

REHAB OREGON RIGHT

HISTORIC PRESERVATION
LEAGUE OF OREGON



REHAB OREGON RIGHT

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REHAB OREGON RIGHT



CHAPTER 1: INTRODUCTION

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INTRODUCTION

Rehab Oregon Right is a manual which explains the basics of rehabilitation for the residential and small commercial property owner. This publication is part of the ongoing Rehab Oregon Right project, launched in 1985 by the Historic Preservation League of Oregon (HPLO). The first edition of this book, published in that year, was accompanied by a series of two-day workshops covering a wide range of topics on restoration and rehabilitation. Ten years later, with the publication of this second edition, the HPLO is dedicating a new series of workshops to the preservation of Oregon's historic resources.

Rehab Oregon Right is organized with easy to read chapters, graphics, and photographs. This basic manual introduces the issues and recommended approaches to rehabilitation. The expandable format will allow publication of a number of supplements which feature in-depth treatment of specific topics, including how-to advice for interior and exterior projects, and information targeted for specific building types, styles, and elements. You may also wish to use the binder format to store other information on the documentation and preservation of your historic building.

Some may approach this manual with questions on specific preservation projects. Other readers may wish to review this manual before purchasing a historic property. Still others may want to have it on hand as a reference book. Whatever your interest in *Rehab Oregon Right*, we hope you enjoy this manual and refer to it frequently during your rehabilitation project and for years to come.

PRESERVING OREGON'S HERITAGE

Most of us who live in Oregon feel lucky to be here. We have outstanding natural resources, our cities are considered among the most liveable in the country, and our rural areas encompass productive range, timber, and farm lands that still bear the traces of the people who worked them in the last century. Part of what makes Oregon so special is the sense of history we have here, and the sense of identity that goes along with it.

Oregon's historical legacy is reflected all around us: in patterns of crops reflecting land grants made in the last century; in divisions of rangeland still based on 19th century cattle empires; in towns and homesteads built along roads which no longer exist; in our bungalow neighborhoods which tell the story of early 20th century expansion. Everywhere we look, there are reminders of our heritage as Oregonians.

Among the most tangible reminders of our collective heritage are the buildings which reflect the lives and aspirations of past generations. Preserving these buildings benefits the



A Willamette Valley farm grouping.

Photo by Dave Pinyerd

community in many ways. Living and working in communities and buildings that date from our collective past keeps us in touch with our heritage. Historic buildings define community character and increase neighborhood pride. They can bring economic benefits to the community— by saving money and resources during rehabilitation, generating jobs, or by attracting visitors or customers. Historic buildings reflect who we are, where we came from, and why we are here. Thoughtful stewardship of our built environment will ensure that this sense of identity is passed along to future generations.

WHY REHAB OREGON RIGHT?

Most historic buildings were built to last, but time and subsequent changes can make them fragile and more

susceptible to damage. Knowing the proper way to approach the rehabilitation of an older building can make the difference between a successful rehabilitation project and the unnecessary destruction of historic fabric. Even well-intentioned projects can result in damage to historic materials and character if they are not thoroughly thought out in advance.

Preservationists shudder when they think of the story of the Octagon, an 18th century historic landmark in Washington, D.C. The eminent American Institute of Architects took over the building in the early 1900s as their national headquarters; in the 1950s, a decision was made to replace the original wooden structure with a more durable steel frame. Over the next decades, the brick exterior expanded and contracted with changes in weather and temperature, as it

had always done, but the rigid steel frame was not as accommodating as the wooden frame had been. This resulted in a number of serious structural problems, including cracks in the bricks.

The moral of this story is that even experienced architects can make dangerous mistakes when they stray from the basic principles of preservation. Of course, few of us ever work on such a big project as the Octagon, but the same ideas apply. This manual will help you work with your historic building to assess its needs and determine the best solutions to your problems.

USING THIS MANUAL

Although this book has been designed with the homeowner in mind, the rehabilitation advice it gives is

applicable to all kinds of small buildings. The format followed is an adaptation of common practices used in all kinds of preservation projects. Working through the chapters in order the first time you use this manual will introduce you not only to the theoretical background but also some of the technical skills required to sensitively rehabilitate your building. The first step, *Identification*, will help you learn about the broad type and style of your building and its history.

Research enables you to understand the original condition of your building and may unearth valuable (and interesting) information about early occupants, landscaping, and building techniques.

The second step, *Evaluation*, is necessary to understanding the current condition of your property. The checklists in this chapter will walk you



Historic downtown Jacksonville.

Photo by Dave Pinyerd

through an assessment of exterior and interior materials as well as an examination of the historic integrity of the building.

After you have thoroughly inspected your building and understand its strengths and weaknesses, it will be time for *Developing Your Plan*. This includes determining your priorities, financing, and strategies for rehabilitating. Chapters on *Exterior Rehabilitation* and *Interior Rehabilitation* offer specific tips and guidelines for various parts of the building.

The final section, on *Rehabilitation Resources*, will help you figure out where to go for more information and resources to do the job right. An appendix on architectural styles offers an introduction to Oregon's major periods of building and the styles that define our cities and rural areas. A separate glossary is provided for reference as you work through the manual.

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Don Peting, Dave Pinyerd, Elisabeth
Potter, Dave Skilton, and Alfred Staehli.

ACKNOWLEDGEMENTS

The first edition of *Rehab Oregon Right*, published in 1985, was patterned after the format developed by the City of Oakland, California in *Rehab Right* (1978). Many of the sections excerpted and adapted from that publication have been retained in this updated edition. Other sources include a number of National Park Service and HPLO publications (identified in the text). In addition, this version has incorporated the comments and concerns of reviewers from throughout the state, including Lisa Burcham, Mike Byrnes, Marla Cates, Andrew Curtis, Cathy Galbraith, Ken Guzowski, Roz Keeney, George Kramer,

A black and white photograph of a textured, light-colored wall. In the center, there is a small, arched niche containing a dark-colored pot with a plant. The wall has a rough, stucco-like texture. The title text is overlaid on the left side of the image.

REHAB OREGON RIGHT

CHAPTER 2: IDENTIFICATION

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IDENTIFICATION

If you plan to do any substantial work on your building, it is a good idea to start off with an understanding of the physical and historical factors that have made it what it is today. This way, you will begin your project with a better sense of which architectural features are historically important and which ones define the character of your building. In the course of your research, you might also learn about missing historic features, early occupants, outbuildings that might have existed, and other information that might influence your rehabilitation decisions.

IDENTIFYING CURRENT HISTORIC STATUS

It is possible that your building may already be a local landmark, part of a historic district, listed on the National Register of Historic Places, or part of a cultural resources inventory. If you are unsure of the current status of your building, contact your local planning office, landmarks commission, or the State Historic Preservation Office (see Chapter 7). If you find that your property already has some kind of historic designation, it is possible that much of the research process has already been done for you.

If your property does not have any kind of historic designation, it may still be listed in a local inventory. Every community in Oregon is required by state law to survey and keep an inventory of its cultural resources. The inventory provides the community's cultural resources (in most cases, historic buildings) with recognition and occasionally protection. It can be a useful planning tool, and it promotes awareness of and pride in local heritage. If your area has been surveyed, you

The National Register of Historic Places

The National Register of Historic Places is the official list of the Nation's cultural resources worthy of preservation. Authorized under the National Historic Preservation Act of 1966, the National Register is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect our historic and archeological resources. The National Register is administered by the National Park Service. Properties listed in the National Register include districts, sites, buildings, structures, and objects that are significant in American history, architecture, archeology, engineering, and culture. These resources contribute to an understanding of the historical and cultural foundations of the Nation.

Listing in the National Register has the following results which assist in preserving historic properties:

- Recognition that a property is of significance to the Nation, the State or the community.
- Consideration in the planning for Federal or federally assisted projects.
- Eligibility for Federal tax benefits.
- Consideration in the decision to issue a surface coal mining permit.
- Qualification for Federal assistance for preservation, when funds are available.

*Excerpted from the National Register brochure
"The National Register of Historic Places"*

might find a description of your property in the cultural resource inventory files. It might also include historic information.

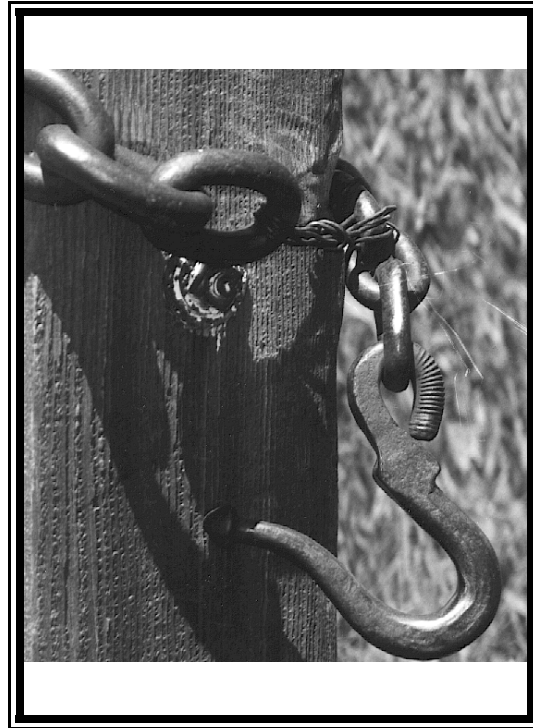
If your property has received some kind of national or local historic designation, it might be eligible for financial benefits. It might also be subject to local regulation such as design review. See Chapter 4, *Developing Your Plan*, for more information on the potential regulatory and financial aspects of historic designation.

IDENTIFYING VISUAL CHARACTER

It is a good idea to get to know your building on a first-hand basis before jumping into your rehabilitation project. The first step is to identify the features of your building which give it its unique historic character. These might include everything from decorative elements to overall form. Walk around your building, inside and out, and try to answer some of these questions:

What are the overall visual aspects of the building?

- How does it fit into its setting?
- What is its shape?
- How is it similar to and different from its neighbors? How do its size and shape compare? What about style, period, and feeling?
- Where are the projections and recesses, if any? What is their function?
- Is there a pattern to the openings?



Hand-worked hardware, discerned at close range, is one of the elements adding character to an Eastern Oregon ranch.
Photo by Dave Pinyerd

- Do the materials used give the building a special texture or feeling? (The effect of stucco, for example, is very different than the effect of a horizontal siding.)
- How do the entrances relate to the rest of the building? Are they prominent? Hidden?

What other exterior characteristics can you discern at close range?

- Is there any evidence of craftsmanship? Of hand or machine working of the materials?
- What evidence of age can you see?
- What kind of detailing does the building have? What kind of ornamentation?

What are the characteristics of the interior?

- What are the visual relationships between spaces?
- What are the features in each room which define its character?
- What kind of original features remain? Fireplaces? Trim? Fixtures? Floors?
- Are the original features being emphasized? Are they hidden?

You might want to make a list of the visual features which you think give your building its character. Preservation Brief 17: "Architectural Character: Identifying the Visual Aspects of Historic Buildings as an Aid to Preserving Their Character" has been the major source for the ideas presented in this section, and is a valuable source for anyone wishing to learn more about identifying the visual character of a property.

KNOWING YOUR STYLE

Every building is influenced to some extent by the owner or builder's ideas of what is attractive or fashionable. Knowing the styles and construction methods prevalent when your building was constructed is an important way to make sure the changes you are planning are historically appropriate. If you don't know the date of construction of your building, knowing its style can help you narrow down a range of dates. Appendix A, *The Importance of Addressing Style*, gives a brief history of building fashions in Oregon. Once you have made a preliminary identification of the style of your building, there are a number of excellent reference books listed in

Chapter 7 which can lead you to even more specific information on the type of building you own.

RESEARCH

There are a number of ways to conduct research on the history of your building. One of the most important sources of information is physical evidence found in the building itself. Evidence of construction methods, stages of construction, previous uses, and alterations are all part of the physical record of your building. Many clues are visible on the exterior of a building. Breaks in the siding might indicate a filled-in window or an addition. Changes in the foundation materials might mean the same thing. Often you can tell when a porch has been filled in to form a new room or when a new, obviously incompatible, window has been installed.

It is a good idea to supplement your observations on the physical history of the building with historical research. The first step is to find out if your building is listed on the National Register of Historic Places or in a local inventory. If it is not, you can start from scratch and construct a complete history yourself, or you can hire someone to do it for you.

Historical Research

Researching older properties can be a fascinating process, offering glimpses into the lives of people and ways of living now long gone. It offers practical benefits as well. Information such as date of construction, original owners,

and historic uses can aid in your preservation planning process.

A typical first step is to try to establish a record of ownership, beginning with the original subdivision of the land (or sometimes the Donation Land Claim) and ending at you, the current owner. Armed with your exact legal description (map and tax lot number, obtainable on tax statements or at the county assessor's office), you should be able to trace back the deed at your county courthouse or at a private title search company. You can either start with your own name and work backwards, or work forward from the person or people who divided the land into lots (in towns) or the original land claim owner (in rural areas).

Once you know the owners at various dates in the property's history, it will be easier to use a variety of other sources available at local libraries, museums, and in family collections. The use of city and county directories, historic maps and views, photographs, newspapers, institutional records, and/or interviews will start to fill out the picture. A number of publications have been written on researching building and family histories; one which is available free of charge from the Federal Government is National Register Bulletin 39: "Researching a Historic Property." (See Chapter 7 for information on ordering this and other free National Register publications.) Local historical societies and genealogical societies may also be able to provide direction and hints for your research.

The following list of questions might help guide you while you are conducting research:

- When was the building constructed?
- Who was the architect/designer/builder?
- Who was the original owner?
- Is there knowledge of property owner transactions?
- Are there alterations or additions? When did they occur?
- Is the building on its original site?
- Has there been a change in building use?



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CHAPTER 3: EVALUATION

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Once you feel you understand the historic significance of your property, it is time to take a closer look. In the evaluation phase, you will examine the condition of your building, a necessary step before deciding what action to take. The first thing to evaluate is the *integrity* of your building, a concept that will be explained in the following section. The rest of this chapter presents a series of inspection checklists which can help you determine your building's condition. Once you have this information in hand, you will be able to make an informed decision on what action to take.

INTEGRITY

The many principles of preserving old buildings can be summed up in two general rules: *preserve historic materials wherever possible*, and *always preserve a building's distinctive character*. The measure of how much of the original material and character is intact is considered the *integrity* of the building. A barn that is still used for agricultural purposes in a rural setting, retaining most of its original materials and features, might be said to have high integrity. A garage which has been moved to a different location on its property and expanded to accommodate extra cars would probably have low integrity.

Before you start making changes to your property, it is a good idea to assess its integrity. After you have determined which aspects are intact and which have lost their character or fabric, you will be in a better position to plan restorative work.

Preservationists look at a number of different factors in assessing integrity. Your building might have very high integrity in some respects and very little



The facade of this bungalow has been replaced, decreasing its integrity. See Appendix A for examples of high integrity. Photo by Dave Pinyerd

in others. Whatever the case, it is important to consider how intact the original materials and character of your house are so you can find an appropriate way to preserve them.

These are just some of the areas in which your property might have or lack integrity:

Design: Have the form, plan, spaces, structure, and style of your building been altered? Putting on additions or incompatible decoration (such as putting Craftsman style knee brace brackets on

an Italianate house) or changing the type of surface materials (e.g., installing vinyl siding over a wood-clad house) are examples of actions that reduce the integrity of design of your building.

Materials: How much of the original fabric of the house is intact? If it has been replaced, has it been replaced in kind (with the same materials— e.g., using the same type of shingles or siding as the original)? Changing the type of material used on the building can have a major impact on its appearance.

Workmanship: Does your building still show the craft skills and methods of its period of construction? A log cabin or timber-framed barn might still show evidence of hand-hewn timbers.

Victorian-era buildings might have highly elaborate brackets or other ornamentation. Bungalows might have built-in cabinetry. All of these features are important records of building practices and individual workmanship.

Setting: Has the character of your building's environment changed? Does the site have a similar landscape? Does the building still have its historic relationship to its neighbors? What about outbuildings, such as garages? Does it still have historic walkways, driveways, or its historic relationship to the street? The spatial relationships of your building to its setting are an important part of its historic character.



This Eastern Oregon cabin still bears evidence of the tools used to shape the timbers. It has high integrity of workmanship and materials.

Photo by Dave Pinyerd

EXTERIOR CHECKLIST

Before you start work on your building, go through the checklists provided in the next few pages to evaluate where to focus your attention. The following list was extracted from *Principles of Home Inspection* and *The Old House Journal Compendium*. You might need to have some of these items with you as you go through your building: flashlight, plumb line, penknife, binoculars, paper and pencil, and this inspection checklist. After you've made notes on the condition of your building, Chapters 5 and 6 will offer suggestions on how to approach your problems.

Building inspectors can be hired for a relatively small fee to examine your property for physical problems. You can hire a specialist, such as a pest inspector,

or find an inspection service that will cover the entire building.

The Site

- ☐ Is the land properly graded to provide for good drainage?
 - ☐ Does the driveway or sidewalk have cracks?
 - ☐ Check retaining walls for cracks and bulges.
 - ☐ Review all landscaping for dead and diseased plant material.
 - ☐ Check all outbuildings, porches, patios for fungal and insect damage.
 - ☐ Do plant materials appear to be original to the building's period of construction?
 - ☐ Is there evidence of alterations to the historic landscape?
- ☐ Are there vertical cracks in the foundation wall?
 - ☐ Does the ground slope away from the foundation to ensure good drainage?
 - ☐ Check the downspouts to see if the roof water is diverted away from the foundation.
 - ☐ In wood frame buildings, check to make sure the sill is anchored to the foundation.
 - ☐ Is there any *efflorescence*?
Efflorescence is a salty deposit on the surface of masonry indicating past or present moisture infiltration problems.

Foundations

Several different foundation systems were used in historic buildings in Oregon, from stacked stones to poured concrete. Masonry foundation walls often are subject to stress which causes the masonry to expand and contract, causing cracks and sometimes more serious problems.

- ☐ Are wooden foundation members well above ground level? There should be a minimum of 18 inches between ground and joists. Are the posts and piers stable?
- ☐ In a brick foundation, are there any cracks between bricks? Cracks which run diagonally are more serious.
- ☐ Check any mortar and bricks to make sure they are not soft and crumbling.

Insulation and Crawlspace

Before 1940, most buildings were constructed without insulation; some old buildings have had insulation added. Historically, buildings with masonry walls are usually not insulated.

- ☐ Is there any insulation visible between the floor joists?
- ☐ Has insulation been blown into the side walls?
- ☐ Is moisture ponding under the building?
- ☐ Check the crawlspace for adequate ventilation, insulation and vapor barriers.

Siding

The exterior walls of your building will weather gradually as they are subjected to the changing environment. Your siding may need attention and repair regardless of its composition.

- ☐ Are the exterior walls plumb? Are there any bulges?
- ☐ Are joints between different materials protected with flashing? Does the flashing seem to be intact?
- ☐ Any signs of cracks along masonry walls? (Horizontal cracks and hairline cracks in bricks are not a major problem; cracks that run vertically and diagonally through bricks and mortar are more serious.)
- ☐ Is mortar crumbling; are bricks gone? (Loose masonry is easily attacked by water.)
- ☐ Is masonry painted? (If so, it should be repainted about every five years, depending on local conditions.)
- ☐ Stonework: Is there spalling, cracking or crumbling of the stone?
- ☐ Horizontal boards: Are the boards loose, cracked or missing? Do they show stains or signs of rot? Are they painted or otherwise protected?
- ☐ Shingles: Are they in place? Are they painted?
- ☐ Is the exterior paint in good condition? The caulking?

Doors and Windows

Open and close the doors to make sure they fit well. Wooden window and door frames often swell and shrink during the winter and summer. Open and close all windows to see if they operate, fit tightly, and keep out the weather.

- ☐ Check for damaged frames and broken glass.
- ☐ Check caulking putty and weatherstripping.

- ☐ Do all the doors and windows operate?
- ☐ Are the doors squarely in their frames?
- ☐ Check for rotting or infestation of sills and frames.
- ☐ Check for paint deterioration and finish.
- ☐ Is the flashing intact?

Infestation

Insects are a common source of frustration to Oregon property owners. Problems with termites and other pests occur when the wood framing system of the building is in contact with the soil, or if moisture has been permitted to accumulate in the wood.

- ☐ Check for veins of dirt on the interior or exterior walls.
- ☐ Check for small holes and frass (the sawdust-like leavings of the powder post beetle).
- ☐ Tap and probe the wood around the house to see if it is sound.
- ☐ Make sure all exterior wood is 6-8 inches above the ground.

If you are considering buying an older building, get an inspection by a qualified pest inspector. This is often done when the property is changing hands, as many lending institutions require a report. The report includes analyzing the presence of any structural pests, assessing the damage, and recommending preventative measures.

This type of report is generally not very expensive to prepare, and is money well worth spending if you are investing in property to rehabilitate.

Porches

- ☐ Wooden porches: Check for rot and infestation.
- ☐ Check for structural stability.
- ☐ Check the flashing at the connection of the porch roof and the main building.
- ☐ Is the paint in good condition?
- ☐ Does the roof leak?
- ☐ Concrete porches: Check for cracks due to settlement.

Roof

Your roof is one of the most important parts of your building. It is the hardest hit by rain, snow, wind, sun, freezing and thawing temperatures. Roof leaks usually develop in the flashing where the roof joins the chimney, around dormers, or in the valleys where two roof slopes meet. You should check the flashing once a year and repair it when necessary.

- ☐ Pitched Roof: Are there missing or broken shingles?
- ☐ Asphalt shingles: is the roof lumpy and do the edges of the shingles look curled or broken?
- ☐ Flat roof: Are there bubbles or a separation in the asphalt or roofing felt?
- ☐ Is there loose flashing around the chimneys?
- ☐ Is the masonry cracked or crumbling on the chimney?
- ☐ Are there any loose, rotted or missing gutters on the exterior of the building? Are downspouts working?

- ☐ Are wooden elements such as exposed rafter tails protected from the weather by paint?

Seismic Stability

Oregon has not been hit by a major earthquake in a long time, but many scientists agree that it is likely that "the big one," when it comes, is likely to be *very* big. The danger is particularly great west of the Cascades. The following checklist is adapted from the State of Utah Historic Preservation Office's "Bracing for the Big One: Seismic Retrofit of Historic Houses."

- ☐ Does your building show signs of settlement or movement, e.g., cracks, sloped floors, leaning walls?
- ☐ Is your foundation in good condition?
- ☐ Are columns, particularly in the basement, rotted, undersized, or poorly attached to the basement floor or the beams they support?
- ☐ Is there a "soft" story— weak, undersized, unbraced walls or columns such as a garage or an open basement— supporting a heavy, solid portion of the house?
- ☐ Are there any "cripple" walls (i.e., wood studs without structural sheathing or plywood) supporting floors or walls above?
- ☐ Are there large openings in the exterior walls, or openings which were added or enlarged?
- ☐ Are additions securely attached to the building? Are they pulling away due to settlement or a poor foundation?
- ☐ Are porch columns straight, sturdy, and secured?

- ☐ Are your floor joists intact? How are they attached to the foundation walls? If not securely attached, they could slide away in an earthquake.
- ☐ Are roof rafters or trusses securely attached to a load bearing wall?
- ☐ Are masonry chimneys, parapets, or gables secured?
- ☐ Are there tall furnishings unsecured to inside walls? Is the water heater secured?

INTERIOR CHECKLIST

Walls, Ceilings and Floors

- ☐ What finish do the walls have now? Is it original?
- ☐ Is there damp plaster? If so, the leaks are coming either from the exterior (probably a leaky roof) or from internal pipes.
- ☐ Is there loose plaster in walls or ceilings? Cracks in plaster are normal, but plaster that is spongy when you push on it will have to be repaired or replaced.
- ☐ Is the original flooring in good repair? What types of flooring are there throughout the building?
- ☐ Is there any damage to the floor around water fixtures?
- ☐ Do the floors sag or tilt?

Stairs

- ☐ Does the staircase bounce when you jump on it? Are there gaps between treads, risers and side stringers?
- ☐ Check all stairs and railings for stability.

Doors and Windows

- ☐ Doors: do they open and close properly? Do they hang straight?
- ☐ Check all hardware on doors and windows. Is it operable?
- ☐ Does the window sash move up and down smoothly?
- ☐ Do window frames show signs of substantial water leakage? (Look for chipped and flaking paint at the bottom of sash and sills.)

Fireplaces

If you use your fireplace regularly, make sure you have it cleaned and inspected on an annual basis. Many problems, such as creosote buildup, are not likely to be detected by the average homeowner until they become a dangerous problem.

- ☐ Do the fireplaces work?
- ☐ Does the mantel front have smoke stains on it?

Electrical

If your electrical system is old, have a qualified electrician inspect it for safety. Electrical systems that have not been updated for many years can be a serious life and safety hazard and should be made a top priority in the upgrading of any building.

- ☐ Does wiring in the basement appear to be old and frayed? Is any of it cloth-covered?
- ☐ Locate the fuse or circuit breaker box. Old fuse boxes have only 3-4 fuses in them, indicating there will only be 30-40 amps. This is not enough for most households and businesses. 200 amp capacity is more typical for modern residential use.
- ☐ Do all ceiling light fixtures operate and have wall switches?
- ☐ There should be at least one electrical outlet on each wall in every room.
- ☐ Are outlets grounded? There should be at least one grounded outlet in every room. Some three-prong outlets are not grounded; it is simple to test them using a small tool available at hardware stores.

Plumbing

Most plumbing problems stem from leakage problems or pipes being clogged with rust and deposits. The water piping in your building will be of brass, copper, lead, or galvanized iron. If you think you have original or outdated plumbing, have a qualified plumbing inspector look over your system for safety. You will probably have to replace original pipes.

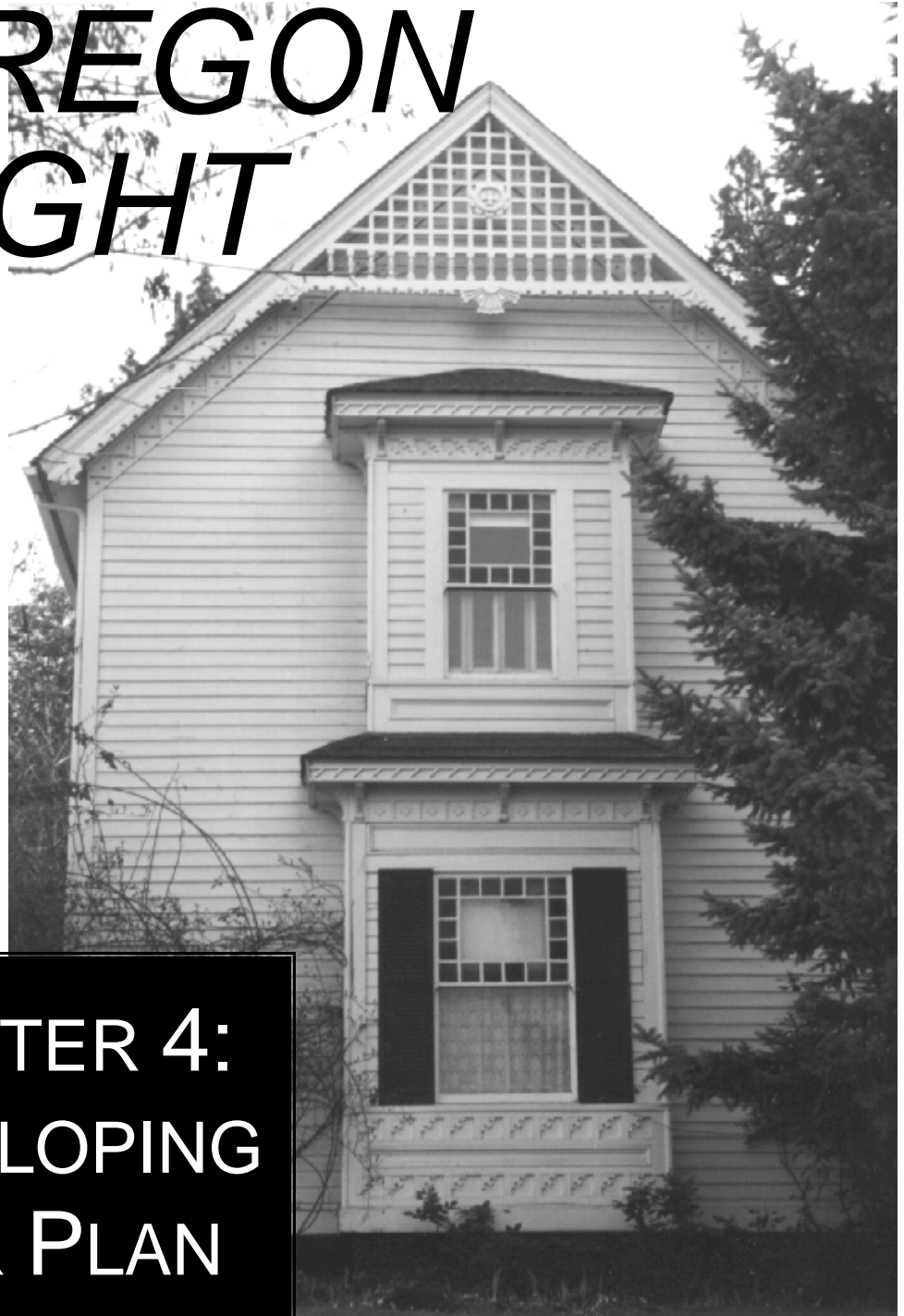
- ☐ Check to see what type of water pipes you have; are they original to the building?
- ☐ Check all faucets and drains for leaks.
- ☐ Look at the condition of the shower stall pan and the strainers on the shower heads.
- ☐ Is there enough water pressure? (Turn on the top floor sink faucets at the same time you turn on the bathtub and flush the toilet.)
- ☐ Is plumbing connected to a city sewer system?
- ☐ Is water supply from a city main, a drilled well or a shallow well? If your water is well water, have it analyzed by the County Public Works Department.
- ☐ Check all caulking and the need to repair or replace loose tiles.

Heating and Mechanical

- ☐ What type of system do you have? How old is it?
- ☐ Does your heating system run smoothly?
- ☐ Are fuel bills high?
- ☐ The capacity of your hot water heater should be at least 40 gallons.
- ☐ Are there signs of leaks or rust spots on the hot-water tank?
- ☐ If you have steam heating systems, check the floor boards around radiators for rot and black stains. These indicate a leaky system that hasn't been maintained.

REHAB OREGON RIGHT

CHAPTER 4: DEVELOPING YOUR PLAN



CHAPTER 4:

DEVELOPING YOUR PLAN

Now that you have evaluated the condition and integrity of your building, you can go ahead and start planning your rehab project. The goal of Chapter 4 is to help you establish your priorities on paper before starting work. This chapter will walk you through defining your priorities, figuring out budgeting and financing, and understanding the essentials of implementing your plan.

Before actually starting your rehabilitation work, it is important to spend time creating a workable plan. Time spent organizing your project at the beginning will help you save time, energy, and money. Below is a list of questions to keep in mind while planning your rehabilitation.

- What are my goals, both short-term and long-term?
- How can I protect the historic character of the building?
- What can I afford to spend on this rehabilitation?
- How large is this project? Can I realistically do it myself, or do I need an architect's or contractor's help?
- Have I looked into all the various types of loans and financial assistance programs?
- Do I have all the permits I need?
- Have I considered the impact of special concerns such as a termite report, disaster preparedness, safety, public access, and the environment? How will these concerns affect my project?

PRESERVATION PRINCIPLES

As mentioned in Chapter 3, the basic rules of good preservation can be summarized in two general ideas: *preserve historic materials wherever possible, and always preserve the historic character of your building.* A more detailed explanation of preservation standards are set forth in The Secretary of the Interior's Standards for Rehabilitation, which have been developed to direct work undertaken on historic buildings under federal control

or using federal funds. Although these standards were created for work on National Register eligible properties, they are widely considered to be the basic ground rules for good preservation, and the principles they set forth apply to every preservation project. Understanding these simple guidelines is the best foundation for a historically sensitive project.

In addition to these standards, the National Park Service has developed a set of guidelines for their application. The Secretary of the Interior's Guidelines for Rehabilitating Historic Buildings offer more specific examples of suggested "dos and don'ts" for historic properties. Examples of these Guidelines are quoted throughout Chapters 5 and 6, *Exterior* and *Interior Rehabilitation*.

Defining Preservation, Rehabilitation, Restoration, And Reconstruction

As you make changes to your property, you will want to retain as much historic material as possible for the type of work you are doing. To better define the scope of your project, it may be useful to look at four approaches to working with historic properties. The following definitions

The Secretary of the Interior's Standards for Rehabilitation

1. A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.
2. The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.
3. Each property shall be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.
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.
6. 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. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.
7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.
8. Significant archeological resources affected by a project shall be protected and 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 the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.
10. New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

The Americans With Disabilities Act

Historically, most buildings and landscapes were not designed to be readily accessible for people with disabilities. In recent years, however, emphasis has been placed on preserving historically significant properties, and on making these properties— and the activities within them— more accessible to people with disabilities. With the passage of the Americans with Disabilities Act (ADA) in 1990, access to properties open to the public is now a civil right.

Legal requirements for accessibility vary according to local laws, but the ADA requires that owners of "public accommodations" (theaters, restaurants, retail shops, private museums) must make "readily achievable" changes; that is, changes that can be easily accomplished without much expense. This might mean installing a ramp, creating accessible parking, adding grab bars in bathrooms, or modifying door hardware. The requirement to remove barriers when it is "readily achievable" is an ongoing responsibility. When alterations, including restoration and rehabilitation work, are made, accessibility requirements are triggered.

In general, when historic properties are altered, they should be made as accessible as possible. However, if an owner or a project team believes that certain modifications would threaten or destroy the significance of the property, the State Historic Preservation Officer should be consulted to determine whether or not any special accessibility provisions may be used. [Normal ADA requirements can often be relaxed in the case of historic buildings.] Solutions for accessibility should not destroy a property's significant materials, features, and spaces, but should increase accessibility as much as possible.

*-adapted from Preservation Brief 32:
"Making Historic Properties Accessible," by
Thomas C. Jester and Sharon C. Park. Further
references on ADA requirements and
increasing accessibility may be found in
Chapter 7.*

are provided by the National Park Service for treatments that may be undertaken on historic properties listed in the National Register of Historic Places. Understanding these different levels of preservation can help you get a better idea of what type of treatment is appropriate for your building.

Preservation: The act or process of applying measures to sustain the existing form, integrity, and material of a building or structure, and the existing form and vegetative cover of a site. It may include initial stabilization work, where necessary, as well as ongoing maintenance of the historic building materials.

Rehabilitation: The act or process of returning a property to a state of utility through repair or alteration which makes possible efficient contemporary uses while preserving those portions or features of the property which are significant to its historical, architectural and cultural values.

Restoration: The act or process of accurately recovering the form and details of property and its setting as it appeared at a particular period of time by means of the removal of later work or by the replacement of missing earlier work.

Reconstruction: The act or process of reproducing by new construction the exact form and detail of a vanished building, structure, or object, or a part thereof, as it appeared at a specific period of time.

SETTING PRIORITIES

Rehabilitating your old building means much more than making it look good. The most important jobs are those which ensure the structural stability of the building and the safety of the people within.

Before you buy a single can of paint or worry about having the right ornamentation, address these fundamental issues:

- Utilities: are they up to code? Are electrical and gas lines safe? Does plumbing leak?
- Foundations: Is the building firmly attached to a stable base?
- Building envelope: Is your building weatherproof?

PLANNING FOR ACCESSIBILITY

Some historic property owners, especially those with commercial buildings, will have to face the issue of accessibility to people with disabilities. In some cases, this might be a legally mandated responsibility; for homeowners, it might be a matter of opening the house to a loved one. To determine your accessibility needs, the National Park Service recommends a three step process much like the overall preservation process advocated in this manual:

1. Review the historical significance of the property and identify character-defining features;
2. Assess the property's existing and required level of accessibility; and

3. Evaluate accessibility options within a preservation context.

If you think you need to modify your property to improve access, try to design changes to be sensitive to the existing historic fabric. In many cases it may be just as simple to regrade as to install an intrusive ramp, or to install offset hinges instead of widening existing doorways. If you need to hire an architect to work on your accessibility design, make sure to find one who has some experience and training in historic preservation.

The National Park Service's Preservation Brief 32: "Making Historic Properties Accessible" provides a good introduction to the issues of accessibility (see sidebar). A free brochure, "Preserving the Past and Making it Accessible for People with Disabilities," is also available from the National Park Service; see chapter 7 for NPS ordering information.

CURRENT REGULATORY STATUS

In Chapter 2, as part of the research on your building, it was suggested that you determine if your building is listed on the National Register of Historic Places, a local register, or as part of a local inventory. Each of these types of recognition is an honor which might also bring with it some kind of restrictions on changing the historic nature of the property.

Local Regulation

Many cities and counties in Oregon maintain listings of buildings and districts that are particularly important to local heritage. These are usually distinguished by strong architectural merit or special associations with the history of the region, and typically have high integrity. In order to protect the historic character of these landmarks, many localities have passed laws to prevent extreme alterations or destruction. Such laws usually apply not only to locally determined landmarks, but any property that has been placed on the National Register of Historic Places either as an individual listing or as a contributing building in a historic district.

The type and extent of regulation is determined at the local level, and varies between jurisdictions. Many local governments reserve the right to review any major changes in such landmarks' exterior appearance through a process known as *design review*. If your

property is in an area with design review, building permits may be denied until your plans are approved. Many local governments also have the ability to delay demolition permits, and some can refuse to allow demolition.

These safeguards protect the historic character of the property without affecting the owner's ability to perform routine maintenance, make interior changes, and make minor changes to the exterior. In addition, in some localities, properties which have been identified in a local inventory as being of primary significance to the community might be restricted, especially in terms of the owner's ability to apply for a demolition permit.

Although the federal government maintains the National Register of Historic Places, there are no federal restrictions on listed properties unless federal money is involved (for example, a property owner who is getting a federal tax credit is restricted in his treatment of the property, as are agencies with federal funding).

Conservation Districts

Due to 1995 changes in state law weakening the power of local jurisdictions to regulate historic districts, the *conservation district* is expected to become a more and more popular way of keeping local control in historic areas. They are different than historic districts because they are not a form of government-imposed designation.

Conservation district administration is typically shared by the local landmarks commission and an advisory board of district residents. The level of regulation is lower than in most historic districts; typically, only permits for new construction, additions, and demolition are reviewed. Owners are not required to seek approval for exterior changes other than additions, although the advisory board is available to review plans and offer suggestions. Guidelines may be written for the district, offering standards for city improvements (plantings, road work, etc.) and suggestions for property owners. The success of conservation districts is based on the interest and enthusiasm of district residents who recognize that preserving the historic character of their community results in increased pride and enhanced livability.

Likewise, the state of Oregon imposes no restrictions on property owners except for those who are receiving state financial incentives.

If your property is covered by a local landmarks ordinance, it is important to get in touch with your preservation planner or landmarks commission early in your rehabilitation process. They can tell you what kind of changes are allowed in your area and what kind of financial assistance is available. They can also give you good ideas for your project and might be able to tell you about how other property owners in your area have faced similar problems. If you aren't sure if your property is listed on a register or inventory, or if you would like to find out more about the nomination process or specific regulations, contact your local landmarks commission or planning department staff (listed in Chapter 7).

BUDGET AND FINANCING

Setting reasonable and achievable goals is the key to any successful rehabilitation project. These goals must take into account both the rehabilitation requirements and costs. Portions of the following information on budgets, financing, and buying a property is adapted and excerpted from *Rehab Right* (City of Oakland, California, 1978).

The first thing to determine is why you want to rehabilitate a property. If you view the property as an investment and hope to resell it quickly, most of your budget will probably go into basic improvements. But if you plan to keep

the property for your own use, you will probably spend more on things such as decoration, wallpaper, etc., which might not make as much difference in the resale value but will improve the quality of your experience there.

Your Rehab Budget*

Once you have looked at the condition of your property and set goals, establish a rehab budget before you do anything else. Here's how to prepare a useful rehab budget: first, determine how much money you can afford to spend on housing each month. Conventional wisdom dictates that housing should cost between 25% and 30% of net income. If your monthly take-home pay is \$3,000, then the housing budget should be \$750-\$900.

To personalize the 30% rule of thumb, review your records to see how much your current housing actually costs you. If you've been spending \$900 a month out of \$3,000 take-home pay, and still have been able to put \$150 per month in the savings account on a regular basis, then you can probably afford a higher housing budget if you are willing to dedicate future savings to the rehab job. The reverse also holds. If \$900 per month has been too steep, don't plan to spend that much in the future either. If you forecast an increased income, make sure the prediction is reliable enough to bank on before enlarging the housing budget.

Second, find the difference between the amount of money you can afford to

*Adapted from *Rehab Right*, City of Oakland, California, 1978.

spend on housing and the bills you currently pay. The difference will be available for rehab work. Continuing the same example:

<u>Housing Expenses</u>	<u>Cost/Month</u>
Mortgage Payments (principal & interest)	330
Real Estate Taxes	195
Insurance (fire & liability)	75
Utilities (electricity, water, garbage)	120
Miscellaneous repairs & reserves (10% of total)	72
<hr/>	
Monthly Total	\$782

The difference between \$900 affordable and \$782 expendable is \$108 a month. What will \$108 a month buy? That, of course, depends on how long you wish to amortize the rehabilitation (1, 10, or 20 years). This is what determines the rehab budget. Your financial goal should be to stay within your budget.

Loans and Loan Assistance Programs*

Shop around for the best way to utilize the extra housing money that is at your disposal. Different lenders have different loan programs. Interest rates and terms vary from one institution to the next, so do make comparisons. The selection of a loan program depends to a great extent on your financial strength, because this is the criterion by which lenders evaluate credit and city staff

determines eligibility for subsidized loan programs. Your lender will be helpful in the rehab financial process. Talk with him or her early in the process. Banking institutions usually lump improvement loans into two categories: personal home improvement loans and commercial loans.

Personal loans vary in interest rates and terms according to the amount of money you are considering borrowing. You have the option of taking out a second mortgage, refinancing the first mortgage, or taking out a home equity loan. Contact your lender for information on these and other programs that may be available.

City Loan Programs

You may be eligible for a local subsidized loan for improvements to old or historic buildings. To find out if your community has a rehabilitation loan program available, inquire at your local city housing or planning office (see Chapter 7 for a list of local preservation authorities). Not all communities have such programs, and eligibility requirements vary. In some locations, you might have to own a registered landmark or be located within a historic district to qualify.

Buying Property*

If you are about to buy a house that needs work, try to finance the rehabilitation with the first mortgage. This allows you to get home improvement funds at the more affordable mortgage rate instead of the more costly rate for home improvement

*Adapted from *Rehab Right*, City of Oakland, California, 1978.

loans. The United States Department of Housing and Urban Development (HUD) offers a mortgage program specially designed for this type of situation (see sidebar).

The value of a building is heavily influenced by the value of surrounding property and the quality of the neighborhood. Improvements to one building that are in concert with improvements to other nearby buildings can push property values up.

Whether buying a new building or fixing up an old place, see if rehabilitation is underway elsewhere in the neighborhood. Call the appropriate city offices to learn if parks, sidewalks, street trees, or any other public projects are slated for the area. Drive around to see if there are any other signs of ongoing improvements. From this quick tour, you can determine the concern and level of energy put into properties by owners and tenants alike. Yard upkeep, fresh paint, general maintenance, and overall cleanliness are good indicators. Look too for signs of work in progress: debris boxes, trade trucks, scaffolding.

To get a feel for how much you can afford to improve the house and still recoup the investment, look at the direction the neighborhood is moving, and investigate the market value of buildings comparable to the one you are interested in. If you see other properties for sale in the area, call the realtors and inquire about the asking price.

State Property Tax Freeze

Owners of historic buildings may also look to the State of Oregon for financial incentives for preservation

203(k) Mortgages

One of the most perfectly tailored financing options for purchasing a historic home is HUD's 203(k) Mortgage Rehabilitation Insurance Program. HUD offers this loan program for one- to four- family dwellings needing at least \$5000 in repair work. This program is particularly attractive because it combines the purchase price and cost of rehabilitation in the first mortgage at a relatively modest cost. Requirements for the loan include completing the work within six months of closing, having a scope of work approved by the mortgage company, and undergoing inspections by a HUD 203(k) certified inspector. The loan amount is intended to cover professional work; in some cases, owners with documented construction skills may be allowed to perform the rehabilitation work themselves.

The 203(k) program, initiated in 1961, is only now beginning to gain popularity due to recent changes that simplify the process. Not all mortgage companies offer the loans, so be sure to shop around until you find the lender that can offer the right loan for you.

through a program known as the Special Assessment. Oregon law allows owners of properties listed on the National Register of Historic Places to receive a freeze on the assessed real market value of their building for 15 consecutive years. Eligible property owners, in turn, agree to provide and follow a preservation plan and to have a yearly open house.

Paying property taxes on the frozen value can be of considerable help to property owners who are beginning improvements on their buildings. Contact the State Historic Preservation Office for more information on the Special Assessment Program (see Chapter 7).

Federal Tax Incentives

The Tax Reform Act of 1986 allows owners of certified historic structures to take a 20% tax credit on rehabilitations of \$5000 (or the adjusted basis of the building, whichever is greater) when the property is used for industrial, commercial, or rental residential purposes. To qualify for this credit, owners must perform what is known as a "certified rehabilitation." This means that the property owner applies through the State Historic Preservation Office, presenting a plan for rehabilitation in accordance with the Secretary of the Interior's Standards (listed earlier in this chapter). The National Park Service certifies the rehabilitation work based on the SHPO's recommendation.

For owners of properties which are more than 50 years old but are not certified historic by either the National Park Service or a local agency, a 10% tax credit may be available for nonresidential uses. Contact the SHPO in Salem for more information (see Chapter 7).

IMPLEMENTATION CONCERNS

When to Get Help

One of the important decisions you must make early in the rehab process is who will oversee the project. Whether or not to hire a contractor is a decision worth considering carefully. A rehab project that was at first thought to be fun may end up a nightmare if not planned out and completed carefully. There is a time for professional help in any rehab job. Look for a professional

when you don't have the time, skills, knowledge, or equipment to do a good job. Codes and loan contracts may in some cases require the use of a licensed contractor. You must also use a licensed contractor if you are rehabilitating with the intention of immediately selling the property. Laws on contracting requirements, licensing, and bonding are frequently changed; contact the Construction Contractors Board for up-to-date information on these and other topics (see Chapter 7).

If you only want help with specific tasks, you can hire a professional directly. Ask around for recommendations, or contact the Historic Preservation League of Oregon for the names of recommended individuals in your area.

If your job is larger, you might want to hire a general contractor. A general contractor can oversee complex jobs from beginning to end, and assumes certain legal responsibilities for the quality of the work. He or she is also responsible for hiring specialists, or subcontractors, to perform work such as plumbing or wiring.

Despite these precautions, there are many opportunities to participate in the rehab process and to save money doing so. Most people will be able to identify certain portions of the rehab project which they can comfortably handle. Once you have consulted Chapters 5 and 6 for the particular repair problems you face, you will probably discover that you can do much more than you had suspected. In fact, rehab work that is sensitive to existing architectural features is often a lot easier to do than a complex "modernization." Many

general contractors are amenable to letting the owner play a part, but this must be agreed upon in advance.

How to Choose a Contractor*

Once you have made the decision to hire a contractor, your next step is to get the best person for the job. Follow these guidelines:

1. Get recommendations from friends, relatives, neighbors, owners of similar style buildings, building suppliers, hardware merchants, subcontractors, and lenders. The HPLO maintains a listing of contractors, carpenters, and other tradespeople who are qualified to provide professional service on your rehab project. It's important to get first-hand information about the quality of the contractor's work. How informed and skilled is he/she in restoration work? Can the contractor explain project work to you in terms you can understand? Be certain that you can talk to the contractor, or your plan for rehabilitation may be overruled; not all contractors are interested in architectural sensitivity. Find out if the contractor is willing to read this book, if he or she hasn't already.
2. Reliability is critical. Be certain the contractor has an established business. Check the Better Business Bureau for registered complaints. Reliability also relates to whether

the contractor is on time, abides by estimates, and is generally honest. Ask for recommendations concerning these traits.

3. Check for a contractors' license. A license is essential for all contractors in the State of Oregon. Get the license number and double check it with the Construction Contractors Board (see Chapter 7).

Contractors are required by law to carry workmans compensation insurance and property damage insurance. The contractor should also carry bonds to guarantee that there is monetary recourse if he/she walks out on the job prior to its completion.

The contractor you choose should have experience in other successful rehabilitation projects. You should take the opportunity to go and look at these projects to make sure there is evidence of sensitivity towards architectural detail and design. Once you are convinced that this contractor is someone you can work with, get a competitive bid in writing from this and several other contractors on the same set of specifications. Remember the points outlined above when you make your final choice. Don't just take the lowest bidder.

Code Requirements

A licensed contractor should be responsible for installations that meet code requirements. When bringing a building up to code, try to understand exactly what needs to be done, and make sure your contractor takes code

*Adapted from *Rehab Right*, City of Oakland, California, 1978.

requirements into account. *The goal is to bring your building up to code without destroying the architecture you set out to preserve.*

You can pick up a copy of the State of Oregon Structural Specialty Code (Uniform Building Code with State Amendments) at your local library or at bookstores that specialize in building information. Chapter 49 of the UBC deals specifically with code requirements for historic buildings. In general, codes are not as rigorous for residential buildings as they are for more public ones.

If you feel that strict adherence to codes will damage the historic integrity of your building, and it is a registered landmark, don't be afraid to ask for a variance from normal code requirements. Variances will only be granted if the proposed changes do not decrease the safety of the building. Ask at your local permit or planning office or at the State Historic preservation Office for more information.

How to Draft a Contract*

Once you have selected a contractor or an architect, define your mutual obligations in a legal contract. Although consultation with a lawyer is generally preferable for major jobs, most contractors have a standard form, or you can get one from the American Institute of Architects. The contract should safeguard your interests and include:

- The work the contractor agrees to do, including dimensions, specifications, type and quality of materials
- The date the work is to begin, and a time schedule of how the project is to proceed, through its completion
- A schedule of payments in pace with the work, with the final 5-10% to be paid after you have inspected the final product and the final occupancy permit has been granted by building officials.
- A precise description of the appliances or fixtures to be purchased, if any
- Responsibility for cleanup and removal of debris, e.g., a requirement that the contractor leave the premises "broom clean" daily or at stated intervals
- Release for you from liability should the contractor go bankrupt before work is completed. Otherwise, under the mechanic's lien law, an owner can be held accountable for any money owed by the contractor for labor or materials used on the owner's project.
- Insurance to make sure your contractor is bonded and licensed
- Responsibility for the abatement of any hazardous materials used.

If you are using a standard form and these, or any other items you are concerned about, are not listed, write them in. As long as the additions are neither illegal acts nor prohibited by laws governing public funds used for the loan, the amended contract is valid when both owner and contractor sign. It is also advisable to double check your

*Adapted from *Rehab Right*, City of Oakland, California, 1978.

homeowners insurance policy and your mortgage before signing the contract, as these documents may have clauses pertinent to remodeling or improvement of the property.

Building Permits

Prior to the start of any construction, the property owner or the licensed contractor must secure the permits required by local law. The process of obtaining a permit will enable you to go over your plans with competent professionals in the local building department who will check your plans and provide you with work inspections. It is much better to respect these permit requirements than not, as they are your insurance against potential construction problems.

Permit requirements vary according to the city in which you live. The best place to obtain information on what permits you need is through your local building, permit, or planning department.

In most locations, a permit is required for any construction that physically changes or adds structures to your property, or for work regulated by city codes or ordinances, such as:

- New buildings, dwellings, carports and storage sheds
- Additions, buildings, some swimming pools; retaining walls over four feet in height
- Alterations beyond cosmetic, such as converting garages to family rooms
- Moving or demolishing a building

- Repairs involving structural members
- Installation of heating equipment, such as wood burning stoves
- Changing the use of a structure, such as changing a single-family residence to a restaurant or shop
- Electrical and plumbing work.

In general, to apply for a permit, you will be required to submit a set of plans and a permit application. Fees for permits vary according to the type, the size of the improvement, and locality. Most permits expire after several months.

Depending on the type of project, there may be several required inspections. A final inspection is required upon completion of all the work and before the structure is occupied.

After the final inspection, when it is found that the building or structure complies with all code provisions, your building inspector will issue a certificate of inspection. No building or structure may be lawfully used or occupied until this certificate of inspection has been issued.

Never sign a Certificate of Completion until after the final inspection and until the job is completed to your satisfaction. Otherwise the certificate entitles the contractor to final payment, and it will be difficult to get him to return and correct any errors.

Neighborhood Context

Another consideration you must think over before starting your rehabilitation is how it relates to the

neighborhood context. Where is your building located and what are the impacts of the rehabilitation on the neighborhood going to be? This question is something to seriously consider if you are buying a property to rehabilitate. What is the neighborhood like? Are there other rehabilitation projects in the area? Is it sympathetic to a new rehab?

Whatever the context of your building, you must feel comfortable with the immediate community. Remember, the enhancement of your property will add value to it and the properties surrounding yours. Your rehab, if it is successfully completed, can in turn increase the value and pride of your community.

Leaving a Record

Future owners of your property may want to know about the history of your building. If you do not leave a record of the work you have performed, future researchers may not be able to tell which features are original and which were installed or repaired by you. It is a good idea to assemble a binder or journal of all of the information you have found on the house, including research, photographs, interviews, and changes. You may also include sketch plans of current features in the building and on the grounds. When you sell your building, you can include this documentation so the new owners don't have to start from scratch in understanding their building.

One publication that can lead you through this process is *The House Journal*, which provides both the right

questions and space for you to record the answers. *The House Journal* is printed on archivally stable paper. If you choose to keep your own record, it is a good idea to use archivally stable paper so your work does not yellow and deteriorate. Acid-free papers with 25% cotton content (or more) will hold up better than standard paper, and are available at any office supply store.

REHAB OREGON RIGHT

A black and white photograph of a two-story house with a prominent front porch. The house features horizontal siding and a gabled roof. The porch has decorative brackets and a railing. A small tree is in the foreground.

CHAPTER 5: EXTERIOR REHABILITATION

CHAPTER 5:

EXTERIOR REHABILITATION

Now that you have the background information on planning your project, this chapter will take you through the actual exterior rehabilitation process. The following descriptions of the parts of your property include recommendations on what might be appropriate treatments and suggestions to get you started on the work.

Before you start ordering materials or selecting tools, go over the Secretary of the Interior's Standards for Rehabilitation, listed in Chapter 4. Keep in mind that you always want to work with the historic character of the property, retaining as much original material as is feasible. Excerpts from the Secretary of the Interior's Guidelines for Rehabilitation, which give advice on how to apply the Standards, are presented throughout this chapter and the next.

SITE

The site your historic building occupies may be as complex as a large working farm or as simple as a small city lot. Features which might be of historic interest on your site include planting patterns, trees, circulation systems (such as paths and roads), water features, landforms (grading, terracing), decorative elements, and furnishings (such as lights, fences, or benches).

When site elements are sensitively maintained or restored, they can add a great deal to the context of your building. In fact, in many cases, landscapes are as

historically significant (or more so) than the buildings in their midst. Designed landscapes (such as gardens) may be significant if they are representative of the period in which they were created.

Landscapes may also be significant if they represent the cultural processes which created them. For example, many rural landscapes show historic settlement patterns and land use, planting customs (such as poplar windbreaks in eastern Oregon), and response to environmental forces. Whether or not you intend to make changes to your site, it is best to be



This Eastern Oregon cabin is still marked by one original poplar.

Photo by Dave Pinyerd

There are walks and drives made of cement, brick, stone, tile, or gravel with fences, posts, and walls, all of which can be made very decorative when employed skillfully. Then there are various styles of terrace—high terraces and low terraces with cement or stone steps and balustrades which help so much to set a bungalow off and give it a good architectural base to stand upon. Pergolas, summer houses, garage, tool house, sheds, greenhouse, lattices— all can be and should be considered in the original scheme. . . .

Cement, clay, and metal garden urns may be had in infinite variety of pleasing forms. Nothing adds more directly to architectural gardening than pieces of this sort. Garden seats and tables made of cement or stone are attractive and should be employed in the scheme by all means. Bird pools and sun dials are of course desirable and do not involve a great expenditure.

Charles E. White, Jr.
The Bungalow Book, 1923

aware of all of the historical factors that have made it what it is today.

Unless your property has been carefully maintained, it is unlikely that your landscape has remained close to its original state. Even if it has been maintained, a landscape changes with the seasons; old plants die, and new ones grow in their place. Perhaps the most important aspect of your approach to your site, no matter how small or large, is to maintain what already exists until you have the time and money for your landscape project. In order to care for your existing landscape, a landscape survey should be conducted.

Landscape Survey

First complete a site survey or plot plan which maps the property, all existing trees, buildings, walls, outbuildings, paths, roads, and utility lines. On an overlay sheet, identify all existing plant materials: shrubs, ground cover, garden plants, gravel paths and fences. You might want to take photographs as part of this survey.

When recording landscape, look for the obscure features. If you see a slight depression in the ground, it may be a former flower bed, or a path once paved with bricks. Fences were very important in the 19th century landscape. Old fence lines can be traced along paths of hedges or plantings.

Historic Landscape Design

Even if your property has lost most of its original landscape elements, you can create a landscape design that is historically appropriate to the date of construction of your building or other significant periods. One of the best ways to find out what is appropriate for your style of building is to look at period gardening manuals, magazines, and building catalogs. A number of important period guides exist in reprint form, and many more are available in their original editions at libraries throughout Oregon.

One of the most important authors of 19th century landscape theory was Andrew Jackson Downing, who popularized the notion of picturesque landscaping and building throughout the United States. His influential works include *A Treatise on the Theory and*

Practice of Landscape Gardening, first published in 1841 and still available in reprint form. Downing advocated a naturalistic, flowing style of landscape design, which remained popular throughout the 19th century.

The later years of the 19th century saw a growing appreciation of more formal gardening styles. Patterns were traced in boxwood and other plant materials, and often filled in with roses or annuals. Exotic plants of all kinds were introduced, and outdoor furniture became popular. Nurseries became more common, and seeds of all types were available commercially through mail-order distributors nationwide.

The eclecticism of the late 19th century culminated in the early 20th century. Many different influences, from Beaux Arts planning ideals (see Appendix A) to Japanese influences, were at work. Planting on different levels was popular, and architectural features were frequently used in the garden. Rock gardens also became

A well-cut lawn, a few fine trees, a shady back-ground with comfortable-looking out-buildings, are the essentials; and walks, shrubs, and flowers, only the embellishments and finishing touches of the picture. Only the finishing touches- but what a charm of added expression and beauty there may be in those perfecting strokes! How a verdant gate-way arch frames the common walk into a picture view; how a long opening of lawn gives playroom for the sunlight to smile and hide among the shadows of bordering shrubs and trees . . . how a flower-bed there brightens the lawn like a smile on the face of beauty; how a swing suspended from the strong, outstretched arm of a noble tree attracts the children, whose ever-changing groups engage the eye and interest the heart. . . .

Frank J. Scott
*The Art of Beautifying Suburban Home
Grounds*, 1870

popular. *The Craftsman* magazine advocated a return to simpler and hardier types of plantings and more natural and rustic lawn decorations— planters of terra cotta, for example, and hickory furniture.

As interest in historic landscapes has grown, so have the resources for maintaining, restoring, and recreating them. A number of sources are listed in Chapter 7, *Rehabilitation Resources*, including distributors of historic plant and seed types.



Historic plantings, including older trees, add meaning and context to the setting of historic buildings.

Photo by Lynn Josse

FOUNDATIONS

Your foundation may not be a major visual element in your exterior, but it is one of the most important parts of the building. A solid foundation is the basis of all rehabilitation work because it accepts the weight of the structure. One of the causes of problems with all foundations is settlement. When the ground beneath a building moves, the foundation adjusts or shifts, causing cracks in the foundation walls. Settlement in older buildings is caused by:

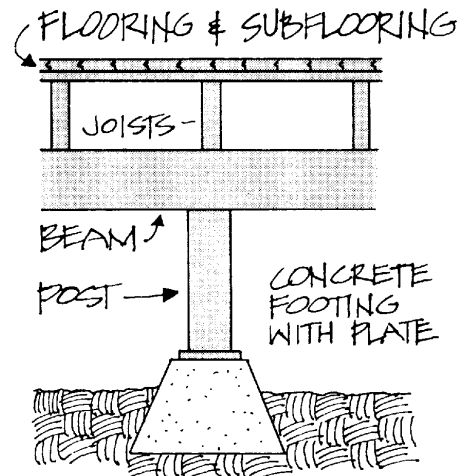
- inadequately compacted fill
- landslide, slough or slippage
- flooding
- clay subsoil which has dried out and shrunk
- deficient drainage or waterproofing
- rotting or drying timbers
- roots of large trees.

Many early vernacular Oregon buildings have wooden foundations instead of masonry. A wooden sill was placed directly on the ground or on large stones. This type of foundation should be closely examined, and repaired or replaced, if needed, by masonry. A new masonry foundation, when tied to the structure of the new building, will also improve stability in case of an earthquake.

The most common types of foundations in historic Oregon buildings are post and pier, brick or stone, and concrete.

Many house styles which pre-date World War II have one or more rows of wood posts on concrete piers for intermediate support underneath the building. If any of the posts show signs of decay, or if the wood is in direct contact with the ground, then new wood posts treated with preservative should be installed on concrete piers. The new posts should be the same size as the old ones.

Wood posts should be separated from the concrete footing by a moisture barrier, commonly a piece of 30 pound felt paper. Without the protection from moisture, water can work its way into the end grain of the post and rot it. This is one of the most common places for rot to occur.



*Section of a post and pier foundation system.
Adapted from Rehab Right, City of Oakland, California, 1978*

Post and Pier

Brick

Brick foundations were most popular in Oregon from about 1870 to 1900. If you have a brick foundation, the most important things to watch for are deterioration of the bricks, deterioration of the mortar, and evidence of settling.

Old bricks often develop cracks where shrinkage or laminating occurred in the clay. Minor cracks in the bricks and mortar are probably not a problem, but any deterioration of the mortar should be fixed by *repointing*.

If you should find large cracks in the foundation or other evidence of settling, seek an engineer's or contractor's advice. If the foundation is found to be weakened, it might be possible to install a new foundation inside the existing one instead of totally replacing it, thus altering the exterior character of the building. For more information on this technique, see the section at the end of this chapter on seismic stability.

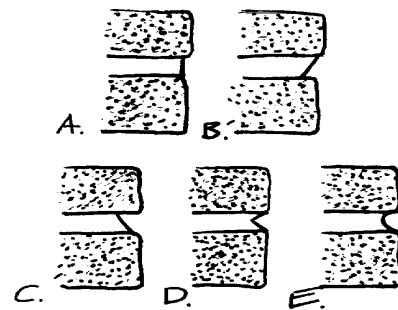
Repointing

Repointing is the application of new mortar to masonry joints. This practice is considered a safeguard to the structure of the building as well as a contribution to its maintenance. Repointing when it is necessary will help prevent more serious damage down the road.

If you are considering taking on a repointing job yourself, there are numerous illustrated reference books that can guide you through the process.

One of the most important aspects of repointing is obtaining the proper composition of mortar. If the mortar is too soft, it will eventually weather,

exposing the joints and bricks. If the mortar is harder than the bricks, it will cause them to disintegrate or delaminate, leaving the mortar in place. Bad repointing is very difficult and expensive to correct, and can cause irreparable damage to a building. It is best to choose a mortar which matches the existing mortar in the building in terms of color, texture, strength and hardness.



Different types of mortar joints: A) Flush; B) Struck; C) Weathered; D) Vee (V); E) Concave.

Another factor to take into consideration when repointing is the profile of the original mortar joints. Many historic brick surfaces have special tooled joints; these should be retained where intact and duplicated in repointing work.

See the National Park Service publication *Preservation Briefs 2: "Repointing Mortar Joints of Historic Brick Buildings"* and *Masonry* for information on how to repoint your foundation or the brick side walls of your building (see Chapter 7).

Concrete

Concrete foundations were introduced in Oregon buildings around 1900 and became very popular in residences of the mid-twentieth century. One of the most critical problems with concrete foundations is their tendency to crack as a result of uneven settlement.

Minor cracks can be repaired by scoring the concrete and filling with concrete patch cement. If a new foundation is required due to the presence of larger vertical cracks, call in a specialist. A professional contractor will be able to give you an estimate on the cost of a new foundation. The money spent on a new foundation, if needed, is worthwhile, since the foundation is the basic supportive system in your building.

Sill Plate

The sill plate is the horizontal wood member which is situated between the framed wall and the masonry foundation. In many older buildings, this sill plate must be replaced because it is decayed due to fungal or insect damage. This job is potentially hazardous and should only be attempted by a professional.

Anchoring Your Building

Because of the risk of earthquakes, it is important that buildings in the western half of the state be anchored to their foundations. (This is a good idea anywhere, but it is more important in seismically active areas.) Many buildings of the 20th century are connected to concrete foundations with anchor bolts. However, having a

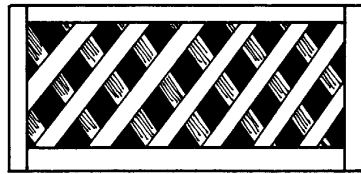
concrete foundation is no guarantee that your building is attached to it. See the "Seismic Stability" section at the end of this chapter for a description of how to attach your foundation to the rest of your building.

INSULATION

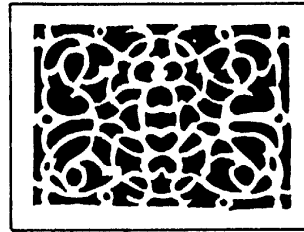
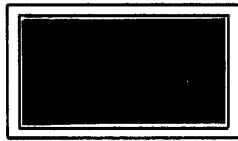
Most early buildings in Oregon were constructed without any kind of insulation. If your project is extensive enough to require the removal of interior or exterior walls, that might be a good time to install insulation and a vapor barrier.

Some property owners opt for blown-in insulation as an alternative. This method is *not* recommended for historic buildings. Installing insulation without an adequate vapor barrier in place will allow excessive moisture to accumulate in the insulation, causing exterior paint to peel and encouraging mold, mildew, and rot. The function of the vapor barrier is to prevent moisture from reaching the inner cavity of a stud wall.

There are a number of new types of insulation on the market which make use of recycled materials. The free booklet available from Metro Regional Environmental Management, listed in Chapter 7, offers several suppliers of fireproof recycled newspaper insulation with a relatively high R-value which is priced competitively with standard fiberglass insulation.



REDWOOD LATH

VICTORIAN
CAST IRON

METAL SCREEN

Decorative cast iron vents often adorn buildings from the Victorian era, while simple crossed lath vents are more typical of Craftsman homes. Plain metal screens are often used today.

Adapted from Rehab Right, City of Oakland, California, 1978

CRAWLSPACE

Many buildings in Oregon will have a crawlspace instead of an excavated basement. The crawlspace is the space between the ground and the lower portion of the first floor.

Clearance

One problem that occurs in many buildings is that there is not enough clearance between the ground and the sill plate to prevent the retention of moisture and damage to the structure. The Oregon State Building Code requires 18 inches of clearance for adequate ventilation.

Ventilation

Vents play an important role in keeping your crawlspace moisture-free. There should be a vent for every 150 square feet of ground area. It is best to place vents opposite each other for

cross-ventilation. It is also suggested that you roll out a polyethylene sheeting (6 mils thick) across the ground of your crawlspace as a vapor barrier to reduce the moisture problem.

Keep and reuse the original vents to your building whenever possible. Specific styles of vents are often associated with different styles of architecture. Cast iron vents, highly ornate, were a common decorative element of Victorian houses. Bungalows and Craftsman houses often have vents of criss-crossed lath. If there are spaces in your vents of greater than $\frac{1}{4}$ inch, attach a screen to the inside to keep out rodents.

Insulation

When a crawlspace is well ventilated, the floor above it will probably become cold. Rolled insulation between the joists, held in place by a wire mesh, will help solve this problem.

SIDING

The siding on a frame building protects the structural frame from the elements, such as rain, snow, and the heat of the sun. Because the siding is constantly exposed to hot and cold temperatures and excessive water, it is often in need of maintenance. When repairing your siding, remember to stay with the original material and style, as it constitutes a large part of the "look" of your building from the exterior.

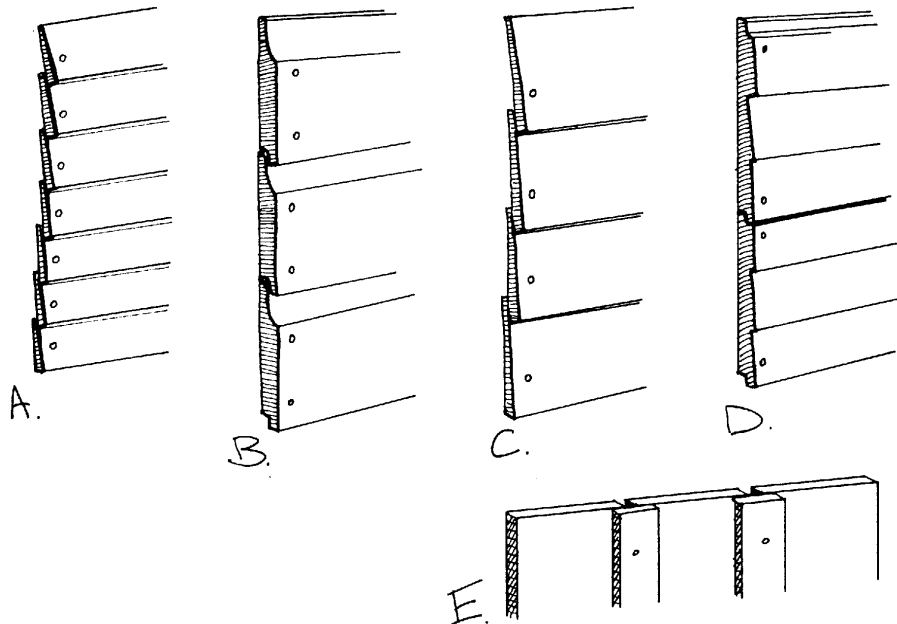
Wood Siding

Wood is one of the most common types of siding on residences in Oregon. Wood siding is installed both horizontally and vertically. Horizontal board siding common in Oregon includes:

- Clapboard: narrow, found in early styles, for example the Greek Revival style
- Shiplap: found in many building types of the Victorian era and early twentieth century
- Weatherboard: Similar to clapboard, except much wider; found on Victorian era and early 20th century buildings
- False Bevel: looks like clapboard at first glance until you notice it is a single unit with more than one tier, common on early 20th century buildings.

Vertical board siding:

- Board and Batten: the most common historic vertical siding, found on buildings from settlement times into the 20th century.



Types of horizontal and vertical exterior siding historically used for wooden buildings in Oregon. A) Clapboard; B) Channel Drop; C) Weatherboard; D) False Bevel; E) Board and batten.

Adapted from Rehab Right, City of Oakland, California, 1978

Care of Wood Siding

The proper care for wood siding is to keep it as dry as possible. One of the most frequent problems with wood siding is rot, which is caused by moisture retention. Wood preservatives, paint, putty and caulking can all keep your siding dry, and prevent it from being harmed by moisture. All cracks and nail holes should be filled with putty or caulk prior to painting.

Replacement of Wood Siding

Repair is always a preferable option to replacement when the original material is salvageable, but in some cases, replacement is the only alternative. Never replace your wood siding with aluminum or vinyl siding. These will distort the historic character of your building, may decrease its value, and in some cases can cause moisture problems in the wood structure.

If you have to replace your siding, get the same type, milled to match what you already have on your building. Remember, your siding is a very visible design element in your building. It is worth the cost of proper replacement when necessary.

When installing or reinstalling siding, prime both the front and back of each piece. Use an oil-based primer for maximum effectiveness. Choose a high-quality paint for use as a finish coat. Good maintenance will help prolong the life of your siding; periodically inspect paint and caulk.

Shingle Siding

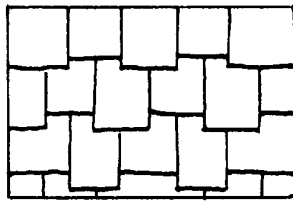
There are many types of wood shingle siding found in Oregon. Shingles are a flexible siding material, 16 to 24 inches in length. Historically, shingles were made from either redwood or cedar, and cedar shingles are still popular today. People often mistake wood shakes for shingles. Shakes are longer, thicker, irregularly shaped, not as refined as shingles, and a poor substitute. There are many different types of shingles, and they vary in thickness from thin, fancy cut ones used in the Victorian era to large square ones used in a late Craftsman style building.

Paint

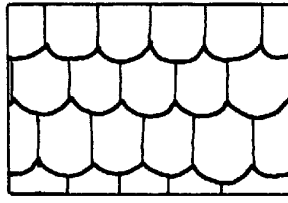
Shingles may be left natural, coated with a wood preservative, painted, or stained. If they have been painted, they will need repainting approximately every five years, depending on the location and subsequent wear of the building. Unpainted shingles develop a patina with age, turning grey (cedar) or brown (redwood).

Repair

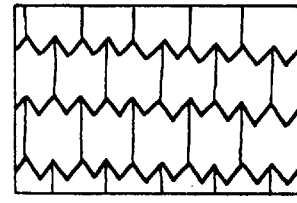
Shingles are often in need of repair or replacement because they crack, warp, or split over time. You can nail warped shingles back down with galvanized nails, but badly damaged shingles should be replaced.



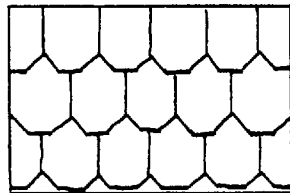
SQUARE



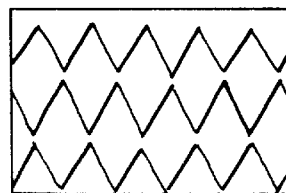
FISHSCALE



SAWTOOTH



OCTAGON



DIAMOND

Decorative shingle patterns often used in the Victorian era and into the early 20th century.

Adapted from Rehab Right, City of Oakland, California, 1978

The Secretary of the Interior's Guidelines for Rehabilitation

Building Exterior: Wood (excerpt)

Recommended:

Protecting and maintaining wood features by providing proper drainage so that water is not allowed to stand on flat, horizontal surfaces or accumulate in decorative features.

Retaining coatings such as paint that help protect the wood from moisture and ultraviolet light.

Removing damaged or deteriorated paint to the next sound layer using the gentlest means possible (handscraping and handsanding), then repainting.

Using *with care* electric hot-air guns on decorative wood features and electric heat plates on flat wood surfaces when paint is so deteriorated that total removal is necessary prior to repainting.

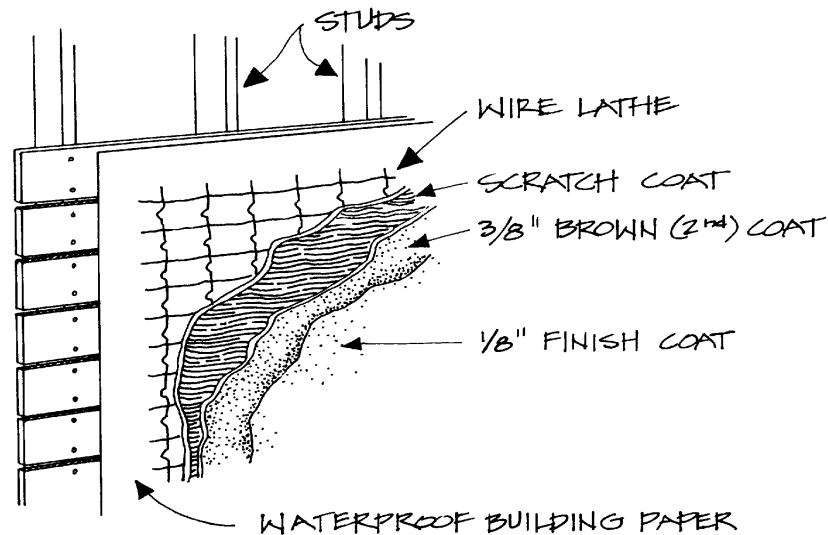
Not Recommended:

Removing a major portion of the historic wood from a facade instead of repairing or replacing only the deteriorated wood, then reconstructing the facade with new material in order to achieve a uniform or "improved" appearance.

Stripping historically painted surfaces to bare wood, then applying clear finishes or stains in order to create a "natural look."

Stripping paint or varnish to bare wood rather than repairing or reapplying a special finish, i.e., a grained finish to an exterior wood feature such as a front door.

Using destructive paint removal methods such as propane or butane torches, sandblasting, or waterblasting. These methods can irreversibly damage historic woodwork.



Stucco, when used for exterior siding, is laid in two coats over a waterproofing building paper and wire lath.

Drawing adapted from Rehab Right, City of Oakland, California, 1978

Stucco*

Stucco is a concrete-like mixture of Portland cement, sand, and lime, applied like plaster to the exterior of wood frame houses. Stucco was most often used on early and mid-20th century houses in eclectic styles, especially the Pueblo, California Mission, Mediterranean, Spanish Colonial, and Prairie styles. When you find stucco on 19th century buildings, be suspicious. It probably was added well after the building was completed. In some cases, especially if the stucco was part of updating the house to an early 20th century style, it might have historic significance of its own.

Stucco Removal

If you own a building that has been insensitively stuccoed over and wish to expose the original siding, don't be too intimidated. Stucco is removable if you are willing to be careful and patient. Use a hammer and chisel to score the stucco into manageable section, about three feet square. Once you have pried off the stucco layer with a crowbar, you should find that it is mounted on chicken wire or metal lath over a layer of paper. Clip the wire away, remove the paper, and your original wood siding should be exposed. Carefully remove the nails; patch holes with wood putty before painting.

Damage

Stucco is prone to cracking near windows and doors, causing leakage into

* Adapted from *Rehab Right*, City of Oakland, California, 1978.

the interior of the building and rotting of the wooden structural members. You can repair minor surface cracks before any internal damage occurs by following the steps listed below:

- Use a knife or spatula to open the crack to sound stucco. Use a hammer and cold chisel to make the edge of the crack wider on the inside than at the outside edge. This inverted "V" will lock in the new stucco. Brush away all loose materials.
- Prepare a dry mix mortar, adding water until it has a firm yet pliable consistency (consult your local home improvement store for help on the ingredients). Dampen the crack and pack the stucco in tightly with a putty knife or trowel. Overfill the crack if it extends through the stucco to the base material. Let it cure for about 15 minutes, then work it down until flush.
- Moist cure the fresh stucco with fine spray from the garden hose for about three days, once in the morning and once at night.

The patch should match the rest of the wall in both color and texture. If the stucco on your building was originally left unpainted, keep it that way. If it was painted before you made the repair, match the patch to the original paint color. For areas larger than about a square yard, contact a mason.

Brick

As an exterior wall surface, brick is less common in Oregon's residential buildings than in commercial buildings. Brick walls can last many years if the right maintenance is performed. Some brick maintenance problems have already been discussed in this chapter's Foundations section. Please refer to this section in addition to Preservation Briefs 2 and *Masonry* (both listed in Chapter 7), for instructions on how to clean and repair masonry.

Paint

When considering maintenance of your brick building, remember that it is best to leave it unpainted if that is the way you bought it. Brick develops an outer "skin" when left unpainted that protects it from the environmental wear of wind, sun and freezing temperatures. The effects of painting a brick building are irreversible; if you choose to paint a previously unpainted brick building, you will forever alter its historic character.

Paint forms a protective coating on the brick; however, if the paint chips or cracks, it leaves the exposed brick subject to the elements. If your building has already been painted, paint over your repairs with the same or a historically appropriate color. Never sand blast or use high-pressure water to remove paint from your building. These methods will damage wood and brick.

The Secretary of the Interior's Guidelines for Rehabilitation

Building Exterior: Masonry (brick, stone, concrete, terra cotta, stucco, mortar—excerpt)

Recommended:

Protecting and maintaining masonry by providing proper drainage so that water does not stand on flat, horizontal surfaces or accumulate in curved decorative features.

Cleaning masonry only when necessary to halt deterioration or remove heavy soiling.

Cleaning masonry surfaces with the gentlest method possible, such as low pressure water and detergents, using natural bristle brushes.

Repairing masonry walls and other masonry features by repointing the mortar joints where there is evidence of deterioration such as disintegrating mortar, cracks in mortar joints, loose bricks, damp walls, or damaged plasterwork.

Removing deteriorated mortar by carefully hand-raking the joints to avoid damaging the masonry.

Duplicating old mortar in strength, composition, color, and texture.

Duplicating old mortar joints in width and in joint profile.

Not Recommended:

Replacing or rebuilding a major portion of exterior masonry walls that could be repaired so that, as a result, the building is no longer historic and is essentially new construction.

Applying paint or other coatings such as stucco to masonry that has been historically unpainted or uncoated to create a new appearance.

Removing paint from historically painted masonry.

Radically changing the type of paint or coating or its color.

Failing to evaluate and treat the various causes of mortar joint deterioration such as leaking roofs or gutters, differential settlement of the building, capillary action, or extreme weather exposure.

Cleaning masonry surfaces when they are not heavily soiled to create a new appearance, thus needlessly introducing chemicals or moisture into historic materials.

Removing paint that is firmly adhering to, and thus protecting, masonry surfaces.

Removing sound stucco; or repairing with new stucco that is stronger than the historic material or does not convey the same visual appearance.

DOORS

Your front door will most likely be the most ornate and widely used door in your commercial building or residence. This door should be retained whenever possible, as it was carefully designed as an integral part of the front facade of your building. Front doors vary in size and style, ranging from very ornate double doors with sidelights to a single door with a simple transom. Refer to one of the architectural style books listed in Chapter 7 to get an idea of what kind of door is appropriate for your type and style of building.



The front door is an important element in defining the character of your building.

Photo by Dave Pinyerd

Replacing Glass Panes

If your door has a glass pane, check for chips in the caulking and broken glass. Repair the glass or replace it if it is badly cracked or chipped.

- First, carefully pry the molding out from the glass pane.
- Remove the glass, clean the bed, and apply a thin strip of glazing compound to the bed.
- Replace the glass with the same size, applying a second layer of compound, and renail the molding in place.
- Fill in the nail holes.

Wear

As with the exterior siding of your building, if your doors are unpainted and in good condition, leave them that way. An unpainted historic door is quite a find. If your doors are scarred, see if you can refinish them. For a painted door, touch up to match.

Hardware

The hardware on your doors is probably made of brass, steel, or brass-plated steel. If the brass is carefully maintained, it should last for a long time, adding charm to the building. It is important to preserve all the original hardware on your doors if it is in good working condition.

Most older exterior doors are hung on heavy-duty, butt-type hinges made of two leaves, screwed to the door and jamb and held together by a pin. Often, the weight of the front door enlarges the

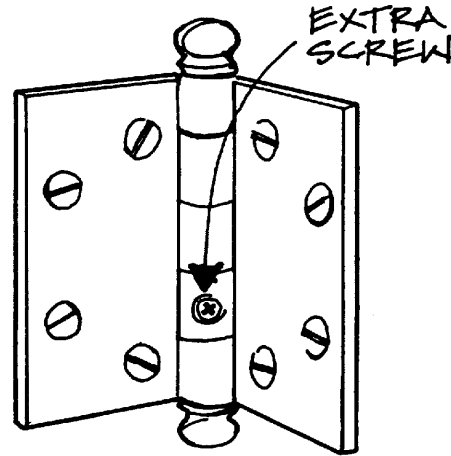
holes which once held the screws snugly, resulting in a door that sticks on one side. To tighten the hinge attachment, you can try longer screws, or you can refill the holes with either putty, plastic wood, a dowel, or wooden match sticks, and reset the screws. Before you do this, remove the door by knocking out the hinge pin with a nail set and hammer while the door is closed. Then remove the hinges.

Original doorknobs should be retained, even if their lock mechanisms are no longer adequate for security. If necessary, you can install a deadbolt without disturbing the original hardware. Keep the faceplate tarnish-free with a brass cleaner. If the brass plating on the knob has worn off in spots, it can be replated. Meanwhile, the brass cleaner will keep the rust off the exposed steel.

Security*

Your security needs don't have to sacrifice the quality and beauty of your doors. Here are a few steps to add security to your doors without obliterating the original design:

- Add a deadbolt with a 1" throw. This is one of the most inexpensive and convenient solutions to security needs.
- Reinforce the glass in your door by adding a panel of break-resistant plastic.
- Add a non-removal hinge pin to your hardware. Open the door, and from inside the hinge, drill a hole into the



By inserting and countersinking an extra screw in the hinge pin, door security is increased. The hinge pin cannot be removed after the screw is in place. Adapted from Rehab Right, City of Oakland, California, 1978

hinge pin. Countersink the hole so it won't interfere with the closing of the door, and insert a self-tapping screw.

- Reinforce your wall studs by adding 2" x 4" blocking between the studs at the level of the lock. This reinforces the frame.
- If you need to replace a door, get a full-sized panel door at a salvage yard or specialty hardware store. They generally do not cost that much more than doors filled with particle board, but are heavier and more sturdy, less inviting for the burglar.

* Adapted from *Rehab Right*, City of Oakland, California, 1978.

WINDOWS

The pattern of openings of your building, its *fenestration*, is one of the single most important elements in defining its character. Unfortunately, windows are often disregarded in the updating of historic buildings. There are as many aesthetic and practical reasons to retain historic windows as there are types of windows.

Types

Types of windows vary, just like types of doors. They are dependent upon the architectural style of the building as well

as the date of construction. These are some of the major categories:

- Double hung sash: opens with an up and down movement
- Fixed: glass is enclosed by a non-operable wood frame
- Casement: opens with an outward movement and hinged from the side
- Awning: opens with an outward movement, but is hinged from the top
- Hopper: also opens with an outward movement, but is hinged from the bottom.

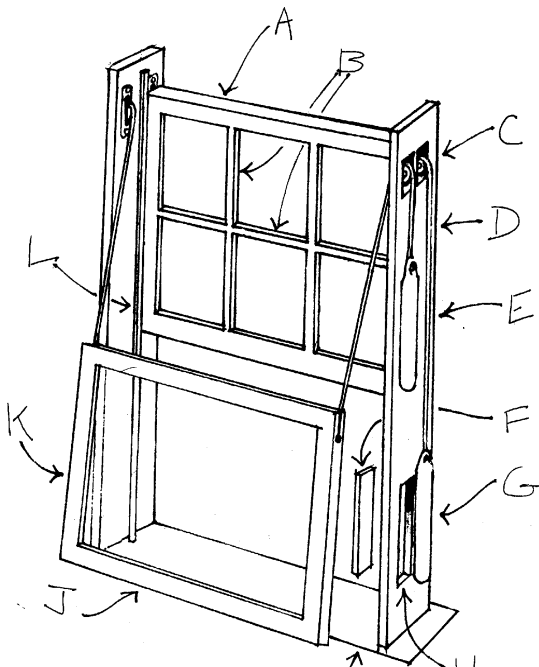
The grouping of these windows, as well as the number of panes, will also vary according to the style of the building.

Repair and Replacement

Before making any repairs to your window, an evaluation should be made as to the:

- location of the window(s)
- condition of the paint
- condition of the frame and sill
- condition of the sash
- glazing problems/condition of the glass
- hardware
- window surrounds.

The procedure for replacing glass panes is essentially similar to that presented on page 14. The most common problem found in historic windows, other than broken glass, is deterioration of the wood frame. If you note black or brown discolorations, it might be a form of rot; moisture



Parts of a double-hung window. A. Top rail; B. Muntins; C. Sash weight pulleys; D. Sash cord; E. Lower sash weight; F. Pocket cover (not found on all examples); G. Pocket; H. Sill; I. Bottom rail; J. Stile; K. Parting strip. Adapted from Rehab Right, City of Oakland, CA, 1978

problems can also be discerned in a bubbling or rippling of the paint. Check both inside and out for water stains and condensation.

Many deterioration problems can be halted or repaired. Don't throw away one of your building's historic windows because of a minor problem.

Window maintenance often requires paint removal. Several safe techniques for this step are discussed in Preservation Briefs 10: "Paint Removal from Historic Woodwork."

Window Replacement

If the window frame is rotted beyond repair, replace it with the same type of frame as the original. *Never use aluminum frame windows.* Not only are they historically inappropriate, they eliminate the need for a frame, fit only into standardized openings, are unattractive, and often don't function properly. In addition, they are easy to break into. Vinyl windows with pop-in muntins are also historically inappropriate.

When faced with window replacement first consider these factors:

- pattern of window openings and size
- the proportions of the frame and sash
- configuration of window panes
- muntin profile
- type of wood
- paint color
- characteristics of the glass
- window surrounds and ornament.

Consider energy efficiency factors as part of the window replacement, but do not let this dominate your decision. It is



Historic windows should be retained whenever possible. If a window must be replaced, it should be replaced in kind and in the original opening. The first floor window replacement in the photograph reduces the historic character of the house.

Photo by Lynn Josse

often cheaper in the long run to retain historic windows (or replace them in kind) and use alternative energy-saving methods (discussed below) than to replace the windows with modern ones.

Energy Loss

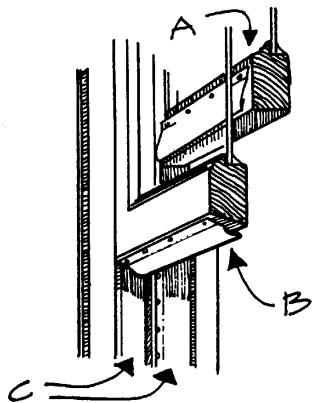
Heat loss and heat gain are likely to occur at the windows. Windows with southern exposures warm a space, while those facing north rob warmth from it. Three parts of the window contribute to heat transmission:

- **Frame and sash:** Wood is a better insulator than metal so wood windows do not lose heat as rapidly as some aluminum ones.
- **Glass:** Conventional glass transmits heat rapidly. Double-glazed panes

minimize heat transfer by about half, but cost more than regular windows.

- **Leakage:** Air leaks between sash and frame, between the frame and wall surface, and where sash rails meet. Weatherstripping provides a tight seal, eliminating drafts, and is easy to install. In traditional painting of windows elements, a little paint is allowed to coat the junction of glass and wood, providing a better seal.

Storm windows can be added to the exterior or interior of your windows to control heat loss and gain. Modern exterior storm windows can distort the historic character of a building. For many owners, a better option is to use interior storm windows that can be magnetically sealed to a strip you apply on the window's frame. This method will damage the finish of the wood when the strips are removed, but it is efficient and easy to install.



Adding metal weatherstripping to a double-hung sash window. Insertion can be made in three places: "A," "B," and "C," as shown above. Adapted from Rehab Right, City of Oakland, California, 1978

The Secretary of the Interior's Guidelines for Rehabilitation Building Exterior: Windows (excerpt)

Recommended:

Conducting an in-depth survey of the conditions of existing windows early in the rehabilitation planning so that repair and upgrading methods and possible replacement options can be fully explored.

Protecting and maintaining the wood and architectural metal which comprise the window frame, sash, muntins, and surrounds through appropriate surface treatments such as cleaning, rust removal, limited paint removal, and re-application of protective coating systems.

Making windows weather tight by re-caulking and replacing or installing weatherstripping. These actions also improve thermal efficiency.

Not Recommended:

Changing the number, location, size or glazing pattern of windows, through cutting new openings, blocking-in windows, and installing replacement sashes that do not fit the historic window opening.

Obscuring historic window trim with metal or other material.

Stripping windows of historic material such as wood, cast iron, and bronze.

Replacing windows solely because of peeling paint, broken glass, stuck sash, and high air infiltration. These conditions, in themselves, are no indication that windows are beyond repair.

Failing to undertake adequate measures to assure the protection of historic windows.

Failing to reuse serviceable window hardware such as brass sash lifts and sash locks.

EXTERIOR STAIRS*

The stairs to your home or building get constant use. The types and materials vary according to the style of your building and the period in which it was constructed. Keep in mind the code requirements for stairs when approaching your repair.

Wood Stairs

The deterioration of exterior wood stairs is a common problem, usually resulting from poor drainage. Look for signs such as worn treads with a depression in the middle of the step; lack of paint or caulking to provide a seal; symptoms of rot; and water puddles on the steps.

Repair

- Consider turning worn treads over. A shallow depression switched to the reverse side will have no detrimental effect, and flipping the board will save money and time.
- Install new or recycled boards at a slight angle from front to back.
- Design the railing so that the balusters are attached to a handrail on top and free-standing shoerail on the bottom. This allows a space for the water to run off the edge after a severe storm.
- Make sure the tread nosing projects 3/4"-1 1/4" over the riser to keep the joint water-free.
- Coat the treads with a wood sealer prior to installation.

- Do not direct drainage water onto the sill plate beneath the steps.

Brick Stairs

Brick stairs are characteristic of Arts and Crafts and Bungalow style homes and a variety of commercial buildings. Brick stairs often settle because of shifts in the soil which supports them. Concrete may be added beneath the structure and additional bracing may be required. A contractor may need to be hired for this operation.

Cracked mortar joints often appear in brick stairs. The cracks should be repointed immediately and the source of water penetration eliminated as soon as possible.

Concrete Stairs

Concrete stairs are often used at entries of early and mid-20th century buildings. Sometimes the concrete is painted or grooved. The design of these grooves should be kept intact if the concrete is repaired.

Concrete steps often crack through normal wear. Small cracks are nothing to be concerned about and can easily be patched. Large cracks in concrete steps are a sign of uneven settlement and should be checked by a contractor or engineer. Concrete steps also spall or chip easily at the end of the tread. This problem can be repaired with new mortar and concrete.

Concrete was often used to replace wooden stairs on older Oregon buildings. Added concrete stairs butted up against a wood building can trap moisture and hold it up against the wood, causing

* Adapted from *Rehab Right*, City of Oakland, California, 1978.

deterioration. Check for signs of rot where the concrete meets the wood.

Handrails

The handrail of your staircase should be compatible with the architectural style of your building, the material of the original steps, and the porch railing. Wooden hand rails should not be replaced by wrought iron. It is best not to replace a railing unless it is absolutely necessary. First try to repair it. If replacement is necessary, use a handrail design that matches your original as closely as possible in both material and style.

PORCHES

Porches are common in residential buildings and on some commercial structures. The front porch serves many functions and is an important part of your building. Because the porch represents a small, almost complete portion of the building, repairs will be similar to those performed on other parts of your building.

As with other parts of your building, keep in mind that to repair is better than to replace. Retain as much original material as possible; if the original pieces are beyond repair, try to duplicate them with a new piece of similar materials. Never enclose your porch or replace it with inappropriate materials.



A well-maintained historic porch can be a comfortable room for outdoor living, especially in the summer.

Photo by Lynn Josse

Wood

Many of the original wooden porches on early buildings in Oregon have disappeared or been radically modified. It is important to keep your wooden porch intact and maintain it to preserve the historic integrity of your building.

Wooden porches are at risk from moisture. Dry rot is a common problem in many porches, and can cause structural damage. Some of the chief symptoms of decay appear on the step treads or deck surfaces, at the joists in railings, at the base of posts, and on the underside of the wood framing members. If you find any indications of structural problems, consult a contractor or engineer for advice. Never replace a wooden porch with concrete. Concrete, when placed up against a wooden structure, can trap moisture and cause rot.

Railing

Porch railings before the 20th century generally were fairly low, often lower than today's codes might allow on new construction. When reconstructing porches, be careful that you understand code requirements. In some circumstances, registered landmarks may be given a variance on height requirements.

Bungalow porches are frequently surrounded by a closed rail, usually also fairly low, and often sided with the same material as the rest of the building. This is an important compositional feature in the house and should be retained.

Avoid wrought iron substitutes for wooden originals. Plain wood posts of the approximate scale of the originals might also be used if the only alternative is removal or replacement with a different material.

ORNAMENTATION

As architectural styles change, so do approaches and attitudes to exterior ornamentation. These vary from the austere simplicity of many Greek Revival forms to the Eastlake exuberance of the Queen Anne and Stick styles. The International Style uses very little applied ornament, while period revival buildings may have stone, tile, wood, and iron ornament. All ornamentation that is original to a building should be retained and repaired whenever possible. If you must replace ornamentation on your building, use a photograph or drawing of the original as a pattern.



Brackets are usually constructed of several pieces and are sometimes hollow inside. The pieces can be disassembled to repair the bracket.

Photo by Lynn Josse

Wood Ornamentation*

Sometimes it is necessary to remove wood ornament in order to repair it. This should be done with extreme care and patience.

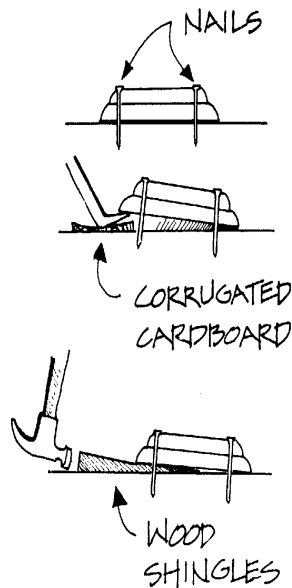
Study the part first to see if it is attached with a toe-nail or a face-nail. Use the broad surface of a prying instrument, like a crowbar, working it in very gradually. When space allows, place a piece of wood or corrugated cardboard between the tool and the structural wood to avoid denting the surface as you unnailed. (See illustration on p. 22).

If paint masks the joint between the ornament and its backing, score the seal with a putty knife first. Gently tap a shingle into a crack on an unnailed edge, tapered end first, until the force of the shingle lifts the ornament away from its support. Ease the shingle out, keeping it horizontal. There should then be enough space to safely use a claw hammer or

* Adapted from *Rehab Right*, City of Oakland, California, 1978.

crowbar. Label the pieces of ornamentation for later reassembly.

Remember to keep all parts of the ornamentation protected from the weather. This could mean treating the parts with a wood preservative or making sure the entire element has at least two coats of paint. When the pieces are thoroughly dry, and the underlying structure has been repaired, nail the pieces of ornamentation back on. Make sure you secure loose pieces. Use the original nails and nail holes if possible. It might be necessary to use screws; make sure you pre-drill the holes.



Two methods to remove face-nailed ornament with minimal damage to woodwork..

Adapted from Rehab Right, City of Oakland, California, 1978

PAINT

The paint on your building is like its outer skin. It protects the building from moisture penetration and the effects of weather. The color used is one of the most visually striking aspects of a building's appearance. See the other sections in this chapter for the use of paint on specific building materials.

Surface Preparation

Before the application of any paint, the exterior of the building must be prepared. Surface preparation is at least one half of the painting job. Too many layers of paint may result in poor definition of details and a sometimes lumpy appearance. On the other hand, removing sound historic paint might expose you or your contractor to lead hazards (see sidebar, next page).

Be gentle with your exterior. Most of the surface preparation should be done by hand. Scrape or brush away loose paint with a wire brush, then sand the edges down to get a smooth finish. Any additional dirt can be removed with water and detergents. If you are working with lead paint, make sure you are properly trained. Wear a respirator, keep children and pregnant women away from the area, and contact local environmental authorities for proper disposal methods.

Make sure the surface is as dust-free as possible before you start priming. Ideally, painting should begin as soon as possible so the exterior doesn't have a chance to collect more dirt.

You should never use sandblasting or high-pressure water to remove paint from a building. Both of these methods can damage wood and brick. Sand is particularly abrasive to the surface, causing scarring and pitting. One of the particular problems of water techniques is that the water can be absorbed into the wood. If you paint over wood which has

absorbed excessive water, there is a good chance that some of the paint will pop or peel off after it has dried.

Application

Once you have a smooth surface, the application of the paint can be an enjoyable experience. Remember to first

Lead-Based Paint Abatement

Lead was one of the main ingredients in almost all paint recipes into the early 20th century. Lead paints were used extensively on both interior and exterior woodwork. The greatest danger from lead paint is to young children, but it is known to be hazardous to adults as well.

The areas posing the greatest health threats are:

1. Peeling, chipping, flaking, and chewed interior lead-based paint and surfaces
2. Lead dust on interior surfaces
3. High lead in soil levels around the house and in play areas
4. Deteriorated exterior painted surfaces and features
5. Friction surfaces subject to abrasion (windows, doors, painted floors)
6. Accessible, chewable surfaces (sills, rails) if small children are present
7. Impact surfaces (baseboards and door jambs)
8. Other interior surfaces showing age or deterioration (walls and ceilings)

The challenge of lead paint abatement is to make the building as safe as possible while retaining character-defining features. Lead-based paint that is not causing a hazard (e.g., covered under subsequent layers of paint) may be allowed to remain. To make historic housing lead-safe, the gentlest method possible should be used. Overly aggressive abatement may damage or destroy much more historic material than is necessary. Another reason for targeting paint removal is to limit the amount of lead dust on the work site.

Whenever lead-based paint begins to peel or otherwise come loose, it should be removed to a sound substrate and the surface repainted. If children are present and there is evidence of painted surfaces that have been chewed, then these surfaces should be stripped to bare wood and repainted. The removal may be of a small scale and undertaken by the owner, or extensive enough to require a paint contractor. In either case, care must be taken to avoid spreading lead dust throughout the unit.

If the owner undertakes interim controls, it would be advisable to receive specialized training in handling lead-based paint. Such training emphasizes isolating the area, putting plastic sheeting down to catch debris, turning off mechanical systems, taping registers closed, and taking precautions to clean up prior to handling food. Work clothes should be washed separately from regular laundry. The preferred method for removing flaking paint is the wet sanding of surfaces because it is gentle to the substrate and controls lead dust. The key to reducing lead hazards while stabilizing flaking paint is to keep the surfaces slightly damp to avoid ingesting lead dust. Wet sanding uses special flexible sanding blocks or papers that can be rinsed in water or used along with a bottle mister. This method will generally not create enough debris to constitute hazardous waste.

*Adapted and excerpted from Preservation Brief 37:
"Appropriate Methods for Reducing Lead-Paint Hazards in Historic Housing"
by Sharon C. Park and Douglas C. Hicks*

apply the primer (usually two coats), and then apply the exterior coat of paint by brushing, rolling, or spraying. Make sure you cover the primer with at least one good coat of paint. It may take two coats. The paint should be reapplied every five to eight years. (See Preservation Briefs 10: "Exterior Paint Problems on Historic Woodwork," for additional information.)

Colors

It is recommended that you paint your building in colors appropriate to its style, type, and location. The light earth tones historically recommended for Gothic style buildings, for example, are usually more suitable for that type than the rich, saturated colors of the later Victorian palette. Neighboring buildings should also be considered in the selection of a paint scheme. A number of good resources for identifying appropriate historic paint colors for your type of building are listed in Chapter 7.

Unless a building has been severely damaged or altered, it is also possible to research the original and subsequent colors. The following methods, used individually or in combination, might help reveal the chronology of color on your building:

- Use a scalpel to carefully expose all the layers of paint in a small area. Examine these layers under a magnifying glass and light.
- You can use a piece of fine grit sand paper to sand the area where the paint has been removed with a scalpel. Add a small amount of mineral oil and examine the layers of paint. This technique is called "cratering."

- With a knife (a #22 X-acto is recommended), remove small cross-sectional chips of paint. Make sure you get some of the base material (usually wood) so you can establish which layer is on the bottom. Examine these chips through a microscope.

Results of this type of investigation are best understood by an expert who has access to chemical and physical tests to determine the composition of the paint. If you plan to analyze the paint on your house yourself, there are a number of things you should remember. First, most historic buildings were primed before the finish coat was painted. This means that the bottom layer of paint on the house may well be a primer and not the final color of the house.

A second thing to remember is that paint colors are affected by the sun and weathering. When taking a sample, make sure that you choose a location away from the sun and prevailing winds. Avoid taking samples at eye level, where they might be noticed later.

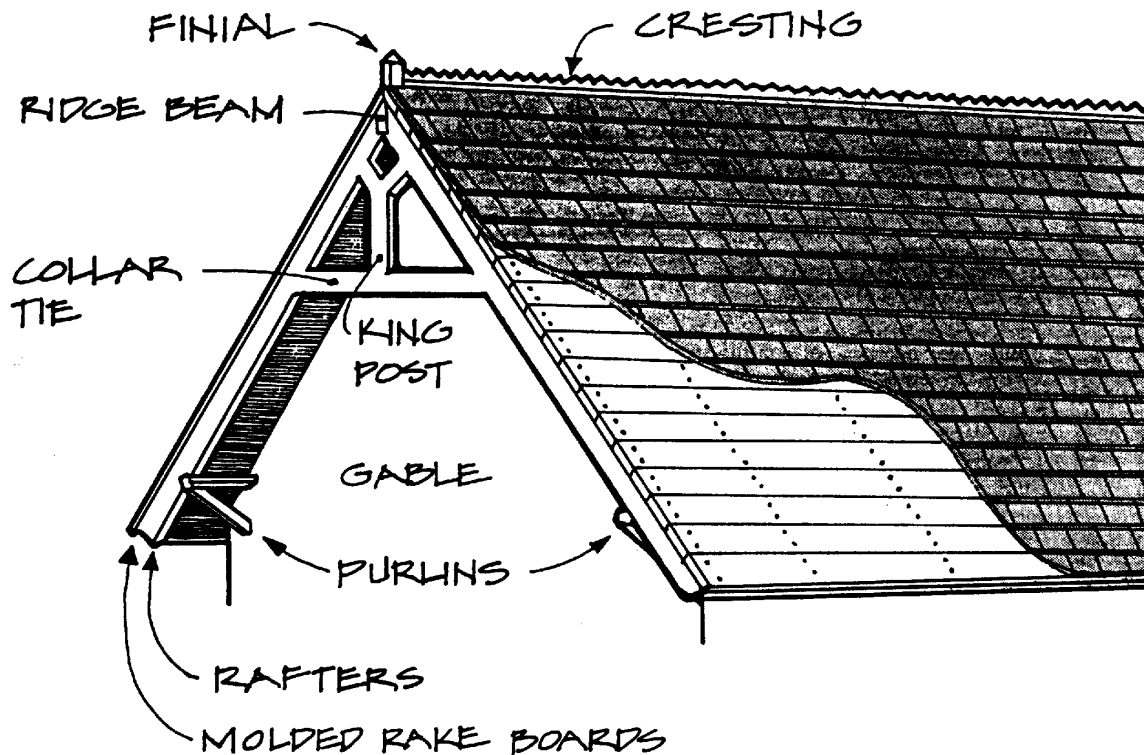
Finally, remember that colors may yellow and fade over time. Blues and greens tend to be especially unstable. Some pigments may change color when exposed to light, while others change when they are deprived of light (even by another layer of paint). Earth tones tend to be the most stable and are the most likely to be true when uncovered.

Don't forget to take samples from a variety of locations. Victorian era buildings are especially likely to have different colors of paint for walls and trim, often three colors and sometimes more.

Knowing something about the paint colors and types available and fashionable in the period your building was constructed can make the job of analysis much easier. When you have some approximate colors identified, look at one of the books recommended in Chapter 7 to see how close your choice is to the colors normally used for a particular style. You might want to refine your choice based on published examples of period colors.

ROOFING

Refer frequently to the inspection checklist for roofs when you approach this portion of your rehabilitation. Though it is listed towards the end of this chapter, the roof is one of the most important elements of your building and must be maintained. Regardless of the shape of your roof or the materials used, a poorly maintained roof will permit an accelerated deterioration of the rest of the building. Simple roof maintenance and repair is the most effective way to protect the value of your home and avoid expensive repairs further down the road.



Parts of a roof

Types of Materials

Architectural Graphic Standards (see Chapter 7) has a complete list of roofing materials which may be helpful to you. This reference is a must for architects, and can be found in many libraries. When it is necessary to replace an entire roof, it is preferable to use the same type of material that was there originally. If this is not possible, try to use a material with a similar color and texture as the original. For example, it would be inappropriate to replace a prominent cedar shingle roof with rolled asphalt. If wood shingles were out of the questions, a composition shingle with a color approximating weathered cedar would be the next best choice.

Flashing

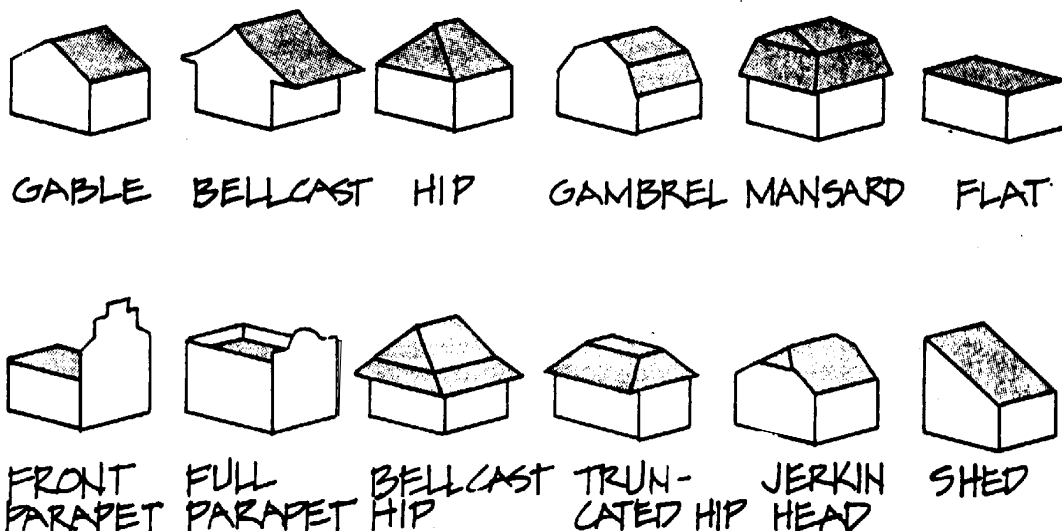
Flashing is a strip of thin sheet metal which prevents water from entering the building by covering the exposed joints and diverting the water to less vulnerable

areas. Modern flashing is typically galvanized steel. On older buildings, the flashing was either copper, lead, terne-metal, or zinc alloy. It is often badly deteriorated, rusted through, or missing altogether. This is an obvious source of serious leakage and should be corrected early in the rehabilitation process.

Flashing is found at

- roof valleys, ridges, hips, and changes in pitch
- eaves, gutters, and parapets
- door and window openings
- expansion joints
- the juncture of building and porch
- vertical projections through the roof, such as skylights, vent pipes, chimneys and dormers
- the meeting of building and ground.

Holes in the flashing can be patched with a piece of sheet metal and roof cement. Make sure you thoroughly coat the area with the cement so you get a good seal.



Types of roofs

Eaves and Fascia

Eaves and fascia are usually made of wood and serve both ornamental and practical purposes. If your building has gutters, you can keep water from damaging this portion of the building by install a metal drip strip between the sheathing and the roofing material, as illustrated. This metal strip will prevent water from coming through the eaves at the edge of the roof.

Many buildings from the early 20th century have rafter tails projecting beyond the eaves. A popular stylistic device of the Craftsman era, exposed rafter tails are particularly vulnerable to the effects of weather. The best way to protect this important decorative element is to keep up a good coating of paint or other wood sealer.

Minor deterioration can be filled in with wood epoxy and painted, but extremely deteriorated pieces might have to be replaced. If only the ends or parts of the undersides are missing, you can splice on a new piece of wood. Cut away the damaged part of the original, and shape a new piece to match. Then glue or nail the replacement piece in place and paint to match the rest of the work.

Gutters and Downspouts

If your building has gutters and downspouts, it is important to make sure they are unclogged and free of debris. If you need to replace a gutter or downspout, try to use a style compatible with the



Vergeboards, projecting rafter tails, and decorative brackets are all wooden elements that might need care.

Photo by Lynn Josse

original and to keep downspouts in their original positions. When installing new downspouts, try to keep them as unobtrusive as possible by locating them away from the front of the building.

Many buildings of the early 20th century were built without gutters. The eave line is an important compositional element in such buildings, and the decision to add gutters may be a difficult one. West of the Cascades, the addition of compatible gutters may be an important step in protecting the historic fabric of the building. Wide modern aluminum gutters are generally not appropriate for historic buildings, but there are alternatives available. It might be possible to selectively add gutters at problem points. For example, if you find that the rain sheeting off the building is blown into the exterior wall on one side, and that side is not the main entrance,

there should be no problem with adding gutters on that side only. Look at other buildings of the same style to determine what type of gutter is appropriate for yours.

Chimneys

The chimney should be considered a design element critical to the building, and should not be neglected when rehabilitation is in progress. Types of chimneys vary according to the style of the building. We are all familiar with the corbelled chimney stacks of the Victorian era. Simple, square chimneys are typical of Colonial Revival style homes. Concrete, poured in blocks to simulate stone or brick, was also a common chimney material in the early 20th century.

The same rule of thumb applies to maintenance and repair of brick chimneys as to brick foundations and walls. Check the chimney for cracks in the brick or blocks and mortar. If the chimney is unpainted, leave it that way. You may wish, however, to apply a water repellant coating. Look at your building supply store for one that is specifically formulated for masonry. If the chimney is painted, look for peeling and crazing paint, indications that it is time for a new coat of paint.

Freestanding chimneys may be a hazard during an earthquake. See the next section for suggestions on tying the chimney to your roof structure for better stability.

The Secretary of the Interior's Guidelines for Rehabilitation Building Exterior: Roofs (excerpt)

Recommended:

Identifying, retaining, and preserving roofs—and their functional and decorative features—that are important in defining the overall historic character of the building. This includes the roof's shape; . . . decorative features such as cupolas, cresting, chimneys, and weathervanes; and roofing material such as slate, wood, clay tile, and metal, as well as its size, color, and patterning.

Protecting and maintaining a roof by cleaning the gutters and downspouts and replacing deteriorated flashing. Roof sheathing should also be checked for proper venting to prevent moisture condensation and water penetration and to insure that materials are free from insect infestation.

Providing adequate anchorage for roofing material to guard against wind damage and moisture penetration.

Protecting a leaking roof with plywood and building paper until it can be properly repaired.

Not Recommended:

Radically changing, damaging, or destroying roofs which are important in defining the overall historic character of the building so that, as a result, the character is diminished.

Stripping the roof of sound historic material such as slate, clay tile, wood, and architectural metal.

Allowing roof fasteners such as nails and clips to corrode so that roofing material is subject to accelerated deterioration.

Failing to reuse intact slate or tile when only the roofing substrate needs replacement.

Using a substitute material for a replacement part that does not convey the visual appearance of surviving parts of the roof or that is physically or chemically incompatible.

SEISMIC STABILITY

Oregon has not been hit by a major earthquake in many years, but the prevailing scientific opinion is that the western half of the state is ripe for a very big "big one." And as residents of Klamath Falls can attest, even a relatively small earthquake can cause serious damage and injury. It is a good idea for residents of Western Oregon to make sure their buildings are as seismically stable as possible before a quake actually hits.

Historic buildings have a number of risk factors not associated with newer buildings. Foundations built before the introduction of reinforced concrete have higher risk factors, and a wood-framed building might not be tied to the sub-structure. Historic buildings are also more likely to have a number of additions which may not be soundly attached to the original building.

Knowing the Risks

While ground movement during an earthquake is in all directions, the greatest damage from earthquakes is caused by horizontal movement. Vertical elements, unless properly connected, are likely to shift or slide when the horizontal forces of an earthquake are in action.

The most stable building in an earthquake is one with a compact rectangular plan, low to the ground, firmly attached to a reinforced concrete foundation. As the plan grows more complex, the extreme volumes or wings have the potential to move independently during an earthquake, literally tearing themselves away. Additions are even more likely to behave in this manner if

their structure has not been carefully attached to that of the original building.

Greater height and "soft" basements or garages are also risk factors. The forces of the earthquake are additive at greater heights, and unsupported stories only increase the risk of collapse. Reinforced concrete foundations perform best in earthquakes; frame and steel walls perform better than masonry walls.

Maintenance

One of the most important ways to prepare your building to withstand an earthquake is to make sure it is properly maintained. Rotted wood and loose bricks might not be causing immediate problems, but they will cause far greater damage during an earthquake. Even loose mortar can cause you to lose bricks and even entire walls or chimneys.

Keep water draining away from your foundation to reduce the risk of settlement. A strong foundation is the most important link in keeping your building upright and whole.

Retrofitting Tips

There are a number of steps you can take to make sure your building is protected in the event of a major earthquake. While no building is totally earthquake-proof, the following retrofitting techniques can significantly improve a building's chances of survival and minimize damage. The guiding principle of your retrofitting work should be that every element of the building should be supported against movement in all three dimensions and firmly connected to the layers above and below.

This is a different way of thinking about buildings than the traditional view that gravity is the only important force to deal with.

Many of the suggested steps can be performed by the experienced homeowner without great expense. These techniques are adapted from the Utah State Historic Preservation Office's *Bracing for the Big One: Seismic Retrofit of Historic Houses*.

Improving Connections

A good foundation is the basis for any earthquake-resistant building, but it is only as good as the connection to the building itself. Without a strong anchoring system, the entire building might just slide off its foundation. The most important step is to tie your joists to the foundation. Metal foundation anchors can be installed fairly easily and at minimal expense. If your local building supply store doesn't have these, they should be able to order them.

Another fairly simple and inexpensive step for owners of frame buildings, especially if you have already exposed your structure in the course of rehabilitation, is to use ties or reinforcing angles to improve the connection between stud walls and joists.

Attaching the joists to walls is a little more complicated for owners of masonry buildings. In this case, tension ties may be needed to attach the joist ends through the exterior wall to a bracket or washer.

Your roof is another area which might not be securely connected to the rest of the house. If the rafters rest on the top plate of the wall, they can be secured with hurricane ties. Often the rafters will meet extended ceiling joists beyond the edge of

the exterior wall plate; in this case, a new structure of crossed 2x4s should be built on the top plate to support the rafters.

If your building has a basement with exposed wood columns, check the connections of the columns to the beams above and footings below. It might be wise to reinforce the connections with steel angles, post caps, or ties.

Reinforcing Floors, Walls, and Roof

Although the use of plywood is inappropriate for the exterior of most historic buildings, it has many structural applications. Wood stud walls without any kind of plywood or board sheathing are vulnerable to lateral forces, and should be reinforced with plywood under the finish materials (5/16" or greater). If you are re-roofing a building with skip sheathing instead of solid decking, it is a good idea to install the same kind of plywood before replacing the roofing materials (if the original sheathing is in good condition, the plywood can be installed over it).

Bridging (criss-crossed 1x elements) should be installed between joists at no greater than eight feet apart. This connects the parallel elements of the floor and roof structure, encouraging the structure to move as a unit instead of the elements moving independently.

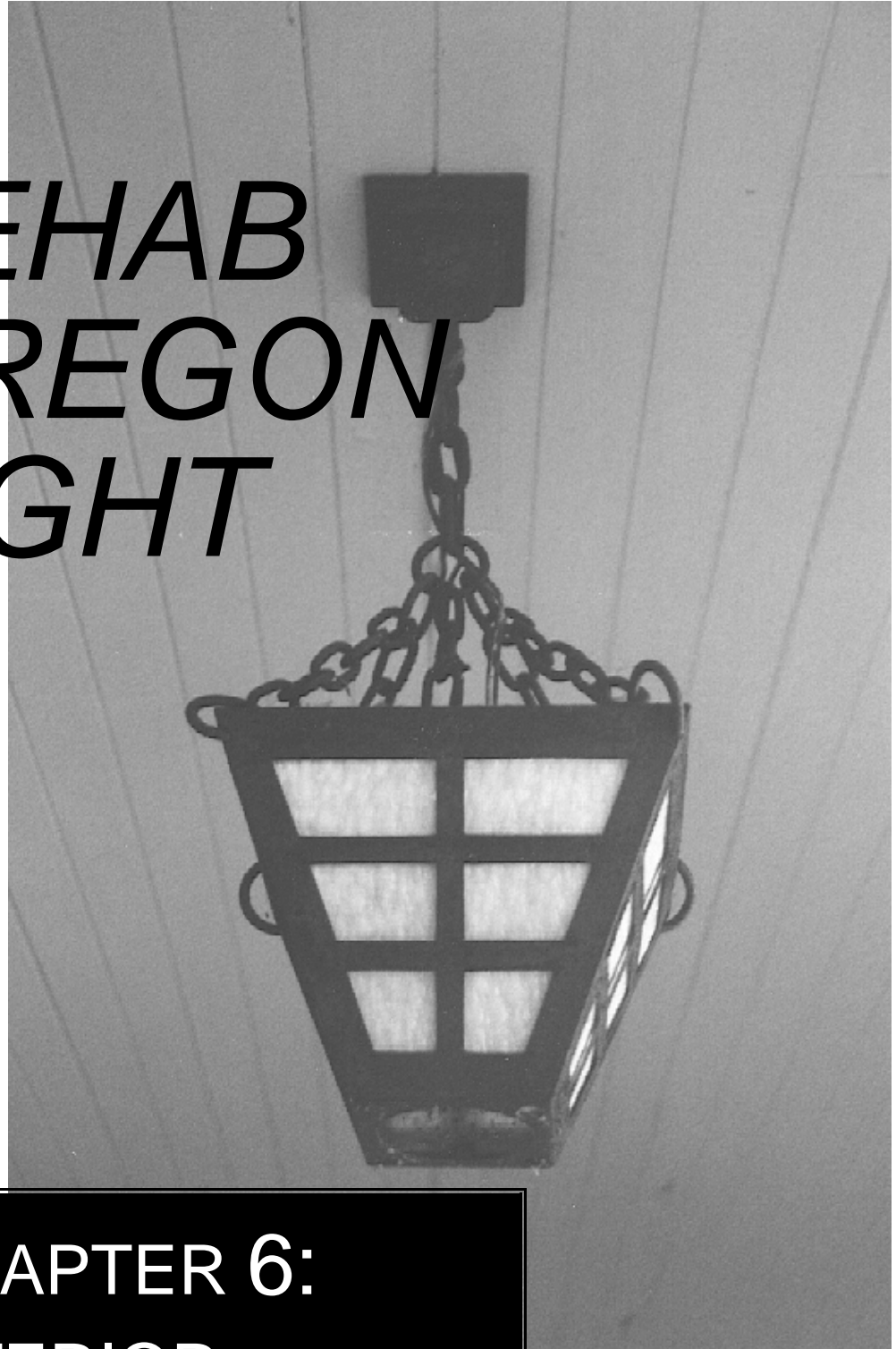
Other Options

Owners of buildings with masonry chimneys may wish to tie the chimney to the roof structure with a 2" steel brace. The brace is attached to a metal strap bolted around the top of the chimney at one end, run through the roof, and bolted

to a braced 2x4 structure installed inside the rafters.

If your existing foundation is not reinforced, it is often possible to install new foundation walls just within the existing one or in critical points toward the center of the building. In addition to the extra stability, this will provide more points to anchor down the structure of the building. This step can be expensive, but might be worth it if your building is at high risk. Consult an architect or engineer for proper placement and details.

REHAB OREGON RIGHT



CHAPTER 6: INTERIOR REHABILITATION

CHAPTER 6: INTERIOR REHABILITATION

While the appearance of the exterior of your building is most important in preserving the historic character of your neighborhood, the interior has a greater effect on your quality of life. Very few historic interiors survive to the present day completely intact; for this reason, it is all the more important to preserve the features which have survived. This chapter provides information on the maintenance and repair of walls and ceilings, floors, doors, interior stairways, fireplaces, and utilities and lighting fixtures. As with the exterior of the building, make sure you document current conditions before starting work.

WALLS

The wall surfaces of your building are very important to the overall interior quality of each room. If the new wall treatment is consistent with the original character of the building, your efforts will be rewarded with a comfortable interior.

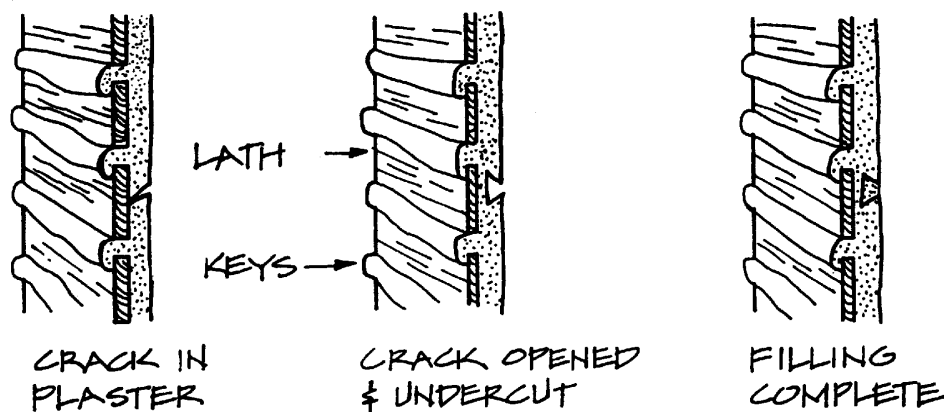
Lath and Plaster

One of the most common historic interior wall finishes is plaster. Plaster is a very versatile material, used for plain surfaces and decorative ornament. Because plaster is a rigid material, which is applied over the lath, a flexible

framework, the plaster often cracks as the building settles.

Fortunately, cracks and chips in plaster can be repaired. Be sure to investigate the cause of the plaster damage and perform repairs, if necessary, before patching the plaster. Leaky plumbing or rotten wood also cause plaster damage.

Small patches of missing plaster are best repaired by traditional plastering methods, but larger holes may be filled in with drywall. (See *Walls and Molding*, listed in Chapter 7.) When you have the need for a *major* plaster repair, it is best to contact a plastering contractor.



Procedure to repair minor plaster cracks.

Adapted from Rehab Right, City of Oakland, California, 1978

Wood and Wainscoting

Wood is used as a wall surface in many historic buildings. When a skirt of wood three to four feet high is placed along a wall surface, it is called *wainscoting*.

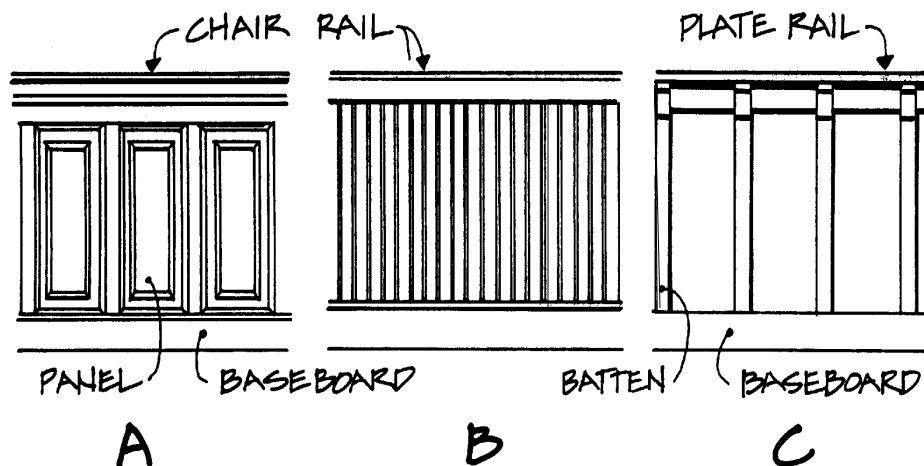
If the wood is unpainted and in good condition, leave it unpainted. If the woodwork was originally painted, you may strip and repaint it. Painted woodwork was common in many styles of buildings, including Classical and Colonial Revival buildings. Softwoods are especially likely to have been painted in any period. Clear finishes and stains are appropriate for hardwoods in many Victorian era buildings and in the Craftsman and related styles which emphasized the use of natural materials.

Refinishing Woodwork

Refinishing woodwork can be a difficult and time-consuming job. Stripping woodwork takes patience, but it is one of the rehab tasks that can most easily be accomplished by the owner. There are several methods for stripping

paint, including the use of chemical removers, applied with a brush which allows the paint to buckle; heat removers which will melt the paint away; and scraping with a sharp hook-type blade. Heat and chemical methods should be used with caution and are best performed by experts. Scraping by hand can be very labor-intensive and requires a certain amount of finesse. Make sure to look at the section on lead-based paint removal in Chapter 5 before beginning work.

Once the wood has been stripped, apply a stain or finish to protect it. The color of the stain or finish you select should be as close a possible to the original, corresponding to the architectural style of your building and the other woodwork in the interior. For further information on refinishing woodwork, consult *Walls and Molding* (see Chapter 7).



Types of wainscoting. "A," a paneled wainscoting, was used in more formal areas of the building; "B" was often used in kitchen or service areas; "C" is representative of the Arts and Crafts period.

Adapted from Rehab Right, City of Oakland, California, 1978

MOLDINGS AND TRIM

Many historic buildings were built with a variety of trims and decorative moldings. The type and abundance of these details is dependent on the era and style of your building. Keep the following suggestions in mind when you consider these special features.

- Retain original features wherever possible. They add to the historic character of your building and might increase its value.
- If a repair to your floor, wall or ceiling needs to be made, the molding may need to be removed temporarily. Only remove molding when necessary, with the utmost care.
- If a piece of molding needs repair, document it first, and then remove it to get a piece to match. Some trim can be duplicated easily; however, complex moldings are costly and more difficult to replace.
- If the trim is completely missing, replace it with a duplicate trim. A copy of the original molding can be made from old photographs, or old paint profiles. You might be able to find period catalogs showing the types of trim popular at the time.
- Do not add new moldings unless they are in keeping with the historic character of your building.

CEILING

The ceilings in your building have a powerful impact on the interior spaces. Many historic buildings have higher ceilings than contemporary buildings. Never alter the ceiling height of the building; it is an unnecessary solution to



Types of molding shapes. A) base; B) base with integral ogee cap; C) chair rail; D) crown; E) cove; F) lattice; G) quarter round; H) astragal; I) picture; J) base cap.

Adapted from Rehab Right, City of Oakland, California, 1978

the problem of a ceiling in need of repair. Reducing the ceiling height or adding hung ceilings minimizes the appeal of the building.

Ceiling Repair

To repair a plaster ceiling, follow the same steps for repair of plaster walls. Plaster ceilings often crack and get holes due to settlement, water damage and the installation of light fixtures. If the ceiling in your building needs major repair it can be replastered, or sheetrock can be installed. It is recommended that sheetrock only be used when major sections of plaster are deteriorated.

You may want to hire a plaster specialist at this point, especially if the ceiling is coved or has decorative plasterwork. Prior to undertaking a major ceiling replacement plan, carefully evaluate just how much of the ceiling needs replacement. You should try to save as much of the original ceiling as possible.

PAINT

Paint colors, preparation, and methods for exterior rehabilitation have been presented in Chapter 5. Refer to that section for information that is not covered here. You should also review that chapter's section on lead-based paint abatement before beginning any work. The same steps apply to painting and paint preparation of interior walls, with a few additions. Remember, proper surface preparation is the key to a successful paint job.

- You need a well prepared, smooth surface to paint; fill all holes, cracks and chips in the walls.
- The old paint should be scraped smooth or carefully removed with heat or chemicals.
- Do not paint over wallpaper unless it is properly hung, not brittle with age.
- Do not paint over wallpaper with an oil based paint.
- Do not paint unpainted wood surfaces.
- A flat latex is usually best for walls and ceilings; use a semi-gloss enamel for trim, doors, and shelving.

The introduction of latex paint has made the painting process much simpler and less time-consuming. You now have an option of using an oil based paint, alkyd, or a water based latex.

Keep in mind that the colors you select for your interior will have a major impact on the way a room looks and feels. To document the historic color of your interior, use the same process as is outlined in the "Paint" section of Chapter 5.

Special Finishes

Buildings of the Gothic Revival and Victorian era in Oregon are especially likely to have special finishes such as graining, stenciling, or marbling. These finishes are a reminder of craft skills which have almost disappeared, and should always be preserved whenever possible. If you are not able to save the original work, document it thoroughly and keep samples if possible.

Stenciling

Stencils were historically used as friezes, on ceilings, and in many other locations. An original stenciled pattern is quite a find. If sections are damaged, it is best to seek help from a professional conservator.

Several books on historic interiors are available to help you determine if stenciling is an appropriate treatment for any part of your interior. Patterns are commercially available, or you can create your own by tracing stencil patterns or existing stenciled designs. Be sure to consult a book on stenciling about the proper type and consistency of paint to use, as this is an important consideration in the success of the application.

Graining and Marbling

It was common in the mid to late 19th century to have softwood features *grained* (painted to look like more expensive woods). This was common in public rooms, but also-occurs in kitchens and service areas. In some cases, wood was painted to look like marble; this treatment was usually reserved for formal areas of the building.

If your building has original grained or marbled features, preserve them! If you find a grained or marbled layer under subsequent coats of paint or wallpaper, there are professionals in Oregon (mostly in the Portland area) who can recreate them.



Graining was common on wooden surfaces such as doors.

Photo by Dave Pinyerd

Cleaning Painted Surfaces

Walls and other painted surfaces might not seem like they need a lot of attention, but over the years, they can collect a lot of dirt and grime. How you approach the cleaning of a painted surface depends on the composition of the paint and if there are any special considerations. The best approach is to start with a small test area, using "the gentlest means possible." Start with a feather duster or vacuum with a soft brush. Water and a mild detergent is safe for most surfaces, but again, make sure you test first.

Special finishes such as those mentioned above might have unusual

compositions or special coatings that are more sensitive than ordinary paint. Use special caution when approaching these, as they are irreplaceable. More suggestions for cleaning can be found in *Walls and Molding* (see Chapter 7).

WALLPAPER

Wallpaper has been popular throughout Oregon's history, and was often used in combination with paint or stenciling.

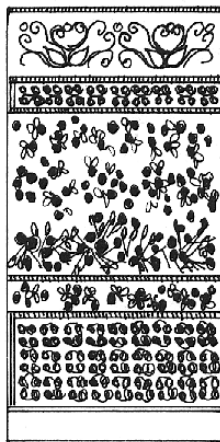
By the 1870s, it was common to use at least three different patterns of wallpaper for the different parts of the wall (see illustration). The use of a separate dado paper lost favor after the 1880s, but frieze papers remained popular into the present century.

A number of companies produce reproductions of historic wallpaper patterns which might be in keeping with the historic character of your building. The National Trust's *Wallpapers for Historic Buildings* lists a number of companies and the patterns that are appropriate for different eras (see Chapter 7).

Just as today we might be able to identify a wallpaper as a product of the 1970s, historic wallpapers can often be dated by their pattern and materials. A number of good books are available that describe historic tastes in wallpapers with illustrations and examples. If you find historic wallpaper in your house and you cannot find the pattern in any of the available books, the Cooper-Hewitt National Museum of Design offers assistance in tracking down patterns. Consult Chapter 7, *Rehabilitation Resources*, for information on books and on contacting the Cooper-Hewitt.

If you need to remove damaged old wallcoverings before hanging new paper,

it is a good idea to photographically record what was there before as part of your record of the house's history. In fact, it is highly recommended that you save some of the old wallpaper. If it has been damaged by moisture, it might come off easily. There are also special steam machines on the market to loosen up the glue and allow you to remove old wallpaper more easily.



FRIEZE
BORDER

FILL
PATTERN

BORDER

DADO

BASEBOARD

Up to five different papers could be used on a wall according to popular tastes of the 1870s and 1880s.

Once you have a sample of the paper, you'll need to devise a way to safely store it. If the wallpaper does not seem to be flaking apart, an archivally stable plastic would be a good choice. (If it is flaking apart, static from the plastic might make the problem worse.) Some art supply stores carry archival plastic portfolio envelopes. If these do not suit your needs, the store should be able to provide you with the address of an archival supply company, several of which offer catalogs.

Samples should be stored flat, with little or no weight on them. Keep them away from light in a temperate setting.

Lincrusta Walton

Lincrusta Walton is a heavy, embossed cardboard-like wall covering. It was imported, along with a thinner material called Anaglypta and numerous imitations, from England and Belgium and also manufactured domestically in the late 19th century. The materials were most often used as a dado and wall covering for Victorian era and Colonial Revival style parlors and hallways. Usually coated with a glossy brown varnish or other decorative finish, it has been the fate of many of these wallcoverings to nearly drown under subsequent layers of paint.

Lincrusta and similar materials are uncommon in Oregon, and anyone who is lucky enough to own an example has a real antique showpiece. There are methods available to recreate missing and deteriorated pieces; consult *The Old-House Journal*, October 1975, for further information on Lincrusta Walton.

FLOORING

Before bringing out the sander to "refinish" your floor, read this section. One of the most common mistakes historic building owners make is to abuse their floors by disregarding the type of floor they have and the special type of treatment it should receive.

Subfloor

The finish floor of your building should be resting on top of a subfloor, probably made up of boards placed perpendicular or at a 45 degree angle to

the joists. Plywood is now the most common material for subflooring, but its use was not introduced until the mid-20th century.

In a well-maintained building, the subfloor is unlikely to have any serious problems. Sometimes the subfloor will suffer from rot if it is exposed to a water source such as a leaky sink or bathtub. At the other extreme, the individual boards of the subfloor might shrink over

the years. The resulting looseness might be a source of squeaks.

You will probably never be faced with replacing your subflooring. Sometimes problems with the first floor subflooring can be corrected from the basement or crawlspace. If it becomes necessary to take up a finish floor to get to the subfloor, remove the moldings and floorboards as carefully as possible, labeling the pieces so you can reinstall them correctly. Plywood can be substituted for traditional subflooring, but make sure you use the same thickness as the boards you removed. A plywood subfloor will also improve the seismic stability of your building.

Floor Finish Selector

FINISH TYPE	ADVANTAGES	DISADVANTAGES
Shellac	Inexpensive. Easy to apply and touch up by blend-patching.	Not long wearing. Should be waxed. Vulnerable to water. Becomes brittle with age.
Conventional Varnish	Moderate cost. Longer wearing and more stain resistant than shellac.	Long drying time. May require filler on oak floors. Surface has gloss. Waxing recommended.
Quick-Dry Varnish	Fast drying allows room to be put back in service sooner. Easy to touch up by blend-patching. No waxing needed.	Medium wear life. Surface has a gloss.
Poly Urethane	Hardest surface of all varnishes. Long-wearing and highly resistant to staining and scarring when properly applied. No waxing.	Can be misapplied. Not compatible with certain stains; plastic film can separate from wood. Can't blend-patch. Surface has a gloss.
Penetrating Sealer	Easy to apply and touch up. Doesn't leave glossy reflective film on the surface.	Not long wearing. Waxing is recommended.
Oil Finish	Final finish has rich luster and patina; easy to touch up.	Not long wearing. Long drying time. Will darken with age.

Hardwood

Hardwood floors are made from woods like chestnut, oak, maple, hickory, or walnut, and were often left partially exposed. These floors may need repair and refinishing, but not necessarily sanding. If you need to restore the finish on your hardwood floors, consult the Floor Finish Selector chart first (see previous page). This chart is excerpted from the *Old-House Journal Compendium* (see Chapter 7).

Softwood

While hardwoods in most homes were reserved for the more public rooms, softwoods were used for flooring throughout the house. These floors were covered with rugs or carpeting, painted, varnished, stained, or sealed with linseed oil. Softwoods used as flooring in the Northwest are most frequently pine and cedar.

Stripping a softwood floor will inevitably remove the effects of time, the *patina* that identifies it as a historic floor. Before you make the decision to strip or alter your floor, make sure you consider how it will affect the appearance of the floor. If you must strip your floors, use paint and varnish remover. These materials are much less harmful to the floors than a sander.

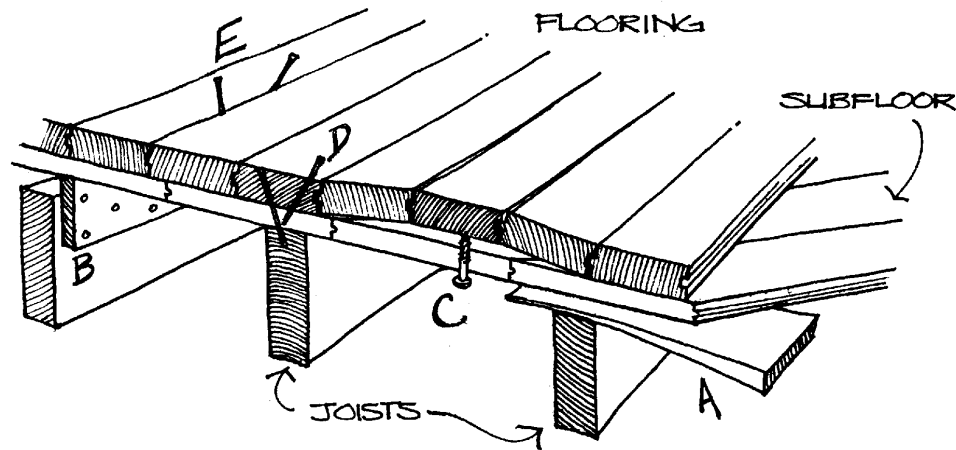
- Leave the remover on the wood for as little time as possible.
- Scrub the floors with mild lye-water several times.
- Coat floors with a clear, flat sealer.
- Light-wax floors in areas where there is heavy traffic.

Repair*

Some of the more common flooring problems are listed below. It is important to keep in mind that though floors, especially hardwood floors, are very durable, they can be damaged. The cause of damage should always be corrected before making the improvements.

- Loose floorboards: Loose boards can be knocked, nailed or screwed back into place if they are not too badly buckled or warped. Squeaks let you know where the trouble spot is.
- Water spots: Water stains darken hardwood. After eliminating the source of the moisture, the stains can be bleached with a solution of oxalic acid and warm water. Brush the solution on the stain and let it soak into the wood. When it dries, vacuum the crystals and sand the surface by hand.
- Nails: Protruding nails should be tapped back into the board with a nail set. Otherwise they may chew up the belt on sanding equipment, if used, or create a hazard.
- Cracking floorboards: Cracks between floorboards are the result of high and low temperatures combined with high humidity. This causes floorboards to shrink so dramatically that drafty spaces are left in between. As the moisture content increases, wood expands, but when abutting floor boards allow no room for expansion, the wood is put into compression and shrinks instead.

*Adapted from *Rehab Right*, City of Oakland, California, 1978.



Several ways to deal with loose floorboards: A) If only a few subfloor boards are loose, support them with a shingle or shim wedged above the joist. B) If more boards are loose, a 1x4 nailed to the joist can support them. C) Use woodscrews to tighten down loose finish flooring from below. D) Floorboards directly above a joist can be nailed in with special ribbed flooring nails (predrill the holes first). E) 6d finish nails driven between floorboards at 6" intervals can help secure finish flooring to subfloor. Alternate angles when nailing.

Adapted from Rehab Right, City of Oakland, California, 1978

When dry again, the board is reduced to less than its original width due to the compressive stress. The best way to prevent cracks between first floor boards is with an adequate vapor barrier in the crawl space. To repair, fill cracks in with wood putty, or sawdust and glue for temporary measures. A better solution is to place felt weatherstripping between the cracks.

DOORS

The panel door is the most typical type of door found in older historic buildings. The number and composition of panels will vary according to the age of the building, but some characteristics are common to all panel doors.

- Panel doors will match the other types of architectural features of the room.
- Original panel doors are compatible with the door frame, molding, trim and cap; a new core door would not match any of these details.
- Panel doors can usually be repaired for a small amount of money.
- Panel doors offer excellent sound insulation.
- Often there is attractive hardware on panel doors.

Many styles of historic doors are available at architectural salvage yards and stores. If you cannot find a supplier in your area, the HPLO might be able to help you find one (see Chapter 7).

Fit, Damage and Repair

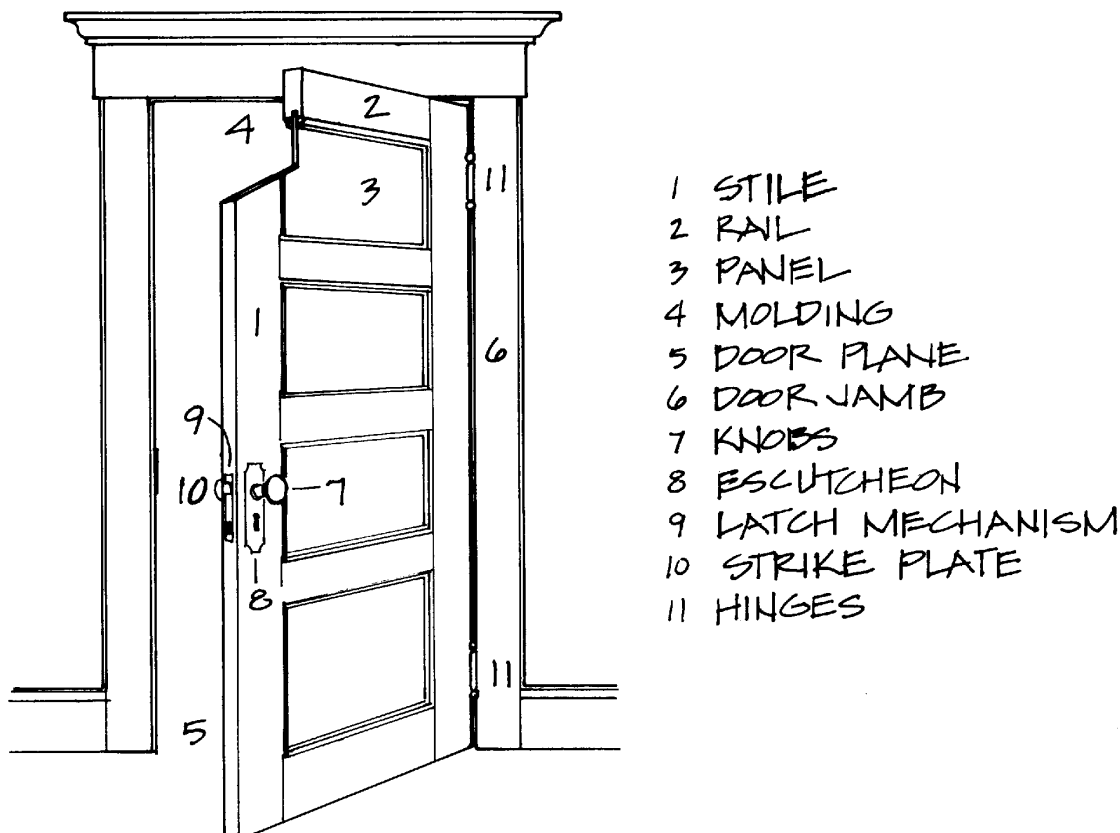
You may find your door may come loose over the years. This is no fault of the door, but of the hinge. Some of the typical problems and solutions on interior doors are as follows:

- The edges may swell: plane the door.
- Loose hinges can cause sticking: remount screws or set mortises deeper.
- The bottom of the door may sag: shim out the bottom hinge and reset the screws of the top hinge.
- Warped door or stop: move stop.
- Knobs on door missing: replace knobs to match others original to house or in character with originals.

- Tarnished hardware: clean and polish.
- Strike plate is out of alignment with latch: enlarge mortise enough to move strike plate up or down as needed.

Door Frame

The door frame is an important part of the door opening, and should be treated with respect. Like other trim and molding in your building, never paint the door frame. If it is natural, leave it that way. The door frame should be left in its original form and repaired rather than replaced, if possible.



Parts of a panel door, showing a cutaway with a typical molding detail.

Adapted from Rehab Right, City of Oakland, California, 1978

Hardware

The hardware, like the door and frame, should be left in its original condition whenever possible. The knobs and hinges should always be retained, cleaned and reused. (See Chapter 5 for the addition of safety features on exterior doors.)

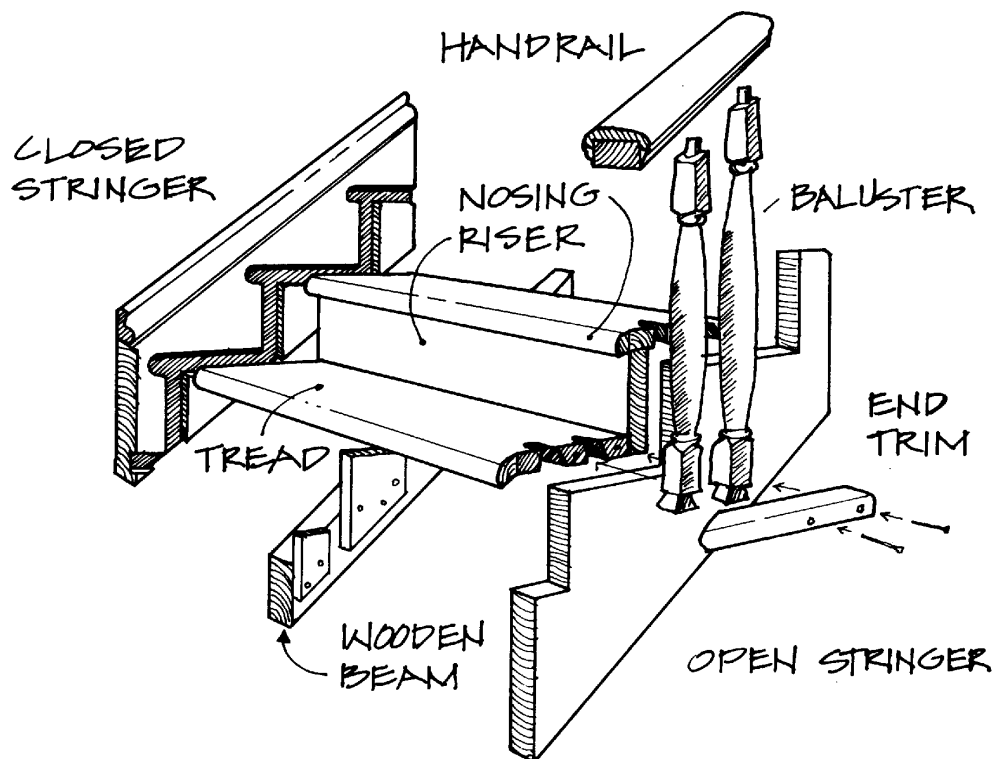
STAIRCASE

Most staircases receive continual wear, and for that reason are likely to show signs of age faster than some other parts of the building. Like other architectural features, staircases differ historically according to the period in which they were constructed, and the architectural style of the building. Many Victorian era staircases had turned

balusters, carved spandrels, and large decorative newel posts. During the early 20th century staircases were sometimes enlarged with built-in benches, storage compartments, and a simpler balustrade. Wainscoting was often located on the walls of the staircase.

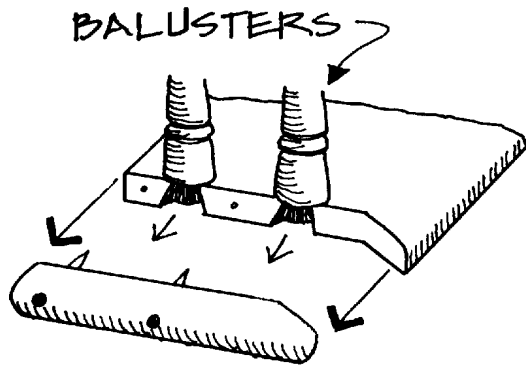
Repair

The approach to repairing your staircase, like the other architectural details previously discussed, is to repair first and replace only when necessary. The discussion in Chapter 5 on exterior stair repair can also be applied to interior stairs. Check the requirements in the State of Oregon Health and Safety Code prior to deciding on rebuilding your staircase.



Parts of a staircase.

Adapted from Rehab Right, City of Oakland, California, 1978



How balusters are attached

Adapted from Rehab Right, City of Oakland, California, 1978

FIREPLACES

If your building has a fireplace, by all means, keep it. A fireplace that is in good working condition will definitely add to the value of your building in addition to providing another source of heat.

Appearance*

There are basically two types of fireplace designs: those with a built-in mantel and those with an add-on mantel. Victorian era homes typically had add-on mantels. They were constructed by roughing a hole in the wall, installing a firebox, damper and flue, and finishing it off with a fire resistant tile. The mantel was added later. It was selected on an individual basis and was usually very decorative. These mantels were first carved out of marble and were very

costly. Later reproductions were made available more cheaply through the mail-order catalogs.

Most Victorian era fireplaces were the primary heat source and generally burned coal. With the introduction of central heating, fireplaces were redesigned as an auxiliary heat source. They were made larger to accommodate wood as fuel, and the mantels were built in. In Colonial Revival style houses, both this and the earlier type can be found. The predominant mantel design is a pair of classic columns with a pediment on top, in a darkly stained or painted wood.

Most buildings of the Arts and Crafts style had a built-in wood burning fireplace. Typically, the mantel is flanked by built-in book cases, and the stack by a pair of fixed windows, often leaded or stained. The hearth is made of brick, or square tiles in gray, tan or brown. The mantel may be built entirely of clinker brick or it may be wood, with the hearth tiles incorporated as the surround.

Repair

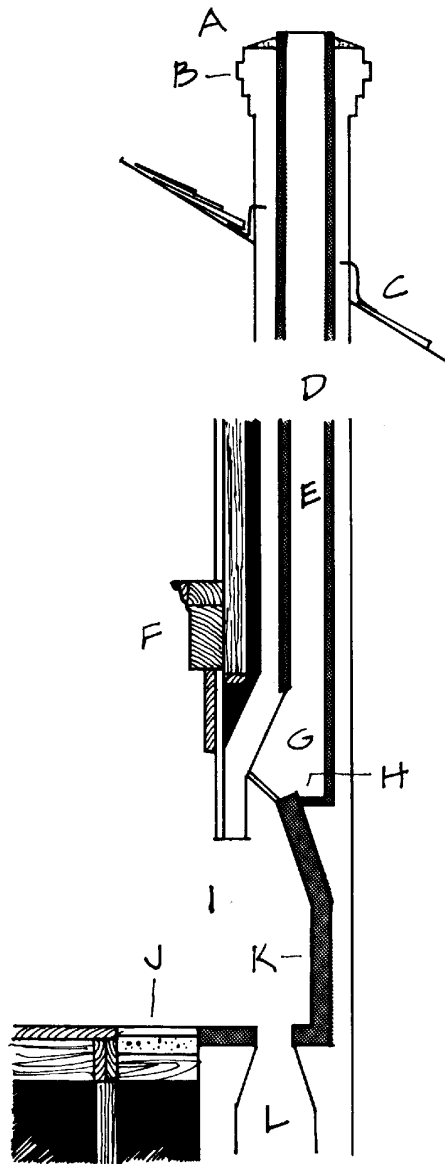
To repair or rebuild a mantel follow these suggestions:

- Keep the size of the mantel in proportion to the shape of the room and fireplace opening.
- Keep the woodwork and tiles consistent with the other decorative details in the room.
- Never change the size of the fireplace opening just for aesthetic reasons.

If there are problems with the internal workings of your flue, make sure

**Adapted from *Rehab Right*, City of Oakland, California, 1978.

the professional you hire has a good reputation and both damage and liability insurance. If structural work needs to be done, confirm a contractor's license (See Chapter 4).



A fireplace in section: A) Cap; B) Corbelling; C) Flashing; D) Flue lining; E) Flue; F) Mantel; G) Smoke chamber; H) Smoke shelf; I) Damper; J) Hearth; K) Firebrick; L) Pit for ashes

Adapted from Rehab Right, City of Oakland, California, 1978

UTILITIES AND FIXTURES

Electrical, plumbing, and heating systems are the nerve system of your building, and can be upgraded without destroying the integrity of the architecture. Follow the checklist in Chapter 3 for a guide of the types of problems that may occur. Because the electrical, plumbing and heating systems are constantly in use, they are often in need of repair.

Electricity

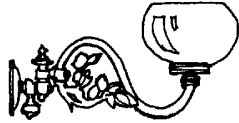
The evaluation of an electrical system usually requires the knowledge of an expert. Old wiring may be hazardous if it has frayed or cannot carry the capacity that modern needs require.

You can tell the voltage of your service by looking at the type of electrical hookup to your building. A three wire hookup indicates a 110-220 volt service, with an amperage of 30-100 amps. A two wire hookup indicates a 110 volt service with 20 to 30 amps. The size of the wires indicates the amount of amperage.

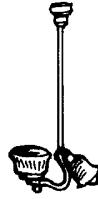
It is recommended to upgrade a 30 amp service, whether two wire or three wire, to a 100 amp service. This can be completed by a licensed contractor who will install a new circuit breaker panel and all the wiring. The existing wiring in your building is acceptable if it has been safely maintained, and not altered or abused; however, all new installations



KEROSENE
LAMP



GAS BRACKET
LIGHT



COMBINATION
ELECTRICAL/GAS



DOMED
LEADED LAMP

Historic lamp styles.

must conform to state code. This is another reason to hire an electrical contractor. Be sure to hire an electrical contractor whom you can talk with, and who shares a willingness to meet your electrical needs without destroying the integrity of your building.

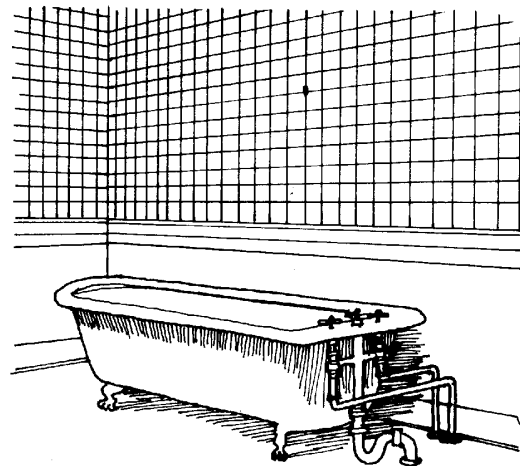
Lighting Fixtures

Lighting fixtures, like the hardware on your doors and windows, are an essential architectural detail which should complement the rest of the building. Retain and use the original light fixtures in your building whenever possible. Electrical lighting became popular in Oregon in the early twentieth century. The first electrical fixtures looked like the old gas ones, with brass stems and glass shades. When replacing these shades and fixtures, first look at salvage yards and antique shops; legitimate reproductions are also available at many retailers and through catalogs.

Plumbing

If the plumbing system in your building is in good condition, there is no need to update it. Most Oregon buildings constructed prior to World War II have a water supply line of galvanized steel and a drain-waste vent line (DWV) of cast iron. Newer plumbing stock is made of copper or plastic.

Improvements to your plumbing system may be required if:



A bathtub with exposed water pipes, popular in the 1890s.

- your building has minimal bathroom facilities
- you want to update your kitchen or add another bathroom
- the old galvanized pipes in your building are fragile and corroded (a common situation).

The effort to conceal new pipes often causes damage to the historic building. Before making additions to your plumbing system,

- Carefully investigate the hidden passages, crawlspaces and vents in your building.
- Use existing holes in the walls or floors for pipe connections.
- Retain all original plumbing fixtures that are in good working order.
- Secure a plumbing permit for all work other than minor repairs.
- If the job is beyond your ability, hire a professional plumber who has a plumbing license.

Mechanical

Older heating systems in Oregon buildings include floor furnaces, wall heaters, space heaters, central steam or hot water heat with radiators, central warm air and forced air ducts and registers, and electric heat. Many older systems are unnecessarily replaced because of minor problems or a perception that newer systems are better (which isn't always necessarily true).

Problems can occur in heating systems if they have been neglected. Look for these signs of aging radiator systems:

- signs of rust around fittings
- cracks at joints in the boiler

- cold radiators on upper floors but not on lower floors.

Steam radiators may become increasingly noisy, but the replacement of the central furnace will not remedy this problem. Additions to your heating system will change the visual impact of your building, so consider upgrading the system you have in place instead of switching to a new set-up.

All new mechanical systems should be designed by experts in the field to meet code requirements and your aesthetic and practical requirements. Safety codes such as the National Electric Code and the American Standard Plumbing Code offer sound guidelines to make sure the equipment in your building is safe, clean, and operable. A good rule of thumb to follow is that if you don't know, call a professional in the field. Public information is also always available at your city offices. It is always best to be well-informed before making any rehabilitation decisions.

Saving Energy

Although older buildings have a reputation for being "drafty," they are surprisingly energy efficient when compared to new construction. A well-built older home often saves the owner money on utility bills for a number of reasons:

- They maximize natural sources of heating, lighting, and ventilation through their design.
- They often use landscape elements (such as shade trees) and features

The Secretary of the Interior's Guidelines for Rehabilitation Interior Features and Finishes (excerpt)

Recommended:

Identifying, retaining, and preserving interior features and finishes that are important in defining the overall historic character of the building, including columns, cornices, baseboards, fireplaces and mantel, paneling, light fixtures, hardware, and flooring; and wallpaper, plaster, paint, and finishes such as stenciling, marbling, and graining; and other decorative materials that accent interior features and provide color, texture, and patterning to walls, floors, and ceilings.

Protecting interior features . . . against damage during project work by covering them with heavy canvas or plastic sheets.

Removing damaged or deteriorated paints and finishes to the next sound layer using the gentlest method possible, then repainting or refinishing using compatible paint or other coating systems.

Repairing interior features and finishes by reinforcing the historic materials.

Not Recommended:

Removing or radically changing features and finishes which are important in defining the overall historic character of the building so that, as a result, the character is diminished.

Installing new decorative material that obscures or damages character-defining interior features or finishes.

Removing paint, plaster, or other finishes from historically finished surfaces to create a new appearance (e.g., removing plaster to expose masonry surfaces such as brick walls or a chimney piece).

Radically changing the type of finish or its color, such as painting a previously varnished wood feature.

Failing to take new use patterns into consideration so that interior features and finishes are damaged.

Changing the texture and patina of character-defining feature through sandblasting or use of abrasive methods to remove paint, discoloration or plaster. This includes both exposed wood (including structural members) and masonry.

such as roof overhangs and awnings to protect a building from the hot sun.

- Building materials such as heavy masonry reduce the winter heat loss.
- The energy saved by letting an existing building stand, referred to as its *embodied energy*, is a tremendous advantage over consuming energy by tearing an older building down and replacing it with a new one.

To help with winter heat loss follow these common-sense steps:

- Weatherstrip all windows and doors.

- Avoid using silicon-based caulk, as it is not easily removed or reversible.
- Secure loose trim and siding by predrilling & nailing with galvanized finish nails.
- Fill larger cracks in wood materials with wood epoxy filler. Replace larger section of deteriorated material in kind, where necessary.
- Add storm windows and doors to your buildings. Consider using interior storm windows that can be easily removed during warm weather and will not mar the historic appearance of your home from the exterior.

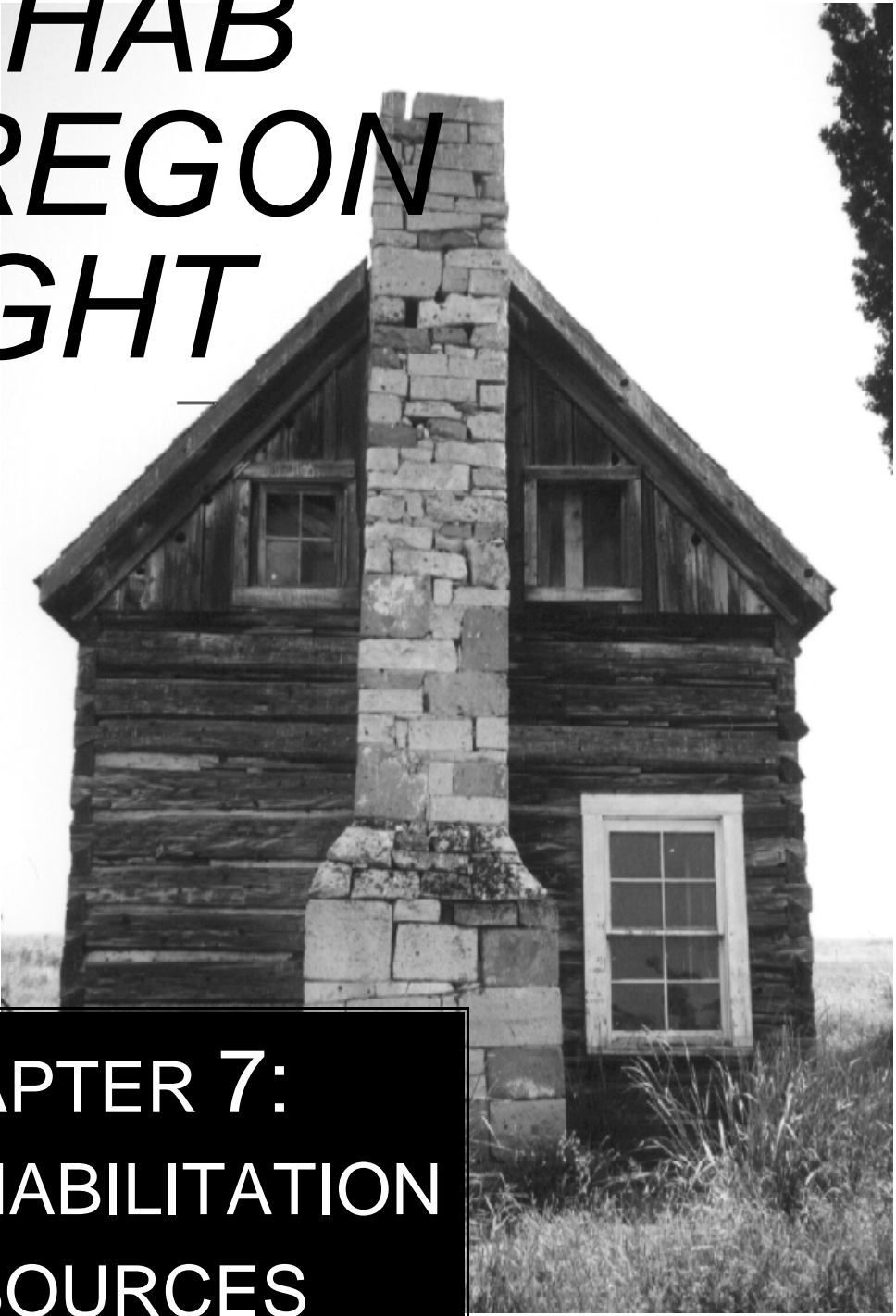
- Clean all radiators and your furnace to keep your heating system energy efficient.
- Insulate your attic, as about 25% of the heat loss is through the roof of your building.
- Set your thermostat and hot water heater as low as possible in the winter.

Summer can present another set of energy problems. Most historic buildings are designed for the use of traditional cooling methods, and on most days you should be able to avoid the use of an air conditioner. Follow these steps in order to maximize energy efficiency in your building:

- Open the building up during the evenings if possible in order to allow cool air to flow in; shut the windows during the day to prevent hot air from entering.
- Close blinds or drapes on the south side of the building.
- Use awnings when possible to cut down on sun exposure.
- Take advantage of landscape features by planting deciduous trees which provide sun protection in the summer, yet allow the sun to warm the building in the winter.

Following these common-sense steps to weatherization should make your building more energy-efficient. If you want to find out about more in-depth solutions to energy concerns, see Preservation Briefs 3: "Conserving Energy in Historic Buildings."

REHAB OREGON RIGHT



CHAPTER 7: REHABILITATION RESOURCES

CHAPTER 7:

REHABILITATION RESOURCES

This chapter includes a list of selected preservation organizations, publications, and sources which might be helpful in planning your rehabilitation project. In addition to a listing of national, statewide, and local organizations that may be of help, a selected reading list gives suggestions for further references on many of the topics covered in this manual.

ORGANIZATIONS

Historic Preservation League of Oregon

P.O. Box 40053
Portland, OR 97240
(503) 243-1923; 243-6857
Lisa Burcham, Executive Director

The Historic Preservation League of Oregon, founded in 1976, is Oregon's only statewide nonprofit organization dedicated to the preservation of Oregon's historic resources. The HPLO's mission includes advocacy in statewide and local preservation issues, expanding public and private support for historic preservation, developing an informational support system which addresses technical and educational preservation needs, designing strategies to ensure a legislative basis for historic preservation throughout the state, and developing a property management plan. The HPLO offers special publications, programs, projects, an annual conference, and technical services to the public.

The HPLO is privately funded by the membership dollars of Oregonians and others interested in protecting Oregon's

cultural heritage. Contact the HPLO for more information on supporting heritage preservation work throughout the state.

State Historic Preservation Office

Oregon Parks and Recreation
Department
1115 Commercial St. NE
Salem, OR 97310-1001
(503) 378-5001
Fax 378-6447

The State Historic Preservation Office (SHPO) provides funding and support for many statewide and local preservation projects. SHPO staff reviews nominations to the National Register of Historic Places and all Federal Tax Act projects prior to their submittal to the National Park Service. The SHPO staff includes an architect, archeologist, architectural historian, grants manager and preservation specialist. A Statewide Inventory of Historic Properties is also maintained by the State Historic Preservation Office.

The National Trust for Historic Preservation

1781 Massachusetts Ave., NW
Washington, DC 20036
(202) 673-4000

The National Trust was chartered by Congress in 1949 as the nation's only national non-profit preservation organization. Its mission is to foster an appreciation of America's cultural heritage. The National Trust publishes the monthly *Historic Preservation* magazine as well as numerous books through its Preservation Press. It acts as a clearinghouse for information on all aspects of preservation, assists in the coordination of preservation groups, offers advice, and maintains a number of historic properties nationwide.

**National Park Service
Cultural Resources Programs**

P.O. Box 37127
Washington, DC 20013-7127

National Register: (202) 343-9536
Preservation Assistance: (202) 343-9573

Within the National Park Service are a number of divisions devoted to preserving and managing America's cultural resources. Two of these divisions, both using the mailing address above, can offer help to the historic property owner. A free catalog of NPS preservation-related publications is available on request; write the Preservation Assistance Division.

The Preservation Assistance Division offers a number of publications including Preservation Briefs (listed at the end of this chapter) and Tech Notes.

The National Register of Historic Places also publishes a number of bulletins to assist in preparation of nominations to the National Register; these can also be valuable to the property owner trying to assess the significance of his or her building or landscape.

**Construction Contractors Board and
Landscape Contractors Board**

P.O. Box 14140
Salem, OR 97309
(503) 378-4621

The CCB can answer any questions about contractor licensing and legal requirements with regard to contracting and contractors. The CCB also offers consultation on the process for claims against registered contractors.

**National Center for Preservation
Technology and Training**

Northwestern State University
Natchitoches, LA 71497
(318) 357-6464

The Center, created by Congress to promote the preservation of historic and prehistoric resources, has a primary goal of advancing and distributing preservation information and technology in the fields of archeology, historic architecture, historic landscapes, materials conservation, and interpretation.

**The Cooper-Hewitt National Museum
of American Design**

2 E. 91st Street
New York, NY 10128
(212) 860-6868

Experts in the Wallcoverings
Department can help answer questions or
identify materials such as wallpaper or
Lincrusta.

**Associated Students of Historic
Preservation**

Historic Preservation Program
School of Architecture and Allied Arts
University of Oregon
Eugene, OR 97403
(541) 346-0726

ASHP was formed to bring together graduate students, undergraduates, and alumni of the University of Oregon's Historic Preservation Program for the common purpose of learning more about Oregon's cultural resources and providing preservation outreach to the Eugene community and surrounding areas. Past activities have involved partnerships with the cities of Eugene and Springfield, the SHPO, the HPLO, the U.S. Forest Service, and the National Park Service. ASHP occasionally takes on outside projects; in the past these have included paint and finishes analysis for Timberline Lodge and local Eugene buildings. A quarterly newsletter reports on ASHP's activities and other matters of interest to the preservation community. Members are frequently available at the ASHP office to answer questions concerning general preservation and specific projects.

**CLGs AND LANDMARKS
COMMISSIONS**

Certified Local Governments (CLGs) are those local governments which have been found to have active preservation programs that meet state and national standards. One of the important roles of a CLG is to have staff people in city or county government who are trained experts in preservation. CLGs are also eligible to receive special grant money for preservation projects.

Many localities, whether or not they are CLGs, have Landmarks Commissions. Your local Landmark Commission plays an important role as the governing body for preservation activities and ordinance adoption within your community. The commission is composed of citizens within the community who have special interests or expertise in the field of historic preservation. Listed below are the names and addresses of Oregon CLGs and Historic Landmarks Commissions authorized by local ordinance or resolution.

CLGs

Albany
Albany Landmarks Advisory Commission
City of Albany
P.O. Box 490
Albany, OR 97321
Telephone: (541) 967-4300
Fax: (541) 967-4330

Benton County

Benton County Historic Resources Commission
Development Department
360 SW Avery Avenue
Corvallis, OR 97333
Telephone: (541) 757-6819
Fax: (541) 757-6891

Clackamas County

Clackamas County Historic Review Board
Dept. of Transportation and Development
902 Abernathy Road
Oregon City, OR 97045-1100
Telephone: (503) 655-8521
Fax: (503) 650-7351

Corvallis

Corvallis Historic Preservation Advisory Board
Corvallis Community Development Department
Planning Division
501 SW Madison- P.O. Box 1083
Corvallis, OR 97339-1083
Telephone: (541) 757-6908
Fax: (541) 757-6936

Deschutes County

Deschutes Co. Historical Landmarks Comm.
Community Development Department
1130 NW Harriman
Bend, OR 97701
Telephone: (541) 388-7927
Fax: (541) 385-1764

Douglas County

Douglas Co. Historic Resource Review
Committee
Planning Department
Room 106 Justice Building - Douglas County
Courthouse
Roseburg, OR 97470
Telephone: (541) 440-4289
Fax: (541) 440-6266

Eugene

Eugene Historic Review Board
Planning and Development Department
99 West 10th Avenue
Eugene, OR 97401
Telephone: (541) 687-5481
Fax: (541) 687-5572

Jacksonville

Historic Area Review Commission
City of Jacksonville- P.O. Box 7
Jacksonville, OR 97530
Telephone: (541) 899-8910
Fax: (541) 899-7882

Oregon City

Oregon City Historic Review Board
Planning Department
320 Warner Milne Road
Oregon City, OR 97045
Telephone: (503) 657-0891
Fax: (503) 657-3339

Roseburg

Roseburg Historic Resources Review
Commission
City of Roseburg
900 SE Douglas Avenue
Roseburg, OR 97470
Telephone: (541) 672-7701
Fax: (541) 673-2856

Salem

Salem Historic Landmarks Advisory Commission
Community Development Department
City Hall
555 Liberty SE
Salem, OR 97301
Telephone: (503) 588-6011
Fax: (503) 588-6005

Springfield

Springfield Historical Commission
Development Services Department
225 Fifth Street
Springfield, OR 97477
Telephone: (541) 726-3775
Fax: (541) 726-3689

The Dalles

The Dalles Historical Landmarks Comm.
City of The Dalles
313 Court Street
The Dalles, OR 97058
Telephone: (541) 296-5481 ext. 127
Fax: (541) 298-2747

Yamhill County

Yamhill Co. Landmarks Commission
Department of Planning and Development
535 E. Fifth Street
McMinnville, OR 97128-4523
Telephone: (503) 434-7516
Fax: (503) 434-5720

Landmarks Commissions**Ashland**

Ashland Historic Commission
c/o City Hall
Ashland, OR 97520
Telephone: (541) 482-3211

Astoria

Astoria Historic Landmarks Commission
1095 Duane
Astoria, OR 97103
Telephone: (503) 325-7323

Beaverton

Beaverton Historic Resources Review
Commission
Beaverton Planning Department
4950 SW Hall Blvd.
Beaverton, OR 97005
Telephone: (503) 644-2191

Coos Bay

Coos Bay Community Development Department
Planning Coordinator
500 Central Avenue
Coos Bay, OR 97420
Telephone: (541) 269-8918

Dallas

Historic Landmarks Commission
P.O. Box 67
Dallas, OR 97338
Telephone: (503) 623-2338

Dayton

Dayton Landmarks Committee
P.O. Box 159
Dayton, OR 97114
Telephone: (503) 864-2723

Forest Grove

Forest Grove Historic Landmarks Board
c/o Forest Grove Planning Department
P.O. Box 326
Forest Grove, OR 97116
Telephone: (503) 357-7151

Independence

Historic Preservation Commission
City Hall
Independence, OR 97351
Telephone: (503) 838-1212

Klamath Falls

Historic Preservation Advisory Committee
Klamath County planning
334 Main Street
Klamath Falls, OR 97601
Telephone: (541) 883-4200

Lake Oswego

Lake Oswego Historic Review Board
Att: Catherine Clark
380 "A" Avenue
Lake Oswego OR 97034
Telephone: (503) 635-0279

Lane County

Lane Co. Historic Resources Comm.
c/o Lane County Land Management Division
125 E.8th Ave., Eugene, OR 97401
Telephone: (541) 687-4466

Linn County

Linn County Historic Preservation Advisory
Commission
Linn County Planning and Building Department
P.O. Box 100
Albany, OR 97321
Telephone: (541) 967-3816

McMinnville

McMinnville Historic Landmarks Committee
McMinnville Planning Department
McMinnville City Hall
McMinnville, OR 97128
Telephone: (503) 472-9371

Oakland

Oakland Historic Preservation Comm.
Oakland City Hall
Oakland, OR 97462
Telephone: (541) 459-4531

Portland

Portland Historical Landmarks Comm.
c/o Portland Bureau of Planning
1120 SW 5th Avenue
Portland, OR 97204
Telephone: (503) 796-7700

Seaside

Seaside Historic Landmarks Commission
Department of Planning
989 Broadway
Seaside, OR 97138
Telephone: (503) 738-5511

SELECTED REFERENCES

Many of these publications are available through the HPLO.

Preservation: General

Morton, W. Brown, Gary L. Hume, Kay D. Weeks, and H. Ward Jandl. *The Secretary of the Interior's Standards for Rehabilitation and Illustrated Guidelines for Rehabilitation*. Washington, D.C.: National Park Service, 1992.

National Trust for Historic Preservation. *Landmark Yellow Pages*. Pamela Dwight, ed. Washington, D.C.: The Preservation Press, 1993.

Past Meets Future: Saving America's Historic Environments. Antoinette J. Lee, ed. Washington, D.C.: The Preservation Press, 1992.

Identification

Built in the U.S.A.: American Buildings from Airports to Zoos. Ed. by Diane Maddex. Washington, D.C.: The Preservation Press, 1985.

Clark, Rosalind. *Architecture, Oregon Style*. Albany, Oregon: The City of Albany, 1983.

Howard, Hugh. *How Old Is This House?* New York: The Noonday Press, 1989.

Howe, Barbara J., Dolores A. Fleming, Emory L. Kemp, and Ruth Ann Overbeck. *Houses and Homes*. Nashville: The American Association for State and Local History, 1987.

McAlister, Virginia, and Lee McAlister. *A Field Guide to American Houses*. New York: Alfred A. Knopf, 1989.

National Register of Historic Places. *National Register Bulletin 39: Researching a Historic Property*.

Phillips, Steven J. *Old-House Dictionary*. Washington, D.C.: The Preservation Press, 1992 (reprint).

Poppeliers, John C., S. Allen Chambers, Jr., and Nancy B. Schwartz. *What Style is It?* Washington, D.C.: The Preservation Press, 1993.

General Rehabilitation

Stephen, George. *New Life for Old Houses*. Washington, D.C.: The Preservation Press, 1989 (reprint).

Litchfield, Michael. *Renovation: A Complete Guide*. New York: Wiley, 1982.

The Old-House Journal Guide to Restoration. Patricia Poore, ed. New York: Penguin, 1992.

The Old-House Journal Compendium. Clem Labine and Carolyn Flaherty. Woodstock, NY: Overlook Press, 1979.

Respectful Rehabilitation: Answers to Your Questions About Old Buildings. Technical Preservation Services, National Park Service, U. S. Department of the Interior. Washington D.C.: Preservation Press, 1982.

Exterior

London, Mark. *Masonry: How to Care for Old and Historic Brick and Stone*. Washington, D.C.: The Preservation Press, 1988.

McKee, Harley J. *Introduction to Early American Masonry*. Washington, D.C.: The Preservation Press, 1973.

Moss, Roger W. *A Century of Color: Exterior Decoration for American Buildings, 1820-1920*. Watkins Glen, New York: American Life Foundation, 1981.

Moss, Roger W., and Gail Caskey Winkler. *Victorian Exterior Decoration: How to Paint Your Nineteenth Century American House*

Historically. New York: Henry Holt and Company, 1992.

Grimmer, Anne. *Keeping it Clean: Removing Exterior Dirt, Paint, Stains and Graffiti from Historic Masonry Buildings*. Washington, D.C.: U.S. Department of the Interior, National Park Service, Preservation Assistance Division, 1988.

New York Landmarks Conservancy. *Repairing Old and Historic Windows: A Manual for Architects and Homeowners*. Washington, D.C.: The Preservation Press, 1992.

Schwin, Lawrence. *Old House Colors: An Expert's Guide to Painting Your Old (Or Not So Old) House*. New York: Sterling Publishing Co., 1990.

Seismic Safety

"Bracing for the Big One: Seismic Retrofit of Historic Houses." Office of Historic Preservation, Utah Division of State History, Salt Lake City, Utah, 1993.

"Controlling Disaster: Earthquake-Hazard Reduction for Historic Buildings." National Trust for Historic Preservation Information Series, 1992.

Smith-Kim, Charles, and Cindy Furukawa. *Introduction to Earthquake Retrofitting*. Berkeley, California: The Owner Builder Center, 1991.

Interiors

Homes & Interiors of the 1920s: A Restoration Design Guide. Originally published as *Building With Assurance* (1921). Ottawa: Lee Valley Tools Ltd., 1987.

Hopkins, Lesley, ed. *The Papered Wall: History, Pattern, Technique*. New York: Harry N. Abrams, Inc., 1994.

Lupton, Ellen and J. Abbott Miller. *The Bathroom, the Kitchen, and the Aesthetics of Waste: A Process of Elimination*. Cambridge, Massachusetts: MIT List Visual Arts Center, 1992.

Lynn, Catherine. *Wallpaper in America from the Seventeenth Century to World War I*. New York: W. W. Norton & Company, 1980.

Moss, Roger W. *Lighting For Historic Buildings*. Washington, D.C.: The Preservation Press, 1988.

Nylander, Jane C. *Fabrics for Historic Buildings*. Revised ed. Washington, D.C.: The Preservation Press, 1990.

Nylander, Richard C. *Wallpapers for Historic Buildings*. Revised ed. Washington, D.C.: The Preservation Press, 1992.

Seale, William. *Recreating the Historic House Interior*. Nashville: American Association for State and Local History, 1979.

Shivers, Natalie. *Walls & Molding: How to Care for Old and Historic Wood and Plaster*. Washington, D.C.: The Preservation Press, 1990.

Winkler, Gail Caskey and Roger W. Moss. *Victorian Interior Decoration: American Interiors 1830-1900*. New York: Henry Holt and Company, 1986.

Von Rosenstiel, Helene, and Gail Caskey Winkler. *Floor Coverings for Historic Buildings*. Washington, D.C.: The Preservation Press, 1988.

See also *The Old-House Journal*, December 1973-March 1974, for a series of articles on historic plaster repair.

Landscape

Favretti, Rudy J., and Joy Putman Favretti. *Landscapes and Gardens for Historic Buildings*. 2nd ed. Nashville, Tennessee: American Association for State and Local History, 1991.

Maynard, Samuel T. *Landscape Gardening as Applied to Home Decoration*. 2nd ed. New York: John Wiley and Sons, 1915.

Scott, Frank J. *The Art of Beautifying Suburban Home Grounds*. 1870; New ed. Victorian Gardens series, Part 1. Watkins Glen, New York: American Life Foundation, 1982.

Downing, Andrew Jackson. *A Treatise on the Theory and Practice of*

Landscape Gardening, multiple editions.

Other

American Home Life, 1880-1930: A Social History of Spaces and Services. Jessica M. Foy and Thomas J. Schlereth, eds. Knoxville, Tennessee: The University of Tennessee Press, 1992.

American Institute of Architects. *Architectural Graphic Standards.* New York: Wiley, 1988.

Bernhard, Sandy, and Tom Ela. *The House Journal.* Washington, D.C.: The Preservation Press, 1993.

Construction Site Recycling Guide. Portland: Metro Regional Environmental Management, 1995.*

Cullinane, John J. *Understanding Architectural Drawings: a Guide for Non-Architects.* Washington, D.C.: The Preservation Press.

A Guide to Recycled Products for Building and Construction. Portland: Metro Regional Environmental Management, 1995.*

Nelson, Carl L. *Protecting the Past from Natural Disasters.* Washington, D.C.: The Preservation Press, 1991.

White, Charles E., Jr. *The Bungalow Book.* New York: The Macmillan Company, 1923.

*The two booklets published by Metro Regional Environmental Management are available from Metro at (503) 797-1700. The Construction Site Recycling Guide applies only to residents of Multnomah, Washington, and Clackamas Counties.

Videos

Inspecting an Old House Before You Buy. National Trust for Historic Preservation Center for Historic Houses.

Maintaining Your Old House. National Trust for Historic Preservation Center for Historic Houses.

Historical Periodicals

Better Homes & Gardens (c. 1922-) *The Craftsman* (1901-1916) *Garden Magazine* (1905-1924); later published as *Garden & Home Builder* (1925-1928) and *American Home* (1928-1978) *The Ladies' Home Journal* (1888-)

Current Periodicals

American Bungalow Association for Preservation Technology Bulletin *Historic Preservation* *The Old-House Journal* *Old-House Interiors* *This Old House Magazine*

Preservation Briefs

The National Park Service's Preservation Assistance Division's Preservation Briefs series is one of the standard reference sources for dozens of specific issues, from repair of stained glass to lead paint abatement. The following Briefs are available from the Preservation Assistance Division (see above):

- 1: The Cleaning and Waterproof Coating of Masonry Buildings
- 2: Repointing Mortar Joints in Historic Brick Buildings
- 3: Conserving Energy in Historic Buildings
- 4: Roofing for Historic Buildings
- 5: The Preservation of Historic Adobe Buildings
- 6: Dangers of Abrasive Cleaning to Historic Buildings
- 7: The Preservation of Historic Glazed Architectural Terra-Cotta
- 8: Aluminum and Vinyl Siding on Historic Buildings: The Appropriateness of Substitute materials for Resurfacing Historic Wood Frame Buildings
- 9: The Repair of Historic Wooden Windows
- 10: Exterior Paint Problems on Historic Woodwork
- 11: Rehabilitating Historic Storefronts
- 12: The Preservation of Historic Pigmented Structural Glass (Vitrolite and Carrara Glass)
- 13: The Repair and Thermal Upgrading of Historic Steel Windows
- 14: New Exterior Additions to Historic Buildings: Preservation Concerns
- 15: Preservation of Historic Concrete: Problems and General Approaches
- 16: The Use of Substitute Materials on Historic Building Exteriors
- 17: Architectural Character– Identifying the Visual Aspects of Historic Buildings as an Aid to Preserving Their Character
- 18: Rehabilitating Interiors in Historic Buildings– Identifying Character-Defining Elements
- 19: The Repair and Replacement of Historic Wooden Shingle Roofs
- 20: The Preservation of Historic Barns
- 21: Repairing Historic Flat Plaster– Walls and Ceilings
- 22: The Preservation and Repair of Historic Stucco
- 23: Preserving Historic Ornamental Plaster
- 24: Heating, Ventilating, and Cooling Historic Buildings: Problems and Recommended Approaches
- 25: The Preservation of Historic Signs
- 26: The Preservation of Historic Log Buildings
- 27: The Maintenance and Repair of Architectural Cast Iron
- 28: Painting Historic Interiors
- 29: The Repair, Replacement, and Maintenance of Historic Slate Roofs

30: The Preservation and Repair of
Historic Clay Tile Roofs

31: Mothballing Historic Buildings

32: Making Historic Properties
Accessible

33: The Preservation and Repair of
Historic Stained and Leaded Glass

34: Applied Decoration for Historic
Interiors: Preserving Composition
Ornament

35: Understanding Old Buildings: The
Process of Architectural Investigation

36: Protecting Cultural Landscapes:
Planning, Treatment and Management of
Historic Landscapes

37: Appropriate Methods for Reducing
Lead-Paint Hazards in Historic Housing

Preservation Tech Notes

Preservation Tech Notes are published by the NPS Preservation Assistance Division as a complement to the Preservation Briefs series. They are separated into series including *Windows*, *Doors*, *Exterior Woodwork*, *Masonry*, *Metals*, *Finishes*, *Mechanical Systems*, *Historic Interior Spaces*, and *Temporary Protection*. Single copies of recent titles may be requested at no charge from the Preservation Assistance Division; many older titles are available in sets.

LANDSCAPE SUPPLIERS

The following list of suppliers of historic plantings is primarily compiled from *Landscapes and Gardens for Historic Buildings* (see Selected References, above). These are distributors in the western United States; the book also lists additional sources on the east coast.

Perennials

Canyon Creek Nursery
3527 Dry Creek Road
Oroville, CA 95965
(916) 533-2166

Flower Seeds

J.L. Hudson, Seedsman
P.O. Box 1058
Redwood City, CA 94064

Unusual Bulbs

Anthony J. Skittone
1415 Eucalyptus
San Francisco, CA
(415) 753-3332

Fruits and Nuts

Bear Creek Nursery
P.O. Box 411
Bear Creek Road
Northport, WA 99157-0411
(509) 732-6219

Apples, Pears

Sonoma Antique Apple Nursery
4395 Westside Road
Healdsburg, CA 95448
(707) 433-6420

Vegetables, Herbs

Good Seed Co.
Stare Route
Box 73A
Oroville, WA 98844

Seeds Blum
Idaho City Stage
Boise, ID 83706
(208) 342-0858

Roses

Heirloom Old Garden Roses
24062 NE Riverside Drive
St. Paul, OR 97137
(503) 538-1576

Heritage Rose Gardens
16831 Mitchell Creek Dr.
Ft. Bragg, CA 95437
(707) 984-6959 or 964-3748

High Country Rosarium
1717 Downing St.
Denver, CO 80218
(303) 832-4026

REHAB OREGON RIGHT

A black and white photograph of a stone building with a pergola. The building features a prominent stone chimney and a stone pillar supporting the pergola structure. The pergola has a series of horizontal wooden slats. The building is surrounded by trees and shrubs. The sky is visible in the background.

APPENDIXES

APPENDIX A

THE IMPORTANCE OF ADDRESSING STYLE

Oregon's architectural heritage includes a rich variety of styles and traditions. The style and construction date of your building will tell you a great deal about the manner in which to approach rehabilitation. Understanding the style of your building, for example, can help in everything from picking historically appropriate colors and details to knowing what kind of construction methods might have been used.

The following pages summarize architectural types and styles typically found in Oregon, representing the one hundred years of Oregon's growth from 1840 to approximately 1940. The material in this appendix is based on three main sources: the State Historic Preservation Office's Chronological Style List; Rosalind Clark's *Architecture, Oregon Style*; and excerpts from a section on architectural history written by Alfred Staehli in the HPLO's *Cultural Resources and You: A Volunteer Guide to Local Cultural Resources Surveys and Inventories*.

This guide to Oregon architectural styles follows the State Historic Preservation Office's Oregon Architectural Style List, which is the basis for style classifications in official documentation throughout the state. It is organized to present the broad historical chronology of the major periods and the styles associated with them. The major period datespans are convenient division points and are not absolute but reflect the period of greatest popularity for a given style. Buildings of a particular style occasionally were built after the popularity of the style had passed.

Oregon Architectural Style List of the State Historic Preservation Office

Log Colonial/Georgian Federal	1840-1870	EARLY OREGON BUILDINGS
Classical Revival	1840-1865	CLASSICAL REVIVAL
Romanesque Revival Gothic Revival Castellated	1850-1895	MEDIEVAL REVIVAL
Italianate Italian Villa Egyptian Revival Second Empire Baroque	1855-1890	RENAISSANCE AND BAROQUE REVIVALS
Stick/Eastlake Queen Anne Shingle	1870-1905	ECLECTIC STYLES OF MIXED ORIGIN
Richardsonian Romanesque Commercial Chicago School	1885-1915	PECULIARLY AMERICAN STYLES OF LATER 19TH CENTURY
Colonial Revival	1890-1915	COLONIAL REVIVAL
American Renaissance	1885-1915	AMERICAN RENAISSANCE
Prairie School Arts and Crafts Bungalow Craftsman	1885-1915	INNOVATIVE AMERICAN FORMS

Oregon Architectural Styles List, continued

English Cottage		
Tudor		
Jacobethan		
Georgian		
Colonial		
Spanish Colonial		
Mediterranean		
California Mission	1910-1935	HISTORIC PERIOD STYLES
Pueblo		
Italian Renaissance		
French Renaissance		
Norman Farmhouse		
Classical Greek/Roman		
Romanesque		
Egyptian		
Gothic		
Exotic (Moorish, Far Eastern, Pre-Columbian)		

Stripped Classical		
Art Deco		
Adirondack Rustic	1915-1940	EARLY MODERN STYLES
National Park		
Half Modern		

Modern Commercial		
Northwest Regional		
Minimal Tract		
Ranch	1935-present	MODERN PERIOD
International		
Postmodern		
Late 20th C. Period Architecture		
Highway Commercial (strip development)		

Other stylistic designation which may apply to any era include:

Vernacular
 Industrial
 Agricultural
 Utilitarian
 Octagon/Round
 Altered

Vernacular Buildings

Not every building fits neatly into one of the stylistic descriptions which follow. While architects were busy setting and copying popular styles, ordinary people often built in forms that responded to current needs and local traditions. Often these vernacular buildings were the descendants of older forms developed on the east coast or in Europe. They are more easily classified by shape than by style; the basic forms (e.g., "L," "T") have been used for centuries. These folk



Line drawing by Tonner Hays, used with permission of the City of Albany

types may show the influence of a particular style or trend, but are more related to simpler building traditions than stylistic innovations from the centers of architectural thought.

A common temptation for owners of vernacular buildings is to overrestore— to create in the rehabilitation process something more elaborate than was ever there in the historic period. An example of this kind of work is adding "gingerbread" trim where none existed before. Unfortunately, whenever a property owner takes steps to create a false historic appearance, it distorts the true historic character of the building. No matter what its style, your building is a legacy of the times in which it was built and the people who built it. It is a great service to the building and to the community to accept, respect, and work with the original nature of the building instead of trying to change it into something it is not.

Hybrid Buildings

Sometimes buildings cannot be easily classified because they employ elements of more than one style. Such hybrid buildings are common throughout Oregon. For



This house reflects forms and detailing common in the Victorian era with a porch that reflects the emerging Colonial Revival style around the turn of the century. Such a porch could be original or added.

example, around the turn of the century, buildings based on Queen Anne forms were frequently embellished with Colonial Revival details and porches. Later, the Colonial Revival met head-on with the Craftsman style, resulting in many interesting combinations. Again, the most important consideration in the restoration of this type of building is to let it be itself. It might not be a pure example of any given style, but it is an important record of changing tastes in building.

EARLY OREGON BUILDINGS

Oregon's oldest existing buildings date from the 1840-1870 period of initial Euro-American settlement. The resources remaining range from homesteader log cabins to frame homes and buildings based on the architecture which predominated in the areas of eastern United States from which these settlers came. They brought a mixture of New England and Southern building types, along with French and English building traditions. The distinctions are most often manifest in types of log and timber building methods and house plans. Some builders may have been influenced by eighteenth century Georgian architecture or by Federal and Greek Revival styles popular in the east coast centers of the new republic, but pioneer conditions generally precluded such refinements in the first Oregon buildings. Oregon's first buildings looked more like rural Ohio, Missouri, Kentucky, and Tennessee farm buildings than any of the buildings in Boston, New York, Philadelphia, or Williamsburg.

Remaining buildings of this category are characterized by log or heavy timber framing, simple rectangular plans with a single room (possibly two) on the ground floor, gable roof with sleeping loft, and usually a lean-to kitchen on the rear.

Log (1840-1870): Very few settlement-era log buildings are left in Western Oregon. This style classification represents a variety of folk styles brought west, united by similar materials and a common simplicity. In Eastern Oregon, which was generally settled later than the western half of the state, the log building tradition was common through the 19th century.

Colonial/Georgian and Federal (1840-1870): The Georgian building, popular on the east coast in the 18th century, was a colonial adaptation of popular English Renaissance styles. Characteristics seen through the settlement period in Oregon include formal, usually symmetrical organization; rectangular plans; gabled or hipped roof; and the newer double hung sash.

In the late 18th century, Georgian style buildings were supplanted by a taller, more vertically accentuated type of building still rooted in the English Renaissance. Federal buildings are generally said to have a lighter and more delicate feel than their Georgian relatives. While generally typified by plain, sometimes austere surfaces, decorative details such as fanlights reveal the special grace of the Federal style.



Oregon City's McLoughlin House is one of the state's best examples of the Georgian style. Photo by Lynn Josse

CLASSICAL AND MEDIEVAL REVIVALS

After the initial settlement by the overland immigrants of the 1840s, Oregon entered a period of moderate city building, development, and consolidation through the Civil War years, 1850 through the 1860s. The California Gold Rush, Oregon statehood and the homesteading laws, many smaller gold rushes, Indian wars, and finally the Civil War were dominant influences on our communities. There was a greater penetration of Eastern architectural ideas into the everyday building practices of the new state, and many buildings of recognizable style were built alongside the plain buildings which dominated the landscape.

Buildings in Oregon in the 1850s and 1860s generally relied on hand hewn, sawn, and finished timbers, lumber, and finish materials for their construction. Very little mill-sawn and dressed dimension lumber and finish stock was locally available at first except for that produced by the Hudson's Bay Company, the Methodist Mission, and a few others. Occasionally millwork might have been imported from the east.

The framing of buildings during this period was predominantly based upon the traditional heavy timber framing methods of Europe and the Colonies: sills, posts, girts, joists, and rafters, joined with mortised and tenoned joints, using pegs or trunnels to fasten. Box constructed buildings using 2x4 and 4x4 or larger sills, posts, and plates with solid, wide, sawn plank walls about 1½ inches thick, built like an apple box, may be found in cities and country up to 1900. Hand wrought or machine cut nails were expensive imported items and were used sparingly.

Classical Revival (1840-1865):

Simple buildings were built to resemble the Greek Revival buildings which had dominated American architecture in the early to mid-nineteenth century. Simple heavy timber frame houses and commercial buildings are patterned after the Classical Revival throughout the Willamette Valley settlements.

Classical or Greek Revival architecture reflects attributes of a Greek temple: regular plan; formal entrance; gable roof which may have a pediment, or be square-top false fronted. Columns or pilasters and elaborate moldings may embellish the front, or those details may be represented by plain wide boards. Siding is usually wood clapboard, painted white or off-white.



Photo used courtesy of the Historic Preservation League of Oregon

Gothic Revival (1850-1895):

Popularized by the writings of Andrew Jackson Downing in the mid-19th century, this style marked the beginning of a widespread rebellion against the formality that had come to dominate American architecture. Its chief aim was to be picturesque, a goal achieved through the use of steeply pitched gable roofs and elements from the Gothic vocabulary, especially the use of one or more lancet arched windows.



Characteristic elements of the Gothic Revival include steeply pitched roofs, irregular massing, and lancet arch windows.

Line drawing by Tonner Hays, used courtesy of the City of Albany

Plans were asymmetrical in larger examples, especially in residential architecture, but could be symmetrical in smaller houses, churches, and commercial buildings. Front porches generally have lighter detailed columns and brackets, if any. Gables and eaves may be accented with scrollwork or large fascia boards.

Gothic Revival is chiefly a residential and church style, uncommon in commercial buildings. Use of only one or two exterior paint colors was the norm. In contemporary writings, light neutral tones from nature were recommended for exterior use, and the use of white was highly discouraged.

RENAISSANCE AND BAROQUE REVIVALS, PECULIARLY AMERICAN STYLES OF THE LATER 19TH CENTURY, AND ECLECTIC STYLES OF MIXED ORIGIN

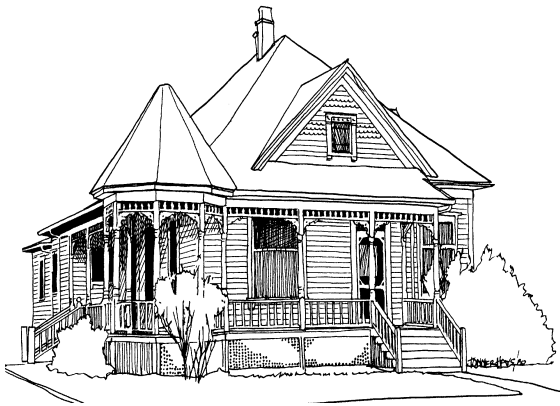
Oregon architecture in the last half of the 19th century shows nearly all the influences so characteristic of that exuberant period of rapid growth, financial legerdemain, empire building, and the return of the United States to close contact and influence with European tastes. During the Victorian era, the Industrial Revolution was brought to its fruition. It was a period of intense status seeking, and the development of a wealthy leisure class not based upon land holding. The practice of architecture was only just coming to be put under some kind of formal training and recognition as a profession. The industrialization of society was spawning reform and revolt movements to find firm roots in idealized past societies or back-to-basics philosophies. The eclecticism of late 19th century architecture reflected this ferment.

It is important to remember that there was a great deal of architectural publication and criticism readily available to both architects and builders of this period. The style lag between Europe or the eastern United States and the west shortened to a few years, ten at most, and a very up-to-date house might be found in any Oregon city or town with an owner whose travels permitted him to witness building in the fashion centers. Oregonians

were equally influenced by the pamphlets and books written by a whole spectrum of philosopher-moralists who prescribed holistic lifestyles, faiths, and appropriate buildings as a cure for contemporary ills, from landscape architect A. J. Downing's *The Architecture of Country Houses* to phrenologist O.S. Fowler and his *Octagon House, A Home For All*.

One of the characteristics of buildings in the Victorian era is a display of fine finishes, a reaction against all that was mean and primitive. When the builder couldn't find or afford the finest materials and expensive finishes inside and outside his buildings, he sought out and adopted with gusto a wide range of manufactured simulations of more expensive materials and finishes. There were precedents for this in earlier buildings, but the Victorians sought out ersatz materials with an enthusiasm that became an end in itself. Victorian America was the heyday of the painter, grainer, paperer, plasterer, gilder, and molder whose works decorated some exteriors and interiors to the point of suffocation.

The Industrial Revolution prompted a domestic technological revolution. The kitchen emerged as an early industrialized workplace for the women of the household. Laundries moved in from the back porches. Bathrooms were inside rather than in outbuildings. Fireplaces and stoves became secondary to central heating systems. Built-in artificial lighting systems were incorporated, whether gas, electric, or both.



Line drawing by Tonner Hays, used courtesy of the
City of Albany

The plans of Victorian-era houses were often complex as suited the large extended families of the period with the members' well defined duties and places within the houses. This was the peak period for discrete single purpose rooms in homes, rooms like the parlor which were closed off from normal daily use and opened only on suitable occasions for their specific function. Smaller workers' and rural farmers' houses generally retained the more simple and regular plans, utilizing multi-purpose rooms, in keeping with the modest economic means of their owners; however, whenever possible, the rooms multiplied and the originally simple house was added to and made more complex.

The outstanding architectural influences in the last half of the 19th century were the Queen Anne style (sometimes known in England as "Free Classic"), the Richardsonian Romanesque or Romanesque Revival, French Second Empire, and Italianate or Italian Villa styles. These styles defined the basic sources from which Victorian builders selected the elements of the typical residential or commercial building for one of Oregon's cities.

Pure, fully-developed examples of these styles are more the exceptions than the rule in Oregon, and are significant when they are found. It is more usual to find that the building in question is diluted by wholesale incorporation of manufactured trim elements of various stylistic origins picked from building material catalogs available during those years. The eclectic results of such mongrel design are often very charming and picturesque, but defy precise architectural classification.

Italianate (1855-1890): This style is based upon Italian Renaissance models. More restrained than either Queen Anne or Second Empire, it features plainer wall surfaces and more formal trim detailing, using the Classic Order motifs, columns, pilasters, console brackets, corniced eaves, corniced lintels and label molding over windows and doorways. Residential verandas were popular. The plan may be regular and rectangular or it may be an ell plan.

In the related **Italian Villa** style, roof slopes are surmounted by a belvedere; or the belvedere may be incorporated in a single square tower which accents the front corner of a residence. The exterior in either style may be of stone, brick, stucco, wood, or wood finished to resemble masonry.



Characteristics of Italianate buildings include the use of vertical elements, brackets, and low-pitched roofs.

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The mansard roof is the most prominent element of the Second Empire Baroque Style.

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Second Empire Baroque (1855-1890): This style is easily recognizable by its characteristic mansard roofs, which were most frequently perched atop formal, symmetrically planned buildings. Wood siding and trim were frequently used to simulate stone construction in appearance, hence the use of stone colors for the exterior painting scheme. In Oregon, this style was more often used for commercial buildings than residences.

Queen Anne (1870-1905): This style is characterized by irregular plans with steep roofs of all types, towers and turrets, elaborated chimneys (sometimes massive), and any and all window styles. Extensive verandas on two or more sides of the house often incorporated pavilions at ends or corners. Exterior variety was often achieved through the use of mixed siding types and patterns or several colors (usually from the rich, warm palette thought of today as the "Victorian palette").

The Queen Anne style is closely related to two additional styles which developed at about the same time in eastern states. The **Stick** style was a precursor of and developed alongside the Queen Anne; it is characterized by a profusion of "stickwork" on wall surfaces, in gable ends, and anywhere else it could fit. Pure examples of this style are less



Queen Anne style buildings are recognizable by their variety of asymmetric forms, ornate details, and intersecting roofs.

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common in Oregon; 19th century railroad stations frequently exhibit characteristics of the Stick Style.

The second style related to the Queen Anne is the **Shingle** style, which was popular on the east coast in the 1880s and 1890s. As the name suggests, one of the distinguishing features of this style is the expanses of shingles which surface the walls. Often, the first floor is of masonry with shingles at the roof and upper floors. Plans are usually asymmetrical and emphasize the continuity of the forms united by the shingled surfaces. Decorative details are often related to the emerging Colonial Revival style. The Shingle style was a primarily domestic style and is less common on the west coast.

Richardsonian Romanesque (1885-1900): Largely made popular in the U.S. by the works of architect Henry Hobson Richardson in the 1870s and 1880s. This style is rare in the west in residences, but occurs occasionally in commercial and public buildings. It is characterized by heavy, massive forms and the use of rusticated stone masonry and brickwork. Windows and doorways are often defined by rounded arches, or have heavy stone sills and lintels if rectangular. Turrets, towers, and bays are common.

Commercial and Chicago School are style classifications which primarily apply to commercial buildings of the late 19th and early 20th centuries. The Chicago School of architecture is a designation which refers to buildings influenced by early high-rise commercial development during the Chicago boom after its fire and exposition. This architectural moment represented both the consummate development of tall buildings in solid masonry and the transition to steel framing with a masonry covering. The new framing techniques allowed for larger windows, known as the "Chicago window" type when it is a single large pane flanked by operable windows, usually double-hung.

Stylistically, these innovations were accompanied by a general abandonment of use of Classic Orders on the facades except for accents to basement and top stories and for details. New ornamental concepts were specially developed for tall buildings, such as the Sullivanesque or geometric types. Several stories of the building would be grouped into one unit (base, shaft, top) rather than accenting each story with its own Classic Order.

The Commercial style designation is applicable to buildings which display the essential attributes of the Chicago School but may be simpler or smaller in scale than the "skyscrapers" of the Chicago School.

INNOVATIVE AMERICAN FORMS, COLONIAL REVIVAL, AND AMERICAN RENAISSANCE

The death of Queen Victoria of England in 1901 and her succession by King Edward VIII was the signal for a wholesale revolution in manners, fashions, and architectural styles. New ideas which had germinated during the Victorian years burst forth in the full flower of the century. The early English Arts and Crafts Movement, a byproduct of English writer, moralist, and critic John Ruskin's Gothic Revival and William Morris' later decorative design work, became the symbol of the new century's freedom and opportunity for wholesomeness, social reform, and personal self-fulfillment. The American Arts and Crafts Movement's bungalows, furnishings, and decorations became popular and defined the qualities of most of the new residential subdivisions which still comprise the bulk of Oregon cities and towns.

Official architecture, however, abandoned the new free impulses and became fixed for almost forty years in the formal mold of Academic Beaux Arts architecture, named after the Ecole des Beaux Arts in Paris. The American Renaissance style celebrated the coming of age of the arts in America. Artists and architects collaborated in high artistic expression. The method was to first select the appropriate classic form to house the planned function, whether, for example, a school, library, city hall or railroad terminal.

The early 20th century was also the time of a new interest in America's architectural history. Many architects began to rework our colonial heritage and its English, French, Dutch, and Spanish derived buildings. Sometimes this Colonial Revival was more closely aligned with Arts and Crafts goals, and sometimes it was manifested in formally conceived Beaux Arts planning.

The practice of architecture in Oregon in the early 20th century was a recognized profession which required a substantial amount of either formal education or a lengthy apprenticeship. The new professionalism in architecture had an influence on the designs and builders. The result was a more restrained planning of homes and greater restraint in the use of architectural ornament. Houses, whether one of the many bungalow styles or one of the more formal revival styles, were more open in plan, had larger windows, natural ventilation and sleeping porches, and more efficient utility spaces and kitchens.

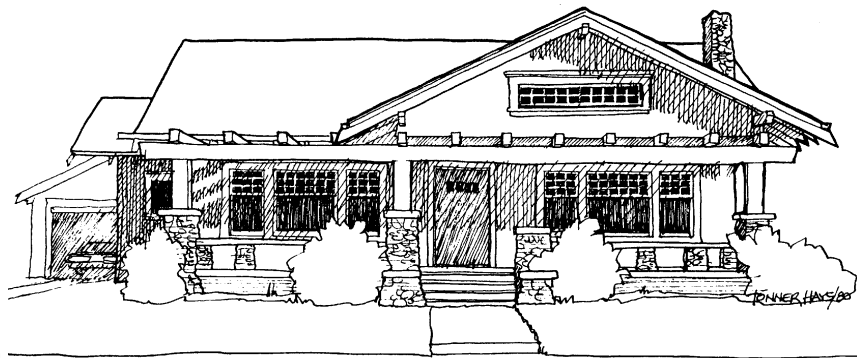
Commercial buildings innovated with modern construction methods, structural steel, and reinforced concrete. Fire resistant construction was a prime consideration, with masonry and terra cotta being used for both decoration and for protection of the steel frames. Non-combustible concrete and block were advocated for homes. Many of Oregon's leading architects were educated in eastern schools and brought the latest styles and building methods to the Pacific Coast.

American Renaissance (1980-1915): Also known as the Beaux Arts style, this term covers a variety of types deriving from a formal approach to architectural design based upon careful study of the great architectural monuments and styles of the past. However the Classic and Gothic styles were played with, the fundamental elements of bases, columns, cornices and pediments, roofs and domes were the building blocks of the Beaux Arts architect. Plans are generally axial and formal, facades monumental. Roofs are generally low except for domes or in Gothic-inspired variations. The style was most generally used for public buildings, schools, and great estates.

Arts and Crafts: Based on 19th century English examination of vernacular architecture and a return to traditional craft skills, this style is characterized by elements which recall the English countryside: high-pitched roofs; exterior finishes which may be uniform or may combine stucco, brick, shingles, or horizontal siding; prominent chimneys; and sometimes more direct allusions with the use of false half-timbering or thatched roofs.

Bungalow/Craftsman

(1885-1925): These styles were generated by desires to turn away from the excesses of the past decades and to reassert humanistic values over formal ones. The way to accomplish this was by returning to handicrafts and the skills of the artisan over the formal rules of past styles and the architectural orders.



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Plans became more irregular and open. Roofs were generally low pitched and with broader eaves. Large porches and verandas and large windows became popular. So did the use of exposed natural materials with texture - rubble masonry, clinker bricks, rough cast stucco, rough sawn board and beams, natural finishes, art glass and architectural use of the arts in many ways. Japanese design elements are sometimes incorporated.

Prairie Style (1900-1925):

The marked horizontality, low-pitched roofs with wide overhanging eaves, and central chimney cores which mark the Prairie style in Oregon are all early trademarks of the style's creator, Frank Lloyd Wright. His vision of a style integrating architecture with landscape was first tested in the relatively flat Midwest, where he echoed the terrain with horizontal forms and created spaces that joined inside and out (through the use of long rows of glass

doors opening on terraces and other devices). Few architects on the west coast practiced in this style, although its influence can be seen in many Craftsman style homes in Oregon.



The insistent horizontality of this architect-designed house, emphasized by broad eaves, horizontal bands, and rows of casement windows, make it an unusually pure example of the Prairie Style in Oregon.

Photo courtesy of the HPLO

Colonial Revival (1890-1915): Based upon renewed interest in American architecture, examples range from near-copies of Georgian and Federal originals to freely adapted versions that mixed in elements of the Craftsman and other contemporary styles. Typical elements include horizontal siding or shingles, gabled roof, and small multi-lite casement windows. Dutch Colonial became a popular sub-style, identifiable by the gambrel roofs that originated in German colonial architecture.



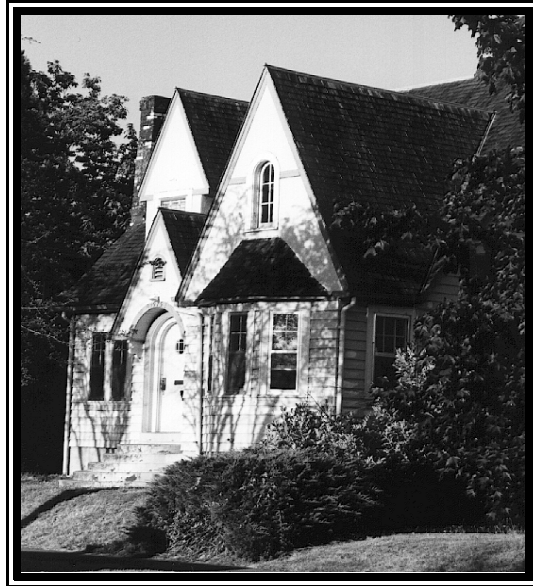
This Portland example of the Colonial Revival style reflects Georgian antecedents.

Photo by Lynn Josse

HISTORIC PERIOD STYLES

Oregon's architecture in the mid twentieth century years, roughly from the end of World War I to World War II, was a diverse period of mixed Classic Revival, Early Modern, and freely adapted mixtures of those opposed influences. The major architectural styles frequently digressed off into splinter styles, frequently identified with particular sections of the country.

Various revival style houses and buildings began to supplant the bungalows. The 1920s and 1930s were the decades of the Tudor Revival. The restoration of Colonial Williamsburg and other primary sites of United States' history resulted in the popularization of Colonial Revival Style. Both large and small houses were built in these styles. Where the small builder with only one or two units per block was characteristic of the first two decades of the twentieth century, larger builder-developers platted and built whole neighborhoods of similar style houses in the 1920s and 1930s. Throughout Oregon's cities, an occasional Egyptian Style house, apartment, or commercial building will be found to show the influence of the opening of King Tut's tomb in the twenties.



An example of the Norman Farmhouse style, with typically steep-pitched front gables.

Photo by Lynn Josse



This building reflects contemporary Tudor and English Cottage influences, expressed in its picturesque massing, jerkinhead roofs, and eyebrow dormer.

Tudor/ Jacobethan/English Cottage/Norman

Farmhouse (1910-1935):

These related styles all draw from medieval English and European sources for their inspiration. Tudor style buildings often can be identified by their real or most likely false half timbering with stucco paneling in between, and shingle, slate or tile gabled roofs. Similar to the Tudor style is the Norman Farmhouse style, inspired by medieval farmhouses of

northern France. The defining element of this style is the use of steeply pitched front-facing gables, sometimes used as projecting entryways, and asymmetrical massing.

The English Cottage style is also related to the Tudor, but generally is after a more picturesque effect. Shingled roofs sometimes have rolled ends to imitate thatch roofing; chimneys are prominent, often tapered; and the overall massing is irregular and asymmetrical. All three of these styles frequently feature leaded glass windows or multi-lite wood sash casements, are frequently constructed of brick or covered in stucco (less common in the Norman Farmhouse, where manufactured shingles or other wood siding is common in small examples), and the use of adapted medieval details.

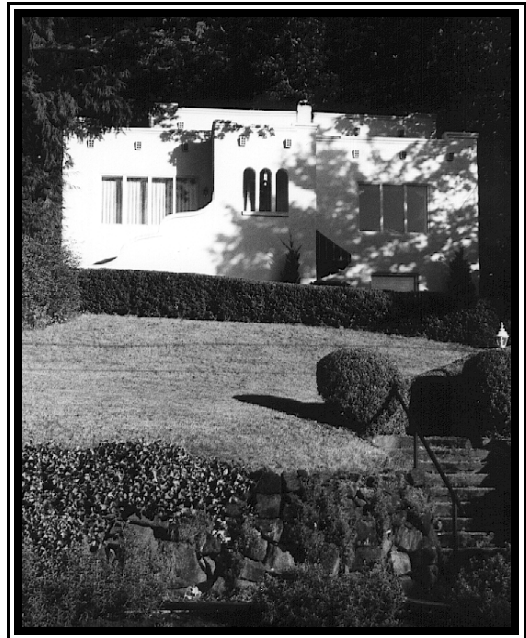
The Jacobethan style is uncommon in residences. It most commonly employs brick or stone veneer and a variety of 16th and 17th century English details (oriel windows, arched openings, parapet gable ends, thick stone mullions) to achieve a dignified effect.

Spanish Colonial/California Mission

Style/Pueblo (1910-1935): These three related styles are rooted in early styles of the American Southwest, and tend to be mixed together rather freely. All three are characterized by simple forms, stucco walls, low-pitched roofs and light exterior colors. They may also have rough wood railings and balustrades, exposed beams and wood supports, and masonry and stucco walls and chimneys.

The Pueblo style is identifiable by its boxy forms, low-pitched roofs (often hidden), and frequent use of false *vigas* (horizontally projecting timber ends). Spanish Colonial buildings often feature wrought iron railings and window grills or gates. Both Spanish Colonial and California Mission styles often have tile roofs and use of tile for paving and sills, and sometimes an interior patio or courtyard.

California Mission buildings are distinctive because they usually feature curved parapet walls of the Spanish Baroque.



A number of other period styles were popular until the Great Depression nearly halted construction in some parts of the state. **Colonial** models were still popular, as were different styles adapted from European Renaissance models. **Italian and French Renaissance** models were most popular among the well-off, who could afford lavish adaptations of palaces and villas. Other styles which were copied included **Mediterranean**, a composite style similar to the Spanish Colonial but without the Southwest influence, a revived **Gothic**, **Romanesque**, and various **Exotic** styles including Moorish, Far Eastern, and Pre-Columbian.

EARLY MODERN STYLES

While many architects in the 1920s and 1930s were experimenting with the adaptation of styles from all over the globe, architectural modernists expressed themselves in Art Deco Style in the attempt to find new expression in machine and geometric shapes related to industrial America. It is appropriate that Art Deco is most frequently found used for movie theaters, automobile related buildings, and chain restaurants catering to a highly mobile public.

The Great Depression, 1929-1941, deferred some buildings but did not significantly influence styles. When buildings were constructed, they conformed to the prevailing expectations of those middle years. The two single exceptions were the Modernistic or Moderne style which resulted from the fairs, the Chicago Century of Progress (1933-1934), and New York World's Fair (1939), featuring modernistic versions of International Style architecture. Buildings of this period show the influences of the industrial designers who designed automobiles, airplanes, and streamliners like the Union Pacific Railroad's City of Portland.

The other exception was the architecture of the CCC, PWA, and WPA programs which conformed to versions of Arts and Crafts Rustic Style when built in the Forests and National Parks, and to Art Deco or Modernistic for other public works, such as dams and highway structures.

Art Deco (1915-1940): An aberrant style employed by only a few architects, which, with notable exceptions, never became popular. Verticality was emphasized, along with the use of attenuated, stylized vegetable and animal design elements and geometric ("zig-zag") patterns. At Art Deco's best, there is much use of cast aluminum and bronze ornament, polychromed terra-cotta and tile finishes.

Modernistic (Moderne): Related to Art Deco, but less decorated (also known as "Streamline Moderne"). Curved building corners and glass block panels were built under flat roofs with slab eaves and entrance canopies. Horizontal striping or banding was sometimes used to emphasize the horizontality of the composition. Standing slabs or entrance pylons at the doorways were common, as were steel sash framed windows. Exterior colors were generally white or a light pastel.

National Park (1915-1940): Refined in Oregon as the Oregon Rustic Style, the National Park style is easily identifiable by its use of natural materials, especially logs and stone, and handcrafted details. It is most commonly associated with CCC-type projects in parks and forests. Related to the **Adirondack Rustic** style.

Half Modern (1915-1940): In many ways, a stripped-down version of the American Renaissance. Often used in official building, this style still relied on formal organization, but emphasized geometric form and openings rather than ornamentation. Rectangular geometries predominated, with round forms and arches seen only rarely.

MODERN PERIOD

At the end of World War II, the pent-up energies of the war effort and the transition to a civilian economy were manifested in unparalleled new construction and redevelopment in American cities. Returning veterans needed new homes for their war-born families and post-war families. The post war construction boom was coupled to war time developed building methods to create a wholly new type of popular architecture. Modern wood and metal panel building systems, developed during the war for military and emergency civilian construction, were rapidly adapted to both old and new building styles, and the time of a popular version of Modern Architecture had arrived.

Based on the availability of panelized and prefabricated building components and modular materials, the former traditional styled houses and commercial buildings were supplanted by stripped down versions with most, if not all, of their former details and trim removed. The traditional story and a half or two story colonial revival house became the single story Ranch Style house which proliferated in our suburban bedroom communities. The downtown commercial building became the suburban shopping center cluster of buildings and the supermarket. The wartime dreams of a generation of young Americans who yearned for the peace and security of the Hardy Family's movie lifestyle became the principal marketing image of the post-war builders.

International Modern (1935-present): This style originated in Europe when a desire for greater functionalism in building was combined with a concern for the modern arts. Plain, geometric shapes, often defined by horizontal lines, predominate. There is little or no ornament except for surface and finish textures. Large horizontal window expanses, flush with the wall surface, lay under flat roofs with wide overhanging eaves or no eaves at all.

In some examples, irregular plans were sometimes stepped and terraced, depending on the site. Other examples may appear boxlike. Compositions are very architectural as we have come to use that term, formally restrained, quiet yet elegant. White or natural colors are preferred, sometimes with a slight use of a primary accent color. Pure examples of the International Style are rare for residences but not uncommon in commercial buildings.

Northwest Regional (1935-present): Born of local architects' desire to integrate International Style design philosophy with specific conditions of the Northwest, this style features open plans, primary use of wood products (often plywood or board and batten siding), and a sensitivity to the environment. Like the International Style, form and surface are more important than applied decoration, although detailing on architect-designed examples is very carefully worked out. Landscaping, usually with native plants, was also very important to many Northwest Regional style designs.

Ranch Style: Many Oregon Ranch style houses are now reaching the point where they could be considered historic. A variety of influences are usually at work in any Ranch style house, including facets of the Spanish Colonial Revival, Prairie, and Northwest Regional styles. Plans are informal, usually spread out over one main floor (or sometimes in a split-level arrangement). Roofs are low-pitched with overhanging eaves. Large

picture windows are common, and attached side garages are almost always present in suburban versions.

See *Architecture Oregon Style*, copyright 1983, City of Albany, Oregon for more detailed information on Oregon architectural styles. It is available at many bookstores and through the Historic Preservation League of Oregon.

APPENDIX B:

GLOSSARY

Amortize: To absorb or pay off the cost of an improvement over a period of time.

Assessed value: The value of a property used for tax purposes.

Balustrade: A railing made up of short upright elements, usually either lathe-turned or sawn wood, connected by a top rail and sometimes by a bottom rail.

Bay: A vertical unit of a building exterior. Bays are usually intrinsic to the structure of a building, defined by elements such as windows or piers.

Bay window: A window which projects from the exterior wall.

Beam: A primary horizontal structural member, historically of large timber.

Bond pattern: The pattern in which bricks are laid. The bond pattern is derived from the side of the brick which is exposed and the relation of the rows to each other.

Bracket: A support under eaves, cornice, balconies, or other horizontal projections from a vertical surface. May be structural or merely decorative.

Casement window: A window which opens with an outward movement and hinged from the side.

Corbelling: Stacked rows of incrementally projecting masonry units (usually bricks). Commonly seen in 19th century chimneys.

Cornice: The crowning element at the top of a wall; most commonly, the intersection of roof and exterior wall.

Design review: A process in which the local landmarks commission or other preservation authority ensures that exterior changes to registered historic buildings do not significantly alter the historic character of the building.

Dormer window: A window projecting from the slope of a roof. Dormer types are named after their shapes: shed dormers, gable dormers, etc.

Double hung window: A sash window which opens with an up and down movement.

Eave: The part of the roof extending past the exterior walls.

Fabric: The physical material of a building.

Facade: The principal elevation of a building (usually the front).

Fenestration: The pattern of openings in an exterior wall.

Hopper window: A window hinged at the bottom, opening outward.

Keystone: The center, and usually the largest, stone in an arch.

Landmarks Commission: A body of locally appointed members in a city or county which reviews proposed historic designation, inventory rankings, and alterations to landmark structures and within historic districts.

Muntin: The wooden members separating glass panes in a window or door.

Nail set: A small tool used with a hammer to drive in nails flush with a surface.

Oriel window: A bay window which begins above the first floor.

Parapet: The part of an exterior wall which extends above the roof line.

Patina: The evidence of age on a building, object, or finish, such as the greening of copper or dulling of a shiny varnish. The patina of a building can be an important part of its character.

Preservation: The act or process of applying measures to sustain the existing form, integrity, and material of a building or structure, and the existing form and vegetative cover of a site. It may include initial stabilization work, where necessary, as well as ongoing maintenance of the historic building materials.

Reconstruction: The act or process of reproducing by new construction the exact form and detail of a vanished building, structure, or object, or a part thereof, as it appeared at a specific period of time.

Rehabilitation: The act or process of returning a property to a state of utility through repair or alteration which makes possible efficient contemporary uses while preserving those portions or features of the property which are significant to its historical, architectural and cultural values.

Restoration: The act or process of accurately recovering the form and details of property and its setting as it appeared at a particular period of time by means of the removal of later work or by the replacement of missing earlier work.

Shakes: Thick shingles of split wood.

Sidelight: A long narrow window located at the side (usually both sides) of an exterior door.

Substrate: The base material onto which a finish such as paint is applied.

Transom window: An operable window (usually hopper-type) above a door, used in older buildings to improve light and ventilation.

Vergeboard: The board running on the exterior wall just below a gable.