while providing an attractive, safe and long-lasting housing resource for low-income Tacoma residents. It is worth noting that the initial cost estimates we've received show that window replacement is likely to be more expensive than adopting a restoration/repair approach.

In response to the Commission's clearly articulated concerns about our previous proposal for replacement of existing windows, we have revised our initial plan to include high-quality custom made wood windows that replicate the dimensions, details and proportions of the aging historic units on the Pacific Avenue elevation. We firmly believe that this approach will enhance the historic appearance of the building's primary façade, while providing building resident's with significant improvements to their ability to control unit temperatures, indoor air quality and their utility costs.

We trust that the additional information contained within this document will assure the Commission that our window replacement proposal will in fact provide both an acceptable level of historic accuracy and result in a significantly more attractive street-front facade for this important city landmark. We will have a sample of the custom-made wood window that we are intending to use on the building's west side for Commission members to inspect during this week's scheduled site inspection.

#### **Background Information**

**Ownership:** The Olympus Hotel is owned by the Korean Women's Association (KWA) of Washington, a 501 (c)(3) non-profit organization, established in 1972. KWA is a 1000-plus employee multi-service organization serving nearly 150,000 individuals throughout Western Washington. KWA offers a wide range of program services including; home care, senior meals and nutritional education, daycare, and counseling for victims of domestic violence. In addition to the Olympus Hotel, KWA owns and operates over 200 units of affordable housing. KWA purchased the Olympus in June 2009.

Rehabilitation Program Funding: When KWA first acquired the Olympus Hotel, Common Ground was retained to apply for funding to rehabilitate the building. Approximately \$700,000 has been committed for rehabilitation work from the Washington State Housing Trust Fund, Pierce County 2060 program, and the Tacoma Community Redevelopment Authority. This funding, while significant, is not sufficient to address all the building's repair needs.

Funding terms require that renters must be low-income individuals and families earning no more than 45% of the area median income (In Tacoma, which would be about \$21,950 for 1 person or \$25,000 for 2-person household). This condition must be met for a period of no less than 40 years. These restrictions on rents and occupancy limit the building's operating revenue over time, making it critical to prioritize renovations that reduce operating and maintenance costs. Funds received from WA State Housing Trust Fund carry the additional requirement to meet the energy goals set out in the Evergreen Sustainable Development Standard (ESDS).

**Rehabilitation Program Development:** KWA has established two main objectives for how rehab funds are to be used; to preserve the historic Olympic Hotel building and to insure that it continues to provide safe, secure and affordable housing for low-income city of Tacoma residents for the next 40 years. Towards that end, a team of highly regarded consultants was assembled by KWA to design and implement the rehabilitation program.

#### **Consultant Team:**

<u>Common Ground</u> is a non-profit, affordable housing development consultant with responsibility for project financing and overall project coordination.

<u>BCRA</u> is a Tacoma based Architecture/Engineering firm that was selected as Prime Design Consultant in large part because of their nationally recognized expertise in the design, preservation and testing of high-performance building envelopes.

<u>Walsh Construction</u> was added to the team to provide pre-construction services including cost estimating and design review and sub-contractor coordination. Walsh Construction is well known in the industry for its years of experience working w/ older Historic masonry buildings in the Pacific Northwest.

**Rehabilitation Program Analysis**: An in-depth Capital Needs Assessment (C.N.A.) was undertaken by Common Ground in 2009. The scope of improvements, upgrades and corrective work that was recommended in the 2009 C.N.A. unfortunately far exceeded the amount of available funding.

As a result, a greatly scaled back project scope was devised that prioritized work on the building's envelope and domestic hot water heating system. In determining how best to apply limited project resources, BCRA and Walsh Construction conducted a rigorous analysis of the building's envelop and mechanical systems. Infrared thermography of the roof and a sampling of interior window areas indicated ongoing moisture penetration in both these locations.

**Rehabilitation Project Scope:** The following describes the conditions that will be addressed as part of the proposed rehabilitation plan that would be of direct concern to the Tacoma Landmarks Commission:

- 1. <u>Existing Windows:</u> The existing windows are a combination of original wood, fire-rated metal and a limited number of more recent replacement units. A majority of these windows are either/or; not sufficiently air and weather tight, in need of some degree of repair, difficult to operate.
  - **West Elevation**: The historic front of the building facing Pacific Avenue has 40 original, 6-over-1 wooden double hung windows.
  - **North and South Elevations:** Both sides of the building have a mixture of metal double hung and awning style windows that must maintain a 1 hour fire-rating. There are a combined total of 68 windows on these two elevations.
  - **East Elevation:** The rear elevation has a total of 25 wooden double hung windows. Six of these are more recent replacement units.
- 2. <u>Window Sill Repairs:</u> A number of the existing cast concrete window sills are cracked or have settled such that water is directed back into the building window assembly.
- 3. **Roof House Re-cladding:** The elevator roof house is in dire need of new siding on three sides. The building's south exterior masonry wall makes up the 4<sup>th</sup> side of the roof house and is in good condition and will not be altered by planned rehab work. The roof house also needs a new roof.

**Window Replacement Proposal - Rational:** <u>Legacy Renovation</u> specializes in historic window restoration and replacement and was brought on early in the project to assess the condition of all existing windows from the second floor up. Legacy developed a rating system of "Good", "Fair" and "Poor" and created a chart listing each window by type and condition. The survey did indicate that with limited exceptions, existing wood windows could be repaired, and weather-stripped at a manageable cost.

Given the Olympic Hotel's Landmark designation, it was well understood by the project team that the preferred approach for addressing the problems of drafty, loose fitting and difficult to operate windows was to restore the existing "historic" units.

After careful study, we came to the conclusion that the owner's and the City's rehabilitation program objectives might be better served by replacing the existing windows with high-performance, historically accurate replicas on the two more visually important East and West elevations. Our decision to propose window replacement rather than window repair/restoration is based on the following factors:

<sup>\*</sup> Other than work to repair damaged window sills, there are no current plans to make any other repairs to exterior masonry.

- Energy efficiency and resident comfort: The building's low-income residents are
  responsible for their own utility costs so it is critical that we provide the best guarantee
  that windows will be draft-free, easy to operate and offer good thermal performance
  over the long haul.
   Legacy has determined that the existing wooden sash does not have adequate profile
  - Legacy has determined that the existing wooden sash does not have adequate profile depth to accept insulated glass lites. We believe that even with addition of interior storm windows, installation of high-performance replacement windows would still significantly outperform fully restored existing units.
- <u>Durability</u>: We have considered the approach of restoring existing windows, adding new weather stripping <u>and</u> installing "operable" interior storm windows. Although this approach may initially provide a similar degree of air tightness and thermal performance to our preferred replacement scenario we have significant concerns about how well this more complicated assembly will hold up over the long haul. With the heavy use that can be expected given the more transient nature of Olympic Hotel's resident profile, the weather-stripping can fail and interior storms pulled loose.

  In addition, the need to install, remove and store interior storms every year would place a significant burden on the Owner's limited building maintenance resources.
- Moisture Resistance and Indoor Air Quality: Infrared thermography confirmed that in some locations water is making its way through existing window assemblies and entering into wall cavities. Clearly this is a major concern relative to building longevity, thermal performance and resident health. We believe that window replacement would provide the most thorough and long-lasting way to address this issue.
- Window Operability/Required Source of Fresh Air: An exhaust system was installed in 1999 to help mitigate the problem of stale and unhealthy indoor air conditions inside each apartment. A ducted, mechanical fresh air delivery system was considered but determined to be unaffordable. As a result properly functioning operable windows are an absolute (code-required) necessity.
  Again, high-quality replacement windows offer the best guarantee that windows will operate safely and continue to perform in all other respects despite frequent use over
  - operate safely and continue to perform in all other respects despite frequent use over an extended period of time. As mentioned previously we are concerned that interior storm windows, even with operable panels, will make it difficult to operate the primary exterior units. If the double hung primary windows are not properly latched at the midrails, weather-stripping is rendered ineffective.
- Reduce Yearly Operating Costs: It is the our belief that the more we can reduce KWA's operating and maintenance expenses as a direct result of rehabilitation work the more resources KWA will have going forward to maintain the "public face" of this historic structure in an attractive and well cared for fashion.

- Minimize Disruption to Tenants and Reduce Lead-Based Paint Risks: To restore existing wood windows, each window will need to be dismantled and taken off-site for repair.
   While repair work is being done temporary "windows" will need to be installed.
   Replacement windows would be installed in a single staged action and would greatly reduce owner coordination efforts and tenant disruption.
- <u>Comply with WA State Housing Trust Fund's ESDS Mandate:</u> Washington State Dept of Commerce requires that all projects receiving Housing Trust Fund grants must adhere to specific measures for energy-efficiency and sustainable design as stipulated in the State's "Evergreen Sustainable Development Standard".

#### **Revised Window Replacement Proposal:**

- 1. <u>Pacific Ave. Elevation:</u> All wood windows on the building's west elevation from the second floor up will be replaced with custom manufactured, wood replica units with insulated glass that have the same dimensional profile as existing wood units including extended "lugs" on the upper sash rails. Units will be factory primed and painted to match period appropriate exterior color scheme.
- 2. <u>North and South Elevations</u>: Fire-rated metal windows on the less critical north and south elevations will be replaced with new "rated" units. Windows will have fixed upper glazing w/ awning style operation below. This adds an important safety feature to the windows and prevents residents on the 2<sup>nd</sup> floor from getting out onto neighboring building's roofs (this has been an issue in the past.) We have been told that code no longer allows for double-hung type units on these two sides.
- 3. Rear East Elevation: The wood windows on the building's rear elevation will be replaced w/ metal clad wood windows designed to replicate existing 6-over-1 glazing pattern and w/ rails, styles and muntins dimensioned similar to existing. These units will be painted to match colors selected for other exterior windows.

#### **Window Sill Repair Proposal:**

Our current plan is to repair cracked sills on the more important east and west elevations with Siplast Parapro fluid-applied PMMA product reinforced with polyester mat material. This method of repair will retain the original dimensions, character and color of existing sills. We would prefer to use a galvanized metal sill covering system for the fire-rated window openings on the less critical north and south elevations. Only a slight vertical lip extending over the top edge of the existing sill would be visible from the street.

#### Window Repair/Replacement Costs:

The estimated costs for restoring existing windows are estimated to be less than the costs to replace windows with new high-quality units. Adding interior storms to full window restoration would however push costs for the repair/restore option well past estimate for window replacement.

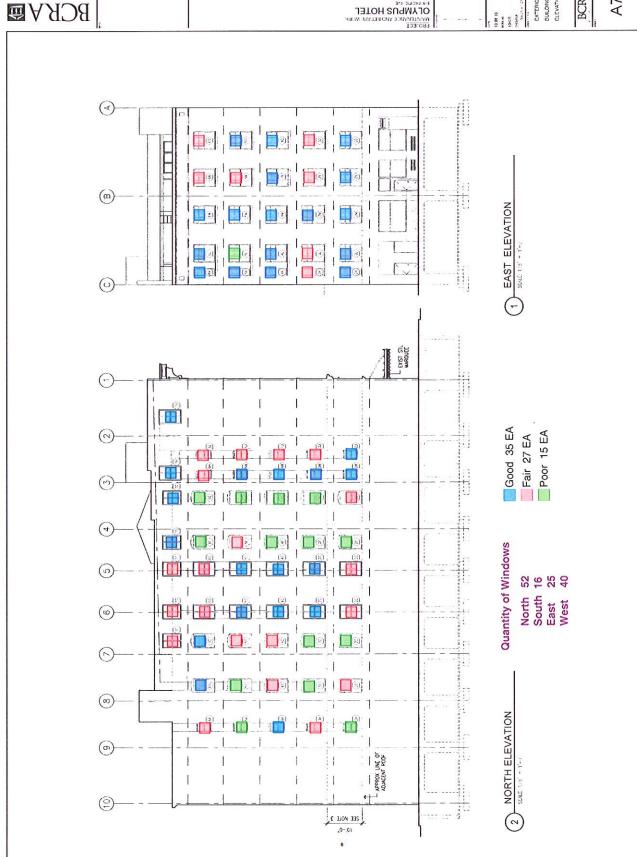
#### Attachments:

- Building elevation that indicate condition of windows by color coding
- Legacy Matrix of window conditions letter 11/9/2010
- Legacy scope of repair work letter 12/9/2010
- Legacy storm window proposal
- Walsh Construction profile of historic projects
- BCRA Building Science expertise

\*The following list of additional project scope items that are not relevant to the Commission's area of concern. We are providing this information in response to one of the Commission member's questions at our previous Landmark Committee hearing.

#### Rehabilitation Project Scope – Non-Historic Items:

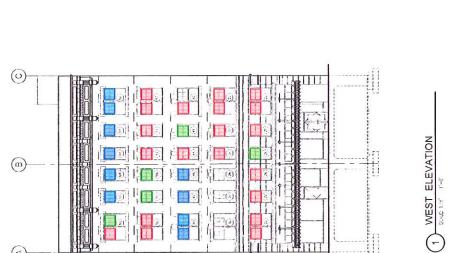
- 1. Roof Repairs: Leaks have developed at a number of the connection points for the steel structure recently installed on the roof to reinforce the masonry parapets. The eastern, lower section of roof does not have adequate pitch for drainage and has an area of damaged roof structure that needs to be re-built. Planned roof repairs include patching of existing BUR upper roof and full replacement of lower roof w/ a 2-ply Siplast modified membrane system.
- 2. <u>Boiler replacement:</u> A new boiler was installed in 1999 however as a result of insufficient maintenance and poor initial installation the equipment now needs to be replaced. Equipment will be replaced with a high-efficiency condensing gas-fired water heater model MODCON-850VWH.
- 3. <u>Exhaust Fan Replacement:</u> There are nine smaller roof-top fans that provide exhaust for apartments and laundry rooms. All have reached the end of their serviceable life and are scheduled for replacement with similar size units.

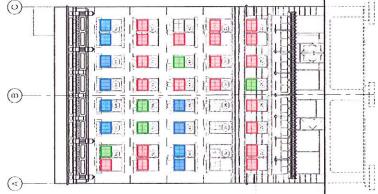


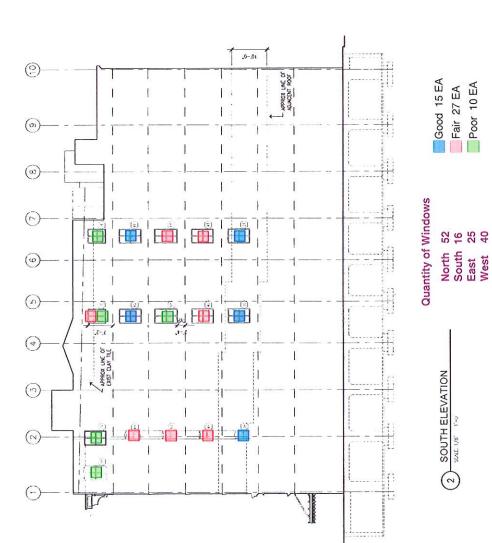
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BCRA B









December 9, 2010

Walsh Construction Co Attn: Susan Hori 509 Fairview Ave. North Seattle, WA 98109

#### Dear Susan:

Here is the bid for the window restoration work to be done on the Olympus Hotel repair/renovation. The estimate is based on the scope laid forth here. For the sake of this scope, all events requiring decision making in estimating will be ruled by the Secretary of the Interiors' standards for historic preservation. Legacy Renovation is EPA certified as Lead Safe. This covers State Prevailing Wages both in the field and in the shop. Any scope of work will have initial air sampling and a full lead work plan established. The wood windows are to be restored using the following method:

- 1. The window sashes will be removed in coordination with a developed site specific safety and lead handling work program. This will include initial exposure sampling and testing.
- 2. The window openings will have temporary OSB protection, 6 mil reinforced plastic, or a combination of the two.
- 3. The window sashes' will be treated by chemical and/or steam strip. This process will abate all paint and the glazing compound. The window frames existing finish is prepared by scrape only, in the field.
- 4. The sashes are to be restored and the hardware is restored or replaced as required with historic match. The method for restoration of the material breaks down as follows:
  - a. The sashes will be inspected thoroughly and the joints will be reinforced.
  - b. The sashes will be modified for size and kerfed for installation of a compression, slip-coated weather-strip.
  - c. All material will be treated with "Board Defense" solution and have repairs made with the "Wood Care" epoxy repair system which includes "Rotfix" and "Sculpwood.
  - d. The sash will be primed.
  - e. The historic glass will be re-installed wherever possible. Where broken, the glass will be replaced with 1/8" annealed clear single glass.
    - i. The glazing beds will be prepared and back-primed.
    - ii. The glass will be set with glazing points and compound glazed.
- 5. The window frames will be treated in the field and primed. The frames restoration consists of the following:
  - a. The frames will be thoroughly scraped to lowest well-bonded layer and/or spot stripped chemically for sanding purposes.
  - b. The frames will be inspected thoroughly and the deteriorated material will be removed.

3001 South Steele St. Tacoma, WA 98409



- c. All material will be treated with "Board Defense" solution and have repairs made with the "Wood Care" epoxy repair system which includes "Rotfix" and "Sculpwood".
- d. The frames will be primed.
- 5. The window sashes and frames will be painted with two coats of topcoat finish paint.
- 6. The window sashes will be returned and installed into the prepared openings:
  - a. Window hardware will be re-used if possible and in acceptable condition where sashes are to be operable. Otherwise, new historic match hardware will be used.
  - b. Fixed windows will be installed and caulked in place.
  - c. All adjustment will be done.
- 7. Exterior joint sealant to masonry will be installed.
- 8. All touch-up and final adjustment will be made to all of Legacy Renovations' scope of work.

The same standards for historic preservation will be applied to the restoration of the steel windows also. The following procedures will be followed:

- 1. If necessary, the window sashes will be removed in accordance with procedures laid out above.
- 2. The window openings will have temporary OSB protection, 6 mil reinforced plastic, or a combination of the two.
- 3. The window sashes' and frames will be spot treated by chemical means.
- 4. Rust will be cleaned and removes with a buzz-wheel mechanically.
- 5. The hardware is restored or replaced as required with historic match. The method for restoration of the material breaks down as follows:
  - a. Dents and voids will be filled with steel epoxy repair products..
  - b. The hardware will be cleaned, repaired, and re-used if possible. Replaced, if not.
  - c. All material will be treated with rust inhibiting primer.
  - d. The historic glass will be re-installed wherever possible. Where broken, the glass will be replaced with appropriate safety/wire single glass.
    - i. The glass will be set with glazing compound or caulking, as appropriate.
- 6. The window frames will be treated in the field and primed. The frames restoration consists of the following:
  - a. Dents and voids will be filled with steel epoxy repair products..
  - b. The hardware will be cleaned, repaired, and re-used if possible. Replaced, if not.
  - c. All material will be treated with rust inhibiting primer.
- 7. The window sashes and frames will be painted with two coats of topcoat finish paint.
- 8. The window sashes will installed into the prepared openings and adjusted:
  - a. Window hardware will be re-used if possible and in acceptable condition where sashes are to be operable. Otherwise, new historic match hardware will be used.
  - b. Fixed windows will be installed and caulked in place.
  - c. All adjustment will be done.
- 9. Exterior joint sealant to masonry will be installed.



All touch-up and final adjustment will be made to all of Legacy Renovations' scope of work.

Our work covers all work from joint sealant at masonry to exterior all the way to the interior sash stop holding the bottom sash in its' channel to the interior.

Please call if you have any questions that I can help with. This should be a good place to start with the budgeting and allow us to fine tune it if needed.

Troy Axe

President Legacy Renovation Products & Services

Ph: 253.474.5175 Fax: 253.474.5542 Cell: 253.691.8021

e-mail: taxe@legacyrenovation.com



December 9, 2010

Walsh Construction Co Attn: Susan Hori 509 Fairview Ave. North Seattle, WA 98109

#### Dear Susan:

Here is the bid for the window restoration work to be done on the Olympus Hotel repair/renovation. The estimate is based on the scope laid forth here. For the sake of this scope, all events requiring decision making in estimating will be ruled by the Secretary of the Interiors' standards for historic preservation. Legacy Renovation is EPA certified as Lead Safe. This covers State Prevailing Wages both in the field and in the shop. Any scope of work will have initial air sampling and a full lead work plan established. The wood windows are to be restored using the following method:

- 1. The window sashes will be removed in coordination with a developed site specific safety and lead handling work program. This will include initial exposure sampling and testing.
- 2. The window openings will have temporary OSB protection, 6 mil reinforced plastic, or a combination of the two.
- 3. The window sashes' will be treated by chemical and/or steam strip. This process will abate all paint and the glazing compound. The window frames existing finish is prepared by scrape only, in the field.
- 4. The sashes are to be restored and the hardware is restored or replaced as required with historic match. The method for restoration of the material breaks down as follows:
  - a. The sashes will be inspected thoroughly and the joints will be reinforced.
  - b. The sashes will be modified for size and kerfed for installation of a compression, slip-coated weather-strip.
  - c. All material will be treated with "Board Defense" solution and have repairs made with the "Wood Care" epoxy repair system which includes "Rotfix" and "Sculpwood.
  - d. The sash will be primed.
  - e. The historic glass will be re-installed wherever possible. Where broken, the glass will be replaced with 1/8" annealed clear single glass.
    - i. The glazing beds will be prepared and back-primed.
    - ii. The glass will be set with glazing points and compound glazed.
- 5. The window frames will be treated in the field and primed. The frames restoration consists of the following:
  - a. The frames will be thoroughly scraped to lowest well-bonded layer and/or spot stripped chemically for sanding purposes.
  - b. The frames will be inspected thoroughly and the deteriorated material will be removed.

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- c. All material will be treated with "Board Defense" solution and have repairs made with the "Wood Care" epoxy repair system which includes "Rotfix" and "Sculpwood".
- d. The frames will be primed.
- 5. The window sashes and frames will be painted with two coats of topcoat finish paint.
- 6. The window sashes will be returned and installed into the prepared openings:
  - a. Window hardware will be re-used if possible and in acceptable condition where sashes are to be operable. Otherwise, new historic match hardware will be used.
  - b. Fixed windows will be installed and caulked in place.
  - c. All adjustment will be done.
- 7. Exterior joint sealant to masonry will be installed.
- 8. All touch-up and final adjustment will be made to all of Legacy Renovations' scope of work.

The same standards for historic preservation will be applied to the restoration of the steel windows also. The following procedures will be followed:

- 1. If necessary, the window sashes will be removed in accordance with procedures laid out above.
- 2. The window openings will have temporary OSB protection, 6 mil reinforced plastic, or a combination of the two.
- 3. The window sashes' and frames will be spot treated by chemical means.
- 4. Rust will be cleaned and removes with a buzz-wheel mechanically.
- 5. The hardware is restored or replaced as required with historic match. The method for restoration of the material breaks down as follows:
  - a. Dents and voids will be filled with steel epoxy repair products..
  - b. The hardware will be cleaned, repaired, and re-used if possible. Replaced, if not.
  - c. All material will be treated with rust inhibiting primer.
  - d. The historic glass will be re-installed wherever possible. Where broken, the glass will be replaced with appropriate safety/wire single glass.
    - i. The glass will be set with glazing compound or caulking, as appropriate.
- 6. The window frames will be treated in the field and primed. The frames restoration consists of the following:
  - a. Dents and voids will be filled with steel epoxy repair products..
  - b. The hardware will be cleaned, repaired, and re-used if possible. Replaced, if not.
  - c. All material will be treated with rust inhibiting primer.
- 7. The window sashes and frames will be painted with two coats of topcoat finish paint.
- 8. The window sashes will installed into the prepared openings and adjusted:
  - a. Window hardware will be re-used if possible and in acceptable condition where sashes are to be operable. Otherwise, new historic match hardware will be used.
  - b. Fixed windows will be installed and caulked in place.
  - c. All adjustment will be done.
- 9. Exterior joint sealant to masonry will be installed.



All touch-up and final adjustment will be made to all of Legacy Renovations' scope of work.

Our work covers all work from joint sealant at masonry to exterior all the way to the interior sash stop holding the bottom sash in its' channel to the interior.

Please call if you have any questions that I can help with. This should be a good place to start with the budgeting and allow us to fine tune it if needed.

Troy Axe

President Legacy Renovation Products & Services

Ph: 253.474.5175 Fax: 253.474.5542 Cell: 253.691.8021

e-mail: taxe@legacyrenovation.com



November 9, 2010

BCRA
Attn: Kent McLaren
2106 Pacific Ave, suite 300
Tacoma, WA 98402

#### Dear Kent:

I had the opportunity to walk the building and perform the full survey at the Olympus Hotel on Wednesday, October 27<sup>th</sup>. I was able examine all of the windows in the building except those in unit 312 which equates to visual inspection of 127 of the 133 total windows in the building. I used the data from the units directly above and below unit 312 to populate the information as there was a great deal of uniformity to draw from.

I have attached a matrix for examining the windows in the building by style, type, and condition. They are broken up between steel windows on the North and South and wood windows on the West and East. There are different standard conditions for the two style/types so I've summed up the windows in the two types.

The North and South have a combination of three different types of window. The oldest are a mix of rolled steel double hung and casement windows that date, likely, to the building construction or very nearly after that. They are called out on the survey as "Historic Steel Awn or Awn Pic Combo" (13 of these), "Historic Steel Double Hung" (21 of these), or "Steel Casement" (6 of these). The casement and awning windows are operated with a flip-lever and swing out on hinges. The historic double hung windows are counterbalanced with chains and a weight system within the jamb. There are also "New Steel Double Hung" windows (11 of these) on these two elevations. They appear to have been installed quite recently (perhaps as recently as the conversion of the building). They are identified easily as of a newer style and are counterbalanced with a coil tape system.

With the steel windows, the three grades of integrity are as follows. "Good" means that there is very little deterioration of operation or finish and hence, little rust. These will be relatively easy to get into good condition with some adjustment/lubrication, some minor buzz-wheel/stripping of surfaces, primer and paint. "Fair" means that there is good integrity of the frame and sash but advanced deterioration of finish and presence of rust. Some minor components need replacement or repair. In the case of the "New Steel Double Hung" windows, this means that the window is in good condition but there is a problem with the tape balances. Windows in "Poor" condition require extensive repairs. There may be advanced rust, broken glazing or hardware components, or deflection/warping



of the frames that requires some more in depth work to get them on par with the remainder of the windows.

The West and the East have wood double hung windows and a very few fixed sash. The "Historic Wood Double Hung" windows (55 of these) are the traditional style, counterbalanced with ropes and weights on pulleys. There are four "Historic Fixed" sash windows and one "New Fixed Sash" window. Finally, there are 5 "New Wood Double Hung Insert" windows that are double hung sash counterbalanced on a vinyl track with springs/block and tackle resistance. The insert windows are all in good shape and need only adjustment and paint. The historic wood windows break down as follows: "Good" windows still need to be stripped and restored. The sashes are largely intact (on the upper floors. It looks to me as though the upper floors were swapped with the lowers when the work was done, given the condition of the materials). They need weather-strip, adjustment, minor epoxy repairs, and paint. The "Fair" windows are worse but still repairable. There would likely be some manufacturing limited to muntin replacement or dutchmans' mostly. The "Poor" condition windows will require significant re-building and reconstruction to get them on par with the others.

Please let me know if there is anything else I can do. I am at your disposal.

Troy Axe

President Legacy Renovation Products & Services

Ph: 253.474.5175 Fax: 253.474.5542 Cell: 253.691.8021

e-mail: taxe@legacyrenovation.com

## **About BCRA Building Science**

**BUILDING SCIENCE** 



Through investigations of numerous failed buildings, BCRA has found that a large percentage of envelope deviations could have been foreseen and corrected.

## INVESTIGATING AND REMEDIATING FAILURES IN THE BUILT ENVIRONMENT

As leaders in the industry, BCRA's Building Science group incorporates a working knowledge of proven thermal, air, and moisture barrier techniques into the design, construction and forensic evaluation of the building envelope. This provides insights in hidden or unforeseen problems, eliminates unnecessary repair and schedule set-backs during construction and provides for an overall cost savings, occupant comfort and lower building maintenance over the lifetime of the building.

Our initial investigations with up-to-date building science knowledge, coupled with the latest infrared thermography equipment, allow for an unprecedented nondestructive evaluation of the building's condition. In conducting multiple Independent Technical Reviews (ITR) for other firms, BCRA has found many errors in the design phase, correcting them before they were implemented. Additionally, BCRA sets contractor meetings and field observation visits to help define the expectations, requirements and rational behind technical envelope design details, learned in the initial building investigations. Through investigations of numerous failed buildings, BCRA has found that a large percentage of envelope deviations could have been foreseen and corrected at either the design phase or construction phase if the proper initial investigation, ITR and field audits had been implemented. BCRA works to eliminate all deficiencies of the building envelope.

#### KEY BUILDING SCIENCE SERVICES INCLUDE:

- **Hydrothermal Modeling** uses known weather history for any region worldwide to best design the envelope system.
- A Whole Building Air Leakage Test is a means by which to determine problem areas of the building and verify that the continuous air barrier has been designed and constructed properly.
- Thermal performance can only be observed non-destructively using *infrared thermography*.
- To test for moisture leaks, especially evaluating the performance of the window installations, BCRA can *water test* windows for proper installation to protect against water intrusion.

BCRA leads the industry in the design, construction administration, and testing of building envelopes and has been offering these services for years. Additionally, BCRA's building science group can be used in the LEED Certification system to earn credits. BCRA is poised to answer the technical demands of any project in a holistic and cost sensitive manner.



Chief Seattle Community Center & Lofts, 2007 - Seattle, WA LEED Silver The project is located in the Pioneer Square Historic District, and involved a complex reconstruction of a 1909 structure to LEED Silver specifications. The unreinforced brick building was thoroughly reconstructed, inside and out, with extensive structural enhancements. Scope included replacement and structural reinforcement of all the windows. Eleven apartments are above the first floor and basement that house the community center for Chief Seattle Club. Unique finishes reflect traditional Native American art and include a gathering circle with traditional adzed wood panelling and a domed ceiling finished in cedar.



**Historic Cooper School, 2006 - Seattle, WA** Cooper School is a City of Seattle designated landmark. The 1917 structure was closed for over ten years due to safety issues, and required a major seismic upgrade with the addition of shear walls and steel bracing at the east wall; a complete reconstruction of the sprinkler system to meet National Fire Protection Assoc. standards; new water and electrical service, and sanitary sewer. To bring the building back to full use from years of exposure, WCC crews performed extensive cleaning of the exterior masonry, along with a complete reconstruction of the roof, and restoration of all windows on the first floor.



**LaSalle Hotel, 2006 - Seattle, WA** Developed by the Pike Place Market Preservation and Development Authority (PDA), the LaSalle Hotel project was the first major development in the Market Historic District since the early 1990s and combined renovation of the historic hotel with new construction of a six-story senior residence. The project also added a 6,500-SF senior center and commercial space at street level. Commercial and residential tenants remained in the building during the entire renovation.



**Estate Hotel, 2007 - Portland, OR Building Energy Tax Credits** The Estate Hotel consists of a 61,952 SF renovation of an historic four-story building with the addition of two stories totaling 15,000 SF to the existing concrete structure. The project includes 38 new studio apartments, increasing the total number of units to 196; and the upgrade of existing units to address safety, efficiency and structural issues for the entire building. The result increases available housing units in the neighborhood and preserves the historic flavor of Old Town Chinatown.



Commerce Building, 1995 - Everett, WA The historic Commerce Building features low income housing on the upper floors and retail spaces at street level. Many of the original doors and fixtures were salvaged and reused in the completed project. The Commerce Building was built in 1910 and served as offices for various entities in the Everett area. Walsh's scope included seismic upgrades of the masonry structure, renovation of commercial retail spaces on the ground floor, and conversion of the upper four floors to 48 low-income and market rate housing units. Thirteen units were dedicated to special needs individuals, 29 SRO units were dedicated to homeless individuals, and the remaining 19 units are low income apartments. This building is on the National Register of Historical Places.



Admiral Apartments, 2010 - Portland, OR The Admiral Apartments is a 1909 Historic Registered five-story brick building with a footprint just under 5,000 SF. The building owner, REACH Community Development, is providing this building for low-income section eight housing. Our scope of work includes a complete cosmetic gut of the 37 units top to bottom. All units get new flooring, cabinets, plumbing and electrical fixtures. New MEP includes a make-up air roof top unit, plumbing supply lines, and electrical panels to each unit. We also constructed a new HVAC shaft running from the ground level to the roof. The building has 173 windows, each ranging from minor repair to major repair to replacement, all completed without compromising the historical integrity of the building.



**Musolf Manor, 2009 - Portland, OR Building Energy Tax Credits** The historic rehabilitation of the three-story Musolf Manor provided 95 studio units for very low-income singles in Old Town, Portland. This project took place in three phases and was an occupied seismic upgrade and rehab replacing most major systems. We also replaced 16,000 SF of ground floor storefronts and 2,100 SF of lobby space. The upper floors, which remained partially occupied throughout the project, were renovated in two phases to accommodate the residents.



Hotel Alder, 2005 - Portland, OR Building Energy Tax Credits This five-story, 52,000 SF renovation of the 99-unit wood structure required significant upgrades to meet code for a new SRO housing apartment building. New utility infrastructure, improved energy efficiency, seismic upgrade and structural damage repair were critical focal points. Timely response to emerging priorities by the entire project team helped maintain a very tight construction schedule. The nearly 100-year-old wood post and beam structure is now an official National Historic Landmark. Hotel Alder was designed and built to a heavy-use institutional grade.



Jean Vollum, 2001 - Portland, OR LEED Gold The renovation of this two-story warehouse in Portland's Pearl District is, nationwide, the first restoration of a historic building to reap the LEED gold rating. The certification considers such factors as water efficiency, energy performance, siting, materials, and indoor air quality. Using green practices in all phases of the work, timbers have even been stripped and re-used. The 100+ year old wood floor was filled and refinished to keep with the character of the building. The existing brick walls and wood columns were blasted using corn-cobs and walnuts and refinished to their original beauty. The project also includes a third floor addition and site improvements.



Mercy Corps Headquarters, 2009 - Portland, OR LEED Platinum The project consists of major renovations and seismic upgrades to the historic 40,000 SF Packard Scott building, along with the addition of a new 40,000 SF steel and concrete structure. The building totaled 80,000 SF of Mercy Corps offices, the Action Center, the Lemelson Foundation and a small retail space. One of the most interesting stages of the project was the removal of the mezzanine level and the lowering of the second floor. Using the mezzanine to brace from, WCC used a series of hydraulic jacks to lower first the south then the north sides of the second floor. After the floor was completely lowered and tied back into the building the mezzanine was demolished. The floor joist from the demolition work were then re-milled and reused throughout the building for stair treads, the reception desk, and a large coffee bar.

## **Landmarks Preservation Commission**

Community and Economic Development Department Planning Division

PART 1: PROPERTY INFORMATION



747 Market Street \* Room 1036 \* Tacoma WA 98402-3793 \* 253.591.5220

# APPLICATION FOR DESIGN REVIEW COMMERCIAL AND MULTIFAMILY

Please include ALL of the following information with your application. Insufficient application materials will result in a delay in processing of your application. If you have any question regarding application requirements, or regulations and standards for historic buildings and districts, please call the Historic Preservation Officer at 253.591.5220.

11 <sup>th</sup> Street  ict
of Tacoma – Tom Rutherford, Engineer than above)  253.591.5767  Applicant's Email <u>TRutherford@ci.tacoma.wa.us</u>
than above)  253.591.5767 Applicant's Email <u>TRutherford@ci.tacoma.wa.us</u>
253.591.5767 Applicant's Email <u>TRutherford@ci.tacoma.wa.us</u>
) City of Tacoma
, , , , , , , , , , , , , , , , , , , ,
'47 Market Street, Public Works
he property owner to be processed. By signing this application, owner confirms the nd determined satisfactory by the owner.
ated project cost: n/a
make payable to City of Tacoma):

The Landmarks Preservation Commission (LPC) is the designated review board to approve or deny proposed changes to designated historic buildings and districts. Review criteria are available at the Tacoma Department of Economic Development, Culture and Tourism Division (253) 591-5220 and on the city website. Information on standards and guidelines can be found in Tacoma Municipal Code 1.42 (Landmarks Preservation Commission) and 13.07 (Special Review Districts).

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DA	DT 3.	DPO IECT	SCODE	AND	DESCRIPT	ION
$-\mu$	K D.	PRUJEUI	SCOPE	MINL	DESCRIP	IUI

Please use the space below to describe the project. Attach additional pages if necessary. All proposed changes must be included in this description. Please see NARRATIVE DESCRIPTION CHECKLIST (next page).

must be moraded in this description. I reaso see MARITATIVE BEGOTTI TION ON ENGLISH (No. C. pago).							
The proposal is to paint the Murray Morgan Bridge for the purpose of preservation and increased life service.							
The photo simulations on two options for color (black and silver) are enclosed along with a photo of existing color.							



PHOTO 1- Existing Bridge Paint Colors, Murray Morgan Bridge

1964: The green on the City approach along the old car ramp from Cliff Street to Dock Street was painted in 1964.

Mid-1970s: The last paint job in the mid 1970s painted the truss spans Space Blue and the girders on the City approach (above the green car ramp girders) Viking Grey.



Rendering #1 - Murray Morgan Bridge

Painted Black and aluminum truss over the lift span unpainted.



Rendering #2 - Murray Morgan Bridge

Painted Black and aluminum truss over the lift span unpainted.



Rendering #3 - Murray Morgan Bridge

Painted Black and aluminum truss over the lift span unpainted.



Rendering #4 - Murray Morgan Bridge

Painted Silver and aluminum truss over the lift span unpainted.



Rendering #5 - Murray Morgan Bridge

Painted Silver and aluminum truss over the lift span unpainted.



Rendering #6 - Murray Morgan Bridge

Painted Silver and aluminum truss over the lift span unpainted.