



## LANDMARKS BOARD

CITY OF SPRINGFIELD  
P.O. BOX 8368  
SPRINGFIELD, MISSOURI 65801  
417-864-1031

City of Springfield

### INTEROFFICE MEMORANDUM

DATE: July 11, 2012

RE: Landmarks Board Meeting

Please find attached the agenda for the Landmarks Board meeting on **July 25, 2012**. No tour is being offered.

Daniel Neal  
Senior Planner



# LANDMARKS BOARD

CITY OF SPRINGFIELD  
P.O. BOX 8368  
SPRINGFIELD, MISSOURI 65801  
417-864-1031

July 25, 2012  
5:30 P.M.  
Council Chambers  
City Hall (830 Boonville)

- |                                                                                  |      |                                                                                                                  |
|----------------------------------------------------------------------------------|------|------------------------------------------------------------------------------------------------------------------|
|                                                                                  | I    | Roll Call                                                                                                        |
| DAVID ESLICK<br><i>Historian Representative</i><br>Chair                         | II   | Minutes<br>June 13, 2012                                                                                         |
| CYNTHIA LIPSCOMB<br><i>Architect and Walnut St. Representative</i><br>Vice-Chair | III  | Unfinished Business                                                                                              |
|                                                                                  | A.   | Certificate of Appropriateness<br>None                                                                           |
|                                                                                  | B.   | Certified Local Government Review<br>None                                                                        |
|                                                                                  | C.   | Local Historic Site De-listing<br>None                                                                           |
| LEN EAGLEBURGER<br><i>At Large Representative</i>                                |      |                                                                                                                  |
| DAVID MAGGARD<br><i>At Large Representative</i>                                  |      |                                                                                                                  |
| LAUREL BRYANT<br><i>Real Estate Representative</i>                               | IV   | New Business                                                                                                     |
|                                                                                  | A.   | Certificates of Appropriateness                                                                                  |
|                                                                                  |      | 1. 633 W. Walnut Street: Install new vinyl siding, replace guttering, soffits and fascia, and repair front deck. |
|                                                                                  | B.   | Certified Local Government Review<br>None                                                                        |
|                                                                                  | C.   | Pre-Application Review<br>None                                                                                   |
| ANN BAYLIFF<br><i>At Large Representative</i>                                    |      |                                                                                                                  |
| TODD SMITH<br><i>At Large Representative</i>                                     |      |                                                                                                                  |
| MONICA STEGALL<br><i>Commercial St. Representative</i>                           |      |                                                                                                                  |
|                                                                                  | V    | Communications                                                                                                   |
|                                                                                  | VI   | Reports                                                                                                          |
|                                                                                  | A.   | Report on committees                                                                                             |
|                                                                                  |      | 1. Application                                                                                                   |
|                                                                                  |      | 2. Demolition                                                                                                    |
|                                                                                  |      | 3. Historic sites and districts                                                                                  |
|                                                                                  |      | 4. Communications                                                                                                |
|                                                                                  |      | 5. Awards and recognition                                                                                        |
|                                                                                  |      | 6. Design guidelines                                                                                             |
|                                                                                  | D.   | Administrative approval of C of A's<br>None                                                                      |
|                                                                                  | VII  | Any other matters that fall under the jurisdiction of the Board                                                  |
|                                                                                  |      | 1. Discuss the Landmarks Board/MSU Historic Preservation Workshop.                                               |
|                                                                                  | VIII | Adjournment                                                                                                      |

**NOTE:** In accordance with ADA guidelines, if you need special accommodations when attending any City meeting, please notify the City Clerk's office at 864-1443 at least 3 days prior to the scheduled meeting.

## **MINUTES OF THE LANDMARKS BOARD**

**DATE:** June 13, 2012

**TIME:** 5:30 pm

The regular meeting and public hearing of the Landmarks Board was held on the above date and time in City Council Chambers, third floor of Historic City Hall with the following members and City of Springfield staff in attendance: David Eslick (Chair), Cynthia Lipscomb, (Vice-Chair); Ann Bayliff, Laurel Bryant. Len Eagleburger, David Maggard and Todd Smith; Daniel Neal, Senior Planner; Duke McDonald, Assistant City Attorney; and Sandy Goddard, Planning Administrative Assistant. ABSENT: None.

### **APPROVAL OF MINUTES:**

The minutes of May 30, 2012 were approved with corrections.

### **UNFINISHED BUSINESS:**

#### **B. Certified Local Government Review**

1. 308 W Commercial – Install a new storefront system.

Mr. Neal commented that the applicant has withdrawn their application.

Mr. McDonald stated that since it is not being called back from the table it will die on the table since the request was withdrawn.

#### **C. Local Historic Site De-listing:**

Oakhaven (Currently Lost & Found Grief Center)  
1006 N. Cedarbrook Avenue

Mr. McDonald stated the Board will have to take another vote tonight on whether you want to de-list the property and are free to discuss it in whatever way will help decide the issue. If there are not five (5) votes one way on either side of the question, it will automatically table for the third time and the de-listing will die, it will not happen. The applicant can then decided if they want appeal it to City Council or let it go.

Ms. Lipscomb motioned to remove Oakhaven from the table for discussion. Mr. Smith seconded the motion.

Ms. Lipscomb said she needed to make a statement regarding this case. She was approached today at the gym by a member of the Board from Lost and Found Grief Center. Although she did tell this person she couldn't discuss the case due to the Sunshine Law, this person went ahead and spoke freely. He told her that the intention is to tear the building down in a couple of years and they would like to get it de-listed so they don't get backlash from the public for tearing down an historic building.

Ms. Lipscomb stated she is not going to recuse herself from the vote because that has no influence on my opinion, but she needed to make it public since it was said to her off the record. She continued that that is his opinion and does not know if that is the opinion of the entire Board from Lost and Found.

Mr. Eslick commented that David Maggard and Ann Bayliff were not at the meeting and the meeting minutes were very good and asking if they needed a refresher on the discussion.

Mr. Maggard stated he was at the meeting originally where it was discussed.

Mr. Eslick asked Ms. Bayliff if she needed an explanation of the meeting minutes.

Ms. Bayliff stated she read them carefully and knows how she wishes to proceed.

Mr. Eslick asked if there was any other discussion before taking a vote on de-listing Oakhaven from the Springfield Historic Register.

Ms. Lipscomb **motioned to approve** Oakhaven Site De-Listing. Mr. Smith **seconded** the motion. Motion **carried** as follows: Ayes: None. Nays: Eslick, Lipscomb, Bayliff, Bryant, Eagleburger, Maggard and Smith. Abstain: None. Absent: None.

**New Business:** None.

**VII. Any other matters that fall under the jurisdiction of the Board.**

**1. Discussion of the Landmarks Board/MSU Historic Preservation Workshop.**

Mr. Eslick stated he has not had the opportunity to visit with Dr. Stephanoff and the Mr. Neal had been contacted by MSU asking to reserve the building for the whole day. Mr. Eslick commented that he will call them and let them know that someone from the City has to be there if they want the facility for the day.

Mr. Eslick commented that they would need to outline the steps to amendments to the guidelines, adding he got Alice Crane's contact information and the other CLG's and see if they would like to be involved with the workshop. He would like to see if they can contact Eric Albers to see if he would come and share his presentation as an example, of how he filled out the Certificate of Appropriateness. He commented that they need to get something to the Builders and Real Estate and the neighborhoods and general public.

Design Guidelines

Certificate's of Appropriateness (how to fill out the certificate)

Video of Green Buildings and Historic Buildings

Building Regulations (City Presenter)

Mr. Neal stated that the City has a list of contacts for the Neighborhood Associations or the ones listed through the City.

The date to hold the workshop was discussed as September 13, 2012 and guideline pamphlets to distribute as well as sample forms of Certificates of Appropriateness.

Ms. Lipscomb commented that it might be good to have someone from City Council at the workshop since the discussion of changing the guidelines and all that has to go through Council.

Mr. Neal said that a lot of the Associations and groups could be contacted via e-mail and put together an attachment. Local Historic Sites may be interested in the workshop and should be contacted.

Ms. Bryant asked how members of the Board should handle being approached by potential Walnut Street owners or historic site owners that have pertinent questions, adding she refers them Mr. Neal each time they ask; but should we then discuss what we have heard.

Mr. McDonald said that he would encourage the Board not to say a lot to them and let them know you serve on the Board and the topic of the discussion may potentially be brought before the Landmarks Board which requires a decision and refer them to Mr. Neal.

Mr. Neal commented that there is the potential that they can give you too much information or try to persuade you too much and at that point you would have to recuse yourself.

There being no further business, the meeting adjourned at 5:55 p.m.

  
\_\_\_\_\_  
Daniel Neal



## LANDMARKS BOARD

CITY OF SPRINGFIELD  
P.O. BOX 8368  
SPRINGFIELD, MISSOURI 65801  
417-864-1031

### STAFF REPORT

#### HISTORIC SITE

DATE: July 18, 2012

#### PROPOSAL:

1. Install new vinyl siding on the building.
2. Replace the guttering, downspouts, soffits and fascias to match the new vinyl siding.
3. Replace the exterior wood trim on many of the deteriorating wood windows.
4. Repair and replace elements of the front porch and deck including the pillars/columns.

#### BACKGROUND:

LOCATION: 633 W. Walnut Street

HISTORIC DESIGNATION: Historic site – Annie Abbott House

APPLICANT: Aaron Van Gorp and Jason Nill

#### RECOMMENDATION:

Staff recommends **denial** of this request unless more details regarding the proposed vinyl siding, fascia and soffits are submitted.

#### FINDINGS:

1. The Annie Abbott House is a local historic site that was nominated by City Council on June 24, 1983.

2. The National Parks Service (NPS) does not recommend the installation of vinyl or aluminum siding as an alternative above repair or replacement. The NPS Preservation Brief #8 states “There are visual and physical consequences of using a substitute material such as aluminum or vinyl siding for new siding installations on a wood frame historic building. These concerns include the potential of ***damaging or destroying*** historic material and features; the potential of ***obscuring*** historic material and features; and, most important, the potential of ***diminishing the historic character*** of the building.”
3. The replacement of the wood trim around many of the wood windows that are deteriorating with materials in-kind shall follow the Secretary of Interiors Standards for Rehabilitation.
4. Any front porch or deck features should be replaced in-kind to the original material. NPS Preservation Brief #45 states “when the historic porch contributes to the historic character of a building, the particular substitute material that is being considered should accurately match the appearance of the wooden feature being replaced.”

PROJECT COORDINATOR:

Daniel Neal  
Senior Planner  
864-1036

ATTACHMENT A  
BACKGROUND REPORT  
Historic Site  
633 W. Walnut

APPLICANT'S PROPOSAL:

The applicant is requesting to install vinyl siding over the existing wood siding, replace the guttering, downspouts, soffits and fascias to match the new vinyl siding, replace wood trim around many of the deteriorating wood windows and repair and replace elements of the front porch including pillars that are deteriorated.

APPEARANCE OF THE HISTORIC SITE WITH THE PROPOSED CHANGES:

The existing appearance of the historic structure will be significantly altered by the proposed rehabilitation.

STAFF COMMENTS:

1. The National Parks Service Preservation Brief #8 (attached) states that there are four steps in the planning process before making changes to the exterior siding:

**1. Identify and preserve those materials and features that are important in defining the building's historic character.** This may include features such as wood siding, brackets, cornices, window architraves, doorway pediments, and their finishes and colors.

**2. Undertake routine maintenance on historic materials and features.** Routine maintenance generally involves the least amount of work needed to preserve the materials and features of the building. For example, maintenance of a frame building would include caulking and painting; or, where paint is extensively cracking and peeling, its removal and the re-application of a protective paint coating.

**3. Repair historic materials and features.** For a historic material such as wood siding, repair would generally involve patching and piecing-in with new material according to recognized preservation methods.

**4. Replace severely damaged or deteriorated historic materials and features in kind.** Replacing sound or repairable historic material is never recommended; however, if the historic material cannot be repaired because of the extent of deterioration or damage, then it will be necessary to replace an entire character-defining feature such as the building's siding. The preferred treatment is always replacement in kind, that is, with the same material. Because this approach is not always feasible, provision is made under the recommended treatment options in the Guidelines that accompany the Secretary of the Interior's Standards to consider the use of a compatible substitute material. A substitute material should only be



considered, however, if the form, detailing, and overall appearance of the substitute material conveys the visual appearance of the historic material, and the application of the substitute material does not damage, destroy or obscure historic features.

In many cases, the replacement of wood siding on a historic building is proposed because little attention has been given to the retention of historic materials. Instead, the decision to use a substitute material is made because: (1) it is assumed that aluminum or vinyl siding will be a maintenance-free material; and (2) there is the desire to give a building a "remodeled" or "renovated" appearance. A decision to replace historic material must, however, be carefully considered for its impact on the historic resource--even when the model planning process has been followed and the appropriate treatment is replacement.

2. Besides more information on the vinyl siding, soffits and fascia, the proposed replacement of the guttering and downspouts seem to meet the standards and guidelines of the Secretary of Interior and National Park Service.
3. The columns/pillars and any other porch features should be replaced with materials in-kind to the original (see attached Preservation Brief #45).

ATTACHMENT B  
PERTINENT DESIGN GUIDELINES  
Historic Site  
633 W. Walnut

ZONING ORDINANCE

The Board has the authority to approve or disapprove the proposed application. A building permit will be issued to the applicant, even if the Board denies the application, sixty (60) days from the date of the application for the building permit.

SECRETARY OF THE INTERIOR'S STANDARDS:

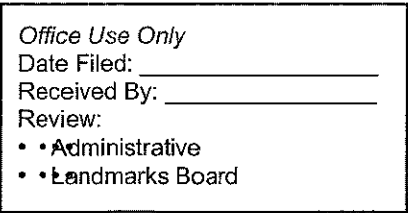
The following standards would apply to the proposed application:

2. The historic character of a property shall be retained and preserved. The removal of historic materials or alterations of features and spaces that characterize a property shall be avoided.
4. Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.
5. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a property shall be preserved.
9. New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.

ATTACHMENT C  
ARCHITECTURAL SIGNIFICANCE  
Historic Site  
633 W. Walnut

1. The house was constructed circa 1903.
2. The site was nominated to the local historic register by City Council on June 24, 1983.
3. The brief description of the local nomination for the Annie Abbott House states:

The house is a two-story clapboard sheathed house which consists of two segments: the larger covered by a hip roof with gabled dormers and the smaller gabled mass which projects toward the street. The pediment of the latter is faced with fish scale shingles and is further enhanced by a prominent dentil moulding with scroll braces at each end. The porch which fills the right angle has been provided with a slightly projecting pediment with extended cornice. The porch is supported by Tuscan columns.



**Exhibit A.**

## Request for Certificate of Appropriateness

*Please use this form only. Form may be photocopied. Please type or print.*

*For instructions, see pages 5-8.*

**1. PROPERTY ADDRESS:**

633 W. Walnut St. 65806

**2. APPLICANT:**

Name(s): Vandelay Properties, Aaron Van Gorp and Jason Moll

If corporation: Corporate official: \_\_\_\_\_

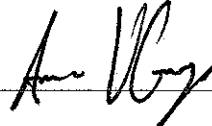
(corporate seal)

Mailing address: PO Box 9594 Zip Code: 65801-9594

Telephone number: 417-425-9699 Fax number: 877-799-7475

e-mail: aaron@prodigy pixel.com

**3. AUTHORIZED REPRESENTATIVE:** *(The representative should have the authority to commit the applicant to changes that may be suggested by the Board).*

Name: Aaron Van Gorp Signature: 

Address: same as above Telephone: \_\_\_\_\_ Fax: \_\_\_\_\_

e-mail: \_\_\_\_\_

**4. BUILDING DEVELOPMENT SERVICES DISCUSSION:** *(Before submitting this application, the applicant should discuss the project with BDS. Their phone number is 864-1055.)*

Date of discussion: Daniel Neal 10/27

**NOTE:** The property owner must either sign this application or give City staff a power of attorney showing that another person is authorized to sign.

**Exhibit B.**

## Description of Proposed Work & Supporting Information

*Please use this form only. Form may be photocopied. Please type or print.*

**1. TYPE OF WORK PROPOSED:** *(Check all that apply. All work items require a written description of the proposed work. Additional required supporting information is denoted after each item and **must** be attached. See Instructions, page 5. NOTE: Even though you check the "Other" or the "New Construction" box, you must still give information on individual features such as windows, doors, etc., included in a large project.)*

|                                  |                               |                              |
|----------------------------------|-------------------------------|------------------------------|
| Addition (1, 2, 3, 7)            | Handicapped Ramp (1, 2, 3)    | Sidewalk (1, 3)              |
| Awnings (2, 3, 4 or 5, 6)        | New Construction (1, 2, 3, 7) | ✓ Siding (3, 4 or 5)         |
| Building Relocation (1, 2, 3, 7) | Parking (1, 3)                | Sign (1, 2, 3, 6)            |
| Demolition (1, 2, 3, 7)          | Porch (1, 2, 3)               | Window (2, 3, 4 or 5, 6)     |
| Door (2, 3, 4 or 5, 6)           | Retaining Wall (1, 2, 3)      | Archeological Site (1, 3, 8) |
| Fence (1, 2, 3, 5)               | Roof-New (3, 4 or 5, 7)       |                              |
| Guttering (2, 3, 4 or 5, 6)      | Re-roof (3, 4)                |                              |

Other (Specify) Replace guttering, soffits and fascias, repair front deck

|                                  |                                                  |
|----------------------------------|--------------------------------------------------|
| 1-Site plans                     | 5-Product literature                             |
| 2-Elevations                     | 6-Drawing                                        |
| 3-Photographs                    | 7-Exhibit C-Why proposed work should be approved |
| 4-Sample of materials to be used | 8-State Historic Preservation Officer Comments   |

**2. DESCRIPTION OF PROPOSED WORK:** *(Attach additional pages if necessary.)*

**NOTE:** An application is considered incomplete until **all** supporting materials, as specified in Item 1 above, are attached. Incomplete applications will **not** be processed or scheduled for a public hearing.

## **Exhibit B.**

### **2. Description of Proposed Work**

We would like to perform the proposed work to make the exterior of our building more attractive and inviting. Currently the building looks in disrepair because of the rotting wood pillars and window trim, as well as paint chipping off of the exterior wood siding..

1. **Vinyl Siding** - We want to install vinyl siding on the building for easier maintenance instead of needing to repair the wood and paint it every few years. Because of this, the historic character of the property will be enhanced and preserved. The siding selected will be have similar lines to the current wood exterior.
2. **Guttering, Downspouts, Soffits, Fascias** - We would like to replace the guttering, downspouts, soffits and fascias to match the new siding. We would like to use materials that match the existing gutters and downspouts. For the soffits and fascia, we would like to replace the current wood ones with vinyl or aluminum.
3. **Exterior Window Trim** - The trim on many of the exterior windows are rotting and need to be replaced. We would like to replace it with new wood, painted to match the existing window trim.
4. **Front Porch** - The pillars on the porch are rotted out. We would like to replace the pillars with new composite pillars that won't rot. We want to match the style of the existing pillars as much as possible. We would like to replace the existing porch railing with a composite material that requires minimal maintenance and will also show less wear than the current wood railing.

**Exhibit C.**

**WHY PROPOSED WORK SHOULD BE APPROVED**

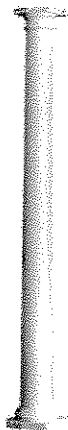
*Please use this form only. Form may be photocopied. Please type or print.*

When proposing a major project, please use this page to give information in support of your request. (See Exhibit B, item 1, above: "Type of Work Proposed," key # 7. Suggested items of discussion are included in the Instructions, page 7.)





More saving. More doing.™



### **HB&G 8 in. x 8 ft. Permacast Column**

Model # 5712-0808 Store SKU # 486700

☆☆☆☆ Write The First Review

**\$112.00 /EA-Each**

#### **Description**

The HB&G 8 in. x 8 ft. Permacast Column is primed and features a round shape. This exterior column is constructed from composite material and resists water.

Dimensions are 8 in. x 8 ft.  
Constructed from composite material  
Primed  
Round shape  
Water resistant  
Designed for exterior use  
MFG Brand Name : HB&G  
MFG Model # : 5712-0808  
MFG Part # : 5712-0808

#### **Specifications**

Interior/Exterior : Exterior  
Item Package Type : Plastic Container  
Load bearing limit (lb.) : 5000  
Manufacturer Warranty : 1 YEAR  
Product Weight (lb.) : 50  
Shape : Round  
Stair Part Type : Column  
Water Resistant : Yes

#### **More Info**

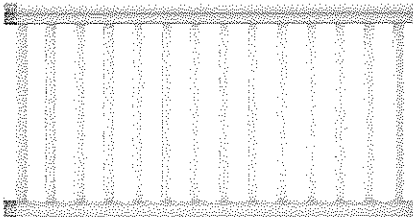
##### **Warranty**

For warranty information on this product, please call our Internet Customer Service Center at 1-800-435-4654.

##### **Shipping**



More saving. More doing.™



## YardSmart 6 ft. x 36 in. Prorail White Handrail Kit

Model # 73013127 Internet # 202581596 Store SKU # 205693  
Store SO SKU # 616581

☆☆☆☆☆ Write The First Review

**\$59.97 /EA-Each**

Free Shipping

This item cannot be shipped to the following state(s): AK, HI

Zoom View

### Description

The Barrette Prorail 67 in. White Vinyl Handrail Kit offers a preassembled handrail made of durable, water-resistant vinyl. The white finish and ornamental design allows you to easily add some elegance to your home projects.

67 in. x 36 in. x 3 in.  
Vinyl construction  
Ornamental design with a white finish  
Water-resistant handrail affords longevity and durability  
MFG Brand Name : YardSmart  
MFG Model # : 73013127  
MFG Part # : 73013127

### Specifications

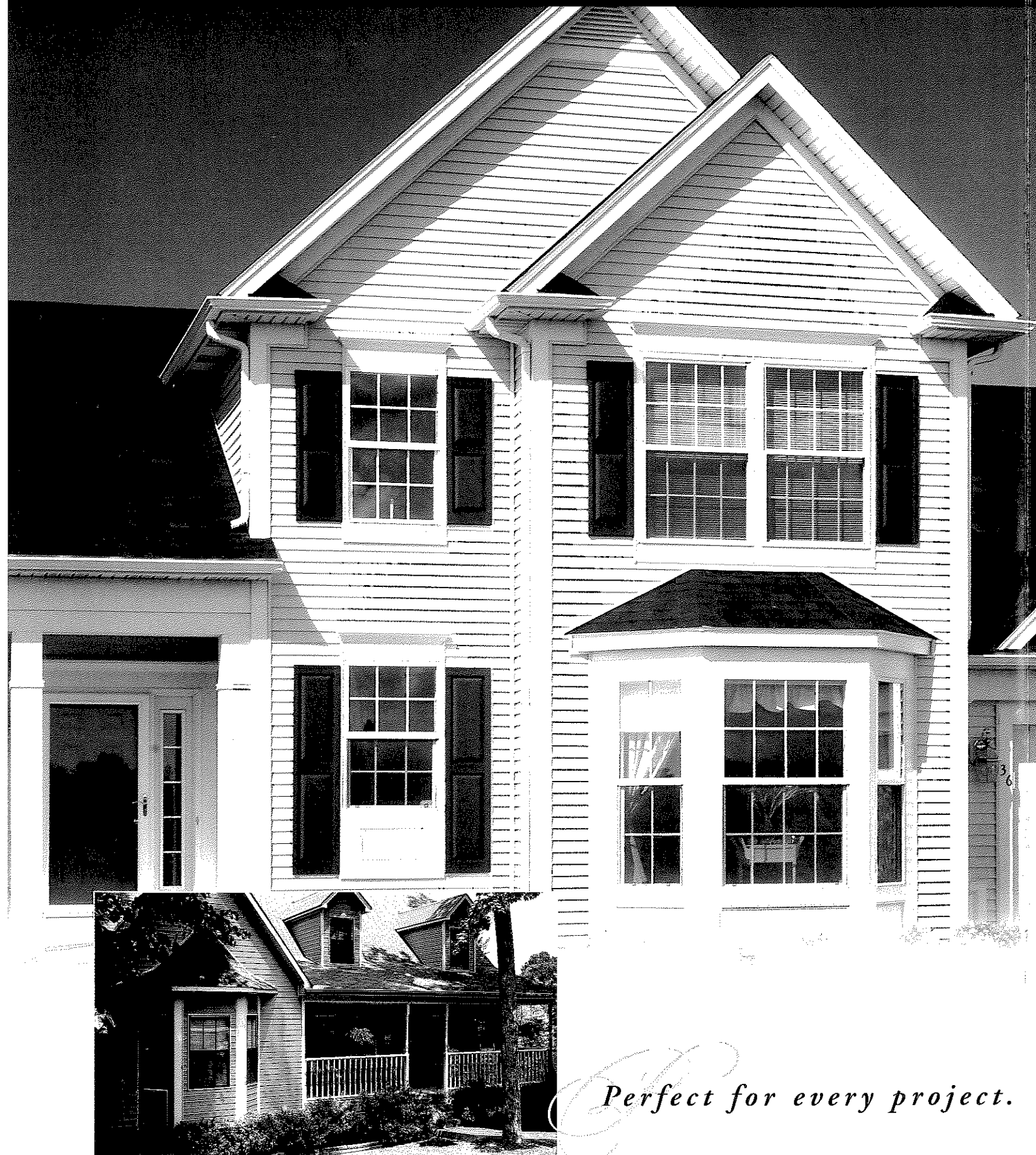
**Assembled Depth (in.)** : 3.00 in  
**Assembled Height (in.)** : 33.25 in  
**Assembled Width (in.)** : 67.00 in  
**Cap/top included** : No  
**Fillet included** : No  
**Handrail color** : White  
**Handrail color family** : White  
**Item Package Type** : No Package  
**Manufacturer Warranty** : Limited Lifetime Warranty  
**Number of framing/post rails for panels** : 2  
**Number of picket/baluster rails for panels** : 13  
**Picket spacing (in.)** : 3.875  
**Product Depth (in.)** : 3  
**Product Height (in.)** : 33.25  
**Product Weight (lb.)** : 18.48  
**Product Width (in.)** : 67 in  
**Product material** : Vinyl  
**Returnable** : 90-Day  
**Stainable/paintable handrail** : No  
**Stair Part Type** : Preassembled Railing  
**Structural/ornamental** : Ornamental  
**Water Resistant** : Yes  
**Water resistant handrail** : Yes





# Odyssey Plus® Premium Vinyl Siding

# Enhanced with Advanced SecureLock

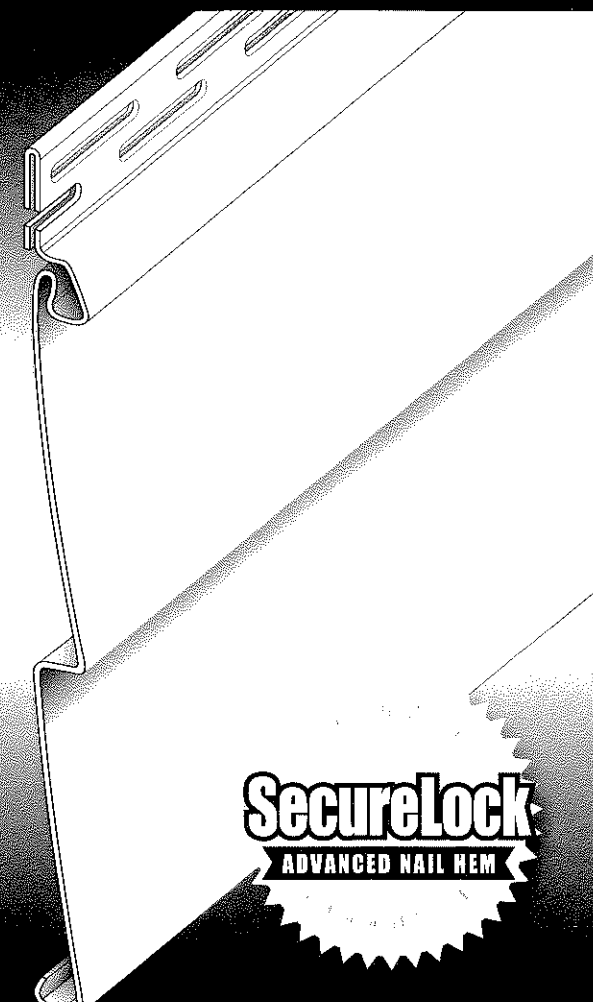
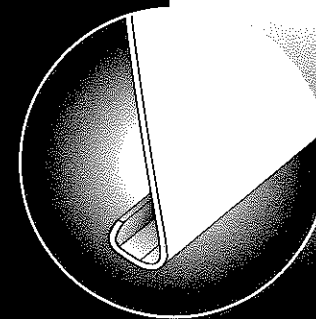
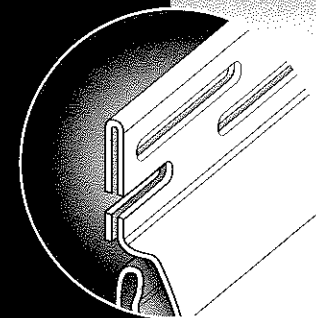
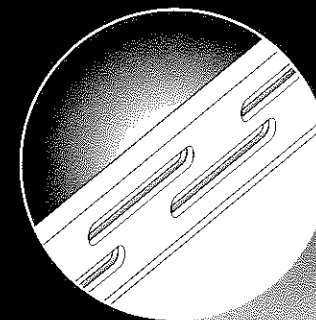


*Perfect for every project.*

*Double staggered  
nail slots hit a stud  
every time*

*Extra strong rolled  
over nail hem*

*Locking panels  
resist high winds*



*Advanced SecureLock staggered nail hem  
secures your vinyl siding effortlessly.*

SecureLock advanced lock design from Alside provides unparalleled performance. Double staggered nail slots and a fully rolled over nailing hem provide exceptional wall gripping strength. In fact, when independently tested in winds of Category 5 hurricane strength, Odyssey Plus stayed nailed in place. This strong locking system also means your siding will lay flat and look beautiful for a lifetime.



Whether you are replacing your existing siding or building a new home, choose a brand that provides both advanced performance *and* lasting beauty . . . choose Odyssey Plus.











































# 8 Preservation Briefs

Technical Preservation Services  
National Park Service  
U.S. Department of the Interior



## Aluminum and Vinyl Siding on Historic Buildings The Appropriateness of Substitute Materials for Resurfacing Historic Wood Frame Buildings

John H. Myers, revised by Gary L. Hume

- » [Historic Character of Buildings and Districts](#)
- » [The Products and Their Installation](#)

- » [Use of Aluminum or Vinyl Siding on Historic Buildings](#)
- » [Summary](#)
- » [Reading List](#)



**A NOTE TO OUR USERS:** The web versions of the **Preservation Briefs** differ somewhat from the printed versions. Many illustrations are new, captions are simplified, illustrations are typically in color rather than black and white, and some complex charts have been omitted.

**A historic building is a product of the cultural heritage of its region,** the technology of its period, the skill of its builders, and the materials used for its construction. To assist owners, developers and managers of historic property in planning and completing rehabilitation project work that will meet the Secretary's "Standards for Rehabilitation" (36 CFR 67), the following planning process has been developed by the National Park Service and is applicable to all historic buildings. This planning process is a sequential approach to the preservation of historic wood frame buildings.



Historic wood siding exhibits rich and varied surface textures. They range from hand-split clapboards of short lengths with feather-

*It begins with the premise that historic materials should be retained wherever possible. When retention, including retention with some repair, is not possible, then replacement of the irreparable historic material can be considered. The purpose of this approach is to determine the appropriate level of treatment for the preservation of historic wood frame buildings.*

**Standard 6** of the *Secretary of the Interior's Standards for Rehabilitation* states that "deteriorated architectural features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials..." The *Guidelines* further

edged ends (shown here), to pit or mill sawn boards which can be beveled, rabbeted, or beaded. Photo: NPS files.

caution against "removing or radically changing wood features which are important in defining the overall historic character of the building so that, as a result, the character is diminished."

The planning process has the following four steps:

**1. Identify and preserve those materials and features that are important in defining the building's historic character.** This may include features such as wood siding, brackets, cornices, window architraves, doorway pediments, and their finishes and colors.

**2. Undertake routine maintenance on historic materials and features.** Routine maintenance generally involves the least amount of work needed to preserve the materials and features of the building. For example, maintenance of a frame building would include caulking and painting; or, where paint is extensively cracking and peeling, its removal and the re-application of a protective paint coating.

**3. Repair historic materials and features.** For a historic material such as wood siding, repair would generally involve patching and piecing-in with new material according to recognized preservation methods.

**4. Replace severely damaged or deteriorated historic materials and features in kind.** Replacing sound or repairable historic material is never recommended; however, if the historic material cannot be repaired because of the extent of deterioration or damage, then it will be necessary to replace an entire character-defining feature such as the building's siding. The preferred treatment is always replacement in kind, that is, with the same material. Because this approach is not always feasible, provision is made under the recommended treatment options in the Guidelines that accompany the Secretary of the Interior's Standards to consider the use of a compatible substitute material. A substitute material should only be considered, however, if the form, detailing, and overall appearance of the substitute material conveys the visual appearance of the historic material, and the application of the substitute material does not damage, destroy or obscure historic features.

In many cases, the replacement of wood siding on a historic building is proposed because little attention has been given to the retention of historic materials. Instead, the decision to use a substitute material is made because: (1) it is assumed that aluminum or vinyl siding will be a maintenance-free material; and (2) there is the desire to give a building a "remodeled" or "renovated" appearance. A decision to replace historic material must, however, be carefully considered for its impact on the historic resource--even when the model planning process has been followed and the appropriate treatment is replacement.

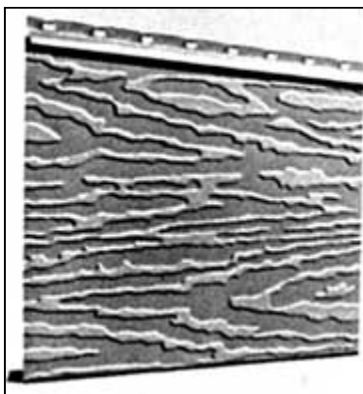
Therefore, this brief focuses on the visual and physical consequences of using a substitute material such as aluminum or vinyl siding for new siding installations on a wood frame historic building. These concerns include the potential of **damaging or destroying** historic material and features; the potential of **obscuring** historic material and features; and, most important, the potential of **diminishing the historic character** of the building.

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## The Historic Character of Buildings and Districts



The character or "identity" of a historic building is established by its form, size, scale and decorative features. It is also influenced by the choice of materials for the walls--by the dimension, detailing, color, and other surface characteristics. This is particularly true for wood frame buildings which are the typical objects of aluminum or vinyl siding applications. Since wood has always been present in abundance in America, it has been a dominant building material in most parts of the country. Early craftsmen used wood for almost every aspect of building construction: for structural members such as posts, beams and rafters, and for cladding materials and decorative details, such as trim, shakes, and siding.



**Aluminum and vinyl siding are available in a variety of widths and colors, but the optional wood graining is not characteristic of real wood siding. Photo: NPS files.**

The variety of tools used, coupled with regional differences in design and craftsmanship, has resulted in a richness and diversity of wood sidings in America. For example, narrow boards with beveled, lapped joints called "clapboards" were used on New England frame dwellings. The size and shape of the "clapboards" were determined by the process of hand splitting or "riving" bolts of wood. The width, the short lengths, the beveled lapping, the "feathered" horizontal joints, and the surface nailing of the clapboards created a distinctive surface pattern that is recognizable as an important part of the historic character of these structures.

The sawn and hand-planed clapboards used throughout the Mid-Atlantic and Southern states in the eighteenth and early nineteenth centuries, by contrast, have a wide exposure--generally between six and eight inches. The exposure of the siding, frequently coupled with a beaded edge, created a very different play of light and shadow on the wall surface, thus resulting in a different character. The "German" or "Novelty siding"--a milled siding that is thin above and thicker below with a concave bevel--was used throughout many parts of the United States in the late nineteenth and early twentieth century but with regional variations in material, profile, and dimensions. One variation of this type of milled siding was called "California siding" and was milled with a rabbetted or shiplap edge to insure a tight installation of the weather boards. Shingles were also commonly used as an exterior cladding material, and in buildings such as the Bungalow style houses, were often an important character-defining feature of the exterior. Shingles were often applied in decorative patterns by varying the lap, thus creating alternating rows of narrow exposures and wide exposures. Shingles were also cut in geometric patterns such as diamond shapes and applied in patterns. This treatment was commonly used in the gable end of shingled houses. Siding and wood shingles were often used in combination with materials such as cobblestone and brick in Bungalow style buildings to create a distinctive interplay of surfaces and materials.

The primary concern, therefore, in considering replacement siding on a historic building, is the potential loss of those features such as the beaded edge, "drop" profile, and the patterns of application. Replacing historic wood siding with new wood, or aluminum or vinyl siding could severely diminish the unique aspects of historic materials and craftsmanship. The inappropriate use of substitute siding is especially dramatic where sufficient care is not taken by the owner or applicator and the width



**When aluminum was installed on the house on the right, the barge boards, scrollwork, columns, and railings were removed. The**

of the clapboards is altered, shadow reveals are reduced, and molding or trim is changed or removed at the corners, at cornices or around windows and doors. Because substitute siding is usually added on top of existing siding, details around windows and doors may appear set back from the siding rather than slightly projecting; and if the relationship of molding or trim to the wall is changed, it can result in the covering or removal of these historic features. New substitute siding with embossed wood graining--intended to simulate the texture of wood--is also visually inappropriate. Exaggerated graining would have been undesirable on real wood siding and is generally found only after sandblasting, a destructive and totally unacceptable treatment for wood.

**distinctive shingled gable and attic vent were covered, further compromising the building's architectural integrity. Photo: NPS files.**

While this discussion focuses primarily on the historic character of individual wood frame buildings, of equal importance is the context of buildings that comprise a historic district or neighborhood. Changes to the character-defining features of a building, such as distinctive clapboarding and other wall surfaces and decorative trim, always have an impact on more than just that building; they also alter the historic visual relationship between the buildings in the district. If character-defining weatherboards, clapboards or shingles are replaced on a number of buildings in a historic district, the historic character of the entire district may be seriously damaged. Because of the potential impact some substitute materials have on the character of a neighborhood or district, many communities regulate their use through zoning ordinances and design review boards. These ordinances and review boards usually require review and approval of proposed alterations to a historic building that could potentially impact the historic character of the building or the district, including the application of substitute materials, such as aluminum or vinyl siding.

Preservation of a building or district and its historic character is based on the assumption that the retention of historic materials and features and their craftsmanship are of primary importance. Therefore, the underlying issue in any discussion of replacement materials is whether or not the integrity of historic materials and craftsmanship has been lost. Structures are historic because the materials and craftsmanship reflected in their construction are tangible and irreplaceable evidence of our cultural heritage. To the degree that substitute materials destroy and/or conceal the historic fabric, they will always subtract from the basic integrity of historically and architecturally significant buildings.

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## The Products and Their Installation

The use of aluminum and vinyl siding really involves two separate industries. The siding materials themselves, including a variety of inside and outside corner pieces, trim and molding pieces and panning for window and door frames, are produced by a comparatively small number of manufacturers. The product information, advertising, and any manufacturer's warranties on the product itself are handled by this part of the industry. The installation of aluminum or vinyl siding is generally carried out by independent contractors or applicators, who are frequently called "home improvement" contractors, and they are not affiliated with the manufacturers. The manufacturer's warranties normally do not cover the installation, or any damage or defect resulting from the installation process.

Since the manufacturer has little control over the quality of the installation, both the quality of the work and the sensitivity of the application are variable. This variation in



quality has traditionally been a problem in the industry and one which the industry and its professional associations have attempted to correct through publishing and disseminating information on the proper application of vinyl and aluminum siding.



**When a building is in need of maintenance, such as the house on the right which needs painting, some owners consider installing aluminum or vinyl siding. The result (see left) can be a complete loss of architectural character due to the covering of details and change of scale due to inappropriate siding dimensions. Photo: NPS files.**

Although it is sometimes argued that an artificial siding application is reversible since it can be removed, there is frequently irreversible damage to historic building materials if decorative features or trim are permitted to be cut down or destroyed, or removed by applicators and discarded. The installation process requires that the existing surface be flat and free of "obstructions" so that the new siding will be smooth and even in appearance. To achieve the requisite flat surface, furring strips are usually placed over the wall surface (vertical furring strips for horizontal aluminum or vinyl siding and vice-versa for vertical siding). The potential danger in this type of surface preparation is that the furring strips may change the relationship between the plane of the wall and the projecting elements such as windows, door trim, the cornice, or any other projecting trim or molding. Projecting details may also cause a problem. To retain them, additional cutting and fitting will usually be required. Further, additional or special molding pieces, or "accessories" as they are called by the industry, such as channels, inserts and drip caps, will be needed to fit the siding

around the architectural features. This custom fitting of the siding will be more labor-intensive, adding to the cost of the siding installation.

The existing wall fabric is further damaged by the nailing necessary to apply siding. Either by nailing directly to the building fabric or by nailing the furring strips to the old siding, the installation of aluminum or vinyl siding will leave numerous holes in wood siding, molding, trim, window and door frames. When applied to brick or other masonry units, the nail penetrations attaching the furring strips and siding can cause irreversible cracking or spalling of the masonry. Although this reference to damaging masonry is included as a point of fact, the application of aluminum or vinyl siding is highly inappropriate to historic masonry buildings.

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## The Use of Aluminum or Vinyl Siding on Historic Buildings

The maintenance and periodic painting of wood frame structures is a time-consuming effort and often a substantial expense for the homeowner. It is therefore understandable that a product which promises relief from periodic painting and gives the building a new exterior cladding would have considerable appeal. For these reasons, aluminum and vinyl siding have been used extensively in upgrading and rehabilitating the nation's stock of wood frame residential buildings. For historic residential buildings, aluminum or vinyl siding may be an acceptable alternative only if (1) the existing siding is so deteriorated or damaged that it cannot be repaired; (2) the substitute material can be installed without irreversibly damaging or obscuring the architectural features and trim of the building; and (3) the substitute material can match the historic material in size, profile and finish so that there is no change in the character of the historic building. In

cases where a non-historic artificial siding has been applied to a building, the removal of such a siding, and the application of aluminum or vinyl siding would, in most cases, be an acceptable alternative, as long as the abovementioned first two conditions are met.

There are, however, also certain disadvantages in the use of a substitute material such as aluminum or vinyl siding, and these factors should be carefully considered before a decision is made to use such a material rather than the preferred replacement with new wood siding duplicating the old.

## **Applying Siding without Dealing with Existing Problems**

Since aluminum and vinyl sidings are typically marketed as home improvement items, they are frequently applied to buildings in need of maintenance and repair. This can result in concealing problems which are the early warning signs of deterioration. Minor uncorrected problems can progress to the point where expensive, major repairs to the structure become necessary.

If there is a hidden source of water entry within the wall or leakage from the roof, the installation of any new siding will not solve problems of deterioration and rotting that are occurring within the wall. If deferred maintenance has allowed water to enter the wall through deteriorated gutters and downspouts, for example, the cosmetic surface application of siding will not arrest these problems. In fact, if the gutters and downspouts are not repaired, such problems may become exaggerated because water may be channeled behind the siding. In addition to drastically reducing the efficiency of most types of wall insulation, such excessive moisture levels within the wall can contribute to problems with interior finishes such as paints or wallpaper, causing peeling, blistering or staining of the finishes.

It cannot be overemphasized that a cosmetic treatment to hide difficulties such as peeling paint, stains or other indications of deterioration is not a sound preservation practice; it is no substitute for proper care and maintenance. Aluminum and vinyl siding are not directly at fault in these situations since property owners should determine the nature and source of their problems, then make appropriate repairs. The difficulty arises when owners perceive the siding as the total solution to their required maintenance and forgo other remedial action.

## **Durability and Cost**

The questions of durability and relative costs of aluminum or vinyl siding compared to the maintenance cost of historic materials are complex. It is important to consider these questions carefully because both types of siding are marketed as long lasting, low maintenance materials. Assuming that the substitute sidings are not damaged, and that they will weather and age normally, there will be inevitable changes in color and gloss as time passes. A normal application of aluminum or vinyl siding is likely to cost from two to three times as much as a good paint job on wood siding. A sensitive application, retaining existing trim, will cost more. Therefore, to break even on expense, the new siding should last as long as two or three paintings before requiring maintenance. On wood two coats of good quality paint on a properly prepared surface can last from 8 to 10 years, according to the U.S. Department of Agriculture. If a conservative life of seven years is assumed for paint on wood, then aluminum and vinyl siding should last 15 to 21 years before requiring additional maintenance, to break even with the maintenance cost for painting wood siding. Once painted, the aluminum and vinyl siding will require repainting with the same frequency as wood.

While aluminum siding can dent upon impact and the impact resistance of vinyl siding decreases in low temperatures and, therefore, is susceptible to cracking from sharp impact, these materials are generally not more vulnerable than wood siding and shingles. All siding materials are subject to damage from storm, fire, and vandalism; however, there is a major difference in the repairability of wood siding versus substitute materials such as aluminum and vinyl. Although they can all be repaired, it is much easier to repair wood siding and the repair, after painting, is generally imperceptible. In addition, a major problem in the repairability of aluminum and vinyl siding, as mentioned above, is matching color since the factory finishes change with time. Matching the paint for wood siding has a greater likelihood of success.

## Energy

Because of high fuel costs, there is a concern for energy conservation in historic materials as well as in substitute materials. Because aluminum and vinyl siding can be produced with an insulating backing, these products are sometimes marketed as improving the thermal envelope of a historic building. The aluminum and vinyl material themselves are not good insulators, and the thickness of any insulating backing would, of necessity, be too small to add to the energy efficiency of a historic building. What energy savings did accrue as a result of a siding application would probably be as much the result of the creation of an air space between the old and new siding as the addition of insulating material. If the historic wood siding were removed in the course of installing the aluminum or vinyl siding (even with an insulating backing), the net result would likely be a loss in overall thermal efficiency for the exterior sheathing.

Preservation Briefs Number 3, "Conserving Energy in Historic Buildings," notes that the primary sources of energy loss in small frame buildings are the doors, windows and roof. It is, therefore, more cost-effective to apply storm windows, weatherstripping and attic insulation than to treat the sidewalls of these structures. There are numerous publications on energy retrofitting which explain techniques of determining cost-effectiveness based on utility costs, R-factors or materials and initial cost of the treatment. Persons interested in this approach may wish to read "Retrofitting Existing Houses for Energy Conservation: An Economic Analysis" published by the National Bureau of Standards, or the U.S. Department of Housing and Urban Development booklet "In the Bank or Up the Chimney." One such study in Providence, Rhode Island, determined that for a two-story house, twenty-five feet square, the payback period for twenty-three storm windows, two storm doors and six inches of attic insulation (R-20) was 4.4 years while the payback period of aluminum siding with an R-factor of 2.5 was 29.96 years. Most of the information which is available supports the position that aluminum or vinyl siding will not have a reasonable payback on an energy-saving basis alone.

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## Summary

The intent of this brief has been to delineate issues that should be considered when contemplating the use of aluminum or vinyl sidings on historic buildings and assessing under what circumstances substitute materials such as artificial siding may be used without damaging the integrity of the historic building or adversely changing its historic character. Many property owners are faced with decisions weighing the historic value of their building and its maintenance cost against the possible benefit of aluminum and vinyl siding materials. To assist in making these decisions, "The Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic

Buildings" have been published and are available from National Park Service Regional Offices and State Historic Preservation Offices. Further, since rehabilitation projects for income-producing historic buildings often seek tax benefits under the 1981 Economic Recovery Tax Act, as amended, it is essential that all work, such as the replacement of exterior siding, be carried out in conformance with the Standards and be consistent with the building's historic character to insure that the tax benefits are not denied.

As stated earlier, the application of aluminum and vinyl siding is frequently considered as an alternative to the maintenance of the original historic material. The implication is that the new material is an economical and long-lasting alternative and therefore somehow superior to the historic material. In reality, historic building materials such as wood, brick and stone, when properly maintained, are generally durable and serviceable materials. Their widespread existence on tens of thousands of old buildings after many decades in serviceable condition is proof that they are the original economic and long-lasting alternatives. All materials, including aluminum and vinyl siding can fall into disrepair if abused or neglected; however, the maintenance, repair and retention of historic materials are always the most architecturally appropriate and usually the most economically sound measures when the objective is to preserve the unique qualities of historic buildings.



**The inappropriate siding applied to the house on the right has altered the character of the urban setting. Photo: NPS files.**

The appropriate preservation decision on the use of a substitute material in the rehabilitation of a historic building must always center on two principal concerns: the possible damage or destruction of historic building materials; and, the possible negative impact on the historic character of the building and the historic district or setting in which the building is located. Because applications of substitute materials such as aluminum and vinyl siding can either destroy or conceal historic building material and features and, in consequence, result in the loss of a building's historic character, they are not recommended by the National Park Service. Such destruction or concealment of historic materials and features confuses the public perception of that which is truly historic and that which is imitative.

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## Reading List

"Condensation Problems in Your House: Prevention and Solution." Information Bulletin No. 373. Washington, D.C.: U.S. Department of Agriculture, 1974.

Kiefer, Matthew J. "Vinyl and Aluminum Siding: Pro and Con." Report to the Ashmont Hill Study Committee. Boston, Massachusetts: The Boston Landmarks Commission, 1977.

"Landmark and Historic District Commission." Vol. 4. No. 5. Washington, D.C.: National Trust for Historic Preservation. October 1978.

"Moisture Conditions in Walls and Ceilings of a Simulated Older Home in Winter." Madison, Wisconsin: Forest Products Laboratory USDA, 1977.

"Performance Criteria for Exterior Wall Systems." Washington, D.C.: National Bureau of Standards, 1974.

"Rehab Right." Oakland, California: City of Oakland Planning Department, 1978.

Skoda, Leopold F. "Performance of Residential Siding Materials." Washington, D.C.: National Bureau of Standards, 1972.

Wood Handbook: Wood as an Engineering Material. Washington, D.C.: Forest Products Laboratory. U.S. Department of Agriculture, 1974.

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**Washington, D.C. October, 1984.**

**Home page logo: Drawing: "A Tribute to Vinyl Siding. (Igloo)" reproduced from David Macaulay's *Great Moments in Architecture*. Copyright 1978 by David Macaulay and reprinted permission of Houghton Mifflin Company.**

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*This publication has been prepared pursuant to the National Historic Preservation Act of 1966, as amended, which directs the Secretary of the Interior to develop and make available information concerning historic properties. Technical Preservation Services (TPS), Heritage Preservation Services Division, National Park Service prepares standards, guidelines, and other educational materials on responsible historic preservation treatments for a broad public.*

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[Questions](#)



# 45 PRESERVATION BRIEFS

## Preserving Historic Wood Porches

Aleca Sullivan and John Leeke



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



Few architectural features evoke more romantic notions or do more to define a building's historic character than the American porch. The size, style, detailing, and location of a porch can tell volumes about the age and use of a building. Each component, from handrail or baluster to column or post, enhances the architectural character of the porch. Alter or remove the porch and a historic building or streetscape can lose its visual integrity and historic authenticity (Fig 1).

Functionally, a porch protects an entrance from the weather. Yet open porches are constantly exposed to sun, snow, rain, and foot traffic, and thus subject to deterioration, perhaps more than other parts of a building. Wood porches are particularly vulnerable.

Deferred maintenance and neglect account for the decay and loss of countless numbers of historic porches

each year. Deterioration from moisture and resultant wood rot, and damage caused by wood-eating insects are common problems that, when left unaddressed too long, can lead to the loss of significant historic fabric. Inappropriate repairs or insensitive alterations, such as the enclosure of a front porch, can be equally destructive and negatively affect the porch's appearance. All these things can alter a building's historic character. To preserve the character of the porch, as well as the historic building itself, it is essential to plan carefully before undertaking any work on a historic porch.

This Preservation Brief provides guidance for the everyday care of wood porches on older buildings. It focuses primarily on the maintenance and repair of wood porches, but acknowledges other, often challenging, work as well. This publication provides a brief history of the American porch and identifies its basic structural and decorative elements. It outlines how to assess the condition of a wood porch, how much work may be needed, and how to develop a specific scope of work. Detailed guidance on each level of work is provided, beginning with routine maintenance, followed by general repairs for various porch components, and concluding with replacement of parts that are beyond repair. Recommendations are provided for work that may require professional assistance. Although the Brief primarily addresses residential buildings, much of the information can be applied to wood porches on any structure.

### Evolution of the Porch

In colonial America, buildings in the northern colonies tended to echo British precedents with small gable-roofed extensions to protect main entrances. Whether open or enclosed, these extensions were called *porches* (from



*Figure 1. Distinctive yet different, these front porches are important features along the street. The rhythm would be diminished if the front porch from one of the houses was dramatically altered or removed. Photo: Aleca Sullivan.*





Figure 2. Porches not only help define the architectural character of a building but also serve as living areas. They can be designed to take advantage of surrounding views. Cedar Grove, the home of the nineteenth-century landscape painter Thomas Cole, has an L-shaped veranda on the front and a two-story porch on the rear, providing an enviable view of the Catskill Mountains. Photo: Marilyn Kaplan.

Medieval English and the French word *porche*, which stems from the Latin, *porticus*). Also known as *porticos* when supported by columns, these covered entrances were sometimes designed to respect classical order and details, especially on more stylish buildings. Hooded doors or small covered entryways flanked by benches, often called *stoops* (from the Dutch *stoep* for step) that served as short covered transitions to and from the outdoors were common features, especially in New York and the mid-Atlantic colonies.

During the late 1700s and early 1800s as longer shed-roofed porches became more common, they were typically called *piazas*, as they were then called in England. This term, still popular in some areas of North America, is adapted from the Italian word for open space or plaza. An alternate term for a long open porch, *veranda*, reflects British colonial design influence from the Indian sub-continent.

In French colonial areas, such as the Louisiana Territory, houses were often built with broad roofs extending well beyond the exterior walls to form surrounding porches, known as *galleries*. Porches were also important features of Spanish colonial buildings. In California, for example, many adobe ranches featured a *portal* with the roof supported by wooden posts. African and Caribbean influences can also be found in North American porch traditions.

By the late eighteenth and early nineteenth centuries, porches became more common in larger, wealthier areas such as Philadelphia, Boston and Charleston. In both the North and the South, formal colonnades with tall columns dressed in classical orders were sometimes added to help dignify public buildings, hotels, and mansions. This trend continued through the 1830s and 1840s, as the Greek Revival became the dominant architectural style in many areas of North America.

The social role of porches as a transition space between indoors and outdoors and as a link between private and public realms evolved during the 1800s. By offering grand entrances and sheltered landings with views of the surroundings, prominent porches became expected features of inns, hotels and resort spas, where they could serve as promenades, social gathering spots, and refuges for more private retreats. Porches were also added to private homes to serve many of these same functions (Fig 2). As the country began to thrive and expand, porches became more than just covered entrances or ceremonial features; they became an integral part of domestic social life.

Some of the most significant factors that aided this shift were America's industrialization and later suburbanization. As improvements to mass production methods helped spur industrial growth, many Americans had more money to spend and more leisure time. Meanwhile a growing middle class was moving to new suburban neighborhoods. Inspired by the pattern books of Andrew Downing and George Woodward and the published designs of such architects as Alexander Jackson Davis and Calvert Vaux, the homes of these mid-1800s suburban neighborhoods were typically ornamented by elaborate porches dressed with fancy millwork. By this time, millwork catalogues and builders' pattern books offered a wide variety of designs for porch parts. With mass production, these fancy brackets and other ornamentation became less expensive, making it easier and more affordable to construct decorative porches (Fig 3). With mechanized wood turning lathes, the cost of posts, balusters and decorative spindle work also decreased to a level affordable by many. Adding a porch with wood ornamentation could enhance even the smallest and simplest of houses. Even older homes could be modernized with a fancy porch addition, stylized to the latest fashion trends. Such changes culminated in the large, highly decorated wrap-around porches of the Queen Anne style.

The second half of the nineteenth century was the golden era of porches. The social role of the porch increased as it evolved into an outdoor parlor, a true extension of the house into the landscape. Often partially screened by shrubs, porches could provide occupants with discreet opportunities for social contacts that might otherwise be difficult to achieve in an age obsessed with manners and proprieties. For many, sitting on the porch became an important part of their daily routine. Perhaps President Rutherford B. Hayes best summed up the love that Victorian-era Americans felt towards their porches when he recorded in his journal in 1873: "The best part of the present house is the veranda. But I would enlarge it. I want a veranda with a house attached."

By the early twentieth century, the hygiene movement, which stressed that access to fresh air could help prevent or remedy such diseases as tuberculosis, contributed to the development and proliferation of the sleeping porch.

These porches were usually located on the second floor next to bedrooms. This era also saw the rise in use of insect screening on porches to guard against the discomfort of mosquitoes and the diseases they spread, such as yellow fever and malaria.

While innovations fostered the proliferation of porches in the nineteenth century, new inventions helped lead to its decline in the twentieth. As the automobile boom of the early twentieth century made it easier for people to get out of the house for entertainment and relaxation, porches began to lose popularity, especially as architectural styles and social attitudes changed. With the telephone, neighbors and friends could chat without personally meeting. And housing styles popularized in the construction boom after World War II often omitted front porches all together as backyard patios became the focus of private outdoor activities. Finally in the mid-twentieth century the broad availability of air conditioning and television enticed many people to stay inside at night and brought the golden era of the American porch to an end.

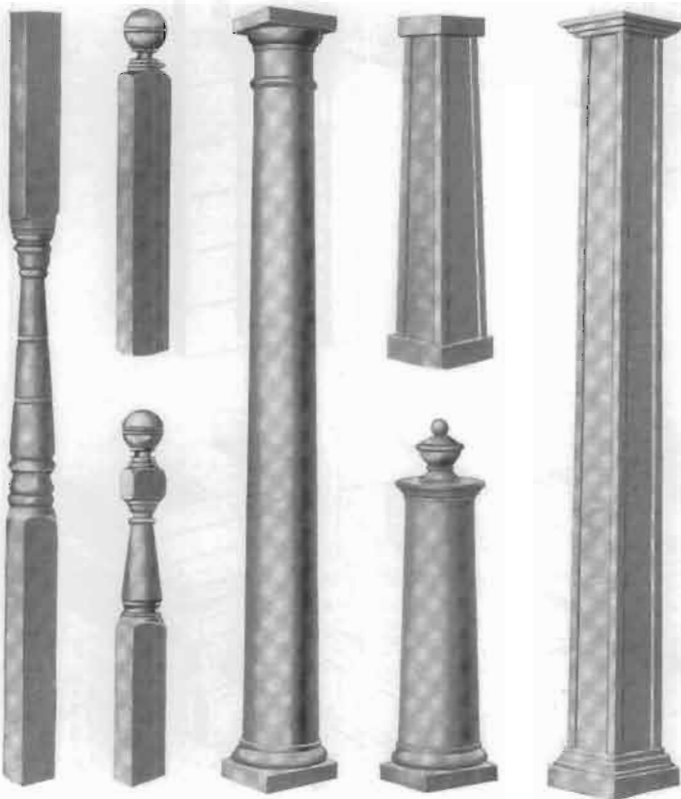


Figure 3. Throughout the late nineteenth and early twentieth centuries, millwork catalogues offered a wide variety of designs for porch parts, including columns, newels, balusters, spindles and brackets. As extolled in the Cedar Rapids Sash & Door Company's Standards Design Book, stock parts made embellishments to porches affordable both for new construction and "updating" existing homes. Courtesy of Charles Fisher.

## Understanding the History and Significance of a Porch

In preserving historic buildings, it is important to understand the history and evolution of a particular structure and what features contribute to its historic character. This is especially applicable when working with historic porches since they usually are prominent features, significant to the character of a building.

Answers to the following questions will help establish the significance of a porch.

### What has the porch looked like in the past?

Early photographs, insurance maps, or tax records can provide useful information. These may be found at city or county offices, historical societies, libraries or even from former owners or neighbors. Such documents may indicate the footprint of the building or show long-lost details of the building's appearance. Physical evidence of historic porch footings may exist. Paint shadows of a former roofline or moldings can provide clues about details now missing. Old porch parts may have been "stored" under the deck during past repairs.

**What, if any, changes have taken place to the historic porch over the years?** On many porches elements such as columns, balusters, and finish details correspond with the design and detailing on the rest of the house. With other porches, the style of these features may differ from the rest of the building, but may reflect an important chapter in its history. Sometimes, parts of porches may have been lost due to neglect or remodeling. Questions about what historic fabric remains, what has been altered over time, and whether earlier changes are now an integral part of the historic character should be resolved before planning major porch work. Determining the historical evolution of the house may require both physical and archival research and in some cases the professional eye of an architectural historian.

### What are the character defining features of the porch?

The open qualities are one of the key features of most historic porches. Overall size, shape and design are obviously important components as well. There are numerous other contributing features which may exist, including the shape of the porch roof, the way a large porch is divided into distinct bays as with columns, the nature of the supporting foundation, the style and size of columns and balustrade, and whether the porch is raised or largely at grade. The simplicity of a porch or its richness in detail will also help define it. Materials are usually important as well, not just the wood features, but also whether other materials exist such as masonry columns and steps (Fig 4).

### How does the porch contribute to the building's overall appearance?

The size and location of a porch and how much of the historic features survive will help define its significance. A highly ornate porch across much of the front facade may be the most distinctive

## The Anatomy of a Porch

- a - Pier, penetrates ground, supports floor structural system and columns
- b - Fascia covering floor framing
- c - Floor (or deck)
- d - Bed Molding covering joint between fascia and floor
- e - Column supporting entablature above

### Entablature (f, g, h)

- f - Architrave of entablature
- g - Frieze of entablature
- h - Cornice of entablature

### Roof Railing (i, j, k, l)

- i - Newel (or Pedestal) of roof railing
- j - Balusters of balustrade
- k - Top rail of balustrade
- l - Bottom rail of balustrade

### Balustrade around floor (m, n, o)

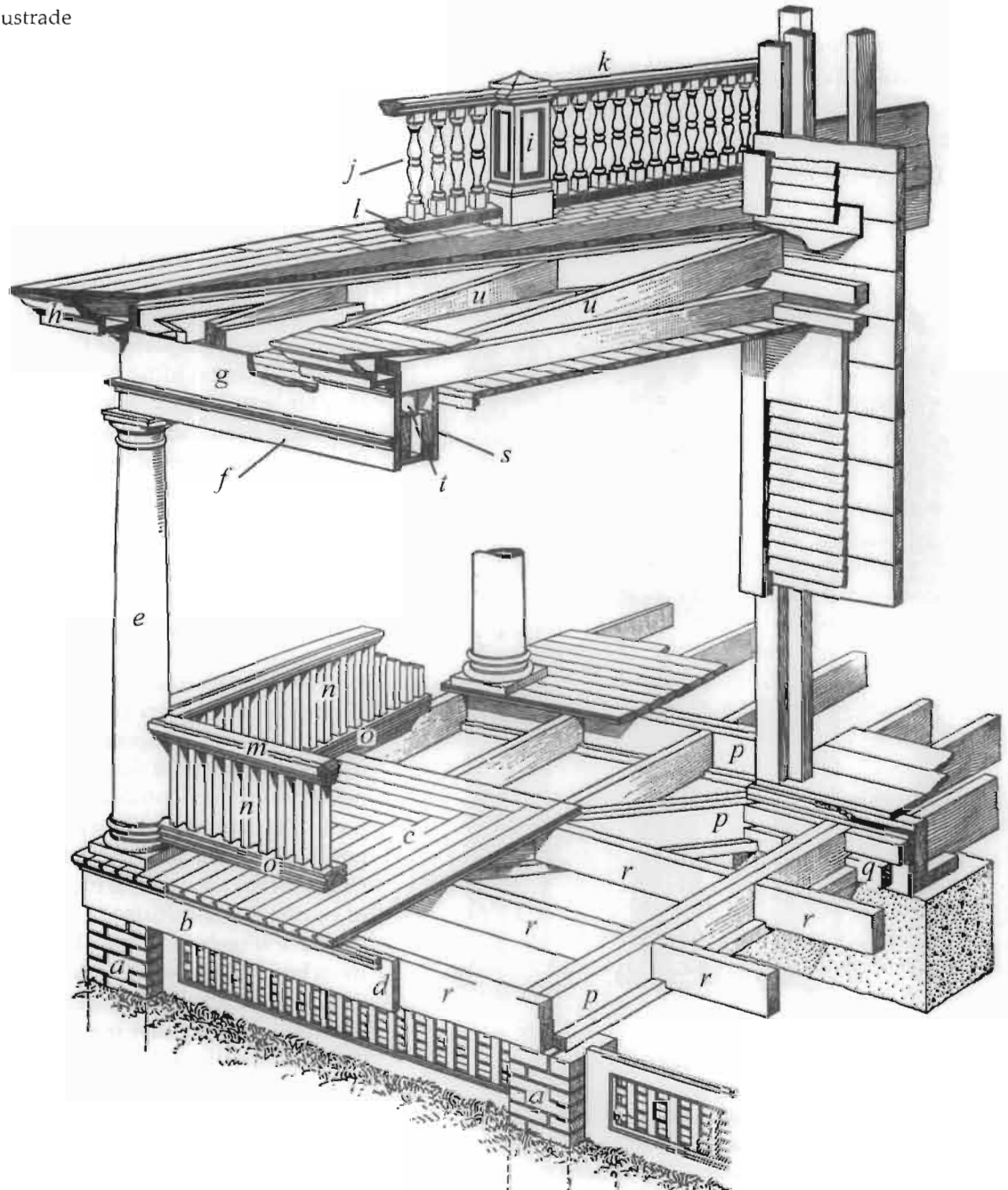
- m - Top rail of balustrade
- n - Balusters of balustrade
- o - Bottom rail of balustrade

### Structural system of deck (p, q, r)

- p - Girder rests on piers and ledgers, support joists
- q - Ledger fastened to house sill, supports girder
- r - Joist fastened to girder, supports floor

### Roof Structural System (s, t, u)

- s - Beams inside the entablature span from column to column, support plate
- t - Plate of the entablature rests on beams, supports roof rafters and ceiling beams
- u - Rafter of the roof structural system



Drawing courtesy of Thomson Education Direct.



feature of the entire house, while a small simple porch on an otherwise plain cottage may be equally significant. The architectural style of a porch may relate to the building and may help define its character. Sometimes a later style porch may have been added to a building or may have replaced an earlier porch. In such cases, the later porch may have acquired importance in its own right. On the other hand, a later porch may be of such poor quality that it detracts from the building's historic character. Because porches are so diverse in terms of style, size, shape and detail, their significance should be assessed on a case-by-case basis with an understanding of the overall importance and evolution of the building.

## Assessing the Condition

Before undertaking most repairs, it is important to assess the condition of the porch. The assessment is greatly facilitated if the porch has been regularly maintained and a record of past work is available. In most cases, however, a condition survey must rely almost exclusively on the physical examination of the porch, documenting the findings with notes, photographs or sketches.

Many older porches were constructed using good construction practices and materials. As a result, porches that are over 100 years old are not uncommon. Most porch deterioration can be attributed to the lack of proper maintenance. Important questions to address in assessing the condition of the porch include the following:

**How is the porch constructed?** A porch is rarely an independent, unattached structure. It may, however, have its own foundation, attached to the house only along the deck and the roof. Alternatively, it may be an included or engaged porch that is integrated with the actual structure of the house. The relationship between the porch and the house is important. If the outer support posts are decayed or if foundation piers are sinking, the roof structure may be pulling away from the house. Many porch decks are fastened to the main building on a ledger, a horizontal board along the house's foundation. A decaying ledger may compromise the structural integrity of the porch and can represent a major safety issue.

**Are the foundation and structural members of the deck sound and providing adequate support for the deck, posts and roof above?** The porch structure needs to be sound at every level. Therefore, a visual inspection of the underside of the porch is necessary to determine its condition. Major cracks in structural members, failed joints, significant wood rot, or evidence of widespread insect infestations (termites, carpenter ants or powder post beetles, for example) are usually signs of serious structural damage. Such conditions may require consultation with a professional architect,



*Figure 4. Celebrating the 4th of July in 1912, this gathering of family and friends reflects the popularity of the porch as a social gathering place. While not overly ornate, each detail of the porch from the roof balustrade to the turned columns to the simple lattice work facing the deck contributes to its character, creating in effect the dominant architectural feature of the building. Photo: © Utah State Historical Society*

engineer or building contractor familiar with old buildings. For an adequate assessment, it may be necessary to remove facing boards to check for potential decay in the structural sill behind (Fig 5).

**What is the condition of the porch?** Porch foundations may be a continuous wall of masonry, a series of masonry or wood piers or metal pipes, or a combination of these. Missing sections of the foundation, crumbling masonry mortar joints, or areas where the sill or joists no longer fully rests on the foundation may represent serious deficiencies. What appear to be deep foundation footings may only be stones or cement blocks sitting on top of the ground. The footings must be stable enough to adequately support the porch in its current or intended use. The smell of mold or appearance of fungal growth on wood beneath the porch is an indication of deficient air circulation and that conditions exist for wood decay. Recent changes that can contribute to deterioration should be identified for correction, such as a clothes dryer vent dumping warm moist air underneath the deck. The enclosure of original air vents in crawl spaces or the boarding up of latticework between piers are other changes that will usually promote an unwanted moist environment.

**Are the porch posts providing adequate support?** Posts, pillars or columns usually help support the porch roof or an upper deck. Establishing what the posts



Figure 5. Even historic porches that appear to be in total disrepair may be repairable. While the roof needed replacement, much of this porch was repaired, including such features as the decorative columns, ornamental brackets, and balustrade. Photos: John Leeke.

are made of and how they are constructed will aid in understanding how they function and may deteriorate over time (Fig.6). Although the posts on a wood porch are commonly made of wood, they may be of masonry or metal or a combination of materials. Large round columns usually are made of wood staves similar to the way barrels are constructed; smaller diameter columns may be solid. A sag in the deck below or a faltering foundation can impact the supporting role of a column or post above. Wood columns and posts are prone to water seeping into open joints, particularly in the base and the lower end of the shaft. It is not uncommon to find that older columns have had patches and replacement bases.

**Is the roofing and drainage system keeping the water away from the porch?** Porches were designed to shed water. This means water will move away both from the building and the porch and not pond and saturate the wood. Continuously high moisture levels promote fungal growth that eventually causes wood to decay. Peeling paint on ceiling boards in a specific location is a sign of a possible roof leak. Clogged or missing downspouts and gutters can cause erosion at the foundation and can contribute to reverse-grade draining that is directing water under the porch instead of into the yard. Inadequately sloped porch floors can result in improper drainage and promote deterioration as exhibited, for example, by cupping floorboards.

**What is the flooring condition?** The porch component most subject to decay is the flooring. Often decay starts at the exposed ends of the boards or where cracks, checks or open joints have occurred and are exposed to the weather. Flooring should be checked frequently for peeling paint, rotted wood, and for loose, cupping or splintery boards. Where water is ponding, there is insufficient slope away from the building, a condition that should be corrected. Floor deterioration can also start in unlikely places such as the result of frequent hose washing to remove dirt or the placement of plant stands directly on the floor without proper moisture barriers. Firewood stored on a porch may trap moisture on the floor and harbor active insect infestation that can be ruinous to a wood porch. Thick floor mats and carpeting also may trap moisture, leading to premature decay.

### Is there evidence of general wood decay?

Wood deterioration may take different forms such as fungal decay, insect infestation or even sunlight degradation of exposed unfinished wood. Decay may be present where two wood surfaces meet and are not adequately protected from water, such as along open joints or behind moldings. Dark streaks, discoloration, and widespread peeling paint on a finished ceiling suggest excessive moisture or water leakage. It may be necessary to remove several finished boards to properly identify the cause of the problem and to insure damage has not extended to structural members behind. Trails of carpenter ants are another sign of potential decay since they will infest moist decaying wood. Where inadequate painting has left wood exposed for a long time, damage to the wood surface from light itself will occur, typically indicated by wood discoloration. Without sanding or scraping back to a sound wood surface, repainting will result in premature failure of the paint film.

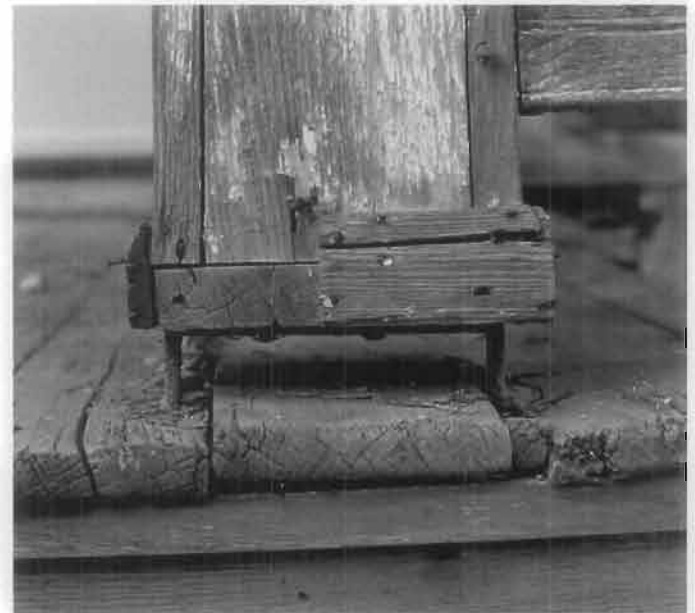


Figure 6. A traditional way to extend the life of porch posts was to place posts on metal feet, thereby providing a separation between the wood post and wood deck. This helped to prevent the wood post from rotting at the base. Early post feet were simple iron bars bent unto a stirrup shape. By the late nineteenth century manufactured cast-iron feet were common, consisting of a pair of disks separated by a short pipe. Post feet are still available today. Courtesy of Old-House Journal/Brian McNeil.

### Are there open cracks or joints in the woodwork?

Tightly sealed connections keep water out. Where individual boards come together, cracks in woodwork and joints can eventually become a major problem (Fig.7). Cracks are primarily caused by movement and water penetration. Movement of structural members beneath the finished woodwork can shift the position of individual boards and trim, breaking open the thin coating of paint over joints. This condition is common on porches with shallow foundations that are subject either to annual winter frost heaving or where soil conditions undergo major seasonal changes in moisture content. Changes in the moisture content of the wood itself due to repeated wetting and drying or changes in seasonal humidity can also cause noticeable expansion and shrinkage across the width of a board. This provides opportunities for water to penetrate unprotected areas.

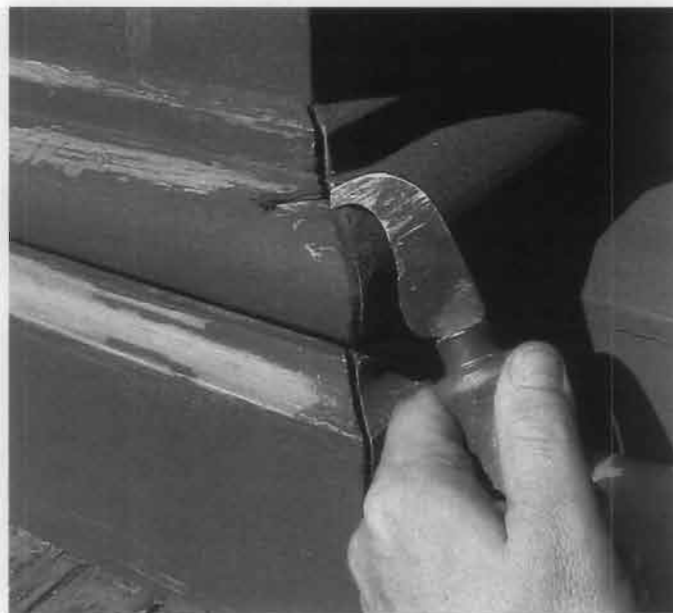
### Does peeling paint indicate deeper problems?

An unbroken layer of paint covering all wood surfaces is the first line of defense against moisture causing decay. Over time, even hairline paint cracks can allow water to penetrate, causing paint to peel down to bare wood. Such peeling occurs near breaks in the film, at opened joints, or where the paint has been scratched or scraped. Peeling can also occur over large areas where there is high moisture and insufficient ventilation. Areas of particular concern include the crawl space beneath the porch deck, inside columns that lack ventilation, and in a roof structure that has a finished ceiling and lacks ventilation. If heavy paint build-up exists on columns, floors and trim, moisture can be trapped within the wood, resulting in the loss of paint adhesions and eventual wood decay.

**Are trees, shrubbery and flowerbeds threatening the porch?** Shade trees can make the porch a cool oasis, but the branches of a nearby tree rubbing on the roof, gutters or wood trim often will cause damage. Tree roots may destabilize porch foundations or supports. Bushes growing against the porch and not trimmed back on a regular basis may block wood porch components from drying breezes, thereby letting moisture build up in the woodwork. Flowerbeds and mulch around the porch that are not properly sloped downward in a grade away from the house will promote moisture problems.

## Defining the Scope of Work

Once the historical and physical assessments are complete, it is important to define the scope of work. How much and what kind of work will need to be done to make the porch structurally sound while preserving its historic character, or to recover its historic appearance if portions are extensively deteriorated, altered or missing? Any part of the porch that defines its historic character should be repaired or replaced to match. Since the porch may display varied levels of deterioration, the spectrum of work in one project



*Figure 7. Common problems with porches that can contribute to serious wood decay include cracks in woodwork and joints that have opened up. Both provide an easy path for water seepage. Trapped moisture can foster peeling paint, wood decay and insect infestation. Open joints and cracks should be checked for evidence of more serious decay and marked for caulking or repair. Photo: John Leeke.*

can include maintenance, repair, and replacement. When laying out the scope of work for the project, each individual component and decorative element of the porch should be identified, and linked with the work needed for that item.

## Undertaking the Work

The highlighted work approaches in this section are based on *The Secretary of the Interior's Standards for the Treatment of Historic Properties* and the *Accompanying Guidelines for Rehabilitating Historic Buildings*. The *Standards and Guidelines* provide a sound philosophical and practical framework for achieving the highest retention of historic materials and character possible. Thus, the familiar hierarchy is applied: maintain, repair, and then replace only if necessary. Contemporary alterations are discussed in a separate section.

## Preservation and Maintenance

There are a variety of tasks that can be done on a regular basis to extend the life of a porch. In addition, a visual inspection of the porch should be made every spring and fall to determine if more in-depth repairs are necessary. Fortunately, ongoing maintenance significantly reduces both the need and cost for later repair work and represents good preservation practice. When properly maintained, a well-constructed porch can last for decades.

### Routine Cleaning and Other Surface Work

Since many porches are essentially another living space,



extending housekeeping to this space makes practical sense. Regular maintenance includes sweeping the wood porch decking, and, if needed, an occasional damp mopping. Removing dirt and leaves by sweeping is preferable to frequent hosing off the deck with water. The latter can saturate the woodwork, thereby promoting decay. Frequent sweeping will reduce the accumulation of abrasive materials, such as dirt and sand. While visually pleasing to some, vines and plants should be kept trimmed away and not be trained to grow onto or allowed to grow beneath porches. Plants and vines unfortunately reduce ventilation, promote a moist environment for insects and decay, accelerate open wood joints and impede cyclical maintenance. As an alternative, traditional freestanding trellises can be used to support plant growth away from the porch.

There are certain precautions that are recommended for wood floors. Rubber mats, rugs or indoor/outdoor carpeting can trap moisture and condensation on their underneath side and should not be used on a wooden porch floor. Keeping flower pots up off the wooden deck will help prevent moisture buildup and decayed spots – wood, clay or metal “trivets” that hold the pots an inch or more off the wooden deck are helpful, but the pots should be moved to different locations periodically. In colder climates, light snow can be swept off the porch. Snow shovels with a hard rubber leading edge or plastic shovels cause less damage to wood than metal, while paint in good condition helps ice to release more easily. Sand or clean kitty litter can be sprinkled on ice to prevent slipping; however, they should be later swept off the porch, as they are abrasive. Salt (sodium

chloride) is not recommended for ice removal on older porches as it can promote corrosion and failure of nails and other fasteners. Magnesium chloride is an alternate de-icing salt that is less corrosive and less damaging to masonry and plants. If any de-icing salt is used, be sure to scrub and rinse off the porch deck in the spring. Boot scrapers and brush-mats at the bottom of the stairs are recommended for muddy areas.

### Painting

Spot painting and resealing of open joints should be undertaken at least every other year (Fig. 8). Heavily used stair treads may require more frequent paint touchup. When peeling paint or bare wood is evident, inspect to ensure it is not signaling deeper problems, such as decay. With sound wood, scrape off the loose paint, sand, prime, and repaint the area. Where lead paint is present, appropriate lead hazard precautions and procedures apply. Only top-quality exterior primers and paints are recommended, selecting for the deck and stairs specially formulated paints. Where wood porch steps are exposed to moisture, grit added to the wet paint during application will help improve safety.

### Repair

Many repairs may be successfully undertaken by property owners, while major projects often require the special knowledge and equipment of an experienced contractor. Repairs generally include patching and reinforcement of historic materials. The roof and foundation are particularly important to the preservation and the structure of a historic porch yet they often receive much less attention than ornamental features. Their neglect will usually lead to more costly work. Repairs to features such as a balustrade or flooring can encompass limited replacement in kind when the porch part is severely deteriorated or when a part of a repeated feature is missing altogether. Some common porch repairs are discussed in this section.

#### Filling Open Cracks or Joints

To seal open cracks or joints, start by scraping off the paint back a few inches from the opening and removing old caulk to expose bare wood. The opening should be examined for any signs of wood decay, and to determine if the joint is loose due to a loss of connection, such as rusted nails. After correcting any problems, apply a water-repellant wood preservative that can be painted. Such preservatives are either an oil-based or waterborne solution of oils or waxes with mildewcide, fungicide and pesticide added. Then apply a high quality exterior wood primer to the wood surfaces where a sealant or caulk is to be used. Most open cracks or joints then can be filled with a sealant or caulk, while larger ones may need the addition of a backer rod. In some cases, small metal flashing over the crack or open joint may be more effective and longer lasting but, when used, care should be taken with proper installation. The final step is painting.



*Figure 8. Decay can start when wood is left exposed to the weather or where joints open up. An inexpensive way to extend the life of the existing porch paint without jeopardizing the historic material is spot paint and caulk where needed every year or two. This cost-effective procedure is particularly effective in maintaining wood porches where the exposure to weathering is high. Photo: John Leeke.*

### Patching with a Dutchman Repair

This traditional technique is often used to repair localized cases of decayed wood and, when undertaken with skill and care, will serve as a permanent repair (Fig. 9). If the damaged area has a structural function, temporary bracing or other support will be necessary. Otherwise the first step after removing any paint around the damaged area is to chisel or mechanically remove the decayed wood. It is best to use the same type of wood being replaced and the new or recycled wood should be seasoned to avoid shrinkage. The repair procedure involves cutting a piece of wood, called a *dutchman*, slightly larger than the area of damage that has been cut out. The dutchman then is laid over the damaged area and an outline scribed into the original wood surface below. Next, a chisel or router is used to follow the scribed line to form an opening in the existing wood for the new piece.

As a preventive measure, an appropriate fungicide should be applied to the surrounding old wood and allowed to dry. The dutchman is then glued into place with waterproof adhesive, such as an epoxy formulated for wood. The repair is finished by trimming or sanding the surface of the new wood down flush with the surrounding existing surfaces, priming and painting.

### Patching with Epoxy or Wood Fillers

There are a variety of commercial wood fillers. Cellulose based fillers consist of wood fiber and a binder and have been available in stores for many years. Only those suitable for exterior applications should be used and they will require a protective finish. Epoxies are a more contemporary product, commonly used by experienced contractors and woodworkers. Epoxies are petroleum-based resins created by mixing two components in accurate proportions that result in a chemical reaction. The result is durable, moisture-resistant consolidants and fillers that bonds tenaciously with wood, and can be sawn, nailed or sanded. Epoxies are for use only in areas that will be painted, as they do not take stain and deteriorate under sunlight. Since epoxies are more difficult to work with than other wood fillers, experience working with epoxies is needed for successful repairs.

### Repairing Railings and Balustrades

Balustrades and railings are not only practical and safety features, they typically are highly visible decorative elements. Unfortunately, balustrades and balusters are frequently altered, covered, removed or completely replaced even though in most cases they can be repaired in a cost-effective manner. To preserve historic fabric,



*Figure 9. The ends of porch roof rafters are often susceptible to moisture decay. When concealed by a soffit or ceiling, rafters can be repaired by adding new sister boards. Where roof rafter ends are exposed, splicing new wood onto the old (dutchman repair) and use of epoxy consolidants and fillers both preserve sound historic fabric while retaining the historic appearance.*

*Photo: Paul Marlowe, Marlowe Restorations.*

the repair of old balustrades and railings is always the preferred approach. A broken baluster usually is one in need of repair, not replacement.

Loose railings and balustrades present unsafe conditions and need to be repaired as soon as possible. Start by examining the points of attachment to determine exactly why the railing or balustrade is loose. Common reasons include rusted fasteners, decayed wood, or physical stress that has broken the fasteners or split the wood. Paint and decayed wood must be removed. Where fasteners are broken yet the wood is sound, the balustrade can be re-fastened using hot-dipped galvanized or stainless steel nails or screws, setting the heads of the fasteners below the surface of the wood and using a wood filler to cover and seal. Next repair deteriorated wood by using a dutchman or wood-epoxy repair. The repaired joints then can be sealed and painted.

### Replacing Missing Balusters

The balusters help comprise a wood balustrade and come in three general styles: simple rectangular shape; flat, pattern-sawn (usually a board with some decorative edge or cutout); and turned. It may be necessary to replace certain balusters that are beyond repair or missing altogether. Some are easy to replace with new matching balusters while others can be more challenging in terms of both design and costs. Finding or affording replacement balusters may take time since they should match the historic baluster as closely as possible. In the meantime, unsafe balustrades can be temporarily stabilized, introducing temporary new material that soon will be replaced.

In replacing individual balusters, simple, rectangular balusters should not be replaced with pattern-sawn or turned ones unless physical or pictorial evidence survives which indicate they previously existed historically on that particular porch. Such an alteration can change the historic appearance of the porch or be incompatible with the character of the building.

Determine the size and shape of the missing balusters either by examining adjacent ones or temporarily removing an existing baluster as a sample. Heavy paint buildup should be removed so that the original dimension can be established. Scrape and clean the joint locations and make repairs to any deteriorated areas. A new baluster is then fabricated to match the original in design and material, either on site or by taking a drawing or sample to a local woodworking shop. The new baluster should be made one-half inch longer than needed on both ends. Measurements are taken from the bottom surface of the top rail to top surface of the bottom rail. Joints on the new baluster can be laid out with a pencil, using a sliding bevel to transfer any angles, and the new baluster trimmed to fit with a handsaw. After test fitting, the ends and any exposed end-grain of the baluster need to be sealed with a high-grade primer or epoxy. Next, apply a paintable water-repellant coating to all exposed wood surfaces, and apply a primer. The baluster can then be fastened in place with hot-dipped galvanized or stainless steel nails, and the nails set. Finally, seal joints and fastener holes and paint the baluster.

### Repairing Column Plinths and Bases

Columns not only enrich the historic character of the porch, they provide support for the roof structure above. Because of their detail and complex construction they can be costly to repair or replace, making maintenance and minor repairs important. Column plinths and bases tend to deteriorate because of their exposed location on the outer edge of a porch (Fig. 10). Leaking gutters can result in water draining into the entablature and down into hollow columns, while clogged or capped gutters can allow water to pour down and splash

back onto the column bases. Open joints and limited wood decay can be repaired using methods previously discussed. Column repairs usually are undertaken by an experienced carpenter, since it may involve structural support of the roof above.

### Repairing Floorboards and Ceiling Boards

Floors should slope down toward the outer porch edge for proper drainage. If drainage is inadequate, moisture buildup will cause deterioration of the floorboards. Flooring can also deteriorate due to movement in the supporting structure below. If a floorboard is soft or broken, the extent of decayed or split wood can be determined by probing gently with an awl. The existing floorboard can then be removed, cutting the length if needed so that the end will center on the next nearest joist or girder. Once the board has been removed, the structural framing beneath should be examined for deterioration and to ensure it is sound. A new floorboard is then cut to length, and the outer edge shaped to match the adjacent boards. After priming the replacement board, nail it in place and repaint.

If a section of the ceiling is deteriorating, it is likely that there is a roof or gutter problem. To determine the cause of deterioration, inspect the ceiling, gutters and roof, including the internal roof structure. After making necessary repairs, the ceiling boards can be repaired in much the same manner as a deteriorated floorboard.

### Repairing the Porch Roof and Gutters

With roof leaks, the entire porch is at risk. Leaks can promote decay in roof rafters, ceiling joists, and columns as well as in areas more easily to detect such as the ceiling and fascia. Inspect the roof covering, gutters and flashing for deterioration and improper performance. They can then be repaired or replaced, as needed, to keep water out of the structure. Avoid having the gutters and downspouts on the main roof drain onto a porch roof.

### Repairing the Foundation

Unstable foundation supports can cause serious damage



Figure 10. This nineteenth century porch column is made of wood staves, similar to the way a wood barrel is put together. After replacing the torus and making dutchman repairs to the apophyge along the base, the column and pedestal are ready to be reinstalled on the porch. Photos: NPS files.



to a historic porch. There are numerous causes and solutions. If the posts supporting the porch deck rest on stones or brick set directly on the ground, there can be seasonal shifts due to the changing moisture content of the soil or freeze/thaw conditions that will require regular attention. Under certain conditions, it may be advisable to extend footings for the posts below the frost line.

Where moisture problems exist, improved drainage may be necessary. It is not uncommon to find that masonry joints in the foundation wall or piers have deteriorated as a result of rising damp, where moisture from the soil percolates up through mortar joints. This condition may lead to the eventual breakdown of the mortar and even old brick and soft stone. In such cases, it will be necessary to replace the areas of damaged masonry and repoint the mortar joints.

With wooden posts, insect damage or rot may necessitate corrective measures to strengthen the foundation.

Techniques can include one or more of the following: epoxy consolidation; dutchman repair; or the addition of supplemental supports to the foundation posts and joists. In some cases damage may be extensive enough that the only real solution is rebuilding the foundation.

### **Repairing a Porch Apron**

The apron, skirt, or latticework is a highly visible and functional porch feature. An apron keeps animals out from under the porch, while at the same time allowing air to circulate, preventing unwanted moisture buildup. Aprons typically are made up of a wood frame, surrounding either a simple lattice or a repetitive pattern of decorative sawn boards. Because the frame is so close to the ground, decay is common. Other causes of decay include plantings around the house that are growing too close to the latticework and improper water drainage. An apron may require partial or complete disassembly for proper repair. One or more of the apron frames should either be hinged or secured with turn buttons for easy access to under a porch for inspection and maintenance.

## **Replacement**

When individual porch parts are deteriorated beyond the point of repair or missing altogether, replacement is necessary. To retain the historic character of the porch, the replacement parts should match the historic component as closely as possible in material, design, color, texture, and other qualities. To achieve this, existing evidence of the historic design, such as a baluster or column detail, or a tongue and groove floor design, should serve as a pattern for the replacement part. When replacing an element, it may provide a good opportunity to upgrade the wood to another species that is more decay resistant, or to one with a vertical grain that is more resistant to cupping or splintering. In limited cases, it may be appropriate to use a substitute material for the replacement material as long as it conveys a close visual match. Before replacing a deteriorated historic porch component, it is important to understand

how it was constructed and installed, and what lead to its deterioration. If the replacement part does not sufficiently match the historic part, the character of the porch may be diminished, or even lost. If the cause of material failure is not addressed, the replacement will also fail.

### **Replacing Porch Floorboards**

If a large section of the porch floorboards is deteriorated, the framing beneath may also be damaged and should be assessed. Replacing floorboards can often expand into repairing the structural sills, girders, and joists beneath. Complete floor replacement will likely require the removal of floorboards that are under structural posts or columns. This may necessitate the careful stabilizing in place or the removal of the posts or columns and the installation of temporary support for the roof structure. If the floor failure was caused by inferior wood, the wood quality can be improved at this time. However, the new wood flooring should match the existing in thickness, width, shape and texture. The slope of the floor should be maintained, or a slope may need to be created if none exists. A slope of ¼ inch per foot or greater, away from the house, is needed for adequate drainage. Boards are usually laid in the direction of the slope, sloping down to the outer edge of the floor.

### **Replacing Steps**

Porch stairs receive heavy usage and are close to the ground, making them predictable candidates for deterioration. Stairs should be repaired or, if necessary, replaced by an experienced carpenter who understands the safety codes and is experienced in fabricating custom stair parts to match original detailing without depending only on store-bought parts.

### **Replacing Column Plinths and Bases, or Entire Columns**

When plinths and bases are deteriorated beyond repair, they can be replaced without replacing the column shaft, which may still be in good condition or require only minor repairs at the bottom. Such replacement will involve temporary shoring for the roof. One-story columns and shafts are often more easily removed during this work, while taller columns are sometimes supported in place. If only a few plinths or bases are deteriorated, it is often economical to have new ones made of wood to match. If numerous plinths and bases are deteriorated, replacing with bases made of rot-resistant materials can make economic sense; however, care must be taken to ensure that all the visual qualities including design, size, shape, color and texture of the historic part are matched (Fig. 11).

Entire columns may need to be replaced, but an owner should first consider all repair alternatives. Some contractors routinely recommend complete replacement of one or all columns due to the challenge of a clean repair (particularly with stave-built columns), or because they see the potential for more profit in complete replacement. If a contractor recommends complete



*Figure 11. The lower shaft of the porch columns had decayed as water wicked up through the end grain (top). The column shafts were repaired in place by cutting out the deteriorated wood and making repairs using epoxy consolidants and fillers. (bottom). The column bases were replaced. Photos: Paul Marlowe, Marlowe Restorations.*

replacement, other opinions should be sought to ensure repair is truly not feasible. Preserving the historic appearance of old columns is not the same as preserving historic columns.

Where a replacement turned or staved column is needed, a local millwork may be able to match the profile or pattern. Alternatively, the Internet is helpful in identifying potential sources of replacement columns that can match the appearance of the remaining ones.

## Replacement Materials

### Wood

When selective replacement is necessary, the key to success is the selection of suitable wood. Dimensional

stability, decay resistance and paint holding ability are wood characteristics that effect durability. Wood that expands and shrinks too much can cause paint to crack. Substances found naturally in certain kinds of wood repel fungi and insects that destroy wood. Selecting wood that is relatively stable and naturally decay resistant helps avoid problems.

The wood from trees cut one and two centuries ago was much different than most wood available today. The mature trees in older forests grew very slowly and, as a result, the annual growth rings were very close together. Today, trees grown by commercial companies for their lumber are fast growing so they can be harvested sooner. As a result, commercially farmed trees have annual growth rings much further apart, resulting in the cut lumber being less strong and decay resistant than older timber. These differences in quality are one of the reasons it makes sense to save old wood when possible.

**Wood Selection:** When choosing wood for repair and replacement work, the species, grade, grain and environmental impacts should be taken into consideration. This is especially applicable to historic porches because of their high exposure to the weather and vulnerability to decay. The best species are those with good natural resistance to decay, such as redwood, cypress, cedar or fir. A clear (knot free) grade of wood is best; however, if clear wood is not readily available or too expensive, a grade with small or tight knots is acceptable. Finally, the use of more stable vertical grain lumber is preferable to flat grain boards. Vertical grain lumber expands and contracts less with changes in moisture content, resulting in reduce warping and checks. Paint thus will hold better. The downside to using vertical grain boards is the cost, which tends to be as much as two to three times the price of flat grain lumber in the same grade and species. However, this expense is typically recovered through lower maintenance costs over the years. Thus, a decay-resistant, high-grade, vertical grain lumber is the best choice for the replacement of deteriorated porch elements, particularly flooring, stairs and milled elements such as balusters and moldings.

The best species to choose will vary depending on the region the house is located. For example, in the South, cypress is more available, making it the selection of choice in the region. Because of this wood's relative ease with which a carpenter can shape it, cypress is a good choice for replacing brackets and trim boards on a porch. In contrast, vertical grain Douglas fir is less workable, but is a very good choice for the replacement of porch floorboards in most climates. Although Douglas fir is from the Northwest, it is generally available throughout the country. For most protected trim boards on porches, white pine is a good choice as it is easy to work and is moderately decay resistant, especially if the wood is back-primed before installation. Availability of any specific wood will change annually based on market supply and demand.



## Wood Characteristics

| Species              | Cut or Grade                     | Cost   | Workability  | Resistance to Decay | Resistance to Cupping | Paint Holding Ability |
|----------------------|----------------------------------|--------|--------------|---------------------|-----------------------|-----------------------|
| Redwood              | Clear, Vertical-grain, all-heart | \$\$\$ | Fair         | Excellent           | Excellent             | Excellent             |
|                      | "B" Select, flat-grain           | \$\$   | Fair         | Excellent           | Good                  | Good                  |
| Cedar                | Clear                            | \$\$   | Fair         | Excellent           | Good                  | Fair                  |
| Cypress              | Clear                            | \$\$   | Fair         | Excellent           | Fair                  | Good                  |
| Douglas Fir          | "C" & better, Vertical-grain     | \$\$   | Fair to Poor | Good to Fair        | Excellent             | Fair                  |
| Southern Yellow Pine | "D" Select, flat-grain           | \$     | Fair         | Fair                | Good                  | Fair                  |
|                      | Vertical-grain                   | \$\$\$ | Fair         | Fair                | Excellent             | Fair to Good          |
| Eastern White Pine   | "D" Select, flat-grain           | \$     | Excellent    | Fair                | Excellent             | Good                  |
|                      | Vertical-grain                   | \$\$\$ | Excellent    | Fair                | Good                  | Excellent             |
| Poplar               | Firsts and Seconds               | \$     | Good         | Poor                | Good                  | Fair                  |
| American Mahogany    | Clear                            | \$\$\$ | Excellent    | Excellent           | Excellent             | Good                  |

*This table summarizes the characteristics of just a few of the different species available, including the workability of the wood (indicating a better wood for decorative porch pieces), the resistance to decay (an important feature for all porch components), resistance to cupping (a wood highly resistant to cupping is a better choice for floor board replacement) and paint holding ability. The Cut or Grade is also listed, as a low-grade wood can perform very differently than a higher grade in the same species. Cost will vary depending on region and market supply and demand. In general, it is best to contact two or three local lumberyards to find the available woods with the characteristics needed in the local market. Source: Practical Restoration Report, Exterior Woodwork Details.*

**Chemically Treated Wood:** Chemical wood preservative treatments are available to resist insect and fungal attack, but care should be taken to avoid using ones that may cause environmental or health risks. Borate preservatives can be applied to surfaces or injected to penetrate and protect the entire volume of the wood. Preservatives with zinc naphthenate can be applied to the wood surface, where necessary, especially to protect hidden joinery and the end grains of wood. Water-repellants can also be used to help seal out moisture. Finally, primers and paints should be applied to both protect the wood and to maintain the historic character of the porch. Note that these treatments are different than those used on most pressure-treated wood, which is typically a plantation-grown southern pine of lower quality that is impregnated with chemicals. Pressure-treated lumber can be effective when used for hidden structural members like posts, joists and sills. However, because typical pressure-treated wood is very susceptible to the deterioration of checks, warping and splitting, especially when left unpainted, it is not a good substitute for the better quality wood that is needed for visible finish porch parts.

### Stock Components

For over a century, prefabricated architectural parts have been sold through catalogues or at home improvement stores. Some companies still make generic, stock architectural components in the same general sizes and designs as those that were first manufactured. These components can be available in both wood and substitute materials. Thus, it may be possible to replace a historic stock component, such as an architectural grade column, with a new prefabricated column that matches the original. Unfortunately, these replacement parts are not designed to match the historic parts of any particular porch. Because traditionally there were many different porch elements, a wide range of styles and considerable regional variations, stock replacement parts available today are not often found to match what is needed in a specific porch repair project. When faced with deterioration of a few porch parts, all the historic material should not be removed in favor of a readily available stock design that does not match the historic appearance. The expressed goal may be to create a porch with a "consistent look," but this approach diminishes the building's historic character and authenticity.



*Figure 12. This old porch enclosure, located on the back side of a house, has acquired significance over time and is remarkable both in the appropriateness of its detailing for use by others today, as well as its high degree of maintenance. The enclosure is set behind the columns; the balustrade has been retained; and the light divisions and the size of the glass panes echo that of the windows above. Within each bay there are two well-crafted, inward swinging doors, providing for greater seasonal use of the porch. Photos: Charles Fisher.*

### Plastic and Composites

A variety of modern materials are marketed today as a substitute for wood. They are usually composite materials typically in the form of plastic resins, including vinyl (PVC), fiber-reinforced polymers and polyester resin. There are other products on the market as well, including medium density wood fiberboard and composite fiber-cement boards. The market is ever changing with the introduction of new synthetic materials and the re-formulation of existing ones. The more costly synthetic products tend to offer the best potential for matching historic features while offering good durability. This means that potential cost savings over new wood tends to be more long term than immediate. Such products generally are not carried in local home improvement stores but rather are available from building supply companies or direct through catalog sales.

The historical significance of a particular property and its porch influences decisions regarding possible use of substitute materials. In general, greater emphasis is placed on authenticity and material integrity when maintaining and repairing individually significant historic properties. However, a front porch that is repeated on rowhouses may be one of the defining characteristics of the historic district and thus of importance to the entire streetscape. So, too, can the location and appearance of a porch influence material decisions, as with, for example, a prominent front porch with ornate detailing as opposed to a small porch over a rear door.

Thus, when the historic porch contributes to the historic character of a building, the particular substitute material that is being considered should accurately match the appearance of the wooden feature being replaced. Composite materials that can be routed or shaped in the

field to match specific pieces being replaced have greater potential for use in repairing a historic porch. Materials that cannot be shaped to match the visual appearance of the historic pieces being replaced usually are not suitable for use on historic buildings.

Substitute materials need to be finished to match the appearance of the historic elements being replaced. In nearly all cases, this means that the material should be painted, or where historically appropriate, stained as with some porch ceilings. While there are substitute materials being marketed as pre-finished with either a plain flat surface or generic wood-grain texture, select those that can be painted or stained in the field.

When a substitute material is to be used in conjunction with existing or new wood material, it is important to consider the differences in expansion and contraction due to temperature and moisture changes. Before making a decision, it is also important to understand how a particular substitute material will age, what its maintenance requirements are, and how the material will deteriorate. For example, sunlight can break down exposed surfaces of plastic resins, so painting the surfaces is needed just as with wood. Low and medium density plastic foam parts are easily damaged by abrasion and physical damage, exposing the interior foam to weathering.

Wood porches are just that, porches made out of wood, just as a brick houses are made of brick and cast-iron porches are made of cast-iron. The type of materials used historically in the construction of a building helps define its character. Limited use of substitute materials that closely match missing or deteriorated features may not endanger this historic character, but wholesale replacement with substitute materials usually will.

## Considerations for Contemporary Alterations

### Enclosures

Much of the character of a historic open porch is clearly its openness. Therefore, in most cases, a historic open porch should not be enclosed. If a porch enclosure is being considered, its significance and location—as well as the nature of the planned enclosure—play key roles in whether it can be done without changing the porch's and building's historic character. While it is almost never appropriate to enclose a front porch on a historic building to create interior space, enclosing a less prominent porch on a less visible elevation could have less impact. In addition, an enclosure should retain as many of the historic porch features as possible (Fig 12).

### Insect Screening and Awnings

Traditionally, the seasonal use of porches was extended with screens and awnings. Screened porches have been popular since the advent of inexpensive and durable wire insect screening in late 1800s. Screens were often set unobtrusively behind railings and columns so the decorative components of the porch remained prominent and visible. Since screens can be damaged easily, the screening material was often set in slender, easy to repair, removable wood frames that could be installed during the warmer months, and stored in the winter. When screening a porch today, this historic precedent is recommended. Screened panels should have minimal wood framework painted either to match the porch or in a darker color to make the framing less visible. Decisions on whether screens should be installed inside the porch railings and posts, between the posts, or on the outside will depend on local traditions and on the design of the porch and trim. Screen doors on porches should be sized to fit proportionately with the porch, made of wood, and hung to swing out so insects are not brought inside with use.

Awnings, drop curtains, and valances were common porch accessories during the nineteenth and well into the twentieth centuries. Both functional and decorative, these canvas features helped shield porches from the sun's direct rays, while their colorful stripes embellished and complemented the house's exterior. Some awnings were fixed in place; others were of a roller assembly that allowed owners to easily lower or retract the awning, depending on weather conditions.

Today, modern solution-dyed acrylic fabrics—materials that resemble, but are more durable than canvas—are often used on porch awnings and drop curtains. When new awnings are installed on a historic porch, the selected awning should be appropriate in shape, material, size and color. Care should be used not to damage existing historic porch features such as columns or cornices.

### Temporary Enclosures

Temporary enclosures allow a porch to be used in colder

months while not permanently altering its appearance. In fact some have become historic features of buildings. Particularly in New England, there is a continuing tradition of installing relatively substantial glass and wood panels on porches during the winter, especially around an entrance door. These tended to have small divided lights. Sometimes porches were fully enclosed with a divided light glass door for entry, creating an enclosed vestibule that reduced the amount of cold air entering the house when the door was opened. Others consisted of simple sidewalls perpendicular to an existing entrance door, serving as a windbreak. Such enclosures were generally removed in the spring (Fig. 13).

In recent years, some porches have been enclosed during the winter with plastic sheeting (polyvinyl) for perceived energy conservation or for creation of an enclosed space. Such a treatment generally diminishes a building's historic character and is not recommended for highly visible porches.

### New Permanent Enclosures

Enclosure of a historic porch can result in significant changes in the appearance and character of the building. When considering the possible enclosure of a porch, a number of questions and concerns should be successfully addressed.

#### Is the porch on a significant elevation of the building?

A porch on a prominent elevation was there to be seen and its open qualities are visually important. Enclosing such a space should be avoided.



*Figure 13. Particularly in New England, there is a cold weather tradition of installing temporary glass and wood panels at entrance doors, thereby creating an enclosed vestibule. These enclosures with their small divided lights were generally removed in the spring.*

*Photo: John Leeke.*



*Figure 14. The enclosure of a prominent porch can dramatically change the historic character of a building. The L-shaped porch on this 1896 Shingle-style New England residence was later enclosed with aluminum windows and screens. Recent owners elected to reopen the historic porch. Among the other work, it was necessary to correct structural damage, as with this post, where beneath the wood casing carpenter ants had done serious damage. In reopening the porch, the historic character of the residence has been brought back and the traditional use of the porch is once again enjoyed. Photos: Mark Landry, Landmark Services.*

**Is the enclosure necessary?** An enclosure will undoubtedly change the porch as a historic feature and may result in damage or loss of historic materials. Depending on the significance of the porch and the nature of the building, a new porch enclosure may also change the historic character of the building. Consideration should be given to alternate solutions such as recapturing underutilized space in an attic or basement (Fig 14).

**Is the porch a highly distinctive feature of the building?** Even porches on secondary and rear elevations can be distinctive, such as a two-story porch on the side ell of a farmhouse. Porches ornamented with decorative trim that embellishes the house can also be distinctive. Enclosing these features should also be avoided whenever possible.

**Is the porch a feature repeated on a row of buildings in a historic district?** Open front porches on a block of row houses can be not only important to an individual building but can also make up a significant feature of the streetscape. Enclosing such a porch usually is inappropriate even if a porch on an adjacent building already has been enclosed.

**Will the proposed enclosure encompass the entire porch?** History has shown that the enclosure of a portion of a porch on a secondary elevation does not always alter the character of a building. In the past as indoor plumbing was introduced to old buildings, the partial enclosure of a one or two-story porch on a secondary elevation was a convenient means of providing new bathroom space while limiting disruption to the building's interior. Since early bathrooms were traditionally small in size, most of the existing porch could be retained as open space. It was common to create new walls set either between columns

or behind them, since the columns usually served a structural as well as decorative purpose. Where sleeping porches with full-length louver shutters were present, the new wall could simply be set behind and the shutters retained and fixed in place. In both cases the resulting effect minimized the impact of the partial enclosure on the appearance of the building. This also provides us with an approach that may be appropriate for a particular project today.

**Will the enclosure result in the loss of considerable historic fabric?** Unless the historic porch is so deteriorated that it is beyond repair, any consideration of enclosing all or part of a porch should incorporate retention of historic fabric. This may mean that the existing structural system needs to be augmented but generally not replaced. Distinctive features such as columns, brackets and balustrades should be retained and the new wall set behind them.

**Is the foundation adequate for the enclosure of the porch and the new use of the space?** Porches were often built on simple posts or piers, some with only minimum footings. Such structural supports may be inadequate to carry the added load of the proposed changes and the typical low space beneath a first floor porch may make installing a new porch foundation difficult and expensive. Such installations may result also in an extensive loss of historic fabric.

**How will the proposed enclosure be viewed from the outside once the interior space is furnished?** One of the approaches to enclosing a porch is to utilize near full glazing set behind existing columns in an attempt to retain a feeling of transparency. Whether such a treatment is successful depends on how it will look once it is constructed and how will the appearance on the outside be impacted by interior lighting,



mechanical systems and furnishings. The traditional use of plantings and porch awnings for shade also provided extended privacy. If historically appropriate, an existing or new awning and plantings may help to reduce the impact of a porch enclosure on a secondary but visible elevation.

### **Is the design of the proposed porch enclosure in keeping with the historic character of the building?**

Where the enclosure of all or part of a historic porch is appropriate, the selection of a compatible design and materials is important. Windows, doors, and wall material selection, along with how the new infill fits within the existing porch, are all factors to consider. A traditional technique of porch enclosures still used today involves the insertion in each column bay of one or more glass enclosures set in wood frames. The enclosures are located between or behind the columns, depending upon the nature of the porch, and mimic the pattern or size of glass panes found in historic windows on the building (Fig 15). An alternate treatment involves the use of much larger sheets of clear, non-reflective glass recessed behind the porch supports, balustrade and railing. This more contemporary treatment may be appropriate, depending upon the historic character of the building, location of the porch, and other factors (Fig 16). Windows, doors, and wall material selection, along with how the new infill fits within the existing porch, are all factors to consider.

### **Safety and Building Codes**

There are many building codes used by states and municipalities across the nation, with a majority of their requirements being very similar and focused on new construction. Building codes such as the International



*Figure 15. A traditional technique of porch enclosures still used today involves the insertion in each column bay of one or more glass enclosures set in wood frames. This enclosure is properly set back an entire porch bay from the front of the house and utilizes traditional light divisions and wood frames. The balustrade, added here for illustration purposes, shows the importance of retaining this linear feature within the enclosed bays. Photo: Charles Fisher.*



*Figure 16. The use of near full glazing to enclose a porch may be appropriate depending upon the historic character of the building, location of the porch, how the interior space is to be treated, and other factors. This enclosure of a rear porch to create a conference room successfully utilizes large expanses of glass and narrow metal framing set behind existing porch elements (a through e). Where an additional horizontal support was needed (f), the frame was placed at a location that is found in many traditional insect screen enclosures. Photo: Charles Fisher.*

Building Code and its companion, the International Existing Building Code, have been developed in recent years that are generally much more sensitive to existing and historic buildings, emphasizing the retention of historic fabric without jeopardizing life safety. These “proportional codes,” as they are called, allow building inspectors greater flexibility to make decisions based on the specific circumstances of each building, and the type and extent of work planned.

Successful rehabilitation work achieves a balance between building and safety code considerations and the retention of historic design and materials. The porch is no exception. The most common porch elements affected by code requirements are railing/balustrade height, baluster spacing, stair geometry, and structural system. When a historic porch is so deteriorated that a substantial portion must be replaced, modern building code requirements are usually triggered. These requirements are often more stringent for multi-family or commercial structures than single-family houses.





*Figure 17. The porch's structural system must be capable of supporting today's loads. In this case moisture led to the deterioration of the wood girder at the corner, creating a major structural deficiency (top). A new solid timber was installed to replace the girder (middle); alternatively a built-up girder could have been used since a fascia board would conceal it. The column base was repaired and portions replaced and the balustrade and column reset and secured (bottom). Photos: Paul Marlowe, Marlowe Restorations.*

It is important to ensure that the code-required work be done in a manner that is sympathetic to the historic character of the building. If building code requirements threaten the historic character of the porch, alternatives that reconcile the two should be explored. Many local jurisdictions issue waivers or variances for historic buildings, allowing for historic elements to be retained, when it can be demonstrated that safety will not be compromised.

In the event that an alteration to a historic porch is required to make the porch safe to use, care should be taken in planning and undertaking the work. Fortunately, there are usually a number of options that are possible, although one is usually the most appropriate preservation solution.

### **Structural Loads**

Ensuring that the structure's foundation can support the specified load is a primary safety issue for porches. Fortunately, repairs and upgrades to improve structural stability are generally made to the foundation at or below grade, and can usually be concealed under the porch or behind finish details. Weakened joists can often be strengthened with the addition of sister joists, epoxy structural repair, or the insertion of new concealed structural members (Fig. 17).

### **Stairs**

Historic stair risers are sometimes too steep and treads too shallow to meet contemporary building codes or the special needs of the occupants. In the latter case, the addition of a simple handrail that meets code may suffice. In instances where there is another stairway that meets code, for example a side stair, it may be possible to retain the existing non-conforming historic stairway.

Modifications to bring porch stairs into conformance with code can be difficult. Where buildings are set close to the street, it may not be possible to rebuild the stairs in the same direction to meet code if they will have to extend onto a public sidewalk. Unless a variance is obtained, it may be necessary to turn the stairs to be parallel rather than perpendicular to a building. Where wood stairs need to be rebuilt, the historic finish details, such as moldings, cut work and edge detailing, should be reflected in the new construction. One common mistake is the replacement of wood stairs or brick steps with concrete, a material that may not be in keeping with the historic building.

Where a porch must be used as a wheelchair accessible entrance, two general issues arise. If there is an elevation difference greater than ½-inch between the porch deck and the front door threshold, a simple threshold ramp may suffice. In cases where the elevation difference is larger than can be accommodated by a simple threshold ramp, a level platform with sufficient turning radius at the door for a wheelchair may be necessary. The other issue is devising a means for wheelchair access from the grade to the porch deck when the porch is the only



*Figure 18. When a porch is used as a wheelchair accessible entrance, it may be possible to retain the historic stairs by adding a ramp parallel to the building. Through plantings and some re-grading, the new ramp built parallel to the building (left) allows retention of the historic stairs and does not impact the historic character of the entrance (right). Photo: Iowa State University Extension.*

entrance alternative. It may be possible to retain the historic stairs by adding another entrance to the porch with the construction of a ramp parallel to the building (Fig. 18).

### **Baluster Spacing**

Codes generally require for children's safety that new balusters are spaced such that a four-inch sphere cannot fit through. Vertical balusters on older porches are often spaced farther apart than this. If modifications are required, inserting narrow metal rods between the existing balusters may be a compatible and inconspicuous solution, particularly if painted flat black or another dark color. This is generally preferable to moving the balusters closer together or adding more balusters to fill the gaps.

### **Railing/Balustrade Heights**

Historic porches generally have handrails that measure 28 to 30 inches in height from the floor. Current code requirements for new construction generally mandate that railings be 36 to 42 inches in height (often 36 inches for single family dwellings, and 42 inches for multi-family dwellings and commercial buildings). Raising the historic railing by as much as 30% or more can have a major impact on not just the proportions of the balusters, but also on the overall appearance of a historic porch. Adding a simple rail above the historic railing and painting it to hide its presence as much as possible is generally the least intrusive solution when this safety requirement must be met. Similarly, an existing bottom rail is sometimes set too high off the deck to meet contemporary code requirements. The addition of a simple wood rail or even a narrow metal pipe below the bottom rail will usually suffice (Fig 19).

It is not uncommon to find historic porches with decks only several steps off the ground and with no railings. For owner-occupied residences undergoing rehabilitation, local codes usually will not require the

addition of railings to these existing porches, provided the porch deck is below a certain height off the ground—typically from 18 to 24 inches. Where greater safety is warranted even though no railing is required, alternatives such as planting an adjacent hedgerow, installing planter boxes between columns, or raising the grade are worth considering. Where not practical or acceptable, a railing might be added so as to not noticeably impact the appearance of the historic porch. Any solution, however, should be simple and based on the character of a specific porch, and its appropriateness considered on a case-by-case basis.



*Figure 19. Historic porches generally have railings that measure 28 to 30 inches in height from the floor. When additional height is necessary for safety, a simple rail, added for illustration purposes in this photograph, can usually be installed above the historic railing. Not only does this treatment allow retention of the historic balustrade, but it also has a minimum impact to the appearance of the porch. Photo: Charles Fisher.*

## Conclusion

Wood porches have made an enduring contribution to our built environment. Porches are significant because of the special character they impart to a historic building and their role in our social and cultural history. A porch is an open sheltered part of a building, providing a covered entrance and, where larger, serving as an outdoor activity room. It represents an outward extension of a building, a place guests can initially be sheltered from the weather, even welcomed and entertained.

Like all historic building features, wood porches require routine maintenance to prevent decay. Understanding how a porch is put together and the factors that cause deterioration will help considerably in carrying out both maintenance and needed repairs. Regular maintenance pays off not only with a good appearance but also by reducing the need for future repairs. With both maintenance and repairs, emphasis should be placed on preserving the historic fabric and significant features of a porch. Where components are deteriorated beyond repair or missing altogether, new pieces should be installed that match the historic ones. Fortunately, good craftsmanship and the use of quality replacement materials as needed will be rewarded with repairs that last. Attentive care will result in the historic porch retaining its charm both in appearance and in function.

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## Bibliography

Davis, John Michael. "Exterior-Trim Details That Last," *Fine Homebuilding*, August/September 2001.

Fisher, Charles E. and Hugh C. Miller, eds., *Caring for Your Historic House*, New York, NY: Harry N. Abrams, Inc., 1998.

Kitchen, Judith L. *Caring for Your Old House: A Guide for Owners and Residents*, Somerset, NJ: John Wiley & Sons, Inc., 1991.

Leeke, John C. *Practical Restoration Reports Compendium*, Portland, ME: Historic HomeWorks, 2005.

Nash, George. "Renovating Old Porches: Common Problems Can Be Solved With Simple Repairs," *Fine Homebuilding*, July 1982.

*Preservation Briefs*, Washington, DC: National Park Service, Technical Preservation Services: 1978—present.

*Preservation Tech Notes*, Washington, DC: National Park Service, Technical Preservation Services: 1984—present.

Reed, Douglas C. "Detailing Early Porches," *Old House Journal*, May/June 2001 and July-August 2001.

Visser, Thomas D. *Porches, Piazzas & Verandas*, forthcoming.

Weeks, Kay D., and Anne E. Grimmer. *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring & Reconstructing Historic Buildings*, Washington, DC: National Park Service, 1995.