

To: Historic Landmarks Board

From: James Reitz (AICP) Senior Planner
jreitz@forestgrove-or.gov (503) 992-3233 

Re: May 25 Agenda

Date: May 18, 2021

Memorandum

NOTE: If anyone can't make the meeting, please advise as soon as possible.

ACTION ITEMS

1. **Design Review:** Please refer to the attached staff report.
2. **Government 101:** Because the Board has a couple of new members – and because everyone else would benefit from a refresher – Councilor Uhing will be discussing your roles and responsibilities as official members of a City board.
3. **Community Outreach:** Since Kelsey is now Chair, someone else needs to take the lead on this, to develop new and inventive ways that the HLB can get out there and engage with the community.
4. For the **Editorial and Events Calendar**, we need to determine what events are happening this year and, of those events, whether the HLB should participate. While COVID is still changing many schedules, it would be good to have a loose plan in place. Similarly, we need to discuss your editorial efforts: do you want to continue writing articles? Is there an audience? Is there a better outlet for your efforts?
5. **Forest Grove Sesquicentennial:** We'll discuss what direction the Council has given, and what the HLB should be planning for in support. Does the Board have any ideas on how to participate? Is there any interest in collaborating with other Boards?
6. **Downtown District Brochure:** The SHPO grant request to fund the development and printing of the downtown district brochure has been approved. Staff is working on the contract details with the designer. Your discussion tonight will be to appoint a subcommittee of 2-3 members. This team will be responsible for developing the content (text and photos) to be used in the brochure.
7. **CEP Grant:** As you know, the HLB has been awarded \$4,152 for the preservation grant program. Perhaps due to the pandemic, interest in the program this year has been lackluster. The purpose of our discussion will be to consider outreach and publicity techniques to re-energize interest in the program.

INFORMATION ITEMS

Preservation Grants: The budget for FY20-21 is \$2,250. Two grants were awarded for painting projects at 1903 22nd Avenue and 2125 "A" Street, both of which have been completed. There remains \$750 available. No new applications have been filed, although staff has fielded several inquiries of interest.

New Agenda and Minutes Format: You may have noticed that appearances have changed a bit. The purpose of this is to ensure that there is a uniform format used by all the boards and commissions. Also, much as with a Council agenda, including are some general time limits for each agenda item. These are not firm limits, but are simply intended to ensure that discussions remain focused and on-topic.

Board Communications: Board members have always been free to discuss non-agenda topics under New Business. This option will henceforth be formalized on the agenda as Board Communications.

2021 - 2022 CALENDAR - UPCOMING AGENDA ITEMS

June 22, 2021 (fourth (not fifth) Tuesday)

- ☐ National Night Out planning (August 3)
- ☐ Adopt July-December 2021 Editorial Calendar

July 27, 2021

- ☐ Chalk Art Festival planning (September 11)

August 25, 2021 (fourth (not fifth) Tuesday)

- ☐ Chalk Art Festival planning (September 11)
- ☐ Public Safety Open House planning (October 9)

September 28, 2021

- ☐ Public Safety Open House planning (October 9)

October 26, 2021

- ☐ 2022 Photo contest

November 16, 2021 (third Tuesday)

- ☐ 2022 Photo contest

December 21, 2021 (third Tuesday)

- ☐ Discuss 2022 work plan
- ☐ Prepare January-June 2022 Editorial Calendar
- ☐ 2022 Photo contest

January 25, 2022

- ☐ Review and adopt 2022 work plan
- ☐ Review and adopt January-June 2022 Editorial Calendar
- ☐ Photo contest
- ☐ Annual officer elections
- ☐ Adopt 2022 meeting schedule

February 22, 2022

- ☐ Begin CEP application preparation
- ☐ Mock Design Review Hearing
- ☐ Photo contest

March 22, 2022 (fourth (not fifth) Tuesday)

- ☐ Review and finalize CEP grant application
- ☐ Discuss selection of Stewart Award recipient
- ☐ Preservation Month / photo contest

April 26, 2022

- ☐ Select Stewart Award recipient
- ☐ Preservation Month / photo contest
- ☐ Prepare annual report

May 9, 2022 City Council Meeting

- ❖ *Present Annual Report*
- ❖ *Preservation Month Proclamation; honor Stewart Award recipient and photo contest winners*

May 24, 2022 (fourth (not fifth) Tuesday)

- ☐ Review July-December 2021 Editorial Calendar



Historic Landmark Review Staff Report and Recommendation

Community Development Department, Planning Division

Report Date: May 17, 2021

Hearing Date: May 25, 2021

Request: Window Replacement in a Historic Contributing Structure

File Number: 311-21-000010-PLNG

Property Location: 1827 Douglas Street

Legal Description: Washington County Tax Lot 1S306AB11600

Applicants: Martha Robertson

Comprehensive Plan and Zoning Map Designations: High Density Residential (HDR)
Residential Multi-Unit High Density (RMH)

Historic District Clark National Register Historic District

Applicable Standards and Criteria: City of Forest Grove Development Code:

§17.5.220 Procedure for Review of Proposed Work Affecting the Exterior of Landmarks

§17.12.210(H1) Historic Landmarks-Related Definitions

City of Forest Grove Design Guidelines Handbook:
Focus Area V – Historic District Design Guidelines

Reviewing Staff: James Reitz, AICP, Senior Planner

Recommendation: Because the windows appear to be substantially intact and repairable, staff recommends that the application to remove and replace several original windows not be approved

I. BACKGROUND:

Development Code (DC) §17.12.210 H1(g) defines a Historic Contributing Building as “Any building, structure, object or site within the boundaries of a historic district which reflects the significance of the district as a whole due to historic associations, historic architectural qualities or archeological features.”

The Clark District National Register Nomination describes the house at 1827 Douglas Street as “a wood-framed vernacular house The windows are one-over-one double-hung wood sash. According to county tax assessment records, (the) house was constructed as early as 1870. The original owner of the house is not known...”

“The house is in good condition. The alterations have been minimal and have not seriously impacted the house’s historic integrity. It is, therefore, considered a contributing resource in the district.”

Because the subject property is considered Contributing to the Clark National Register Historic District, exterior modifications are subject to review per DC §17.5.220 Procedure for Review of Proposed Work Affecting the Exterior of Landmarks:

For the purposes of this section, “historic landmark” or “landmark” is construed to include “historic contributing building” as defined in §17.12.210 H1. These standards apply to:

- *Structures listed on the Forest Grove Register of Historic and Cultural Landmarks, whether or not they are located within a district;*
- ***Historic contributing structures within a district;*** (emphasis added)
- *Non-contributing structures within a district; and*
- *New development within a district.*

Prior to the commencement of work on the exterior of a landmark (including repairs, maintenance, alterations, improvements, reconstruction and/or expansion affecting the exterior appearance of the landmark), an application describing the proposed work shall be submitted to the Community Development Department for review. The application shall include plans and specifications describing proposed materials and methods in sufficient detail to illustrate the finished results.

For landmarks within a district, the design intent is to maintain or better the overall integrity of the district. For new development or non-contributing buildings there is a similar intent, particularly if the development would displace an existing landmark.

The standards in this section apply to the exterior rehabilitation of buildings within a historic district. Situations include existing historic contributing buildings, additions, or new development within a district, and to individually-listed historic landmarks located outside of a district. Certain provisions apply to all properties.

The applicant wishes to remove several windows and replace them with Marvin fiberglass windows of the same design and similar dimensions. Because the existing windows did not appear to meet the criteria for replacement - they appear repairable - staff could not administratively approve the application.

II. PROJECT DESCRIPTION AND ANALYSIS

- A. Description of Proposal: The applicant's request is to replace 8 windows. Of these, 2 were previously replaced with "ill-fitted, inexpensive vinyl sash windows" according to the application. The remaining 6 windows are apparently the original wood sashes.

The applicant wishes to replace the windows because of a perceived safety hazard, energy inefficiency, deterioration, and restoration expense (see application materials, attached as Exhibit 1).

- B. Architecture: According to the Clark District National Register Nomination, the house at 1827 Douglas Street is "a wood-framed vernacular house" whose "alterations have been minimal and have not seriously impacted the house's historic integrity."
- C. Preservation Briefs: The National Park Service Technical Preservation Services division has prepared a series of *Preservation Briefs*. *The Repair of Historic Wooden Windows* addresses windows as follows:

Technical Preservation Services recommends the retention and repair of original windows whenever possible. We believe that the repair and weatherization of existing wooden windows is more practical than most people realize, and that many windows are unfortunately replaced because of a lack of awareness of techniques for evaluation, repair, and weatherization. Wooden windows which are repaired and properly maintained will have greatly extended service lives while contributing to the historic character of the building. Thus, an important element of a building's significance will have been preserved for the future.

The entire Brief is attached as Exhibit 4.

III. APPROVAL CRITERIA, FINDINGS AND ANALYSIS

DC §17.5.220(D)(1) *General Review Standards* and §17.5.220 (D)(4)(j) *Building Design – Doors and Windows* requires that the proposal complies with the following criteria. The action of the Board to approve the application shall be accompanied by specific findings of fact indicating how each of the criteria in §17.5.220(D) are satisfied or, if the Board acts to disapprove the proposal, indicating how the proposal fails to satisfy one or more of the criteria.

DC §17.5.220(D)(1) *General Review Standards*

- a) Every reasonable effort shall be made in the proposal to provide a compatible use for the property which requires minimal alteration of the structure, or to use the property for its originally intended purpose.

Finding: *Use of the property is not proposed to change. It would retain its function as a single-family home.*

- b) The distinguishing original qualities or character of the structure shall not be destroyed. The removal or alteration of historic material or distinctive architectural features shall be avoided when possible.

Finding: According to the Clark District National Register Nomination, "The windows are one-over-one double hung wood sash." According to the applicant, 2 of the windows are in fact vinyl sashes.

Finding: The Development Code defines Historic Integrity as "The historic, character-defining physical features that convey a building, object, site or structure's significance as part of a district" (DC §17.12.210(H1)(j)). While 6 of the windows appear original to the house, the applicant proposes to remove and replace them because they are a safety hazard, ill-fitting, broken and/or painted shut, which suggests that they have not been regularly maintained but also that they have not deteriorated to the point where replacement is the only viable option. Because the windows appear to be substantially intact, they do not appear to meet the criteria for replacement; they are repairable.

Finding: Six of the windows proposed to be removed appear to be original to the house, and would therefore be defined as "historic material".

Conclusion: Because 6 of the 8 windows are constructed of historic material and are repairable, their removal should be avoided. The remaining 2 windows are of vinyl construction; their replacement with a more durable material (fiberglass) would not conflict with this standard.

- c) All structures shall be recognized as products of their own time. Alterations that have no historical basis and which seek to create an earlier appearance shall be discouraged.

Finding: The house dates from c. 1870. The proposed window replacements would not seek to create an earlier appearance. This criterion is satisfied.

- d) Changes which may have taken place in the history and development of the structure shall be recognized and respected.

Finding: According to the Clark District National Register Nomination, the home's "alterations have been minimal and have not seriously impacted the house's historic integrity." This criterion is not applicable.

- e) Distinctive stylistic features or examples of skilled craftsmanship which characterizes the structure shall be treated with sensibility.

Finding: Six of the eight windows proposed to be removed are one-over-one double-hung wood sashes, a stylistic feature common in vernacular architecture in the late 19th century. The applicant proposes to remove and replace them with "virtual replicas ... All new interior and exterior trim will match the existing trim."

Conclusion: Because 6 of the 8 windows appear to be substantially intact and repairable, they do not appear to meet the criteria for replacement. Further, replacing them with new units would remove original features which characterize the structure. For those 6 windows, this criterion is not met. Replacement of the 2 vinyl sashes with a more durable material (fiberglass) would not conflict with this standard.

- f) Deteriorated architectural features shall be repaired if practicable; if not, they should be replaced in-kind. Where replacement of features is proposed, the new material should match the material being replaced in composition, design, color, texture, and other visual

qualities. Repair or replacement of missing architectural features should be based on accurate duplications of features, substantiated by historic, physical, or pictorial evidence rather than on conjectural designs or the availability of different architectural elements from other buildings or structures.

Finding: According to the Clark District National Register Nomination, "The windows are one-over-one double hung wood sash." According to the applicant, 2 of the windows are in fact vinyl sashes.

Finding: The Development Code defines Historic Integrity as "The historic, character-defining physical features that convey a building, object, site or structure's significance as part of a district" (DC §17.12.210(H1)(j)). The applicant proposes to remove and replace 6 of the windows because they are a safety hazard, ill-fitting, broken and/or painted shut, which suggests that they have not been regularly maintained but also that they have not deteriorated to the point where replacement is the only viable option. Because the windows appear to be substantially intact, they do not meet the criteria for replacement; they are repairable. Multiple window restoration contractors are located in the greater Portland area that could restore the windows. Depending on their skill set and the extent of the repairs needed, a general contractor or even the applicant may be capable of performing the work.

Conclusion: Because 6 of the 8 windows appear to be substantially intact and not significantly deteriorated, they are repairable. Therefore, this criterion is not met.

- g) Proposed surface cleaning, if any, of structures shall be undertaken with the least damaging means possible. Sandblasting and other cleaning methods that will damage the historic building materials shall not be undertaken.

Finding: No surface cleaning is proposed; this criterion is not applicable.

- h) Every reasonable effort shall be made to protect and preserve archeological landmarks affected by, or adjacent to, the landmark.

Finding: No known archeological resources would be affected by this application. This criterion is not applicable.

- i) A design which may be proposed for alterations and additions to the structure shall not be discouraged when such alterations and additions do not destroy significant historical, architectural, or cultural material, and such design is compatible with the size, scale, color, material and character of the property, neighborhood, and environment.

Finding: The house was constructed c. 1870. It is of vernacular architecture. According to the Clark District National Register Nomination, "The windows are one-over-one double hung wood sash." According to the applicant, 2 of the windows are in fact vinyl sashes.

Because 6 of the 8 windows are constructed of historic material and are repairable, their removal should be avoided. The remaining 2 windows are of vinyl construction; their replacement with a more durable material (fiberglass) would not conflict with this standard.

- j) Wherever possible, new additions or alterations to any structures shall be done in such a manner that, if such additions or alterations were to be removed in the future, the essential form and integrity of the structure would be unimpaired.

Finding: No additions are proposed. The proposed windows would be fitted into existing openings such that, if removed in the future, the essential form and integrity of the structure would not be impaired. This criterion is met.

- k) Attempts to improve or enhance the exterior appearance of a landmark by installing decorative features, such as shutters, shall be avoided unless it can be established that the feature existed on the landmark at its inception.

Finding: No decorative features are proposed to be added; this criterion is not applicable.

DC §17.5.220(D)(4)(j) Building Design – Doors and Windows

- i. Original openings on visible sides of historic buildings shall be retained.

Finding: The proposed windows would be of similar dimensions as the existing windows such that, if removed in the future, the original openings could be restored. This criterion is met.

- ii. New main and upper level window or door openings on front or visible sides of historic buildings are not allowed.

Finding: No additional main and upper level window or door openings on front or visible sides of historic buildings are proposed. This criterion is not applicable.

- iii. New basement windows or doors are allowed on side walls.

Finding: No new basement windows or doors are proposed; this criterion does not apply.

- iv. New window types and materials not allowed at front-facing or visible sides: sliding glass units, glass block, vinyl, fiberglass, between glass grids, commercial-type windows.

Finding: No sliding glass units, glass block, vinyl, between glass grids, or commercial-type windows are proposed. The new windows would be constructed of fiberglass. The HLB has adopted a policy to allow fiberglass sashes in limited circumstances (see Exhibit 5). Because the HLB has adopted a policy to allow fiberglass sashes in some circumstances, this criterion may be met.

- v. New or replacement windows and doors on historic buildings shall match the style, configuration, dimensions, and materials of existing or originals. Not Allowed: Window shapes other than rectangular.

Finding: Replacement windows would largely replicate the existing windows, but would not exactly match their dimensions.

- vi. Retain and repair existing historic window and door parts and trim. Wholesale replacement of windows or sash in good condition on historic buildings is not allowed.

Finding: While most of the windows appear original to the building, the applicant proposes to remove and replace them because they are a safety hazard, ill-fitting, broken and/or painted shut, which suggests that they have not been regularly main-

tained but also that they have not deteriorated to the point where replacement is the only viable option. Because the windows appear to be substantially intact, they do not meet the criteria for replacement; they are repairable.

Conclusion: Because the existing windows appear to original historic material and are repairable, their removal should be avoided. Therefore, this criterion is not met.

- vii. Storm windows are acceptable on interior or exterior. If on the exterior they shall match the window shape, style, basic configuration, and shall be a comparable color. Exterior storm doors are allowed.

Finding: No storm windows are proposed. This criterion is not applicable.

- viii. Windows and doors on new buildings shall be appropriate to the style of the building and as found on historic buildings the block face. This includes their design, materials, pattern, grouping, and configuration.
Not allowed: window shapes other than rectangular, vertically asymmetric, individual window division or configuration.

Finding: This criterion is not applicable because the request pertains to an existing structure, not a new one.

- ix. Glazing on visible building sides and front shall be clear. Reflective or tinted glass or films are not allowed; decorative or stained glass replacement is excepted. Obscure glass is allowed at bathrooms.

Finding: The replacement units would replicate the original windows, including transparent glazing. No reflective, tinted or obscure glass is proposed. This criterion is met.

- x. Doors and Sidelights: New decorative or stained glass is allowed.

Finding: No new decorative or stained glass windows are proposed; this criterion is not applicable.

- xi. New door types not allowed: Flush metal doors, metal and glass storefront or commercial-type doors.

Finding: No new doors are proposed; this criterion is not applicable.

Design Guideline Handbook – Focus Area Section V Historic District Design Guidelines

Recognizing that no set of standards can be perfect, the guidelines provide guidance on how construction might deviate from the standards, and yet still accomplish the goal of protecting a building's architectural heritage. Projects can be permitted to deviate from the development standards in some ways, if it is demonstrated that the related design guidelines have been addressed, and that deviations would result in a higher quality development. The applicable Design Guidelines for this request are as follows (Design Guideline Handbook Section V p. 24):

DOORS AND WINDOWS

Guideline: Preserve and maintain historic doors and windows, and utilize their design as a cue for new work.

Description: Windows and doors provide access, light, and ventilation. Their design and arrangement is often a primary decorative feature in a historic building. The majority of historic windows in Forest Grove are double-hung wood sash, although there are examples of several other styles of windows. Historically, doors were also made of wood.

Recommended

- Original window and door openings should be retained.

Finding: Original window openings would be somewhat modified.

- Original decorative details should be preserved.

Finding: By replacing the windows, the original materials and details would be removed. This guideline would not be met.

- Repair wooden doors, windows, sashes, frames, and trim whenever possible. If repair is not possible, replacements should match the original details in design, configuration, and materials (i.e., wood, glass, and hardware).

Finding: While most of the windows proposed for removal appear to be original to the house, the applicant proposes to replace them because they are a safety hazard, ill-fitting, broken and/or painted shut, which suggests that they have not been regularly maintained but also that they have not deteriorated to the point where replacement is the only viable option.

Conclusion: Because the existing windows appear to be substantially intact, they do not meet the guideline for replacement; they are repairable. This guideline is not met.

- Avoid removing a historic window and blocking the opening or replacing it with a new window that conveys a completely different appearance.

Finding: The new windows would replicate the original design. Therefore, this guideline would be met.

- If storm windows are desired, consider those that can be installed on the interior of the windows. If exterior storms are necessary, select storm window materials compatible with the age of the house (wooden storm windows are appropriate for homes constructed prior to 1945, while aluminum storm windows became popular for homes constructed after 1945).

Finding: No storm windows are proposed. This guideline is not applicable.

- Window restorations should follow fire safety and building codes.

Finding: Window restoration is considered to be maintenance and would not require the windows to comply with current building code standards. Therefore, this guideline is not applicable.

- New windows added in basement and attic remodels must meet building codes related to adequate egress and ingress while attempting to retain historical accuracy; but building codes take precedence.

Finding: New windows in the basement or attic are not proposed. This guideline is not applicable.

- The relationship of width to height of windows and doors should be consistent with the dominant pattern set by the surrounding historic buildings, as should the rhythm of walls to openings.

Finding: No new construction is proposed with this application. This guideline is not applicable.

IV. ALTERNATIVES

The Historic Landmarks Board may:

1. Approve the request as submitted, if it can make written findings, supported by substantial evidence in the record, that the request meets the criteria of Development Code §17.5.220(D)(1) *General Review Standards* and (D)(4)(j) *Building Design – Doors and Windows* above.

Motion to Approve as Submitted -- I move to approve the application as submitted, as the project meets the standards of Development Code Section 17.5.220(D)(1) *General Review Standards* and (D)(4)(j) *Building Design – Doors and Windows*.

2. Approve the request with modifications or conditions, if it can make written findings, supported by substantial evidence in the record, that the request meets the criteria of DC §17.5.220(D)(1) *General Review Standards* and (D)(4)(j)(i), (v) and (ix) *Building Design – Doors and Windows*.

Motion to Approve with Conditions - I move to approve the application with these conditions (list conditions). With these conditions the project would meet the standards of Development Code Section 17.5.220(D)(1) *General Review Standards* and (D)(4)(j)(i), (v) and (ix) *Building Design – Doors and Windows*.

If the HLB concludes that the application complies with the approval criteria above, staff recommends that approval of the application include the following conditions:

1. The applicant shall be bound to the project description and all representations made by the applicant during the application and decision-making proceeding.
 2. The applicant shall comply with all applicable City building codes and standards.
 3. The existing windows shall be removed with care and recycled.
3. Deny the request, if it can make written findings, supported by substantial evidence in the record, that the request does not meet the criteria of DC §17.5.220(D)(1) *General Review Standards* and (D)(4)(j) *Building Design – Doors and Windows* above.

Motion to Deny - I move to deny the application based on the findings in the staff report because the project does not meet standards of Development Code Sections 17.5.220(D)(1)(b), (e), (f) and (i); and 17.5.220(D)(4)(j)(iv), (v) and (vi).

4. Continue the matter to a date certain for further considerations.

Motion to Continue the Hearing to a Date Certain - I move to continue the issue to the June 22, 2021 HLB meeting and request additional information and/or research including...

V. CONCLUSION AND RECOMMENDATION

Staff's perspective regarding the replacement of original materials with contemporary materials can be summarized with the following quotation:

"Appearance notwithstanding, (a) district isn't special just because it *looks* like it's made of historic stuff. It's special because it's *actually* made of historic stuff. Anybody can make a neighborhood out of Hardie-board houses, but only our forebears can provide us with an *authentic* historic neighborhood. Imitation can be better than nothing, but *real* is still the best. Going to the Italy pavilion at Disney World is nice, but actually visiting Italy is exponentially better. When we allow for authentic details to be replaced, the district's character gets nicked-and-dimed over time, and we slowly transform our real history into something less authentic and less meaningful." (Emphases in original)

Boyd Mayer
National Association of Preservation Commissions
May 2017

In this instance, the wood sash windows have suffered from deferred maintenance, but they appear to be substantially intact and repairable. Furthermore, as described above, even if they were replaced with exact duplicates, a portion of the structure's historic building fabric would be forever lost. For these reasons, staff recommends that the request to remove and replace the wood sash windows not be approved.

Staff would further note that repair and restoration of the wood sash windows are eligible for the City's Preservation Grant program, which could result in a grant of up to \$750 per project.

Because the remaining 2 windows have already been replaced with vinyl sashes, staff recommends that the applicant be allowed to replace them with fiberglass sashes.

If the Board concurs with the above recommendation, 2 motions would be in order: 1) a motion to deny removal and replacement of the 6 wood sash units, and 2) a motion to approve replacement of the 2 vinyl units with fiberglass units.

VI. LIST OF EXHIBITS

The following exhibits were received, marked, and entered into the record as evidence for this application at the time this staff report was written. Exhibits received after the date of this report will be marked beginning with the next consecutive number and will be entered into the record at the time the hearing is opened, prior to oral testimony.

- Exhibit 1** Application Materials, submitted by the applicant
- Exhibit 2** Background material from City files
- Exhibit 3** City of Forest Grove Development Code §17.5.220 *Procedure for Review of Proposed Work Affecting the Exterior of Landmarks* and §17.12.210(H1) *Historic Landmarks-Related Definitions*
- Exhibit 4** Preservation Brief 9 *The Repair of Historic Wooden Windows*
- Exhibit 5** HLB Policy re Wood Sash Window Replacement

EXHIBIT 1

Application Materials

James Reitz

From: Martha Robertson <martha.j.robertson15@gmail.com>
Sent: Monday, April 26, 2021 3:10 PM
To: James Reitz
Subject: HLB Materials: Windows, 1827 Douglas
Attachments: Window Estimate & Specs 1827 Douglas.pdf; window photos 1827.pdf; windows.pdf

Hello James,

Having reviewed Development Code Section, 17.5.220, General Review Standards, A-K, and having received your letter, dated April 12, I submit window estimate and specs, for 1827 Douglas, as provided by our carpenter (attached).

I am also attaching four photos of original windows, so that you and George may recall your visit to inspect. My initial letter, following that visit, is attached for reference.

Thank you for your consideration.

Regards,

Martha Robertson
406-830-5408

Martha Robertson
1827 Douglas Street
Forest Grove, OR 97116

March 1, 2021

James Retiz, Senior Planner
City of Forest Grove
PO Box 326
Forest Grove, OR 97116

To the Members of the Historic Landmarks Board,

Thank you, to James Reitz and George Cushing, for taking the time to come view the windows at our house. As I have received no formal response from the Historic Landmarks Board, I intend to proceed with plans to replace 8 of the 14 windows at 1827 Douglas St.

Only 6 of the 8 sash windows are original; the two upper-level windows were replaced, by previous owners, with ill-fitted, inexpensive vinyl sash windows. Our reasons for choosing replacement over restoration are as follows:

- The windows are not egress, posing a safety hazard to residents and our guests.
- The windows were low-cost, even for 19th century construction, having neither sash cord & pulley, nor weight systems. Restoration would not amend this problem.
- The windows, which no longer fit their frames, promote high energy consumption.
- Restoration will not be, as Mr. Cushing suggested, cheaper than replacement.
- One window is broken; the two front windows are painted shut.

Per Forest Grove historic building guidelines, the new windows will neither “deter nor diminish the historic qualities of the house.” The new windows will “utilize the design,” and will “not convey an appearance incompatible with the historic appearance” of the house.

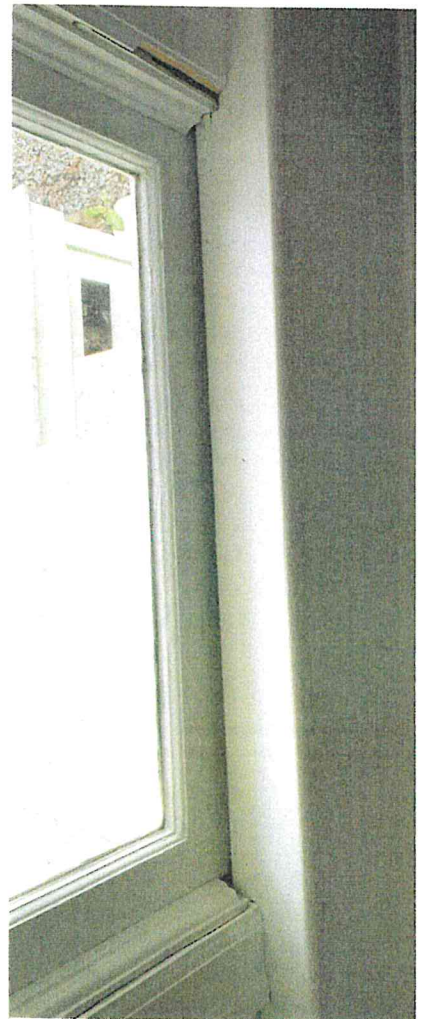
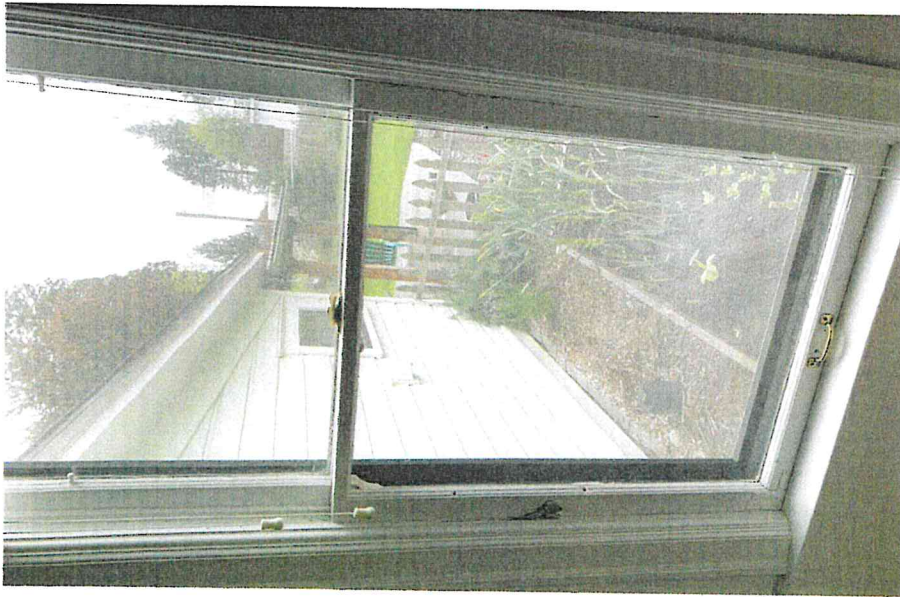
The windows being purchased are high-end Marvin all-wood, fiberglass-clad sash windows, virtually replicas of the existing windows. All new interior and exterior trim will match the existing trim. This is not a low-cost project. We proudly invest our time, energy and money to upkeep this historic property.

Councilwoman, Elena Uhing, informed me that the HLB will meet March 23, 2021. We are not applying for a Historic Preservation Grant, but shall await response from the HLB, directly following the meeting.

Respectfully submitted,



Martha Robertson



UNIT SUMMARY

The following is a schedule of the windows and doors for this project. For additional unit details, please see Line Item Quotes.

Additional charges, tax or Terms and Conditions may apply. Detail pricing is per unit.

NUMBER OF LINES: 2

TOTAL UNIT QTY: 8

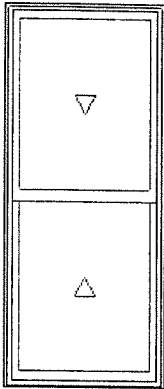
LINE	MARK UNIT	PRODUCT LINE	ITEM
1		Elevate	Double Hung RO 32" X 72 1/2" Entered as FS 31" X 72"
2		Elevate	Double Hung RO 32" X 66 1/2" Entered as FS 31" X 66"

LINE ITEM QUOTES

The following is a schedule of the windows and doors for this project. For additional unit details, please see Line Item Quotes. Additional charges, tax or Terms and Conditions may apply. Detail pricing is per unit.

Line #1	Mark Unit:	Net Price:	
Qty: 6		Ext. Net Price:	USD

MARVIN



As Viewed From The Exterior

Entered As: FS
MO 31 1/2" X 72 1/4"
FS 31" X 72"
RO 32" X 72 1/2"
Egress Information
Width: 27 7/8" Height: 31 3/32"
Net Clear Opening: 6.02 SqFt

Stone White Exterior
Bare Pine Interior
Elevate Double Hung
Frame Size 31" X 72"
Rough Opening 32" X 72 1/2"
Top Sash
Stone White Exterior
Bare Pine Interior
IG - 1 Lite
Low E2 w/Argon
Stainless Perimeter Bar
Bottom Sash
Stone White Exterior
Bare Pine Interior
IG - 1 Lite
Low E2 w/Argon
Stainless Perimeter Bar
Beige Weather Strip Package
Satin Nickel Sash Lock
Exterior Aluminum Screen
Stone White Surround
Charcoal Fiberglass Mesh
4 9/16" Jambs
Nailing Fin
***Note: Unit Availability and Price is Subject to Change

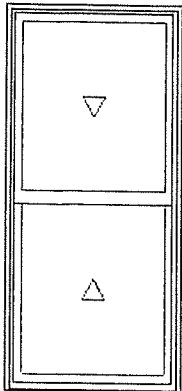
Line #2	Mark Unit:	Net Price:	
Qty: 2		Ext. Net Price:	USD

MARVIN

Stone White Exterior
Bare Pine Interior
Elevate Double Hung
Frame Size 31" X 66"
Rough Opening 32" X 66 1/2"
Top Sash
Stone White Exterior
Bare Pine Interior
IG - 1 Lite
Low E2 w/Argon
Stainless Perimeter Bar
Bottom Sash
Stone White Exterior
Bare Pine Interior
IG - 1 Lite
Low E2 w/Argon
Stainless Perimeter Bar
Beige Weather Strip Package
Satin Nickel Sash Lock
Exterior Aluminum Screen

Accepted:

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Stone White Surround
Charcoal Fiberglass Mesh
4 9/16" Jamb
Nailing Fin
***Note: Unit Availability and Price is Subject to Change

Initials required

Seller:

Buyer:

As Viewed From The Exterior

Entered As: FS
MO 31 1/2" X 66 1/4"
FS 31" X 66"
RO 32" X 66 1/2"
Egress Information
Width: 27 7/8" Height: 28 3/32"
Net Clear Opening: 5.44 SqFt

Project Subtotal Net Price: USD
0.000% Sales Tax: USD
Project Total Net Price: USD

Accepted:

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Page 3 of 6

EXHIBIT 2

Background Materials

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Section number 7 Page 126

Douglas Street (no address; located west of 1814 & 1818 Douglas Street)

Owner: Clifford and Theresa Clark
Owner Address: 1814 Douglas Street, Forest Grove, OR 97116
Legal Description: Tax Lot #1S36BA10601
Classification: Vacant

1827 Douglas Street

Historic Name: Unknown
Date of Construction: c.1870
Owner: Toni Wagner
Owner Address: 1827 Douglas Street, Forest Grove, OR 97116
Legal Description: Tax Lot #1S306AB11600
Classification: Historic Contributing

Description: This is a wood-framed vernacular house consisting of two volumes, the main volume is a one-and-a-half story front-facing gable; the side wing on the north side is one-story. It is clad with droplap siding and sits on a concrete foundation. The intersecting gable roof is covered with composition shingles. The windows are one-over-one double hung wood sash. A hipped roof porch is located on the front where the two volumes intersect; it spans the wing and is supported by turned posts; there is no railing. Two small interior brick chimneys pierce the roof. A back porch has been enclosed (an early alteration). A small one-car garage (also early) has been attached to the house at the northeast corner. Landscaping includes a few small trees and open lawn.

Significance: According to county tax assessment records, this house was constructed as early as 1870. The original owner of the house is not known at present. Lee Anderson owned this property for several years in the early twentieth century. In the 1950s and 1960s, Frank L. Strahl occupied this house. The house is in good condition. The alterations have been minimal and have not seriously impacted the house's historic integrity. It is, therefore, considered a contributing resource in the district.

1837 Douglas Street

Historic Name: Unknown
Date of Construction: c.1870
Owner: Kevin and Lucie Hourian
Owner Address: 1837 Douglas Street, Forest Grove, OR 97116
Legal Description: Tax Lot #1S306AB11500
Classification: Historic Contributing (2)

Description: This is a vernacular wood-framed house with a one-and-a-half story front-facing gable volume and a one-story perpendicular wing on the south. It has been clad with asbestos cement shingles (appears to have occurred within the historic period). It sits on a concrete foundation and has composition shingle roofing. The windows are one-over-one wood double hung sash, some with aluminum storms. The house is distinguished by a narrow porch that spans the length of the wing; it is supported by turned posts and there is no railing. A three-part window is located on the front facade; it appears to have been installed in the early 1910s. A one-car garage, also dating to the historic period, is located beside the house. Landscaping includes several trees.

Significance: According to county tax assessment records, this house was constructed as early as 1870. The original owner is not known at present. In 1909, Anna L. Billinger owned this house. Two years later, J.E. and M.E. Patton were the owners of record. Owners in the 1950s and 1960s included W.L. Wright (1952); Richard J. Miller (1960); Theodore Fagin (1964); and Hugh Whetstone and Kathleen Hagen (1968). The house and garage are in good condition.

EXHIBIT 3

Development Code Provisions

§ 17.5.220 PROCEDURE FOR REVIEW OF PROPOSED WORK AFFECTING THE EXTERIOR OF LANDMARKS

For the purposes of this section, “historic landmark” or “landmark” is construed to include “historic contributing building” as defined in §17.12.210 H1. These standards apply to:

- Structures listed on the *Forest Grove Register of Historic and Cultural Landmarks*, whether or not they are located within a district;
- Historic contributing structures within a district;
- Non-contributing structures within a district; and
- New development within a district.

Prior to the commencement of work on the exterior of a landmark (including repairs, maintenance, alterations, improvements, reconstruction and/or expansion affecting the exterior appearance of the landmark), an application describing the proposed work shall be submitted to the Community Development Department for review. The application shall include plans and specifications describing proposed materials and methods in sufficient detail to illustrate the finished results.

For landmarks within a district, the design intent is to maintain or better the overall integrity of the district. For new development or non-contributing buildings there is a similar intent, particularly if the development would displace an existing landmark.

The standards in this section apply to the exterior rehabilitation of buildings within a historic district. Situations include existing historic contributing buildings, additions, or new development within a district, and to individually-listed historic landmarks located outside of a district. Certain provisions apply to all properties.

Two-Track Procedure: Pursuant to §17.2.350, designs or portions of a project not meeting, or those requesting an exception to the Standards [Track 1] shall be reviewed under the Guidelines [Track 2] as described in Design Guidelines Handbook Section V *Historic District Design Guidelines*.

- A. Exempt Activities. Replacement of deteriorated materials in kind, repainting, installation of gutters and leaders and installation of removable storm windows and demolition of non-contributing buildings shall be considered allowable without assessment of visual impact.
- B. Director Review. When the proposed work activities are not exempt under A. above, the Director shall review the application and plans. If review results in a determination that the work would not result in visual change, the Director shall provide the applicant with written approval for the work to proceed.

Where the proposed work is of such a nature that a building permit is required, the Building Official shall withhold issuance of a building permit for the proposed work pending review and approval by the Director. The Director may require additional plans and application materials beyond those required for issuance of a building permit. If review results in a determination that the work would comply with the standards of §17.5.220(D) below, the Director shall provide the applicant with written approval for the work to proceed.

C. HLB Review.

1. Where review of the application results in a determination that the work would not comply with the standards of §17.5.220(D) below, the application shall be forwarded to the HLB for review and action subject to Type III procedures. Other design elements requiring HLB review include:
 - a. Relocations or repositionings of a landmark or a historic contributing building pursuant to §17.5.225;
 - b. Demolition of a landmark or historic contributing building pursuant to §17.5.225;
 - c. Removal of chimneys from a landmark or historic contributing building; and
 - d. New exterior stairs (except those connected to ground-floor entries).
2. Where the proposed work is of such a nature that a building permit is required, the Building Official shall withhold issuance of a building permit for the proposed work pending review and approval by the HLB. The Board may require additional plans and application materials beyond those required for issuance of a building permit.
3. After reviewing plans and materials, the HLB shall approve, approve with conditions, or reject the proposal subject to Type III notice procedures and timelines.

D. Review Standards

In acting on an application submitted pursuant to this section for work affecting the exterior of a landmark or construction of a new building within a district, the Director shall approve the proposal if findings are made demonstrating that the following standards are met:

1. General Review Standards
 - a. Every reasonable effort shall be made to provide a compatible use for the property that requires minimal alteration of the structure, or to use the property for its originally intended purpose.
 - b. The distinguishing original qualities or character of the structure shall not be destroyed. The removal or alteration of historic material or distinctive architectural features shall be avoided when possible.
 - c. All structures shall be recognized as products of their own time. Alterations that have no historical basis and which seek to create an earlier appearance shall be discouraged.
 - d. Changes that may have taken place in the history and development of the structure shall be recognized and respected.

- e. Distinctive stylistic features or examples of skilled craftsmanship that characterize the structure shall be treated with sensibility.
- f. Deteriorated architectural features shall be repaired if practicable; if not, they should be replaced in kind. Where replacement of features is proposed, the new material should match the material being replaced in composition, design, color, texture, and other visual qualities. Repair or replacement of missing architectural features should be based on accurate duplications of features, substantiated by historic, physical, or pictorial evidence rather than on conjectural designs or the availability of different architectural elements from other buildings or structures.
- g. Surface cleaning, if any, of structures shall be undertaken with the least damaging means. Sandblasting and other cleaning methods that will damage the historic building materials shall not be undertaken.
- h. Every reasonable effort shall be made to protect and preserve archeological landmarks affected by, or adjacent to the landmark.
- i. A design for alterations and additions to the structure shall not be discouraged when such alterations and additions do not destroy significant historical, architectural, or cultural material, and such design is compatible with the size, scale, color, material and character of the property, neighborhood, and environment.
- j. Wherever possible, new additions or alterations to structures shall be done in such a manner that, if such additions or alterations were removed in the future, the essential form and integrity of the structure would not be impaired.
- k. Attempts to improve or enhance the exterior appearance of a landmark by installing decorative features, such as shutters, shall be avoided unless it can be established that the feature existed on the landmark at its inception.

2. Building and Addition Placement and Orientation

3. Spacing and Setbacks

4. Building Design

j. Doors and Windows

- i. Original openings on visible sides of historic buildings shall be retained.
- ii. New main and upper level window or door openings on front or visible sides of historic buildings are not allowed.
- iii. New basement windows or doors are allowed on side walls.
- iv. New window types and materials not allowed at front-facing or visible sides: sliding glass units, glass block, vinyl, fiberglass, between glass grids, commercial-type windows.

- v. New or replacement windows and doors on historic buildings shall match the style, configuration, dimensions, and materials of existing or originals. Not Allowed: Window shapes other than rectangular.
- vi. Retain and repair existing historic window and door parts and trim. Wholesale replacement of windows or sash in good condition on historic buildings is not allowed.
- vii. Storm windows are acceptable on interior or exterior. If on the exterior they shall match the window shape, style, basic configuration, and shall be a comparable color. Exterior storm doors are allowed.
- viii. Windows and doors on new buildings shall be appropriate to the style of the building and as found on historic buildings the block face. This includes their design, materials, pattern, grouping, and configuration.

Not allowed: window shapes other than rectangular, vertically asymmetric, individual window division or configuration.

- ix. Glazing on visible building sides and front shall be clear. Reflective or tinted glass or films are not allowed; decorative or stained glass replacement is excepted. Obscure glass is allowed at bathrooms.
- x. Doors and Sidelights: New decorative or stained glass is allowed.
- xi. New door types not allowed: Flush metal doors, metal and glass storefront or commercial-type doors.

k. Foundations

§ 17.12.210 DEFINITIONS

H1. Historic Landmarks-Related Definitions.

- Historic Contributing Building: Any building, structure, object or site within the boundaries of a historic district which reflects the significance of the district as a whole due to historic associations, historic architectural qualities, or archeological features.
- Historic Landmark: Any structure, archeological site, prehistoric site, or historic site on the Forest Grove Register of Historic and Cultural Landmarks (Historic Register) as designated by the City Council.
- Integrity: The historic, character-defining physical features that convey a building, object, site or structure's significance as part of a district.
- Visible Sides or Portions: Portions of the building that are visible from the adjacent street(s) or public way.

See other building terms in the Appendix of the Design Guidelines Handbook *Section V Historic District Design Guidelines*.

EXHIBIT 4

Preservation Brief #9



U.S. Department of the Interior
National Park Service
Cultural Resources
Heritage Preservation Services

Preservation Briefs: 9

The Repair of Historic Wooden Windows

John H. Myers

The windows on many historic buildings are an important aspect of the architectural character of those buildings. Their design, craftsmanship, or other qualities may make them worthy of preservation. This is self-evident for ornamental windows, but it can be equally true for warehouses or factories where the windows may be the most dominant visual element of an otherwise plain building (see figure 1). Evaluating the significance of these windows and planning for their repair or replacement can be a complex process involving both objective and subjective considerations. The *Secretary of the Interior's Standards for Rehabilitation*, and the accompanying guidelines, call for respecting the significance of original materials and features, repairing and retaining them wherever possible, and when necessary, replacing them in kind. This Brief is based on the issues of significance and repair which are implicit in the standards, but the primary emphasis is on the technical issues of planning for the repair of windows including evaluation of their physical condition, techniques of repair, and design considerations when replacement is necessary.

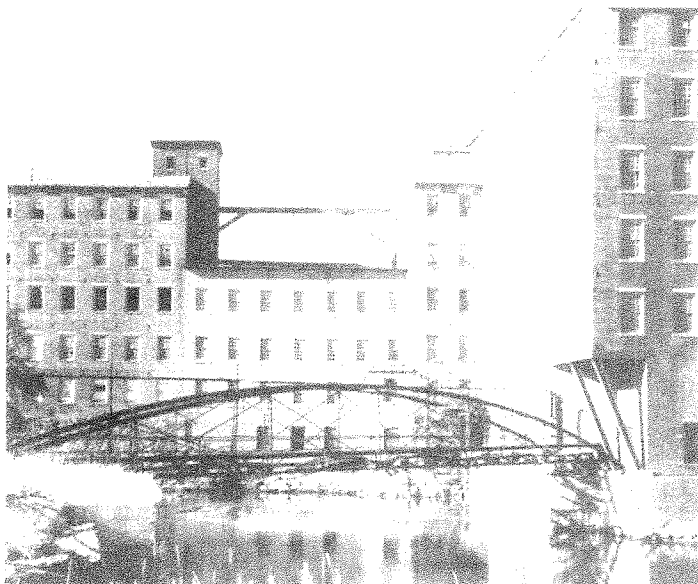


Figure 1. Windows are frequently important visual focal points, especially on simple facades such as this mill building. Replacement of the multi-pane windows here with larger panes could dramatically change the appearance of the building. The areas of missing windows convey the impression of such a change. Photo: John T. Lowe

Much of the technical section presents repair techniques as an instructional guide for the do-it-yourselfer. The information will be useful, however, for the architect, contractor, or developer on large-scale projects. It presents a methodology for approaching the evaluation and repair of existing windows, and considerations for replacement, from which the professional can develop alternatives and specify appropriate materials and procedures.

Architectural or Historical Significance

Evaluating the architectural or historical significance of windows is the first step in planning for window treatments, and a general understanding of the function and history of windows is vital to making a proper evaluation. As a part of this evaluation, one must consider four basic window functions: admitting light to the interior spaces, providing fresh air and ventilation to the interior, providing a visual link to the outside world, and enhancing the appearance of a building. No single factor can be disregarded when planning window treatments; for example, attempting to conserve energy by closing up or reducing the size of window openings may result in the use of *more* energy by increasing electric lighting loads and decreasing passive solar heat gains.

Historically, the first windows in early American houses were casement windows; that is, they were hinged at the side and opened outward. In the beginning of the eighteenth century single- and double-hung windows were introduced. Subsequently many styles of these vertical sliding sash windows have come to be associated with specific building periods or architectural styles, and this is an important consideration in determining the significance of windows, especially on a local or regional basis. Site-specific, regionally oriented architectural comparisons should be made to determine the significance of windows in question. Although such comparisons may focus on specific window types and their details, the ultimate determination of significance should be made within the context of the whole building, wherein the windows are one architectural element (see figure 2).

After all of the factors have been evaluated, *windows should be considered significant to a building if they:* 1) are original, 2) reflect the original design intent for the building, 3) reflect period or regional styles or building practices, 4) reflect changes to the building resulting from major periods or events, or 5) are examples of exceptional craftsmanship or design. Once this evaluation of significance has been completed, it is possible to pro-

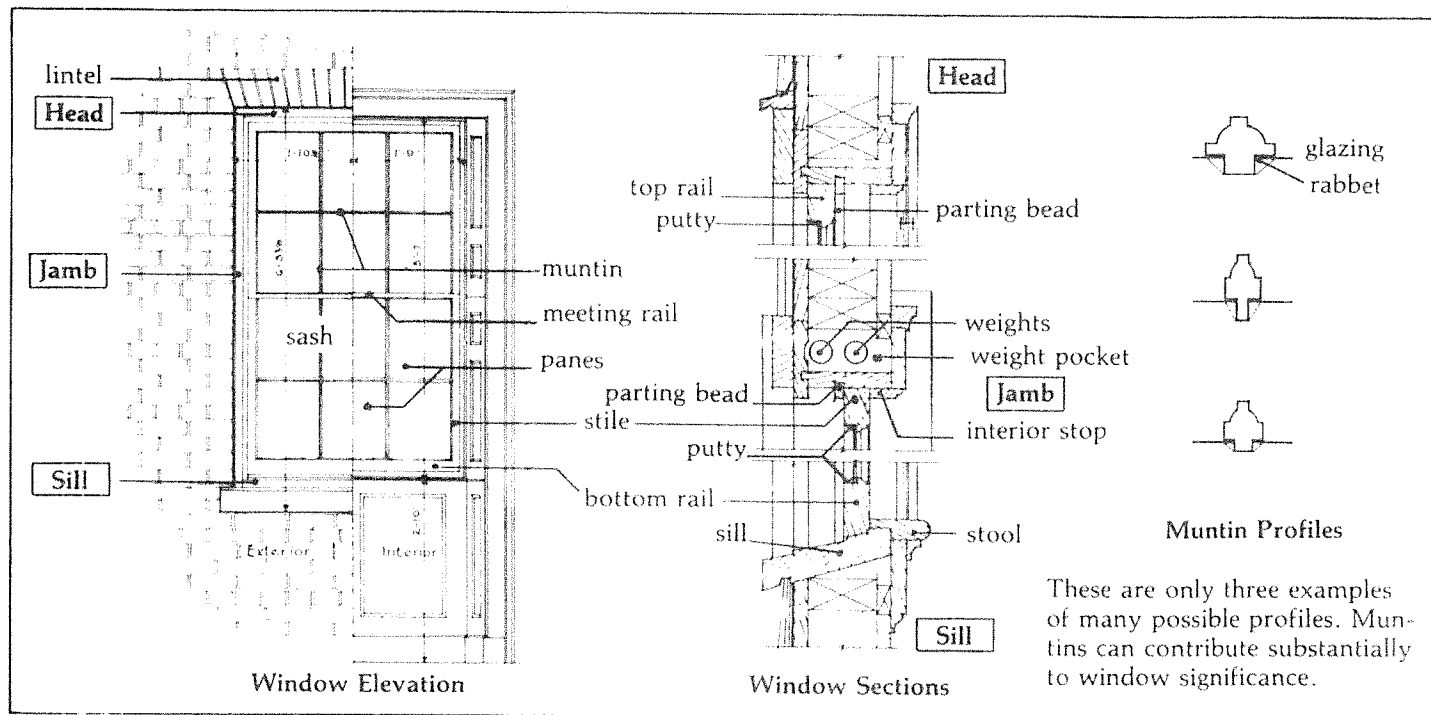


Figure 2. These drawings of window details identify major components, terminology, and installation details for a wooden double-hung window.

ceed with planning appropriate treatments, beginning with an investigation of the physical condition of the windows.

Physical Evaluation

The key to successful planning for window treatments is a careful evaluation of existing physical conditions on a unit-by-unit basis. A graphic or photographic system may be devised to record existing conditions and illustrate the scope of any necessary repairs. Another effective tool is a window schedule which lists all of the parts of each window unit. Spaces by each part allow notes on existing conditions and repair instructions. When such a schedule is completed, it indicates the precise tasks to be performed in the repair of each unit and becomes a part of the specifications. In any evaluation, one should note at a minimum, 1) window location, 2) condition of the paint, 3) condition of the frame and sill, 4) condition of the sash (rails, stiles and muntins), 5) glazing problems, 6) hardware, and 7) the overall condition of the window (excellent, fair, poor, and so forth).

Many factors such as poor design, moisture, vandalism, insect attack, and lack of maintenance can contribute to window deterioration, but moisture is the primary contributing factor in wooden window decay. All window units should be inspected to see if water is entering around the edges of the frame and, if so, the joints or seams should be caulked to eliminate this danger. The glazing putty should be checked for cracked, loose, or missing sections which allow water to saturate the wood, especially at the joints. The back putty on the interior side of the pane should also be inspected, because it creates a seal which prevents condensation from running down into the joinery. The sill should be examined to insure that it slopes downward away from the building and allows water to drain off. In addition, it may be advisable to cut a dripline along the underside of the sill. This almost invisible treatment will insure proper water run-off, particu-

larly if the bottom of the sill is flat. Any conditions, including poor original design, which permit water to come in contact with the wood or to puddle on the sill must be corrected as they contribute to deterioration of the window.

One clue to the location of areas of excessive moisture is the condition of the paint; therefore, each window should be examined for areas of paint failure. Since excessive moisture is detrimental to the paint bond, areas of paint blistering, cracking, flaking, and peeling usually identify points of water penetration, moisture saturation, and potential deterioration. Failure of the paint should not, however, be mistakenly interpreted as a sign that the wood is in poor condition and hence, irreparable. Wood is frequently in sound physical condition beneath unsightly paint. After noting areas of paint failure, the next step is to inspect the condition of the wood, particularly at the points identified during the paint examination.

Each window should be examined for operational soundness beginning with the lower portions of the frame and sash. Exterior rainwater and interior condensation can flow downward along the window, entering and collecting at points where the flow is blocked. The sill, joints between the sill and jamb, corners of the bottom rails and muntin joints are typical points where water collects and deterioration begins (see figure 3). The operation of the window (continuous opening and closing over the years and seasonal temperature changes) weakens the joints, causing movement and slight separation. This process makes the joints more vulnerable to water which is readily absorbed into the end-grain of the wood. If severe deterioration exists in these areas, it will usually be apparent on visual inspection, but other less severely deteriorated areas of the wood may be tested by two traditional methods using a small ice pick.

An ice pick or an awl may be used to test wood for soundness. The technique is simply to jab the pick into a wetted wood surface at an angle and pry up a small sec-

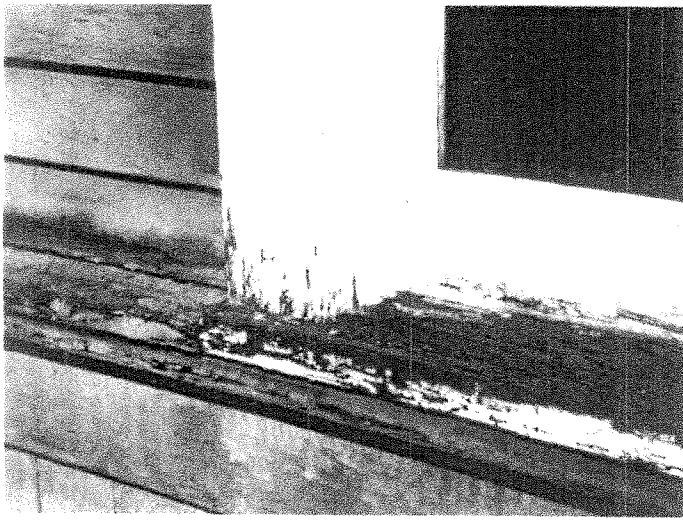


Figure 3. Deterioration of poorly maintained windows usually begins on horizontal surfaces and at joints where water can collect and saturate the wood. The problem areas are clearly indicated by paint failure due to moisture. Photo: Baird M. Smith, AIA

tion of the wood. Sound wood will separate in long fibrous splinters, but decayed wood will lift up in short irregular pieces due to the breakdown of fiber strength.

Another method of testing for soundness consists of pushing a sharp object into the wood, perpendicular to the surface. If deterioration has begun from the hidden side of a member and the core is badly decayed, the visible surface may appear to be sound wood. Pressure on the probe can force it through an apparently sound skin to penetrate deeply into decayed wood. This technique is especially useful for checking sills where visual access to the underside is restricted.

Following the inspection and analysis of the results, the scope of the necessary repairs will be evident and a plan for the rehabilitation can be formulated. Generally the actions necessary to return a window to "like new" condition will fall into three broad categories: 1) routine maintenance procedures, 2) structural stabilization, and 3) parts replacement. These categories will be discussed in the following sections and will be referred to respectively as Repair Class I, Repair Class II, and Repair Class III. Each successive repair class represents an increasing level of difficulty, expense, and work time. Note that most of the points mentioned in Repair Class I are routine maintenance items and should be provided in a regular maintenance program for any building. The neglect of these routine items can contribute to many common window problems.

Before undertaking any of the repairs mentioned in the following sections all sources of moisture penetration should be identified and eliminated, and all existing decay fungi destroyed in order to arrest the deterioration process. Many commercially available fungicides and wood preservatives are toxic, so it is extremely important to follow the manufacturer's recommendations for application, and store all chemical materials away from children and animals. After fungicidal and preservative treatment the windows may be stabilized, retained, and restored with every expectation for a long service life.

Repair Class I: Routine Maintenance

Repairs to wooden windows are usually labor intensive and relatively uncomplicated. On small scale projects this

allows the do-it-yourselfer to save money by repairing all or part of the windows. On larger projects it presents the opportunity for time and money which might otherwise be spent on the removal and replacement of existing windows, to be spent on repairs, subsequently saving all or part of the material cost of new window units. Regardless of the actual costs, or who performs the work, the evaluation process described earlier will provide the knowledge from which to specify an appropriate work program, establish the work element priorities, and identify the level of skill needed by the labor force.

The routine maintenance required to upgrade a window to "like new" condition normally includes the following steps: 1) some degree of interior and exterior paint removal, 2) removal and repair of sash (including reglazing where necessary), 3) repairs to the frame, 4) weatherstripping and reinstallation of the sash, and 5) repainting. These operations are illustrated for a typical double-hung wooden window (see figures 4a-f), but they may be adapted to other window types and styles as applicable.

Historic windows have usually acquired many layers of paint over time. Removal of excess layers or peeling and flaking paint will facilitate operation of the window and restore the clarity of the original detailing. Some degree of paint removal is also necessary as a first step in the proper surface preparation for subsequent refinishing (if paint color analysis is desired, it should be conducted prior to the onset of the paint removal). There are several safe and effective techniques for removing paint from wood, depending on the amount of paint to be removed. Several techniques such as scraping, chemical stripping, and the use of a hot air gun are discussed in "Preservation Briefs: 10 Paint Removal from Historic Woodwork" (see Additional Reading section at end).

Paint removal should begin on the interior frames, being careful to remove the paint from the interior stop and the parting bead, particularly along the seam where these stops meet the jamb. This can be accomplished by running a utility knife along the length of the seam, breaking the paint bond. It will then be much easier to remove the stop, the parting bead and the sash. The interior stop may be initially loosened from the sash side to avoid visible scarring of the wood and then gradually pried loose using a pair of putty knives, working up and down the stop in small increments (see figure 4b). With the stop removed, the lower or interior sash may be withdrawn. The sash cords should be detached from the sides of the sash and their ends may be pinned with a nail or tied in a knot to prevent them from falling into the weight pocket.

Removal of the upper sash on double-hung units is similar but the parting bead which holds it in place is set into a groove in the center of the stile and is thinner and more delicate than the interior stop. After removing any paint along the seam, the parting bead should be carefully pried out and worked free in the same manner as the interior stop. The upper sash can be removed in the same manner as the lower one and both sash taken to a convenient work area (in order to remove the sash the interior stop and parting bead need only be removed from one side of the window). Window openings can be covered with polyethylene sheets or plywood sheathing while the sash are out for repair.

The sash can be stripped of paint using appropriate techniques, but if any heat treatment is used (see figure 4c), the glass should be removed or protected from the sudden temperature change which can cause breakage. An



Figure 4a. The following series of photographs of the repair of a historic double-hung window use a unit which is structurally sound but has many layers of paint, some cracked and missing putty, slight separation at the joints, broken sash cords, and one cracked pane. Photo: John H. Myers



Figure 4b. After removing paint from the seam between the interior stop and the jamb, the stop can be pried out and gradually worked loose using a pair of putty knives as shown. To avoid visible scarring of the wood, the sash can be raised and the stop pried loose initially from the outer side. Photo: John H. Myers



Figure 4c. Sash can be removed and repaired in a convenient work area. Paint is being removed from this sash with a hot air gun while an asbestos sheet protects the glass from sudden temperature change. Photo: John H. Myers

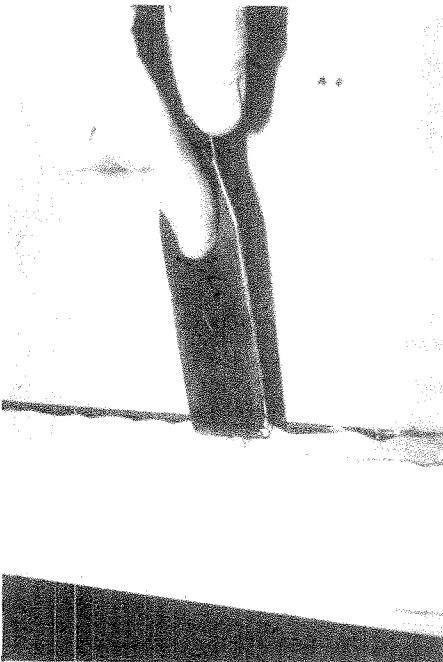


Figure 4d. Reglazing or replacement of the putty requires that the existing putty be removed manually, the glazing points be extracted, the glass removed, and the back putty scraped out. To reglaze, a bed of putty is laid around the perimeter of the rabbet, the pane is pressed into place, glazing points are inserted to hold the pane (shown), and a final seal of putty is beveled around the edge of the glass. Photo: John H. Myers



Figure 4e. A common repair is the replacement of broken sash cords with new cords (shown) or with chains. The weight pocket is often accessible through a removable plate in the jamb, or by removing the interior trim. Photo: John H. Myers



Figure 4f. Following the relatively simple repairs, the window is weathertight, like new in appearance, and serviceable for many years to come. Both the historic material and the detailing and craftsmanship of this original window have been preserved. Photo: John H. Myers

overlay of aluminum foil on gypsum board or asbestos can protect the glass from such rapid temperature change. It is important to protect the glass because it may be historic and often adds character to the window. Deteriorated putty should be removed manually, taking care not to damage the wood along the rabbet. If the glass is to be removed, the glazing points which hold the glass in place can be extracted and the panes numbered and removed for cleaning and reuse in the same openings. With the glass panes out, the remaining putty can be removed and the sash can be sanded, patched, and primed with a preservative primer. Hardened putty in the rabbets may be softened by heating with a soldering iron at the point of removal. Putty remaining on the glass may be softened by soaking the panes in linseed oil, and then removed with less risk of breaking the glass. Before reinstalling the glass, a bead of glazing compound or linseed oil putty should be laid around the rabbet to cushion and seal the glass. Glazing compound should only be used on wood which has been brushed with linseed oil and primed with an oil based primer or paint. The pane is then pressed into place and the glazing points are pushed into the wood around the perimeter of the pane (see figure 4d). The final glazing compound or putty is applied and beveled to complete the seal. The sash can be refinished as desired on the inside and painted on the outside as soon as a "skin" has formed on the putty, usually in 2 or 3 days. Exterior paint should cover the beveled glazing compound or putty and lap over onto the glass slightly to complete a weathertight seal. After the proper curing times have elapsed for paint and putty, the sash will be ready for reinstallation.

While the sash are out of the frame, the condition of the wood in the jamb and sill can be evaluated. Repair and refinishing of the frame may proceed concurrently with repairs to the sash, taking advantage of the curing times for the paints and putty used on the sash. One of the most common work items is the replacement of the sash cords with new rope cords or with chains (see figure 4e). The weight pocket is frequently accessible through a door on the face of the frame near the sill, but if no door exists, the trim on the interior face may be removed for access. Sash weights may be increased for easier window operation by elderly or handicapped persons. Additional repairs to the frame and sash may include consolidation or replacement of deteriorated wood. Techniques for these repairs are discussed in the following sections.

The operations just discussed summarize the efforts necessary to restore a window with minor deterioration to "like new" condition (see figure 4f). The techniques can be applied by an unskilled person with minimal training and experience. To demonstrate the practicality of this approach, and photograph it, a Technical Preservation Services staff member repaired a wooden double-hung, two over two window which had been in service over ninety years. The wood was structurally sound but the window had one broken pane, many layers of paint, broken sash cords and inadequate, worn-out weatherstripping. The staff member found that the frame could be stripped of paint and the sash removed quite easily. Paint, putty and glass removal required about one hour for each sash, and the reglazing of both sash was accomplished in about one hour. Weatherstripping of the sash and frame, replacement of the sash cords and reinstallation of the sash, parting bead, and stop required an hour and a half. These times refer only to individual operations; the entire proc-

ess took several days due to the drying and curing times for putty, primer, and paint, however, work on other window units could have been in progress during these lag times.

Repair Class II: Stabilization

The preceding description of a window repair job focused on a unit which was operationally sound. Many windows will show some additional degree of physical deterioration, especially in the vulnerable areas mentioned earlier, but even badly damaged windows can be repaired using simple processes. Partially decayed wood can be water-proofed, patched, built-up, or consolidated and then painted to achieve a sound condition, good appearance, and greatly extended life. Three techniques for repairing partially decayed or weathered wood are discussed in this section, and all three can be accomplished using products available at most hardware stores.

One established technique for repairing wood which is split, checked or shows signs of rot, is to: 1) dry the wood, 2) treat decayed areas with a fungicide, 3) water-proof with two or three applications of boiled linseed oil (applications every 24 hours), 4) fill cracks and holes with putty, and 5) after a "skin" forms on the putty, paint the surface. Care should be taken with the use of fungicide which is toxic. Follow the manufacturers' directions and use only on areas which will be painted. When using any technique of building up or patching a flat surface, the finished surface should be sloped slightly to carry water away from the window and not allow it to puddle. Caulking of the joints between the sill and the jamb will help reduce further water penetration.

When sills or other members exhibit surface weathering they may also be built-up using wood putties or home-made mixtures such as sawdust and resorcinol glue, or whiting and varnish. These mixtures can be built up in successive layers, then sanded, primed, and painted. The same caution about proper slope for flat surfaces applies to this technique.

Wood may also be strengthened and stabilized by consolidation, using semi-rigid epoxies which saturate the porous decayed wood and then harden. The surface of the consolidated wood can then be filled with a semi-rigid epoxy patching compound, sanded and painted (see figure 5). Epoxy patching compounds can be used to build up

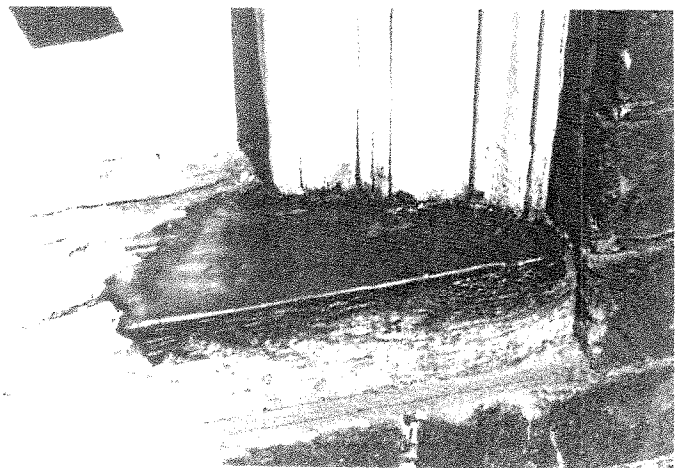


Figure 5. This illustrates a two-part epoxy patching compound used to fill the surface of a weathered sill and rebuild the missing edge. When the epoxy cures, it can be sanded smooth and painted to achieve a durable and waterproof repair. Photo: John H. Myers

missing sections or decayed ends of members. Profiles can be duplicated using hand molds, which are created by pressing a ball of patching compound over a sound section of the profile which has been rubbed with butcher's wax. This can be a very efficient technique where there are many typical repairs to be done. Technical Preservation Services has published *Epoxies for Wood Repairs in Historic Buildings* (see Additional Reading section at end), which discusses the theory and techniques of epoxy repairs. The process has been widely used and proven in marine applications; and proprietary products are available at hardware and marine supply stores. Although epoxy materials may be comparatively expensive, they hold the promise of being among the most durable and long lasting materials available for wood repair.

Any of the three techniques discussed can stabilize and restore the appearance of the window unit. There are times, however, when the degree of deterioration is so advanced that stabilization is impractical, and the only way to retain some of the original fabric is to replace damaged parts.

Repair Class III: Splices and Parts Replacement

When parts of the frame or sash are so badly deteriorated that they cannot be stabilized there are methods which permit the retention of some of the existing or original fabric. These methods involve replacing the deteriorated parts with new matching pieces, or splicing new wood into existing members. The techniques require more skill and are more expensive than any of the previously discussed alternatives. It is necessary to remove the sash and/or the affected parts of the frame and have a carpenter or woodworking mill reproduce the damaged or missing parts. Most millwork firms can duplicate parts, such as muntins, bottom rails, or sills, which can then be incorporated into the existing window, but it may be necessary to shop around because there are several factors controlling the practicality of this approach. Some woodworking mills do not like to repair old sash because nails or other foreign objects in the sash can damage expensive knives (which cost far more than their profits on small repair jobs); others do not have cutting knives to duplicate muntin profiles. Some firms prefer to concentrate on larger jobs with more profit potential, and some may not have a craftsman who can duplicate the parts. A little searching should locate a firm which will do the job, and at a reasonable price. If such a firm does not exist locally, there are firms which undertake this kind of repair and ship nationwide. It is possible, however, for the advanced do-it-yourselfer or craftsman with a table saw to duplicate moulding profiles using techniques discussed by Gordie Whittington in "Simplified Methods for Reproducing Wood Mouldings," *Bulletin of the Association for Preservation Technology*, Vol. III, No. 4, 1971, or illustrated more recently in *The Old House*, Time-Life Books, Alexandria, Virginia, 1979.

The repairs discussed in this section involve window frames which may be in very deteriorated condition, possibly requiring removal; therefore, caution is in order. The actual construction of wooden window frames and sash is not complicated. Pegged mortise and tenon units can be disassembled easily, if the units are out of the building. The installation or connection of some frames to the surrounding structure, especially masonry walls, can complicate the work immeasurably, and may even require

dismantling of the wall. It may be useful, therefore, to take the following approach to frame repair: 1) conduct regular maintenance of sound frames to achieve the longest life possible, 2) make necessary repairs in place wherever possible, using stabilization and splicing techniques, and 3) if removal is necessary, thoroughly investigate the structural detailing and seek appropriate professional consultation.

Another alternative may be considered if parts replacement is required, and that is sash replacement. If extensive replacement of parts is necessary and the job becomes prohibitively expensive it may be more practical to purchase new sash which can be installed into the existing frames. Such sash are available as exact custom reproductions, reasonable facsimiles (custom windows with similar profiles), and contemporary wooden sash which are similar in appearance. There are companies which still manufacture high quality wooden sash which would duplicate most historic sash. A few calls to local building suppliers may provide a source of appropriate replacement sash, but if not, check with local historical associations, the state historic preservation office, or preservation related magazines and supply catalogs for information.

If a rehabilitation project has a large number of windows such as a commercial building or an industrial complex, there may be less of a problem arriving at a solution. Once the evaluation of the windows is completed and the scope of the work is known, there may be a potential economy of scale. Woodworking mills may be interested in the work from a large project; new sash in volume may be considerably less expensive per unit; crews can be assembled and trained on site to perform all of the window repairs; and a few extensive repairs can be absorbed (without undue burden) into the total budget for a large number of sound windows. While it may be expensive for the average historic home owner to pay seventy dollars or more for a mill to grind a custom knife to duplicate four or five bad muntins, that cost becomes negligible on large commercial projects which may have several hundred windows.

Most windows should not require the extensive repairs discussed in this section. The ones which do are usually in buildings which have been abandoned for long periods or have totally lacked maintenance for years. It is necessary to thoroughly investigate the alternatives for windows which do require extensive repairs to arrive at a solution which retains historic significance and is also economically feasible. Even for projects requiring repairs identified in this section, if the percentage of parts replacement per window is low, or the number of windows requiring repair is small, repair can still be a cost effective solution.

Weatherization

A window which is repaired should be made as energy efficient as possible by the use of appropriate weatherstripping to reduce air infiltration. A wide variety of products are available to assist in this task. Felt may be fastened to the top, bottom, and meeting rails, but may have the disadvantage of absorbing and holding moisture, particularly at the bottom rail. Rolled vinyl strips may also be tacked into place in appropriate locations to reduce infiltration. Metal strips or new plastic spring strips may be used on the rails and, if space permits, in

the channels between the sash and jamb. Weatherstripping is a historic treatment, but old weatherstripping (felt) is not likely to perform very satisfactorily. Appropriate contemporary weatherstripping should be considered an integral part of the repair process for windows. The use of sash locks installed on the meeting rail will insure that the sash are kept tightly closed so that the weatherstripping will function more effectively to reduce infiltration. Although such locks will not always be historically accurate, they will usually be viewed as an acceptable contemporary modification in the interest of improved thermal performance.

Many styles of storm windows are available to improve the thermal performance of existing windows. The use of exterior storm windows should be investigated whenever feasible because they are thermally efficient, cost-effective, reversible, and allow the retention of original windows (see "Preservation Briefs: 3"). Storm window frames may be made of wood, aluminum, vinyl, or plastic; however, the use of unfinished aluminum storms should be avoided. The visual impact of storms may be minimized by selecting colors which match existing trim color. Arched top storms are available for windows with special shapes. Although interior storm windows appear to offer an attractive option for achieving double glazing with minimal visual impact, the potential for damaging condensation problems must be addressed. Moisture which becomes trapped between the layers of glazing can condense on the colder, outer prime window, potentially leading to deterioration. The correct approach to using interior storms is to create a seal on the interior storm while allowing some ventilation around the prime window. In actual practice, the creation of such a durable, airtight seal is difficult.

Window Replacement

Although the retention of original or existing windows is always desirable and this Brief is intended to encourage that goal, there is a point when the condition of a window may clearly indicate replacement. The decision process for selecting replacement windows should *not* begin with a survey of contemporary window products which are available as replacements, but should begin with a look at the windows which are being replaced. Attempt to understand the contribution of the window(s) to the appearance of the facade including: 1) the pattern of the openings and their size; 2) proportions of the frame and sash; 3) configuration of window panes; 4) muntin profiles; 5) type of wood; 6) paint color; 7) characteristics of the glass; and 8) associated details such as arched tops, hoods, or other decorative elements. Develop an understanding of how the window reflects the period, style, or regional characteristics of the building, or represents technological development.

Armed with an awareness of the significance of the existing window, begin to search for a replacement which retains as much of the character of the historic window as possible. There are many sources of suitable new windows. Continue looking until an acceptable replacement can be found. Check building supply firms, local wood-working mills, carpenters, preservation oriented magazines, or catalogs or suppliers of old building materials, for product information. Local historical associations and state historic preservation offices may be good sources of

information on products which have been used successfully in preservation projects.

Consider energy efficiency as one of the factors for replacements, but do not let it dominate the issue. Energy conservation is no excuse for the wholesale destruction of historic windows which can be made thermally efficient by historically and aesthetically acceptable means. In fact, a historic wooden window with a high quality storm window added should thermally outperform a new double-glazed metal window which does not have thermal breaks (insulation between the inner and outer frames intended to break the path of heat flow). This occurs because the wood has far better insulating value than the metal, and in addition many historic windows have high ratios of wood to glass, thus reducing the area of highest heat transfer. One measure of heat transfer is the U-value, the number of Btu's per hour transferred through a square foot of material. When comparing thermal performance, the lower the U-value the better the performance. According to *ASHRAE 1977 Fundamentals*, the U-values for single glazed wooden windows range from 0.88 to 0.99. The addition of a storm window should reduce these figures to a range of 0.44 to 0.49. A non-thermal break, double-glazed metal window has a U-value of about 0.6.

Conclusion

Technical Preservation Services recommends the retention and repair of original windows whenever possible. We believe that the repair and weatherization of existing wooden windows is more practical than most people realize, and that many windows are unfortunately replaced because of a lack of awareness of techniques for evaluation, repair, and weatherization. Wooden windows which are repaired and properly maintained will have greatly extended service lives while contributing to the historic character of the building. Thus, an important element of a building's significance will have been preserved for the future.

Additional Reading

- ASHRAE Handbook-1977 Fundamentals*. New York: American Society of Heating, Refrigerating and Air-conditioning Engineers, 1978 (chapter 26).
- Ferro, Maximillian. *Preservation: Present Pathway to Fall River's Future*. Fall River, Massachusetts: City of Fall River, 1979 (chapter 7).
- "Fixing Double-Hung Windows." *Old House Journal* (no. 12, 1979): 135.
- Look, David W. "Preservation Briefs: 10 Paint Removal from Historic Woodwork." Washington, DC: Technical Preservation Services, U.S. Department of the Interior, forthcoming.
- Morrison, Hugh. *Early American Architecture*. New York: Oxford University Press, 1952.
- Phillips, Morgan, and Selwyn, Judith. *Epoxies for Wood Repairs in Historic Buildings*. Washington, DC: Technical Preservation Services, U.S. Department of the Interior (Government Printing Office, Stock No. 024-016-00095-1), 1978.
- Rehab Right*. Oakland, California: City of Oakland Planning Department, 1978 (pp. 78-83).
- "Sealing Leaky Windows." *Old House Journal* (no. 1, 1973): 5.
- Smith, Baird M. "Preservation Briefs: 3 Conserving Energy in Historic Buildings." Washington, DC: Technical Preservation Services, U.S. Department of the Interior, 1978.

EXHIBIT 5

HLB Wood Sash Window Replacement Policy



CITY OF FOREST GROVE
HISTORIC LANDMARKS BOARD
POLICY RE: WOOD SASH WINDOW REPLACEMENTS
ADOPTED 01/26/16

ISSUE: Use of alternative material window replacements for wood sash windows.

BACKGROUND: Wood windows sometimes deteriorate to the point where they can no longer be restored or repaired. Several replacement options then need to be considered. These replacement options include installing sashes of the same style and dimensions as the original (including muntin profiles) constructed of the following materials:

1. A wood window sash recycled from another building of the same era.
2. A new all-wood window sash.
3. A new fiberglass window sash.
4. A new aluminum-clad wood sash (i.e. wood interior with an aluminum exterior).
5. A new all-aluminum sash window.
6. A new vinyl sash window.

POLICY: When an original wood window has deteriorated to the point to where it must be replaced, the HLB will allow replacements, in the following order of preference:

1. A wood window sash recycled from another building. This is the preferred option because it would most closely replicate the original, deteriorated window; and the sash can be painted.
2. An all-wood new window sash. This is the second choice because, while the sash could be fabricated to duplicate the original design and could be painted, contemporary construction materials (e.g. second-growth finger-joined Douglas fir) are not of the same quality as old growth materials.
3. A fiberglass window sash would be the third choice. Fiberglass has the advantage of being a stable material (meaning it does not flex with heat or cold); the grain and appearance of fiberglass sashes can closely match wood sashes; and fiberglass sashes can be painted to match the building's trim.

New aluminum-clad wood sash or new all-aluminum sash windows are not acceptable because their exteriors cannot be painted to match the building's trim. Their color is fixed at the factory and cannot be changed.

New vinyl sash windows are not acceptable because the material is unstable (i.e., it flexes with heat and cold); they cannot be painted (vinyl windows are designed with weep holes to allow water drainage from the sill, and filling these holes with paint can make the system fail, causing leaks and voiding the warranty); 30% of vinyl replacement windows will fail within 10 years of installation, and would need to be replaced again (Rypkema, 2006); and vinyl window sashes are toxic to produce and create toxic by-products (Sedovic, 2005).

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