

MANUAL FOR OWNERS OF HISTORIC BUILDINGS

**The State Historic Preservation Office
South Carolina Department of Archives & History**



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South Carolina State Historic Preservation Office
South Carolina Department of Archives & History

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HISTORY & HERITAGE
For All Generations



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INTRODUCTION

PURPOSE OF THIS HANDBOOK

The South Carolina Department of Archives and History (SCDAH) published this handbook to assist property owners with the preservation and maintenance of their historic buildings. In carrying out its day-to-day duties as South Carolina's official historic preservation agency, SCDAH found that there was great need for a plainly written, non-technical guide for owners faced with caring for, adapting, expanding, and preserving older buildings.

South Carolina is blessed with a remarkable and unique architectural heritage. Its historic buildings and places contribute tremendously to our state's quality of life and to its economic vitality — they are valuable resources that must be cared for and used wisely, in the interest of all our state's citizens. Proper maintenance and rehabilitation practices are critical to preserving these architectural resources.

Owners of older buildings have available to them a bewildering amount of information and advice about caring for their property. Some is very technical in nature; some is based on the experiences of friends and relatives; some comes from people with products to sell; and some comes from architects, builders, contractors, or others with varying levels of knowledge and skill. Often an owner must evaluate and choose between conflicting recommendations.

This handbook tries to cut through the confusion by providing sound, basic advice about old building care. Reading it will not make you an expert overnight, but it should give you a good foundation on the subject, and it provides recommended reading and other sources where you can obtain further information. The focus in this handbook is on good maintenance practice: how to protect your building from the destructive agents — primarily moisture — that it faces day in and day out. A glossary is included so you can become familiar with common architectural terms.

There is often a perception that caring properly for an older building is always more expensive than taking maintenance shortcuts. For example, many people assume that repairing and retaining old windows costs more than replacing them with new ones; or that new vinyl or aluminum siding is "maintenance-free" and therefore less costly and troublesome than maintaining wood siding. In fact, very often the most cost-effective and least expensive course of action is repair and retention of existing building materials, and this handbook explains why this may be the case with your building.

Beyond the question of appropriate ongoing maintenance practices, you will also find here some good advice on how to protect your building's historic character during rehabilitation, renovation, or the construction of additions. Older buildings tend to change over time as their occupants' needs change, and if they are done carefully these changes can enhance rather than detract from a building's character.

You can learn much about old building care from this handbook, but SCDAH encourages you to read further. More resources are listed at the end of this publication.

BRIEF BACKGROUND ON HISTORIC PRESERVATION

Interest in the history of the United States goes back to the nation's earliest days, but until about the mid-nineteenth century that interest focused primarily on prehistoric Native Americans and on the country's natural history. The man-made environment held little interest for a nation busy expanding, developing an industrial base, and re-making itself every generation or so.

The first historic preservation effort to gain national recognition was the rescue of Mount Vernon. George Washington's Virginia home was threatened with demolition in the late 1850s, and a women's organization was formed and took responsibility for preserving the property as a memorial to the first president.

Historic buildings and places of national significance tended to be the focus of preservation efforts for much of the next century. Places such as Independence Hall, the Gettysburg battlefield, and Thomas Jefferson's home at Monticello held meaning for large numbers of people because they were associated with important national figures and events. The federal government became involved in preservation in the early twentieth century. Congressional acts in 1906 and 1935 provided protection for historic and prehistoric Native American sites and for historic buildings and places of national significance, enabling the inclusion of such resources in the national park system.

Charleston, South Carolina, and New Orleans, Louisiana, are credited with first recognizing and protecting historic properties at the local level. The passage of protective municipal ordinances for historic districts in these cities in the 1920s and 1930s represented an early understanding that even places of state or local significance could have value. The municipal governments saw that protecting these resources could make a contribution to the city's living environment and economic base.

The concept of recognizing the state or local significance of older buildings, districts, and places was extended nationally in the 1960s. In the period following World War II, national and local development policies encouraged widespread demolition in cities and towns to prepare sites for new development. Known as Urban Renewal, these efforts removed thousands of older structures but often did not result in the hoped-for surge of new urban development. By the mid-1960s people nationwide had become alarmed at the rapid erosion of the country's historic resources, and their concern culminated in the passage by Congress of the National Historic Preservation Act of 1966.

The Preservation Act did several innovative things and, though amended at various times, it still provides the basic structure for preservation efforts in the United States. First, it established the Advisory Council on Historic Preservation. Under Section 106 of the Act, the Council has the power to comment and make recommendations on (but not to stop) federally funded or licensed activities that affected historic properties. Second, the Act expanded the existing national list of historic properties (created by the 1935 law) into a National Register of Historic Places which recognizes properties not only of national significance but also those important at the state and the local levels. By formally incorporating the concept of local significance, the Act gave new impetus to local preservation efforts focused on the historic resources in a particular community.

Third, and perhaps most importantly, the 1966 Act established a national historic preservation administrative network. For the first time, federal preservation grant funds were made available to the states and, through them, to cities, towns, counties, and private owners of historic properties. To obtain funding, states were required to designate a State Historic Preservation Officer and to establish ongoing and professionally-staffed state preservation offices. Each state had to have a governor-appointed statewide advisory board, as well. Working in cooperation with federal preservation officials housed at the National Park Service, the statewide programs were responsible for surveying and inventorying historic properties (including below-ground or archaeological resources), making nominations to the National Register, preparing statewide preservation plans, providing technical and other information about preservation, and assisting individuals and government units in preservation matters.

Over the years there has been some confusion about federal preservation efforts. The National Register of Historic Places, for example, has often been misunderstood. Some people have assumed that it has the power to stop federal projects or that it can prevent demolition of buildings by government or private owners. None of this is true. The National Register is primarily a means of recognizing and documenting historic and prehistoric resources. Properties must meet established criteria of significance in order to be listed, and not just any old building can qualify. Section 106 of the 1966 Act requires that federal agencies consider the effect on historic properties when they fund or license various projects, but the National Register does not give the federal government or anyone else the power to stop the alteration or demolition of listed properties. Private owners in particular are free to sell, alter, or demolish National Register properties without restriction.

In some cases, properties listed in the National Register may also be designated as historic under local or municipal preservation ordinances; and sometimes properties may be locally designated without being listed in the National Register. In such cases (Charleston, of course, is South Carolina's best-known example), an owner's ability to alter or demolish a property may be limited, but this is not governed by or a result of the National Register.

Some people have also confused the National Register of Historic Places with the National Trust for Historic Preservation. The two are entirely unrelated. The National Trust is a private, non-profit organization that provides preservation information, education, and advocacy on a nationwide basis. It was chartered by Congress in 1949, but the National Trust is not involved in the federal government's preservation program which, as was noted above, is housed in the National Park Service. The National Trust puts on workshops and has a publication program, and it offers memberships. See **READING LIST & ORGANIZATIONS** for information about the National Trust and its membership benefits.

The National Park Service maintains a research and publication program in historic preservation technology and has developed a considerable body of useful information for people who care for older buildings. See **READING LIST & ORGANIZATIONS** for information about the Park Service's publications.

WHAT THE STATE HISTORIC PRESERVATION OFFICE DOES

South Carolina's State Historic Preservation Office (SHPO) was established as part of the South Carolina Department of Archives and History in 1969 in response to the National Historic Preservation Act of 1966. There are 12 full-time staff members in the SHPO, and the office provides a number of preservation services, including the following:

- Review of properties that may qualify for National Register listing, and assistance in preparing nomination forms
- Information for building owners and contractors about appropriate rehabilitation/renovation techniques
- Assistance in the use of the 20 percent Federal Rehabilitation Tax Credit (and 10 percent State Tax Credit) for income-producing historic properties, and a sample local ordinance to grant property tax abatement for rehabilitated historic properties
- Assistance in the use of the 25 percent State Income Tax Credit for owner-occupied historic homes
- Assistance in planning and carrying out surveys/inventories to research and record local historic properties
- Information about the Certified Local Government program, which invites the participation of local governments in preservation activities and provides funding for these activities
- Reviews of federal and state construction projects affecting historic properties
- Information about preservation planning and zoning
- Grant information and applications for 50/50 matching grants for local surveys/inventories of historic properties; preservation education; preparation of local preservation plans and protective ordinances; preparation of National Register nominations; stabilization and weatherization of historic properties located in Certified Local Governments only; and archaeological projects
- A statewide conference on historic preservation and local history and workshops throughout the year
- Assists in making contacts, when appropriate, with the South Carolina African American Heritage Commission, Main Street South Carolina, local land trusts, and local history and preservation organizations

■ ■ ■ ARCHITECTURE ■ ■ ■

SOUTH CAROLINA'S RICH ARCHITECTURAL HERITAGE

South Carolina is unusually blessed with historic architecture of outstanding breadth and depth: breadth in the sense that its older buildings span a long period of time from the eighteenth century forward; and depth in the sense that numerous building types and architectural styles are represented. From a nearly-pure eighteenth-century plantation home like Drayton Hall, to a vernacular tenant farmer's home, to early-twentieth-century commercial buildings, South Carolina can claim examples of every important development in American architectural history.

Besides variations in style and building type, the state's architecture varies with local climate and topography. In the Lowcountry, for example, high foundations and raised basements were a concession to often damp or marshy conditions, while in the Midlands broad porches and abundant windows helped provide relief from summer heat. Upstate buildings, by contrast, often had many similarities to those from much farther north.

Many older South Carolina buildings, both residential and commercial as well as governmental and institutional, are examples of specific architectural styles. The question of style can be confusing, and some people have a tendency to try to put every building into a single category. In fact, most older buildings either were not designed in any particular fashion or, at most, had only a few elements of a formal style. In other cases, building designs combined elements from several eras in an eclectic mix that cannot be put into one particular category. Buildings designed as a combination of various traditional elements — such as roof shape, door and window design, and overall form — are known as vernacular buildings.

Architectural styles reflected the changing tastes and preferences of the people who constructed buildings. There were few hard and fast "rules" about the categories of styles, which allowed for variation and innovation, but most had more or less standard or accepted design elements. Styles did not start and end abruptly but tended to overlap. During these periods of overlap, people would often construct transitional buildings with elements of both the old and the new.

Many of South Carolina's older buildings fall into the following stylistic categories. If you are unfamiliar with some of the architectural terms used in the descriptions, see the **GLOSSARY**. Remember, too, that the time periods are approximate and represent the time when most examples of a style typically were built; there were, however, both early and late exceptions.

GEORGIAN (1700-1780)

The Georgian style, from the Colonial period, was a residential style that tended to be used only in the largest and most impressive homes, such as rural plantation houses or the city homes of wealthy planters. Georgian designs were largely inspired by the sixteenth-century



Drayton Hall in Charleston County has been called the finest example of Georgian architecture in America.

Italian architect Andrea Palladio. They feature a strongly symmetrical and formal design, with projecting entry porticos and window architraves present in many examples.

FEDERAL (1785-1830)

Like Georgian, the Federal style's roots were in English architecture. Less formal and more restrained than Georgian, Federal-style buildings usually employed forms, massing, and



Both the exterior and interior of Stoney Point in Greenwood feature elements of the Federal style.

proportions similar to Georgian but more delicately and lightly detailed. Doors and windows tended not to be accented as strongly. Elements such as fanlights and elliptical fan windows were typical Federal elements. Known also as Adam or Adamesque, after the predominant late-eighteenth-century British architect Robert Adam and his brothers, this style coincided largely with the Early Classical or Roman Revival movement — predecessor to the Greek Revival. The Federal style was widely used for both residential and commercial buildings.

GREEK REVIVAL (1820-1860)



Milford in Sumter County is an outstanding example of the Greek Revival.

Popular nationally during the early-nineteenth century, the Greek Revival style drew inspiration from the classical architecture of Greece. Most examples had entry or full-width porches supported by square or rounded columns. Greek Revival buildings typically had a wide band of trim below the cornices of the porch and main roofs. As in earlier buildings, windows tended to be vertically proportioned. The Greek revival style was popular for

residential, governmental, and institutional buildings such as churches.

GOTHIC REVIVAL (1835-1860)



In South Carolina most Gothic Revival buildings were churches like the Church of the Cross, in Bluffton, Beaufort County.

Again inspired by European architecture, especially that of England and France, the Gothic Revival style was picturesque and relied upon unique ornamentation for its effect. Typical features included a steeply-pitched gable roof, the use of cross gables and dormers with similarly steep roofs, and the pointed arch form for window and door openings. On frame buildings, board-and-batten siding was the most common.



LEFT: This commercial building on Bay Street in Beaufort reveals the influence of the Italianate style. RIGHT: Like the Italianate style, the Second Empire style was relatively rare in South Carolina. The McMillan House in Latta (Dillon County) is one of the state's few examples of the French Second Empire style.

ITALIANATE (1850-1890)

Although the Italianate style dominated American architecture between 1850 and 1890, it was much less common in South Carolina than it was in the Midwest and other sections of the country. The Civil War, Reconstruction, and economic depression led to years of little new building in South Carolina, and when new building did resume, Italianate was no longer fashionable. Italianate commercial structures typically had large first floor display windows, plain upper walls with vertically-proportioned windows topped by hoodmolds, and a bracketed projecting cornice. Residential buildings in the Italianate style had many similar features, especially the hoodmold-capped windows and the projecting cornices. In addition, they tended to have low-pitched roofs and often had decorative porches and ornate doors and doorways.

FRENCH SECOND EMPIRE (1860-1895)

The universal feature of this style, which was based on French architecture of the mid-nineteenth century, was the mansard roof. Often a full additional story could be placed within the roof, which might be convex, concave, or flat in form. Like the Italianate style, the French Second Empire stressed doors and windows with often elaborate hoodmolds, surrounds, and entries. On residential buildings, ornate porches were common. The style was used on commercial and institutional buildings as well as houses.



The John Calvin Owings House in Laurens is an especially exuberant example of the Queen Anne style.



TOP: The Blackstock House in Greenville reveals the influence of the Classical Revival. LEFT: This house on College Street in Columbia is an example of the Dutch Colonial Revival style. RIGHT: The Dr. George J. Wilds House in Hartsville is an example of the Georgian Colonial Revival style.

QUEEN ANNE (1880-1910)

The Queen Anne style was influenced by British architectural design and featured irregular massing; steeply-pitched and complex roofs; great variety in siding, materials, and window type; and wide use of features such as balconies, towers and turrets, dormers, chimneys, and bay windows. Queen Anne buildings are lively in design and visually interesting. This was primarily a residential style, though it was sometimes employed in church and public building designs.

COLONIAL REVIVAL (1890-1940)

Like other revivals, this style was a romantic interpretation of earlier architectural designs. It occurred in three variations: Classical Revival, Dutch Colonial Revival, and Georgian Colonial Revival. Classical Revival employed pediments, pilasters, and classical columns typical of Colonial architecture. Buildings usually were symmetrical and had center entrances. Dutch Colonial Revival buildings can be spotted by their double-pitch gambrel roofs and the design often included recessed porches. Georgian Colonial Revival buildings attempted to re-create exactly the original designs of Georgian buildings from the eighteenth century, including materials, proportions, and details. Central entries, pedimented door and window openings, prominent chimneys, and hip roofs are common features.



The Henry Franklin Hendrix House in Leesville is an example of the Neo-Classical Revival style.



The United States Courthouse in Columbia features many elements of the Second Renaissance Revival style.



Many early-twentieth century neighborhoods like Elmwood Park in Columbia include examples of the American Four-Square.

NEO-CLASSICAL REVIVAL (1900-1930)

This style found inspiration in classical architectural design from Greece and Rome. It was inspired throughout the United States and elsewhere by the World's Columbian Exposition of 1893 in Chicago. A full-height porch supported by classical columns, usually with Ionic or Corinthian capitals, dominated the facades of Neo-Classical Revival buildings. The facades were symmetrical with a central entrance.

SECOND RENAISSANCE REVIVAL (1895-1930)

This style was used for many institutional and governmental buildings and, in modified form, for some residential buildings as well. For the style to be successful, the building had to be of fairly large scale. Elements included accentuated mortar joints (rustication) on lower floors, triangular and arched pediments at window and door openings, and pilasters or columns. These were classically-inspired elements that were widely used in European architecture during the Renaissance period.

AMERICAN FOUR-SQUARE (1900-1930)

Inexpensive and easy to build, the Four-Square was common early in the twentieth century and was used only on residential buildings. Characterized by its square plan and arrangement of four rooms downstairs and four up, this style employed simple designs, featuring hip roofs, dormers, and porches across the entire front elevation. Ornamentation was usually minimal, but examples of the style gained visual variety through the use of various siding materials, door and window trim, and porch details.



The J.B. Gilbert House in Hartsville features elements of the Tudor Revival style.



The Heslep House in Columbia is one of South Carolina's best examples of the Spanish Colonial Revival style.



This bungalow is in the Shandon neighborhood of Columbia.

rafters, knee braces, and supporting brackets. Porches were often recessed under broad roofs and supported by square wood columns on heavy brick piers. Dormers in the roof surface were also common.

TUDOR REVIVAL (1910-1940)

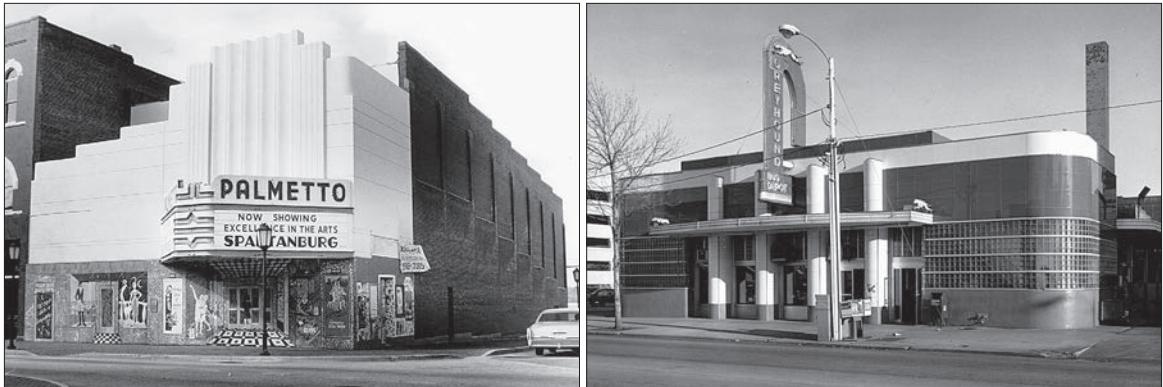
This style, used almost entirely for residential buildings, was part of an early-twentieth century Romantic Movement that sought inspiration in traditional English folk cottage and manor house designs. Common features of Tudor Revival buildings were brick construction, steeply-pitched roofs, intimate scale, ornamental chimneys, often with chimney pots, and arched openings. Tudor Revival buildings also employed real or simulated half-timbering and stuccoed or decoratively-patterned brick wall surfaces.

SPANISH COLONIAL REVIVAL (1915-1940)

Inspired by Spanish Colonial architecture in America, dating from the seventeenth and eighteenth centuries, this style employs tile roofs, stuccoed or light-colored masonry walls, and elements such as curvilinear parapets and balconies. The style was used for all kinds of buildings, including houses, churches, institutional buildings, and commercial properties.

CRAFTSMAN (1915-1940)

The Craftsman movement was promoted in the early-twentieth century by Gustav Stickley, and the Bungalow form of residential structure best exemplified the style. Craftsman houses stressed the craftsmanship of the builder and employed simple native materials such as stone, and stucco. Often the basic structure of the building was expressed by means of exposed



LEFT: The Palmetto Theatre in Spartanburg is an example of the Art Deco style. RIGHT: The Old Greyhound Bus Station in Columbia exemplifies Art Moderne.

ART DECO (1925-1950) and ART MODERNE (1930-1950)

Art Deco was an artistic movement that found expression in all kinds of design — jewelry, household goods, publications, and also architecture. Based on the “machine aesthetic,” Art Deco design employed modern materials such as aluminum and architectural glass, and it used geometric forms both for overall building designs and in ornamentation. Ornamentation often included stylized natural forms such as plants, animals, and flowers. Art Moderne or Streamline Moderne was similar but was more restrained and employed less ornamentation. Both styles represented a major transition in architecture during the first half of the twentieth century — from heavily ornate buildings in distinct styles in the early years, to plain, unornamented, boxy, and style-less buildings of the postwar and modern periods.

LEARNING YOUR BUILDING’S HISTORY

Before you can undertake a successful rehabilitation or carry out appropriate ongoing maintenance, you need to know as much about your building as possible. Knowing when and how it was built, what changes were made to it over time, and how skillfully it has been cared for can provide many valuable clues for what you should do now and in the future. The first step is to learn your building’s history, from both primary and secondary sources. Primary sources are those that provide direct information about the building, without editing, summarizing, or other manipulation of the information by other people. Primary sources include deeds, mortgages, tax information, maps, photographs, drawings, diaries or daybooks, and newspaper pictures and stories. Another primary source might be someone who actually worked on your building in the past. Secondary sources have been “filtered” in some way through other people and include local histories, family stories, traditions, histories, and anecdotal information from third parties.

In using these sources, your goal should be to learn basic information about your building: when it was built; when and how it was altered over time; whether it ever suffered fire, storm, or other major damage; the kinds of uses it contained; and the kinds of materials and treatments that have been applied to it. Gaining this sort of background information

will make it much easier to understand what you are seeing when you physically study the building itself.

Primary and secondary sources can provide a great deal of information, but each building's history varies, and in many cases very little information may be available.

If you are having trouble finding information, contact your local library — it may have a local history section; or talk to members of historical or genealogical societies — they may be able to direct you to sources. Colleges and universities may be of help, especially if they have history or architecture programs with students and professors versed in old building research sources; and their libraries may contain useful information. Research in deed and tax records may be helpful, but these documents, which generally record information about land, may not contain much about the buildings on the land.

Once you have learned as much as you can from the written record, it is time to take a good look at your building. Before starting, organize your written information in chronological order so you have some idea of what happened to the building over time. Then study the building to see if you can find physical evidence of the changes you have documented. Can you see where a rear wing was added, or where a porch was removed? Sometimes a subtle bit of evidence — such as the paint "shadow" left by a long-removed porch, or a change in materials where a wing was attached — will be all you have to go on. Basements, crawl spaces, and attics are useful places to look for such evidence. Watch for obviously newer materials, or a change in the size or type of building materials. This is also a good time to look for evidence of problems such as dry rot, insect infestation, or excessive moisture (see **PRESERVATION PRACTICES** on page 18 for more information).

On the exterior, watch for changes in materials as evidence of alterations. Sometimes the way a wing and the main building are joined can tell you whether the wing was original or added. If your building has aluminum or vinyl siding, try to determine whether the original siding remains underneath; watch also for evidence of moisture trapped by the new siding, a problem that can occur if unwanted sources of moisture, such as leaking pipes or overflowing gutters, have been neglected.

Your goal in studying your building is not just to learn its history and changes but to decide whether these may affect how you deal with the building in the future. If you determine, for example, that sidewall insulation was installed without a vapor barrier, then that could explain moldy walls or peeling exterior paint. If you find that an addition was constructed of under-sized or inferior materials, then that will affect how you use that space or may influence the work you do on the addition.

Now is a good time to pull out the **CHECKLIST** starting on page 82 of this handbook. Use it as a guide, and fill it out as completely as possible as you study your building. It will help you remember anything important, and it will be helpful to anyone working on your building. Remember, too, to keep good records of what work you do, and when. It will be of great help to future owners of your building.

PLANNING FOR PRESERVATION

Demolition or relocation of older buildings should be avoided. Even when deteriorated, these buildings usually were built so well that they are capable of economical rehabilitation, so in most cases even buildings that look pretty far gone do not have to be demolished. Always give these buildings the benefit of the doubt if you are considering rehabilitation versus demolition. Also, avoid moving an older building from its original site unless this is absolutely necessary to avoid its demolition. A building and its site are intimately related, and moving it results in a loss of character and integrity.

A successful preservation project is one that makes a building functional, safe, and efficient without destroying the elements and features that give it its architectural character. This is true for fine high-style mansions, and equally true for modest downtown commercial buildings or vernacular cottages. Regardless of whether it has been officially designated as historic, an older building typically has design features and details that make it a product of its time and give it a place in the evolution of its community. These characteristics should be protected and respected when repair and rehabilitation work are undertaken. This is not only good preservation practice; it also tends to be the least expensive way to care for older buildings, and it helps preserve the economic value of the building as well. Properly cared-for buildings tend to be more valuable than those that have been poorly cared for or inappropriately altered.

There is sometimes confusion over what various preservation terms mean. Words such as renovation, restoration, or rehabilitation are sometimes used interchangeably to mean, roughly, "fixing up an old building." In fact, they have different and distinct meanings. In addition, there are other preservation terms that describe specific treatments for older buildings.

Preservation means sustaining the existing form, integrity, and material of a property, including its site and landscaping. When such work is done in an emergency to protect a deteriorated property from further deterioration, it is known as stabilization.

Rehabilitation is the process of returning a property to usefulness in a way that preserves its essential historic design elements. Rehabilitation, for example, involves the installation of modern heating, plumbing, wiring, and air conditioning, but in a manner that does not damage or remove historic architectural elements.

Restoration means returning a property to an earlier state or condition at a specific point or period in the past. Such work might involve re-creation of missing elements, removal of modern materials and replacement with historically appropriate ones, or removal of additions or alterations that occurred after the restoration date.

Reconstruction is the process of reproducing by new construction either the exact form and appearance of a demolished building or structure or a portion of such a property. Restoration and reconstruction require careful research in primary and secondary sources to obtain sound information on which to base the work.

Renovation is used widely and loosely, sometimes implying restoration, sometimes rehabilitation, and sometimes a "gut" job that preserves very little historic fabric. Because it can mean so many things, it is not very precise and can lead to misunderstandings. It's better to get in the habit of using the more precise terms defined above.

PREVENTIVE MAINTENANCE

Successful care of older buildings, of course, requires taking care of them so they don't need rehabilitation or reconstruction. As many old adages have stated in various ways, you're always better off taking care of an asset than letting it run down and then having to undertake more costly repairs or replace the asset entirely. The importance of preventive maintenance and ongoing repair cannot be overstated.

This handbook is designed to make it easier for you to maintain and repair your building in a timely fashion. The **CHECKLIST**, which begins on page 82 of this handbook, is a good way to keep an ongoing record. Make copies of the blank form, and get into the habit of doing annual or even semi-annual inspections of your building. Save the forms, and compare them as time goes on — they may reveal developing problems, and they may indicate areas where regular or "cyclical" maintenance is needed.

The idea of cyclical maintenance is simple: once you know your building and understand its maintenance needs, you should establish a schedule of inspection and treatment of problems that tend to recur. Examples include gutters or downspouts that fill with leaves; sheltered or poorly-ventilated areas that tend to accumulate moisture; or exposed elements that tend to weather under the effects of rain and sun. Getting into the habit of inspecting your building and maintaining it regularly can keep your building from "getting away" from you and making you feel overwhelmed. In addition, since many maintenance problems are interrelated, catching one problem early and correcting it can avoid other problems later. By regularly inspecting downspouts to be sure they drain freely, for example, you can avoid the damage an overflowing gutter can eventually inflict on interior plaster.

As you plan and undertake maintenance and repair work, avoid the temptation to fix the symptoms rather than causes of problems. If paint is peeling off an area of wood siding, for example, don't just repaint and hope the paint will stay on; investigate to find out why the paint is peeling. If you get water in your basement after a heavy rain, don't just mop it up; try to figure out where it's coming from and why.

Water, or moisture, is the most serious threat a building faces. Moisture can do direct damage, such as causing mortar or plaster to become weak and powdery; but it can also create conditions that support other kinds of damage such as insect infestation or infection by the fungus known as "dry rot." As you will see in **PRESERVATION PRACTICES**, most maintenance and repair work is directed toward keeping moisture out of and away from buildings and getting it away from them as fast as possible.

THE SECRETARY OF THE INTERIOR'S STANDARDS FOR REHABILITATION

In an effort to bring consistency to preservation work nationwide and to provide a way to evaluate projects using the 20 percent Historic Rehabilitation Tax Credit, the National Park Service developed a series of ten standards for adoption by the Secretary of the Interior. The standards were intended to guide planning for preservation of buildings of all types and thus tended to stress a general approach rather than specific treatments. Their focus was on how to promote rehabilitation and reuse of historic buildings in ways that did not destroy their character. *The Standards* address both interiors and exteriors of buildings; they encompass related landscape features as well as the building's site and environment; and they address attached, adjacent, or related new construction.

The Standards remain the principal preservation philosophy of the National Park Service and the various SHPOs and should be applied in a reasonable manner, taking into consideration economic and technical feasibility.

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 historic 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 archaeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.

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.

On first reading, *The Standards* may seem restrictive and even somewhat dictatorial; indeed they are applied fairly strictly in National Park Service reviews of projects proposing use of the tax credit for commercial rehabilitations. If you take a step back and look at *The Standards* as a preservation philosophy, however, they look reasonable and represent a common sense approach for anyone anticipating work on an older building: all they require is that you respect and protect the elements that give a building its significance.

What does this mean in practical terms? In general, it means retaining sound older building materials, ornamental elements, and details. When such features are deteriorated, it means replacing them with new ones as close to the originals as possible, in the same materials if you can. It means making changes in a sensitive way — constructing additions that do not overwhelm the original building and that are clearly secondary to it; avoiding gratuitous removal of trim and details, especially during roofing or re-siding projects; and resisting the temptation to apply false historical details, giving it a character it never had.

Read *The Standards* carefully and think of the ways in which they apply to your building. Think about the specific design features and elements that give your building its character and how *The Standards* recommend you proceed when the work you do affects those features. You'll find that adopting the philosophy of *The Standards* will tend to lead to a successful project that will accomplish your goals without robbing your building of the things that make it special.

PRESERVATION PRACTICES

KEEPING WATER OUT AND MOISTURE AWAY

Though you've probably read it already in this handbook, it bears repeating: ***Water is the most destructive agent your building must face in its day-to-day life.*** You can take many steps, most of them simple and inexpensive, to ensure that water has as little chance as possible to attack your building or to create conditions where other agents such as dry rot can attack it.

The recommendations below will give you many suggestions about specific things you can or should do, and about things you should avoid. In addition, though, you need to keep the "big picture" in mind. Buildings are composed of interrelated systems such as the roof and drainage system, mechanical systems, or the structural system. Flaws or weaknesses in any of them can admit water or moisture in one form or another, and you need to keep constant watch for such situations.

One of the best things you can do to understand your building is go outside when it's raining. Stay out of lightning storms, of course, but during the next heavy rain, put on a raincoat and go out to watch your building. Take note of where the water is going. Does it drain quickly from the roof into gutters? Do the downspouts drain properly? If there are no gutters, what happens to the water when it hits the ground? Is the site draining properly?

On the interior, moisture in the form of water vapor (humidity) tends to be the major problem. In the right conditions, water vapor condenses to liquid water, and liquid water supports destructive agents such as the dry rot fungus. Even if dry rot does not get started, dampness can cause peeling paint, plaster damage, and mildew. With today's emphasis on energy conservation, sometimes buildings are made so "tight" that it's hard to eliminate interior moisture.

It is surprising how much moisture can collect on a building's interior. A family of four, for example, can produce as much as three tons of moisture in a year's time from simple activities such as cooking, showering, and breathing. Add to this the sometimes high humidity levels of the South Carolina climate and a building can have a good deal of moisture to deal with. Historically this tended not to be much of a problem, since buildings generally had adequate air infiltration through doors, windows, and cavity walls so that moisture could dissipate. Today this often is not the case. Insulation, storm windows, tight-fitting or fixed replacement windows, and other energy conservation measures can make it hard for moisture inside a building to dry out. Whenever possible, let natural ventilation help you avoid problems — leave windows open, be sure basement or foundation ventilation openings are kept open and clear, and avoid using loose insulation materials without vapor barriers. Use appropriate soffit and ridge vents, in addition to attic vents which may be part of your building's original design, to keep an airflow going in the roof or attic area so moisture is less likely to collect.

Be sure that mechanical systems don't contribute to the problem of moisture. Window air conditioners should not be allowed to drip onto the building or ground, and central

air-conditioning systems should have functioning drain systems for condensation. Watch for leaking supply and drain lines in the plumbing system, as well.

Even when you take all these precautions, moisture can still find ways to collect and cause problems. Remember this handbook's earlier advice about regular inspections. Learn the signs of moisture problems, and take steps to correct them right away when they do occur.

TAKING CARE OF CHARACTER-DEFINING FEATURES

This section of the handbook suggests numerous ways you can care for specific elements of your building — the elements that contribute to your building's visual and architectural character. By suggesting both things you should do and things you should avoid, these recommendations should give you a good general grounding in the care of older buildings. You will not find answers here to every possible problem, but a careful reading of this section can make you a better-educated building owner, and it will prove useful when you discuss repair and rehabilitation work with architects, contractors, and repair people.

ROOFS

South Carolina buildings have many kinds of roofs, and roofing materials range from wood, slate, asphalt, and metal shingles to ceramic tile and standing seam metal. On late-19th and early-20th century commercial structures, the roofs are flat in profile and slightly sloped and usually are invisible behind parapets. On many residential buildings, the roofs are major design elements; what happens to them and how they are treated can have a major impact on a building's appearance.

With any roof, especially highly visible ones, the preferred choice is to retain and repair existing historic roofing materials. Whether your building has a slate, tile, wood shingle, or metal roof, new materials are generally available for repair work. Sound older materials should be left in place, and repair materials should be chosen for as close a match to the existing as possible. Be sure existing materials truly are beyond repair before removing them.

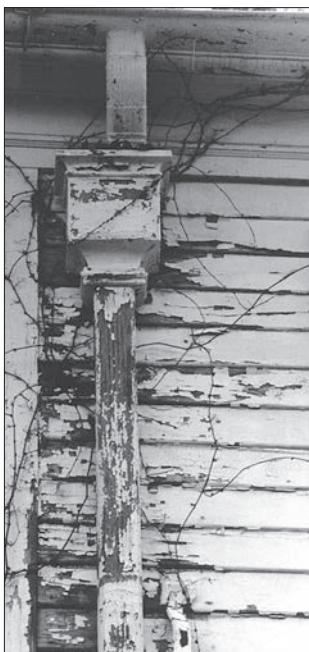
If your building requires a complete new roof, try to do the job with materials that would have been used on that building in the past. Research and physical inspection can tell you what these might have been — often new roofs are placed over older ones and you can dig down and see what was used. Nail patterns in the attic, on the underside of the roof sheathing, can tell you whether the roof had individual shingles or, perhaps, standing-seam metal roofing. The undersides of original materials, or fragments of them in the attic, may also provide valuable information.

If you do not use traditional roofing materials such as wood shingles, slate, tile, or metal, your choice probably will be some kind of asphalt or fiberglass shingle. Avoid using such materials on very low-pitched roofs, where rain can get under them or heavy wind can lift them. Avoid staggered-butt or other shingles intended to give a "rustic" or "historic" look, and choose colors appropriate to your building.

Remember the roof's primary job: to make water drain away as fast as possible, and to provide a watertight skin that will not admit any water while it is draining away. Roofing



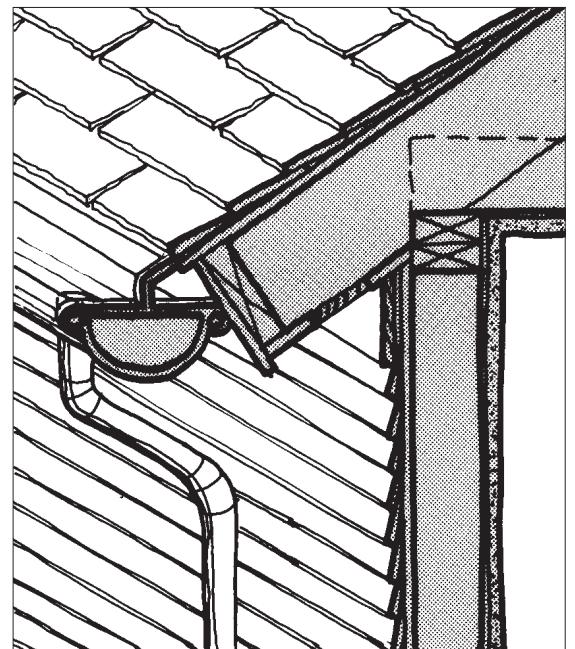
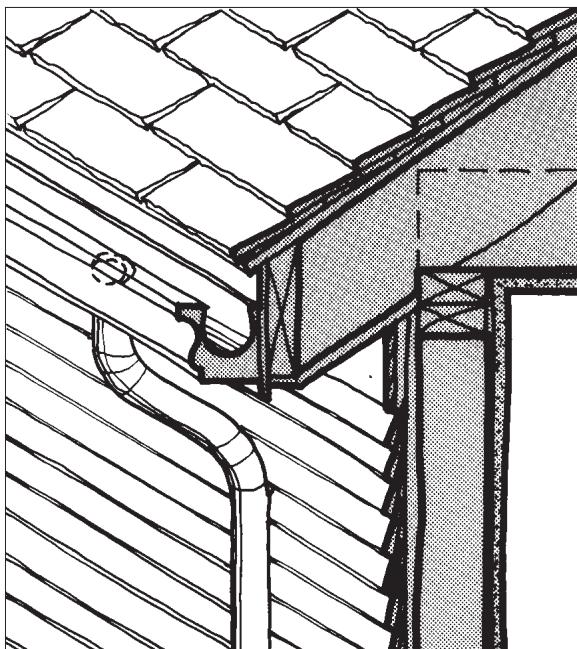
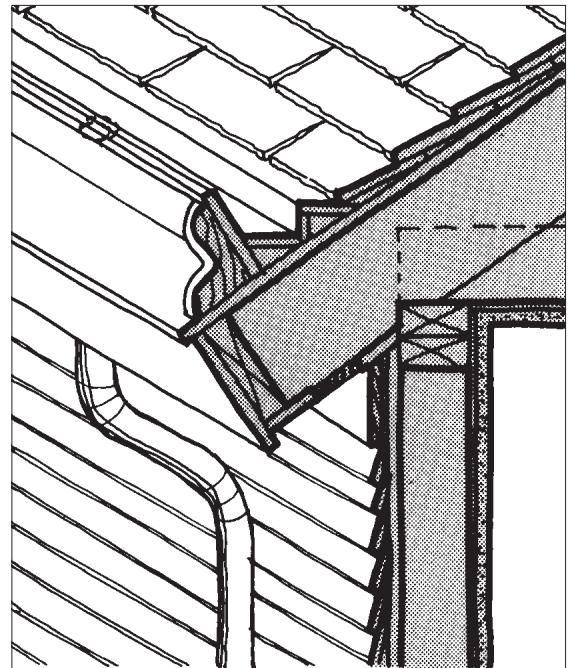
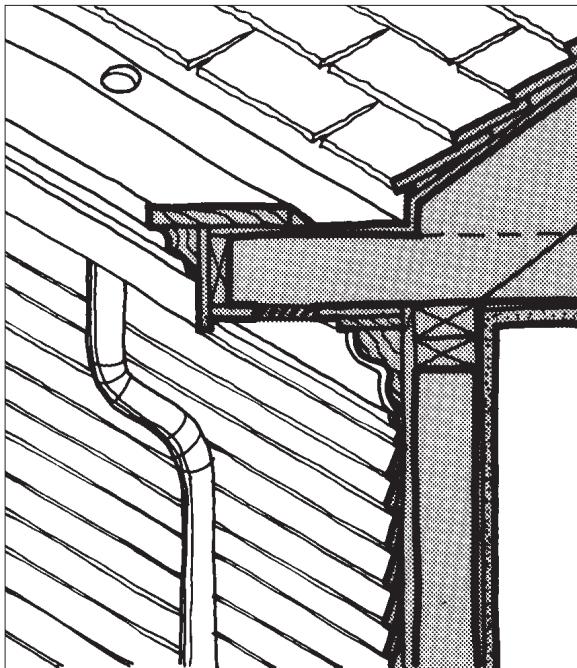
CLOCKWISE FROM TOP LEFT: Pressed sheet metal shingle roofs can be found in all parts of South Carolina. They usually require a good coat of paint to prevent rust and deterioration. / Slate roofs were very popular in the late-19th century. As in this example, such roofs often were made in decorative forms and colors and became part of the architectural composition. / New metal shingles are still available and can be used for patching existing roofs or for entirely new ones. / Standing seam metal roofs are common in South Carolina; they date from the early 1800s and are still available today. Proper capping at ridges is important, as is proper crimping at joints between panels. / A traditional wood shingle roof. Such roofs are laid with joints placed over the shingle below, and at any given point the roof is typically three shingles thick.



materials should overlap adequately, and joints in materials like standing-seam metal must be watertight. When you inspect your roof, watch for torn or loose materials and for any exposure of the underlying sheathing. For sloping and flat roofs, watch for blisters, slits, gaps, or low spots where water may collect or leak in. Remember, too, that flashing at chimneys, dormers, and other roof penetrations is part of the roof and watch for open joints (areas where flashing has pulled away from the vertical element), or older flashing that has rusted through.

Many South Carolina buildings do not have gutters and downspouts, but those that do need ones that work. The most common problem is gutters that fill with debris and downspouts that become obstructed. In both cases, the result will be overflows from the gutter, which can pour large amounts of water down a building's wall or soak the ground and splash

The roof is only part of the system that carries water away from the building. Neglect of gutters and downspouts can cause severe deterioration in a short period of time.



GUTTER TYPES — CLOCKWISE FROM TOP LEFT: Box Gutter / Stop Gutter / Half Round Gutter / Ogee Gutter

against the building. Also, watch for sagging gutters, poorly-sloped gutters that do not drain well, disconnected sections of downspout, and downspouts that lack splashblocks or underground drains.



CLOCKWISE FROM LEFT: This house combines excellent ornamental brickwork in the body of the building and smooth stuccoed columns on the portico. Note also the fine wood ornamentation in the porch balustrades and cornice. / These two photos show the disastrous effects of sandblasting historic masonry. In one case, the faces of the bricks have been eroded to a point behind the lines of the more resistant mortar, with the brick surfaces severely roughened. In the other, smooth-faced finish brick, which had very thin mortar joints, have had their smooth faces entirely removed. In both cases, the softer inner core of the brick is exposed to weathering and the rough surfaces will hasten accumulation of dirt.

MASONRY

Masonry refers to building materials composed of stone, brick, concrete block, tile, terra cotta, or stucco which are generally used to construct building walls, ornamentation, and elements such as chimneys, parapets, steps, and porches. The range of masonry materials in South Carolina architecture is tremendous and varies even within a particular type. Brick, for example, may range from very soft low-fired eighteenth century red brick to very hard glazed brick, in many colors, from the early-twentieth century. Though it is rare, masonry in this state even includes tabby, an indigenous eighteenth and nineteenth century material that used oyster shells as a raw material.

Though strong and durable, masonry can be brittle; it supports heavy compressive loads well but has little tensile strength. This means that masonry elements can crack if the ground or building wall supporting them shifts or sinks. If your masonry building has cracks, it may be necessary to call in a qualified architect or engineer to assess the problem. Some cracking is thermal cracking, caused by expansion and contraction of the masonry in varying temperature conditions. This kind of cracking usually is limited in scope and generally does not lead to structural problems. Watch, however, for any cracks that appear to be new or that seem to be getting larger. These may indicate a more serious problem such as differential settling. This often can be caused by poor building site drainage, a situation where the soil beneath a wall becomes water-soaked and loses its supporting

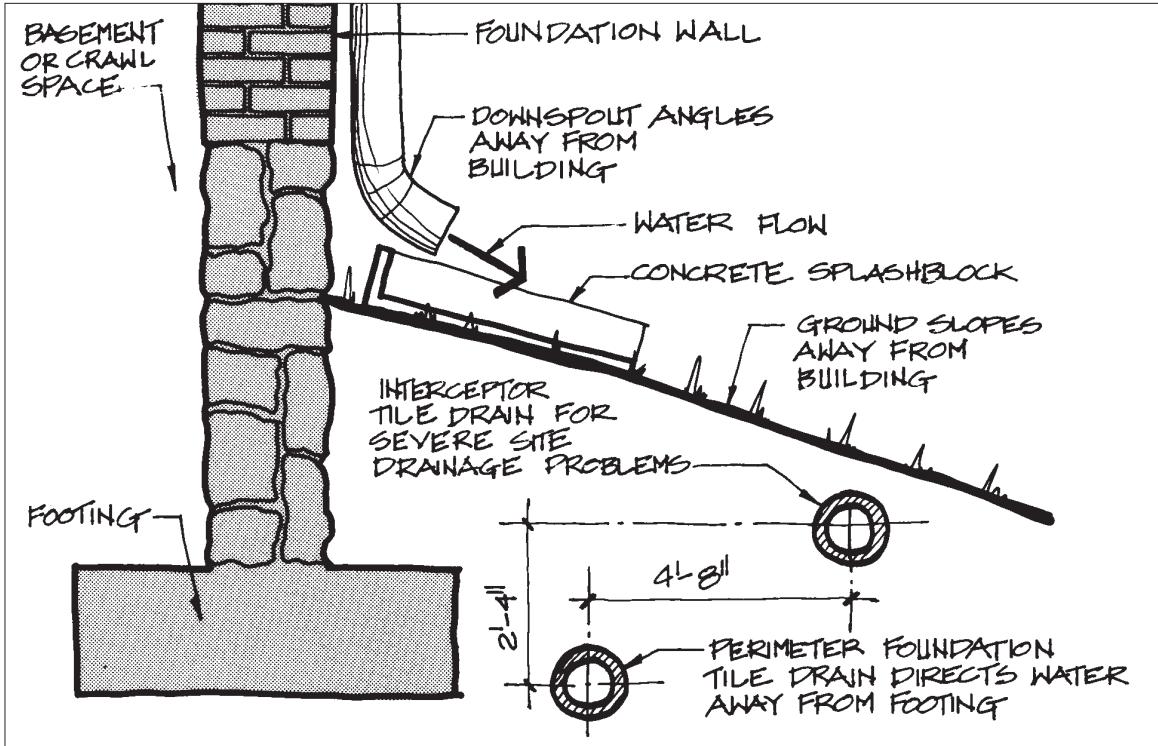


CLOCKWISE FROM LEFT: This early church has excellent original ornamental brickwork, but also a serious crack that is probably due to settlement. In cases like this, it is important to conduct tests to determine whether movement has ceased. In crack repair, mortar should not be smeared on the faces of adjacent bricks. / This is an unfortunate instance of poor quality re-pointing, and of an attempt to use mortar to fill in where bricks were missing or broken. / Long-term exposure to moisture, either from poor site drainage, faulty gutters and downspouts, or rising damp from groundwater, can result in severe erosion of masonry. This sandstone wall is powdering away because water has dissolved the stone's natural binders.

capacity. You may find areas in your building where cracks were patched by earlier owners, often just by filling the crack with concrete or mortar. If these patches have themselves cracked or loosened, there may still be wall movement going on that should be addressed by a professional. If you find new cracks in masonry, don't just patch them — get qualified assistance to find the source of the cracking first.

In South Carolina, especially in the Lowcountry where groundwater may be high, masonry buildings often encounter a condition known as "rising damp." Water can wick up through a wall by capillary action from the ground and is visible in the building wall above ground level. Signs of rising damp include darkened masonry, powdery mortar, soft brick, growth of moss or mildew, or the presence of whitish salts known as "efflorescence." These salts, which may come from saltwater in coastal areas or from salts in the masonry or mortar, are carried into and through the masonry in solution but eventually crystallize at or on the surface. The process of crystallization creates internal pressure which can damage the masonry.

If excessive groundwater is not a typical condition in your area, then look for other causes. Is your building site drained properly, so that water is carried away from the



Proper ground slope and drainage at foundation

building? Are gutters, downspouts, or underground drain lines leaking? Are foundation plantings keeping the ground near the building from drying out quickly after a rainstorm?

Watch for and correct adverse conditions and your rising damp problem may go away. If high groundwater is present, however, the solution usually requires insertion of a "damp-proof course" into the masonry wall. This is a thin layer of waterproof material — lead or slate was used historically — that blocks moisture from rising. It's not an ideal solution, because dampness can remain in the wall below the damp-proof course, but it may be the only workable solution in many cases.

Cleaning must be undertaken in a way that does not damage the masonry. Sandblasting, for example, should never be used to clean masonry, because it works by removing part of the surface along with the dirt. This roughens the masonry surface, enabling it to collect dirt more quickly, and it destroys finishes, small details, and edge definition. Avoid all kinds of abrasive cleaning, which may go by such seemingly benign names as "feather-dusting," or may use abrasives such as glass beads or walnut shells. They all work the same way and do the same damage.

Unless it can be shown that the dirt on a masonry wall is actually causing harm through chemical action or by retaining moisture, consider not cleaning your masonry building. The weathering and darkening often experienced by masonry walls are evidence of its age and are a natural consequence of their having stood a long time; they become part of its character.



LEFT: This is an excellent example of a well-maintained stuccoed masonry wall. The stucco has been kept in repair, its surface smooth and without cracks or missing areas. The paint surface has been kept in good condition as well.
RIGHT: Stuccoed surfaces sometimes lose their stucco, usually because moisture has caused a break in the bond between the masonry and the stucco. Patching such damage should be done with new stucco compatible in color and texture, and application of the stucco should be done carefully after any underlying problems have been resolved. These patches have pushed the rising damp higher in the wall — each succeeding repair has done so as well.

If you do decide to clean the masonry, start with the least aggressive technique. This usually is just plain water. Various methods, including soaker hoses or sprays, low-pressure (under 300 pounds per square inch) spray heads, or hand-scrubbing with bristle brushes, can be surprisingly effective. Be sure, though, that windows and doors are watertight and that excessive moisture does not get into the building or the masonry.

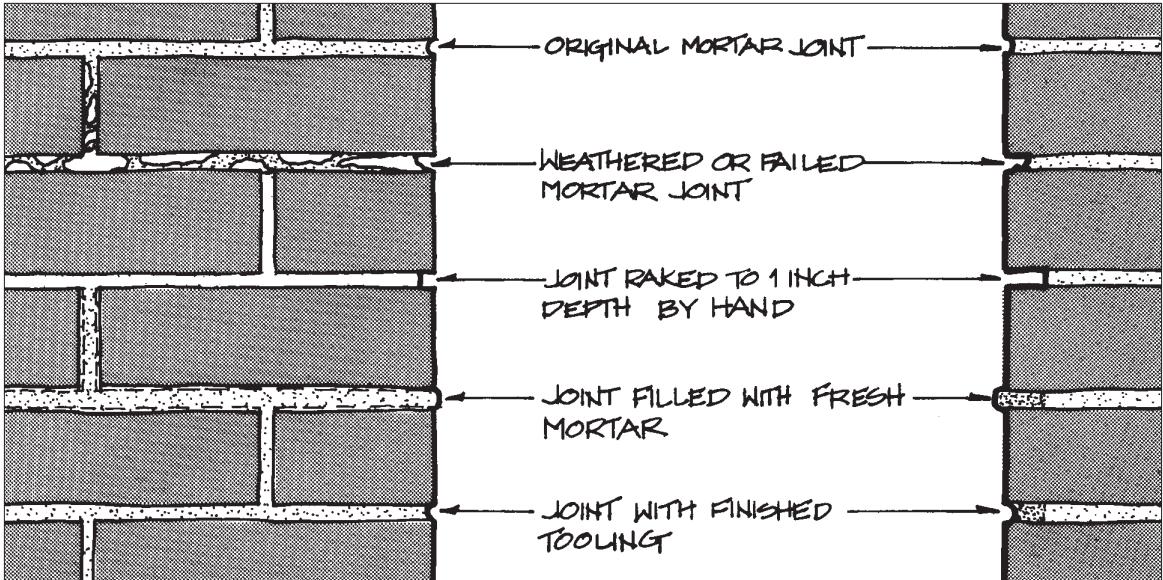
Most masonry cleaning should be done by qualified contractors with the proper equipment. This is especially true if plain water is inadequate and you move on to some of the chemical cleaners. There are several effective products, but all must be used carefully to avoid damage to masonry, glass, paint, plantings, or automobiles. Some solutions contain fairly strong acids, which can damage some kinds of stone or brick, so be sure your contractor uses the right solution for your building. Ask to see the product literature, and read it yourself to become familiar with proper application techniques.

Rinsing with clean water is typically the last step in a chemical cleaning job, but avoid wash pressures over 300 pounds per square inch. High-pressure water washes can be very abrasive, causing the same damage as sandblasting.

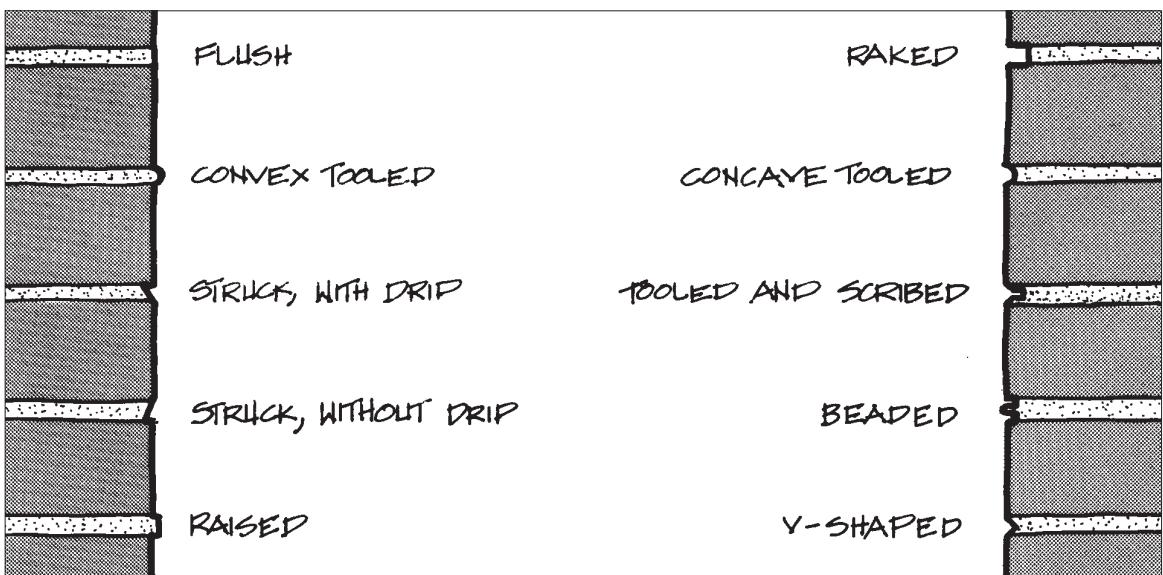
Pointing, or re-pointing, is another aspect of masonry care that must be done carefully. The three most important issues are careful removal of existing mortar, the use of a proper new mortar composition and proper tooling of the mortar joint.

Re-pointing of a masonry wall should be done only where the existing mortar has truly failed. Minor cracks or some weathering away of the mortar usually are not major problems. Watch instead for pieces of broken and loose mortar, and for areas where the mortar has fallen out completely, leaving an open joint. If this mortar loss is due to a condition such as a leaking downspout, be sure you have corrected the cause of the damage before re-pointing.

In preparation for re-pointing, loose mortar should be removed, and the joints should be raked out by hand to a depth of at least one inch. Don't use power tools such as



ABOVE: Proper repointing technique. BELOW: Typical mortar joints.



circular cutters to remove mortar — they can damage adjacent masonry units. Just prior to applying the new mortar, moisten the cleaned-out joints with water to prevent the masonry from drawing water out of the mortar and causing it to cure improperly.

The new mortar should match the old as closely as possible in color, texture, and size of sand grains. It should be a close match, too, in composition, in order to give it performance characteristics as close as possible to the original. The National Park Service has developed a good basic mortar composition which can be a starting point for your re-pointing job. It provides adequate strength for most applications without being so hard as to damage the masonry. Start with 1/4 part (by volume) white Portland cement, 1 part hydrated lime, and

3 to 6 parts sand. Unlike historic mortars, which had some natural cement as an impurity, modern lime mortars can have some cement added to increase workability and strength; too much cement, however, will cause the softer brick to crack and break when it tries to expand and contract next to the hard mortar. For very hard masonry such as high-fired 20th-century brick, a little more cement may be added, but in general avoid excessively hard mortar. The sand portion should be varied so that the color, texture, and grain size are the same as those in the existing mortar. Joint tooling or finishing should match the original.

Many people consider applying waterproofing or water repellent coatings to masonry buildings, but this should generally be avoided. Such treatments can interfere with a masonry wall's ability to dry out after getting wet. In fact, these walls are designed so that they can get wet and then dry out quickly before moisture can soak in to the interior.

A wall that has been doing this for several decades or longer doesn't need help in the form of waterproofing, and introduction of such materials can trap moisture that would otherwise dissipate quickly.

In unusual cases, where weather exposure or damage from abrasive cleaning has exposed masonry to substantial moisture penetration, the use of waterproofing (below grade) or water repellent coatings (above grade) may be appropriate. Be sure, though, that moisture is actually penetrating the masonry and is not coming from loose flashing, bad gutters, or some other source. Remember, too, that some treatments may have to be applied fairly frequently in order to maintain their effectiveness.

Sometimes moisture in a masonry wall will remain for a long time after the source has been stopped. Figure a month of drying-out time for every inch of masonry wall thickness. For example, if you have an 18-inch-thick wall, then you should allow at least a year and a half to be reasonably sure it has dried out, after the source of water has been stopped.

Painting is a common treatment for masonry, especially for older brick. Sometimes brick buildings were painted from the start or fairly early in their lives, either because poor quality brick was used in the original construction, or because fire damage or alterations made the unpainted brick wall unsightly. Stuccoed buildings, too, often were painted, while stone and terra cotta masonry usually were not.

In general, painted masonry and even painted stone — which would not have been painted originally — should remain painted. There are chemical paint removers which do an adequate job, but they may not remove all the paint, and you may find that the paint covered some sort of damage. Too-aggressive paint removal efforts can damage masonry, and some chemicals may leave a whitish residue. Because possible unanticipated conditions may be under the paint and the potential for damage from paint removal is high, keep the paint on a painted masonry building. Unpainted buildings, on the other hand, should remain unpainted. If the masonry requires consolidation, then paint is not likely to be effective. Consider a masonry consolidant to address masonry with a deteriorated surface.

Stuccoed surfaces are common on South Carolina masonry buildings. This material, which is applied wet, with a consistency like that of plaster, was used to smooth out exterior wall surfaces, to achieve stylistic effects such as simulating stone, and to cover rough

building materials. Sometimes masonry or even frame walls were stuccoed some time after construction, to cover damage or alterations or to protect porous materials.

Stuccoed buildings should be left stuccoed, and deteriorated stucco should be repaired.

Avoid removing stucco — often, brick building walls were chipped and chiseled to give the stucco a good bonding surface, and such a wall without its stucco can be very unsightly. In addition, the stucco may be providing important weather protection needed by the masonry.

WOOD

Wood is the most common building material in South Carolina, especially for residential buildings. Flexible, inexpensive, and readily available, wood was the material of choice throughout the state's history. It was fashioned into all kinds of building components, from structural timbers to jig-sawn porch ornamentation.

Repair and retention of historic wood building components is essential to preserving the character and visual quality of almost every building. Weathering, from the effects of moisture and sunlight, and biological attack, from insects and fungi, are the two most destructive influences wood building components must face.

As you have already read in this handbook, a regular inspection program, during which you watch for signs of deterioration, is the best means of catching wood-destroying problems before they escalate into serious damage. Most wood, for example, is painted for both cosmetic and preservation reasons. Any time you see failing paint, you should look further: can you also see moss or mildew? These are signs that something is causing moisture to accumulate, preventing the wood from drying out. Moss or mildew will not harm wood, but their presence indicates a high enough moisture level that the dry rot fungus can get established. In the right conditions (primarily darkness and a moisture content of at least 20 percent), it takes only about three months from the time dry rot spores come in contact with wood to the point that the fungus is fully established and causing damage. The fungus destroys wood's structural strength; the classic sign of it is called "cross-grain checking," where the wood breaks up across the grain, forming small squares or cubes of weak, powdery wood. An icepick or similar thin, sharp object can help find areas of dry rot. If you poke the surface of a piece of wood, the pick should penetrate only a very small fraction of an inch; if it goes significantly deeper with little resistance, dry rot is probably present. Also, try prying up some of the wood with the point of the pick, perpendicular to the grain. If it cracks and splinters, the wood is probably sound; if it breaks loose easily, dry rot may be present. Remember that paint can conceal dry rot that is just under the surface, so use your pick freely to test wood elements. If wood has suffered dry rot damage, it cannot be reversed. If the damage is slight, further damage can be prevented by removing conditions that support the rot — for example, making sure the wood stays dry or dries out quickly when it gets wet. Chemical preservatives may help, but they tend to be very poisonous. If extensively damaged wood is replaced, remember that dry rot spreads by sending out invisible tendrils as much as two feet beyond the rotted area. Be sure to cut out both the rotted wood and any that may be infected, too, before installing new wood.

1. DAMAGED SECTION OF BOARD TO BE REPLACED.

REPAIR MINOR CRACKS AND HOLES WITH WOOD PUTTY OR CAULKING COMPOUND

2. CUT NAILS WITH A HACKSAW

EASE DAMAGED BOARD FORWARD WITH WOOD WEDGES

MAKE VERTICAL CLETS WITH A BACKSAW

3. CUT REMAINING WOOD WITH SHARP WOOD CHISEL

REMOVED DAMAGED SECTION OF BOARD

4. ATTACH NEW BOARD WITH GALVANIZED NAILS. DRIVE NAILS FLUSH AND AT AN UPWARD ANGLE.

THEN TAP BOARD INTO PLACE USING WOOD BLOCK AND MALLETS, UNTIL NAIL HEADS ARE COVERED BY BOARD ABOVE.

5. NEW BOARD IN PLACE, WITH NAILS PROTECTED BY BOARD ABOVE

The repair of wood siding



LEFT TO RIGHT: Historic wood siding can have a great deal of character and visual quality, as can be seen in this example of beaded-edge beveled siding. / Late 19th century buildings often combined various kinds of wood siding. This example has both beveled and shingle siding, and in addition has decorative elements such as latticework, columns, and brackets. / Board-and-batten siding was very popular in the 19th century, especially in mid-century examples of the Gothic Revival style. Battens sometimes were rectangular, but often they were beveled or profiled. Note the unusual open bargeboard treatment of this board-and-batten house.



CLOCKWISE LEFT TO RIGHT: Wood siding requires painting to protect it from both the weather and the sun. This heavily weathered siding, which is missing its cornerboards, shows the results of long exposure to the sun — ultraviolet light destroys the wood. / This is an example of a serious moisture problem in a wood-sided building. The peeling paint and dark mildew stains are a sure indicator of moisture in the siding, and there are signs of dry rot as well. The source of moisture could be improperly-installed insulation, a leaking gutter or downspout, or leaking plumbing inside the house. / Wood porches are exposed to the weather and tend to be susceptible to deterioration. In this case, dry rot has caused a face piece, and probably structural members behind it, to lose its physical strength and crumble away. Note also the buckled floorboards, a sign that they are absorbing excessive moisture. Wood with dry rot must be replaced as soon as it is noticed so the rot will not spread.



CLOCKWISE LEFT TO RIGHT: Proper surface preparation is essential to a successful paint job on a wood-sided building. Sometimes it is necessary to remove earlier paint layers if the build-up is so great that it cannot provide a sound surface for the new paint. / This is a close-up view of severe termite damage. The tunnels they eat through the wood are clearly visible, as is the waste material, known as frass, that they leave behind. / Termite damage often is not visible on the surface of the wood element. This baluster has lost all its physical integrity, having been eaten away from within. The damage was not apparent, however, until a tool pressed against the surface broke through the thin shell of paint and wood that the termites left behind.

Insect attack can be equally serious, especially in the case of termites, which actually eat wood and thrive in South Carolina's climate. They are messy, leaving behind a sawdust and waste mixture called "frass." Probing with an ice pick can help find termite damage, which consists of long, interwoven tunnels and often occurs just below a painted surface and is not visible. Treatment for termites can include physical barriers such as sheet metal guards; poisoning of the ground where they build their nests is usually the most aggressive treatment. Be sure to contact qualified exterminators if you suspect you have problems with termites or with other wood-attacking insects such as carpenter ants or powder-post beetles.

One important way to avoid insect and fungus attack is to be sure that any dead or rotted wood — fallen tree branches, or stacks of firewood, are kept well away; never allow them to stay in contact with your building.

Sunlight can be a very destructive influence on wood; the characteristic grey and weathered look of exposed wood results from partial destruction by ultraviolet light.

This is a primary reason most wood used in buildings is painted, and any wood that is painted should stay painted. Avoid stripping paint from wood to get a "rustic" look, and never sandblast wood because it wears down and destroys the surface and the edges of details and ornamental elements.

ARTIFICIAL SIDING AND SUBSTITUTE MATERIALS

Artificial siding includes aluminum and vinyl siding, and composite materials. All have been around for some time and have been widely used to cover or replace original wood siding on many kinds of older buildings. Most building owners do this in the belief that the artificial siding is maintenance-free, or that the wood siding was beyond repair and the artificial siding was a suitable replacement.



CLOCKWISE FROM TOP LEFT: Inappropriate application of artificial siding can cause significant loss of architectural character. / Loss of trim and detail elements such as window treatments is one of the problems associated with the use of artificial siding. / Since bricks are already designed to be weather-resistant, there is little justification for siding a brick building. / Artificial siding can require some maintenance and repair. A loose piece such as this can be difficult to reach and repair, but if it is left unrepairs then water can penetrate behind the siding and cause deterioration in the wood siding and structure.

Unfortunately, there is a tendency to use artificial siding to cover over the symptoms of problems, while the problems themselves go unattended. These problems usually involve moisture that has caused the paint on wood siding to peel and require constant repainting. After installation of artificial siding, the building owner often feels his problems are over, while in fact they continue unnoticed under the new siding. Unless the owner takes steps to find and correct the source of moisture, the underlying wood never dries out, and extensive dry rot damage can easily occur.

The other main objection to artificial siding is that it takes away a significant part of the architectural and historic character of an older building. This happens when original siding is covered or removed and replaced, and it also occurs when window and door trim and decorative elements are damaged or removed to facilitate siding installation.

Your first choice should always be to try to retain existing wood siding and associated wood trim and details. If peeling paint is a problem, find out the cause. Is moisture coming from inside, either from an unvented bathroom or due to lack of a vapor barrier? Is water dripping from an overflowing gutter or downspout or splashing up from the ground? Are foundation plantings keeping wood siding from drying out properly? Also consult a qualified painter to see whether your problem may be poor surface preparation prior to the last paint job. Unless existing paint is thoroughly scraped to a sound surface, new paint may not adhere well.

Once you have addressed problems such as these, the quality of modern paints is very high, and a qualified painter should be willing to give a reasonable warranty that is competitive with those provided by siding installers.

Remember, too, that no building material is "maintenance-free." Siding can get dirty and must be washed; aluminum siding dents very easily; vinyl siding can crack; and wind can blow siding loose. Don't assume that you can forget about maintenance if you install artificial siding. One clue to the fallacy of such an assumption is the fact that most paint companies are developing paints for use on artificial siding. If such siding was truly "maintenance-free," why would it need painting?

Some substitute materials may be appropriate for use on older buildings but only after all other options for repair and in-kind replacement have been ruled out. Materials such as fiberglass or glass fiber-reinforced concrete (called "GFRC") have been used as substitutes for stone or metal building components. Hardiplank, a cement board siding, has been used as a substitute for wood siding. Use of these materials should be limited, as to not jeopardize the integrity of the historic resource, and work best when they are used on the upper portions of buildings, away from close inspection. They should be used only to replace missing or deteriorated elements that may be hard to find; they should not be used to replace sound existing building elements.

ARCHITECTURAL METALS

Architectural metals include both cast and sheet metals, which were used primarily for door and window trim and for elements of projecting cornices. These materials also were used for storefront columns, commercial display window framing systems, roofing materials, and decorative elements. Sheet metals included terne metal (lead-tin alloy over sheet iron or



LEFT TO RIGHT: A very popular use of architectural metal was on commercial buildings, where pressed sheet metal was widely used to form building and storefront cornices. Note how much character this simple treatment gives to a fairly modest commercial structure. / Cast iron storefronts were readily available in the late 19th and early 20th centuries. George L. Mesher & Co. of Evansville, Indiana, shipped thousands of such fronts all over the United States. They could be bought by the running foot to fit any building and assembled like large kits. / Another kind of architectural metal common in South Carolina is cast iron in the form of stairs, railings, and fences. This well-designed and well-preserved example shows the level of detail that could be achieved with this material.

steel) and galvanized (zinc on iron or steel) products, and also copper, bronze, aluminum, and other non-ferrous materials. Cast materials are primarily cast iron; very little cast work was in other metals. Probably the most common historic architectural metal elements surviving today are cast iron storefront columns, fencing and railings, and window and door trim; and galvanized sheet metal formed into hoodmolds, cornices and detail elements.

Whether covered with a protective coating or not, iron-based materials such as these will rust unless protected from the weather. Thus the most effective maintenance technique you can undertake is regular painting of metal elements.

The nature of the material makes cast pieces hard to repair, but sheet metal elements can be repaired fairly easily. Cornices and other elements that have been neglected can develop rusted areas and holes, and whole pieces may be so rusty that they can't be saved. Fortunately, making new sheet metal patches or even entire pieces is fairly easy, and installation usually consists of nailing, soldering, or riveting the new pieces — all pretty straightforward techniques. Before doing such work, though, be sure that any wood supporting elements behind the sheet metal have not deteriorated; if they have, make repairs before dealing with the sheet metal.

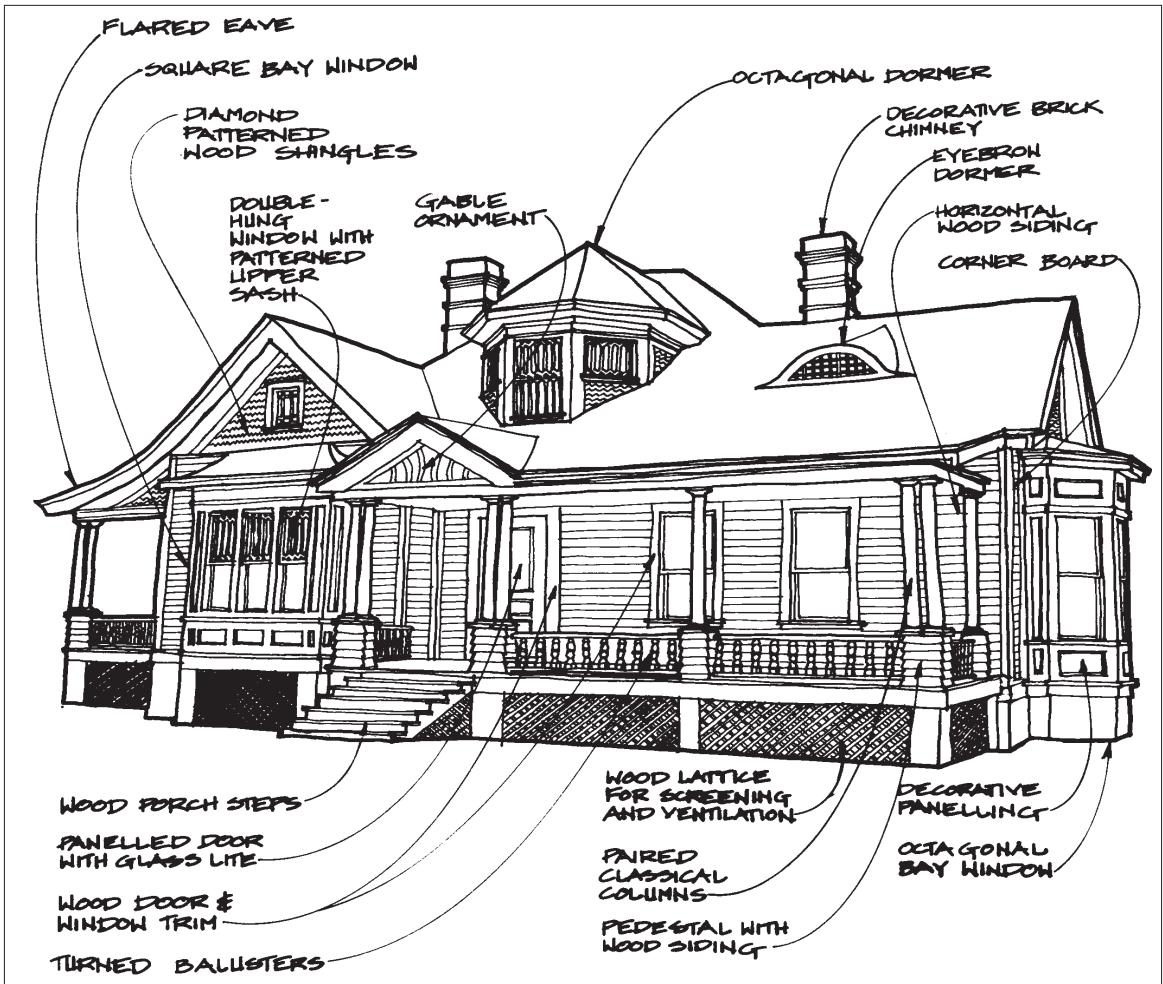
ORNAMENTATION

Ornamentation includes architectural elements applied to buildings for decorative purposes. Some ornamentation is an integral part of particular architectural styles —



CLOCKWISE LEFT TO RIGHT: Many early-20th century buildings had much simpler ornamentation than late-19th century buildings; this Craftsman-style bungalow is an example. Wood, still the favored material, was used here to form simple brackets, exposed rafter ends, trim pieces, and porch elements. / Many brick buildings needed nothing more than the bricks themselves for ornamentation. This example shows the many ways bricks could be used, with variations in color and texture, to form decorative treatments such as window surrounds and cornice elements. / A very popular late-19th and early-20th century type of masonry ornamentation was terra cotta, a baked clay material made in molds. This building illustrates the great flexibility of this material, which was used here for virtually all ornamental elements. / During the 1920s and 1930s, glass ornamental panels in Art Deco designs were often used on buildings built in the Art Moderne style.

cornice brackets used on Italianate style buildings, for example — and some is merely added to buildings to give them some character and distinctiveness. Examples of the latter include patterned shingles or other woodwork in the gable of a house, or terra cotta medallions in the brick wall of a commercial building.



LEFT: Wood elements were the earliest kind of ornamentation and are still the most common on South Carolina buildings. This building combines an accentuated pediment, window trim, small cornice brackets, and drop finials — all of wood — in a pleasing overall composition. **RIGHT:** Many late-19th century buildings had elaborate ornamentation made of wood, as in this excellent example. Retention, repair, and regular maintenance of such elements is extremely important in preserving a building's character.



CLOCKWISE LEFT TO RIGHT: Two-story porches were fairly common on early South Carolina buildings. Note how the design and ornamentation of this porch is in keeping with the house's simple character. / To avoid problems from trapped moisture in the space under the floor, porches should be properly vented as in this example. The latticework screen is a traditional means of providing ventilation while keeping out unwanted plants and animals. / Porches are important not only for the buildings to which they are attached, but also to the neighborhood where they are located. The succession of large open porches along this street is a major element of the high design quality of the neighborhood. / Enclosing porches to increase living space can be a significant design issue. Any such work should be as minimal as possible and should be reversible and leave the original porch design unaltered. The screened area at the left end of this porch is a good example of an appropriate enclosure.

Even on buildings that are not high-style, ornamentation can be a major contributor to the building's architectural character, and during repair and rehabilitation work these elements should be protected and preserved. Avoid removal of ornamentation, unless it is deteriorated beyond repair, and if it must be replaced, do so with matching new elements. Substitute materials, such as fiberglass in place of wood, may be appropriate, but the first choice should always be to use the same material as in the original.

On the other hand, avoid adding extra ornamentation to a building where it never existed. Many buildings were purposely designed to be very plain and unadorned.

PORCHES

Porches are major design features on many older residential buildings, but often they have preservation problems because they are exposed to the weather. Problems include buckling of flooring; dry rot in columns, flooring, and floor joists; and roof and flashing problems.



CLOCKWISE LEFT TO RIGHT: Some porches were very simple, little more than a stoop and hood. This type of porch was typical of early-20th century cottage and bungalow designs. / The steps leading up to the porch deck are an important part of the design. They should have design elements that tie them to the overall design of the porch. / This porch enclosure consists primarily of glass and has created new year-round space. Note how the new elements have been placed behind and are subsidiary to the original columns, rail, and ornamentation. / This porch probably was originally open but appears to have been enclosed with metal-framed windows and doors early in the 20th century. Note how major porch design elements were left intact and visible.

Some building owners solve these problems by removing a porch entirely, or replacing wood elements with masonry decks and metal columns. However, these changes are not recommended because they cause a significant loss of historic building materials and architectural character.

A more appropriate choice is repair of a porch with the same materials of which it is built. Doing so is not necessarily more expensive than replacement with a new material such as poured concrete, and it may be much less expensive. Only replace what is truly deteriorated, and this will help keep your costs down.

Once your porch has been repaired, or if your porch is currently in good condition and you want to keep it that way, the key is to inspect it regularly, perhaps twice as often as you

inspect the rest of the house. Watch the flashing where the house and porch join, to be sure water isn't getting into the joint; look for moss, mildew, and warped or buckled wood that indicates excessive moisture; and be sure that the space beneath the porch is properly ventilated. If your porch is supported on piers, avoid filling in the open spaces between piers. This will trap moisture and can lead to peeling paint and dry rot. If you wish to enclose spaces like these, use wood lattice panels; they are historically appropriate and will permit adequate ventilation.

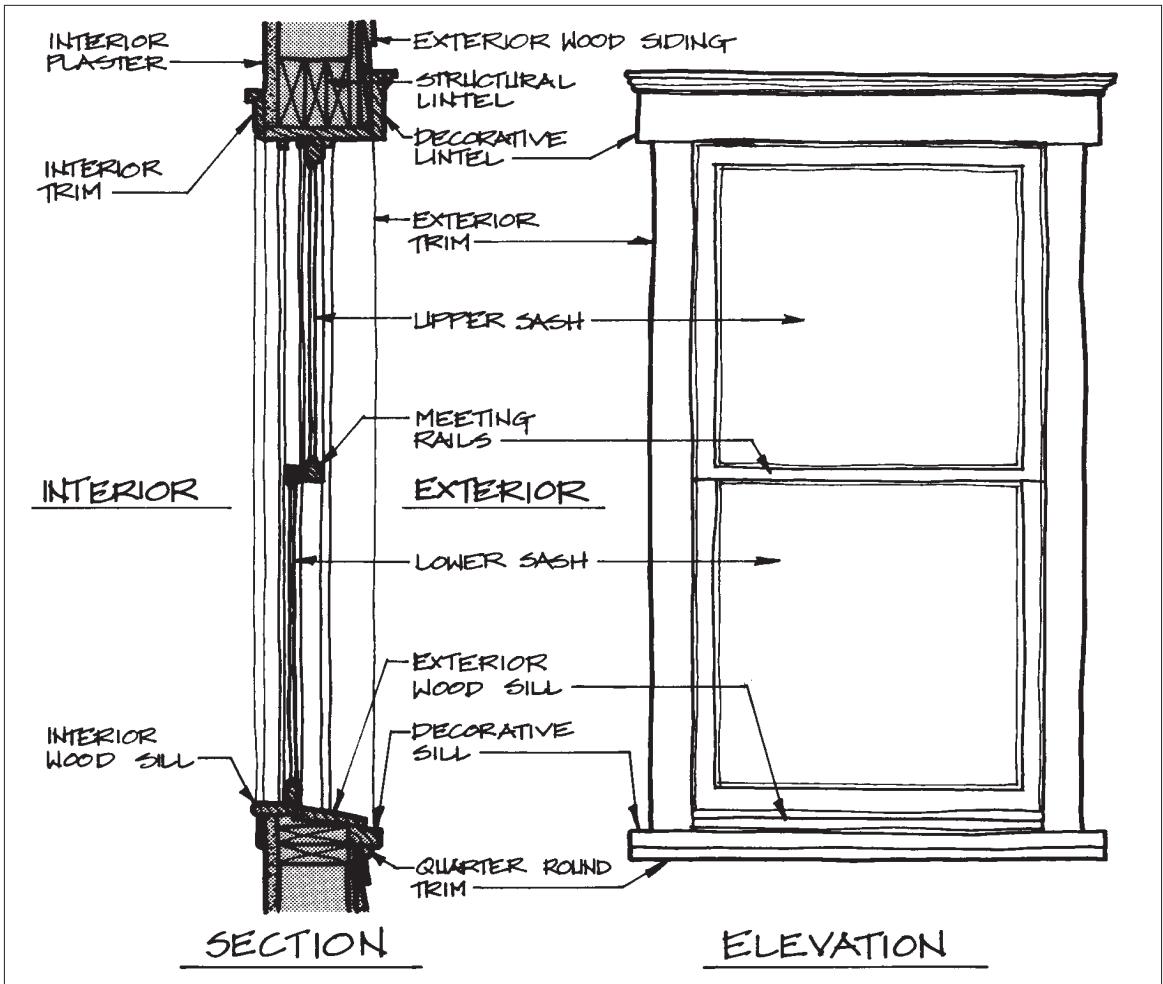
Enclosing porches to increase useful living space is another issue. In some places this may be governed by zoning codes, so be sure to check. From a preservation standpoint, porch enclosures can be a problem because they can permanently alter the character of the porch and the building on which it is built. In general, porch enclosures should not be used to create new year-round living space. Porches are intended for seasonal or occasional use and not for full-time occupancy. When enclosing them for the latter purpose, building owners often use siding materials and residential-size windows, making the porch look like an extension of the building wall and significantly altering the building's appearance. A more appropriate approach is to use either screened panels, which will permit use of the porch without worrying about insects, or large glass panels that maintain a high degree of transparency that keeps the porch from looking massive and bulky. In all cases, enclosures should be built inside of the columns and trim of the porch, so that these design elements remain visible. This helps lessen the loss of architectural character.

DOORS AND WINDOWS

These elements are major design features of older buildings, and how they are cared for can have a great impact on a building's appearance and historic character. Building owners sometimes hurry to replace windows and doors, especially windows that they perceive to be obsolete or beyond repair.



LEFT TO RIGHT: These 9-over-9 windows are typical of early residential windows, which had many panes because glassmaking technology at the time could produce only smaller pieces of glass. Note how the shutters are mounted on original hardware and would fill the window opening when closed. / Four-over-four windows were not widely used but are typical of the mid-to-late 19th century. These windows have the tall, vertical proportions typical of the Italianate and other Victorian-era styles. / Two-over-two windows are typical of the late 19th century, when larger pieces of window glass were readily available. Such windows were very common in Italianate buildings; note the vertical proportions of this example. Shutter hardware survives on this building. / A replacement window with an exterior grid to appear similar to a historic window may not be as successful as intended. Grids can break and/or fall off.



Anatomy of a window

In fact, it is rarely necessary to replace a window completely, and often all it requires is some repair to make it sound and functional. The fact that windows may be old is not a good reason for replacement — indeed it is a good argument for keeping them. In addition very often it's considerably less expensive to repair an existing window than to put in a replacement.

The assumed advantages of replacement windows — a tighter fit and double-glazing for energy conservation — are easily achieved with existing windows. A tighter fit can be achieved with weather-stripping, which will cut down on air infiltration, and interior or exterior storm windows will help conserve energy in both warm and cold weather.

If existing windows are truly beyond repair, the most appropriate choice is to install new windows that match the old in materials, number of glass panes, and in the thickness and profile of framing and sash pieces. Avoid aluminum and vinyl windows; wood replacements are most appropriate. Also avoid snap-in muntins (the wood pieces that support individual glass panes) or ones that are sandwiched between two pieces of glass.



TOP: This old entrance has all of its original elements: a paneled door with a glazed upper half, paneled sidelights, a transom, and a traditional screen door. **LEFT TO RIGHT:** This is a good example of operable shutters, complete with working hinges, "dogs" to hold the shutters open, and a locking bar to keep them shut. / A six-panel door was typical in late-18th and early-19th century buildings. The finely-detailed entrance and rectangular transom with a fan pattern are design elements from the Georgian and Federal styles. / "Crossbuck" style storm doors generally are not appropriate for older buildings.

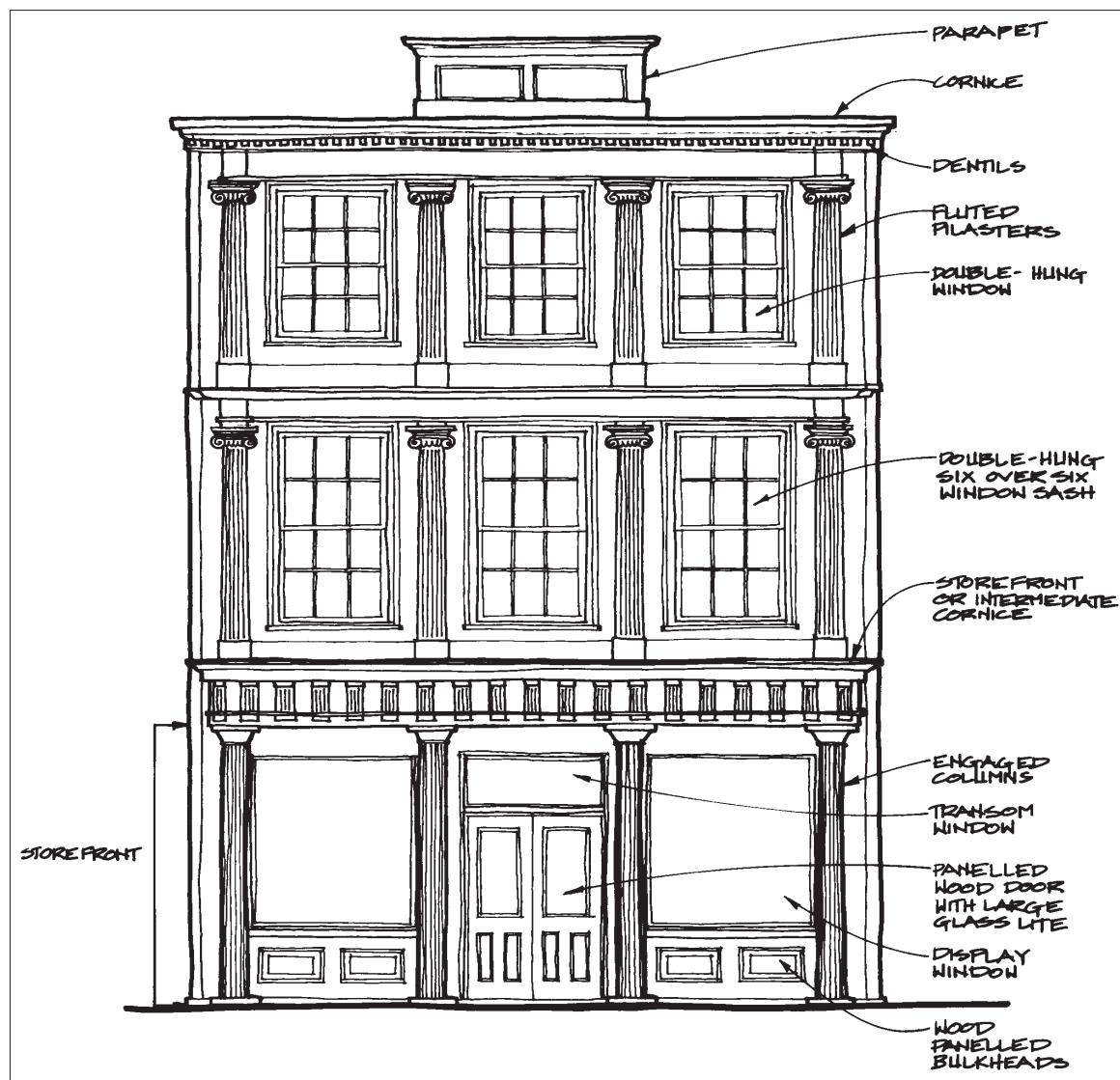
Doors tend to be replaced less often than windows, but sometimes — especially in the case of commercial buildings — they have suffered so much damage that they must be replaced. Always try to repair them first; it may be a matter simply of replacing a side piece or a piece of recessed panel, a simple carpentry job. Any new doors should be as close as possible to the appearance of the originals. Commercial building doors, for example,

almost always have large panes of glass — sometimes for their full height — and new doors should, too. Avoid using blank, windowless doors, or residential-type doors with small windows, on commercial buildings.

The same suggestions apply for residential building doors. Try to keep the originals, but if they are replaced, try to duplicate them exactly. Remember, too, that most 19th century doors were painted, not stained and varnished. It was only very late in the 19th century and early in the 20th that stained and varnished doors became common. Unless your building dates from that time period, avoid removing paint from painted doors.

COMMERCIAL STOREFRONTS

First floor storefronts are usually the most visible elements of older commercial buildings, and these storefronts contribute greatly to the character and visual quality of downtowns





LEFT: This wood storefront has all the classic elements: a paneled bulkhead, large paired and glazed entrance doors, large display windows, and transoms over the display windows. Note that the storeroom ceiling is so high there is room for an unusual double transom over the entrance doors. **RIGHT:** These late-19th century storefronts combine stone, wood, cast iron, and glass in a lively and visually interesting composition. In these examples, large signboards are placed above the storefronts and below an intermediate cornice.

and commercial districts large and small. South Carolina communities are fortunate to have many well-preserved downtown areas with intact storefronts.

Traditional storefront design developed during the 19th century. By about 1850 to 1860 a fairly standard composition had evolved and was almost universally used on Italianate commercial buildings that had achieved wide popularity by that time. For almost another century storefront design changed very little. The principal components of the storefront were the bulkhead, a paneled area below the display windows that could be up to two feet high; the display window, which rose from the top of the bulkhead and originally was composed of several panes of glass in a wood framework but later was made of large sheets of plate glass; the entry door, which might be centered or offset and often had a transom above it; the transom windows above the display windows, which helped bring natural light into the often deep and narrow store spaces; and a signboard and cornice area at the top of the storefront, which terminated the design.

Early storefronts were framed by stone pillars and beams; later, cast-iron columns became widely available. Eventually building owners could order complete storefront "kits" from several manufacturers (the Mesker Company of Evansville, Indiana, for example, sold storefronts nationwide); they could be ordered by the foot to fit any building and were shipped by rail. Various ornamental details could be added to give them distinctive characters, including medallions, floral bosses, and geometric shapes. Yet with all the variety and variation in design, the standard storefront composition remained unchanged: bulkhead, display window and entry door, transom, and cornice.

In the period following World War II, many older storefronts were "updated" to make them look more modern and appealing to a shopping public that was getting used to the new look of shopping centers. Often older fronts were removed entirely and replaced with



CLOCKWISE FROM LEFT: This detail from the Visitors Center photo on page 43 clearly shows the stone, wood, glass, and cast iron elements of which it is made. Note that the cast iron columns have the maker's name cast into their faces — they came from Athens, Georgia. / Many late-19th and early-20th century storefronts had transoms of prism glass, which gathered natural light and projected it into the storeroom. This example had colored glass for visual interest and also had tilting ventilator panels. / During the early-20th century, modern storefronts often were added to older buildings in an effort to update them. This is an example of architectural glass panels used to give a storefront a smooth and clean appearance. This work probably dates from the 1930s or 1940s and is a type of storefront that has become architecturally significant.

aluminum-and-glass fronts that had no bulkhead, transom, or cornice. Storefront design by this time has become very plain and spare-looking, with no ornamentation, but the all-glass front still played an important role: it continued to provide the continuous glass wall along the street that linked the streetscape and the retail stores' interiors.



In more recent times, many storefronts have been closed in or covered with wood, plastic panels, brick, or other materials. As downtown buildings have changed from retail to office, restaurant, and other uses, business owners have often not wanted large display windows. This has had a negative effect in many places, creating a "blank wall" along the streetscape that makes downtown areas seem uninviting.

Surviving historic storefront materials should be retained and repaired; avoid removing them even if the complete storefront is not intact. In particular, you should retain historic bulkheads, transoms, doorways, cornices, metal or stone columns, and, especially, large glass display windows. Even if the business in your building might not need display windows, removing them is not recommended. There are ways to use interior screens, blinds, drapes, or other materials to create privacy for a business without having to remove the storefront windows.

If your building's storefront has been entirely removed and replaced with a modern aluminum-and-glass storefront, you may wish simply to leave it in place. While not historic in design or materials, as long as it still has large glass display windows it still can contribute

to the commercial streetscape. If you decide to remove a modern storefront, however, you can either do a reconstruction of an earlier front (if you have good documentation such as old photos), or you can install a contemporary front in traditional materials and a design compatible with your building. Wood and glass are the most common traditional materials, and an appropriate contemporary storefront should have the basic elements of traditional fronts: bulkhead, display windows, entry door, transom, and terminating cornice. Rather than try to copy historic designs, though, you should employ a simple modern design.

Awnings often were a part of historic storefront design, and many awning support frames still survive, some with older awning materials still on them. Awnings were used to shade the storefront from the sun, and to provide protection from rain for passing pedestrians. Awnings are appropriate today, both for storefronts and for upper floor windows. Traditional fabric awnings are more appropriate than fixed metal awnings or canopies. The most appropriate design is one where each awning fits within the opening of each window; avoid a single continuous awning across the entire building front. The simple flat, sloping awning, with or without triangular end panels, is most appropriate. Avoid rounded or "bullnose" awnings except in round-arched openings where they are appropriate.

FOUNDATIONS

A building's foundation rises from below ground level to support the structure above. Its job is to spread out the weight of the building so the load on the supporting soil does not exceed its bearing capacity.

South Carolina buildings have various kinds of foundations, ranging from a series of simple brick piers to solid poured concrete foundations that form full basements. Some foundations end just above ground level; others extend well above the ground to form high basements. Typical foundation materials include wood posts, stone, brick, poured concrete, and various kinds of structural block.



LEFT TO RIGHT: This is an example of foundation plantings placed too close to a building. These shrubs tend to retain moisture at the foundation, where it can penetrate masonry and cause problems. Plantings should be kept trimmed at least a foot away from a building wall to permit air and sunlight to dry out any accumulated moisture. / Pier foundations are common in South Carolina. Properly constructed and maintained, they permit easy ventilation under a building's floor and discourage the accumulation of moisture. This example shows both an open form on the right and a brick lattice infill on the left. / Avoid complete infill of pier foundations. Even with the small ventilator panels shown here, there is great potential for trapping and retaining moisture, and the dark, unseen space under the house can be an attraction for pests such as termites.

Problems with foundations usually do not occur unless they have been inappropriately altered or something has happened that affected the soil's ability to support the building's weight. Inappropriate alterations include cutting through the foundation to provide window or door openings without adding compensating support to the foundation; building a new structure or adding onto a structure in a way that exceeds the foundation's capacity; or blocking in ventilation openings so that air flow is restricted. The soil's bearing capacity can be affected by excessive moisture. A leaking underground water line or drain, for example, can soften the soil and cause it to flow away from the foundation, which can lead to differential settling and cracking of the foundation. Water from the surface, such as from overflowing gutters, can do this too.

Blocking in the gaps in pier-type foundations is not recommended because it interferes with the air flow that keeps moisture from building up under the building. Moisture trapped there can lead to dry rot or encourage insect infestation, and a blocked-up foundation makes it hard to inspect for these conditions. If you want to fill open spaces in a pier-type foundation, consider using wood lattice panels. These were used historically and are fairly easy to make and repair; and they permit adequate air flow.

Unless you or a prior owner made alterations affecting the foundation's ability to do its job, you should experience little trouble with this part of your building. If you have any doubt about it, though, call in an architect or engineer who is experienced in older buildings and can help you assess problems and propose solutions.

PAINT

Colors

Color for older buildings is a large and complicated subject. Color choice at any given time was affected by paint technology, cost, and both personal taste and stylistic trends. Before about the 1880s, when manufactured paints became widely available, most painters made their own paints from various oils and pigments, both natural and manufactured, and there was great variety in colors and finishes.

In selecting paint colors for your building, the building itself can be the best guide. With some study and analysis, you can learn what colors were used on the building in the past, and today there are many colors available that are based on historic use; finding a suitable match should be no problem. Several paint manufacturers provide charts of the historic colors they have researched and developed.

Paint color research involves studying existing paint layers. One way is to examine paint chips under a microscope; you have to be sure that your sample includes all the paint on the building, down to the lowest layer. Another way is to expose a paint "window," preferably in an unobtrusive spot, by making about a two-inch-long slightly curved cut down through the paint layers to the substrate underneath. Make another cut opposite the first, and cut out the paint from the space between the cuts, which should be about a quarter-inch wide at its widest point. Using a medium-grit sandpaper, sand in an oval motion slowly down through the paint layers; each will begin to get exposed in a series of concentric oval rings, the newest at the outer edge and the oldest toward the center. Brush away the dust, then wash with water and let the surface dry. The result will be

a visual record of the various paint layers. From them you won't be able to tell much about when each was applied, but when the samples are combined with other research information, you may be able to get some idea. These techniques work on interior paint, too; but remember that interior woodwork sometimes was treated with techniques such as graining, which required multiple paint layers — don't mistake a base coat for a finished paint surface.

Some building owners make paint color choices based on personal preference rather than historical research. Since paint colors can be easily changed, this generally is fine, though appropriate colors that complement the age and character of a building should always be the first choice.

Paint Maintenance

Paint maintenance is important, too. Once paint has been applied to a building, it makes sense to be sure it lasts as long as possible and does not fail prematurely. Good preparation is one key. Older paint layers must be scraped down to a sound surface (but not necessarily removed entirely), and rough edges should be sanded or "feathered" to a smooth surface. Never prepare a surface for painting by sandblasting or using rotary sanders — both will permanently scar the underlying wood, and these scars will show through the paint. Be careful about using paint removers that require a water wash; damp wood will not hold paint properly, and adequate drying time before painting must be allowed. Also, avoid painting surfaces in direct midday sunlight. The heat from the sun can cause vaporization and poor bonding of the paint.

Once the paint is in place, watch for sources of moisture, from both inside and outside the building, which can cause chipping and peeling. Most paint failure is the result of water getting between the wood and the paint. Sources include overflowing gutters and downspouts, rainwater splashing up from the ground, and moisture coming out from inside, such as from an unvented bathroom. Keep vines from growing on painted surfaces, since they can also cause paint failure. When in doubt, get recommendations from friends and neighbors for qualified painting contractors with whom you can consult on paint problems.

ENERGY CONSERVATION

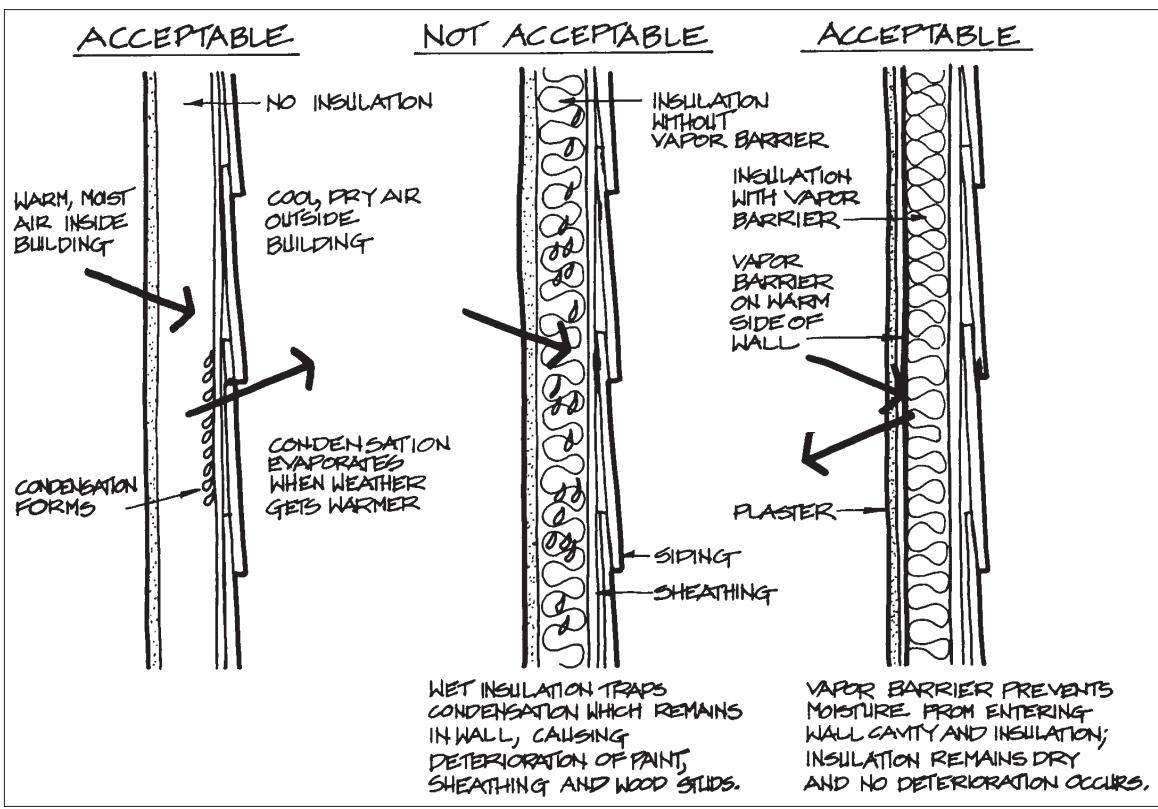
The key to successful energy conservation is an efficient heating/ventilating/air conditioning (HVAC) system. Though conservation of energy, during both hot and cold weather, is an economic and environmental necessity, there is sometimes a tendency to overdo conservation efforts, to the point that these steps can begin to cause maintenance problems in older buildings. Before undertaking these steps, be sure that your HVAC system is functioning properly and efficiently; consider replacing older elements with new higher-efficiency ones.

Earlier discussion focused on various moisture problems that can occur when a building cannot "breathe" adequately (see **KEEPING WATER OUT AND MOISTURE AWAY**), but there are some other issues as well. One is the use of storm windows. They are a traditional means of providing protection from cold weather, and they can help cut interior heat gain during hot weather as well. Their design, though, is important and can impact a building's appearance and historic character.



LEFT: Working shutters and a sheltering porch roof can significantly cut down on summer heat gain in a house. The shutters have louvers to provide air flow while they are closed, and the porch keeps the sun from shining directly into the interior.

ABOVE: Plugs like these are evidence that insulation has been pumped or blown into a cavity wall, probably without a proper vapor barrier. The potential for trapping moisture in the insulation is very high in such cases and can lead to serious dry rot damage to the structure.



Insulation parameters

Storm windows can be either interior or exterior types. When they are used on the exterior, their big advantage is that they provide physical protection for historic windows. To look appropriate, they should be the same color as the window, and they should have the same major structural subdivisions — for typical double-hung sash, for example, the storm windows should have an upper and a lower half, and they should meet at the same point as the meeting rails of the window sash.

Wall insulation is another issue. Many building owners want to add insulation to the walls, either by filling cavity walls or by removing plaster, adding rigid foam insulation, and re-plastering or drywalling. Studies have shown, however, that heat gain or loss through walls is fairly modest. The loss of historic character and the potential for trapping moisture in the wall indicate that wall insulation may not be the best use of your insulation budget. Consider instead insulating the attic or roof, where there is more documented energy loss, but be sure that proper vapor barriers are installed to avoid trapping moisture in unvented spaces.

INTERIORS AND MECHANICAL SYSTEMS

Because the interior arrangement of rooms and hallways is part of a building's design, try to avoid major changes such as new doorways, removal of partitions, or subdividing of rooms. Also, try to avoid wholesale removal of original plaster and installation of drywall. There may be cases where plaster has suffered damage from water, past alterations, or vandalism, but replacement with drywall may not always be necessary.

Sometimes it is less expensive — and more character-preserving — to repair existing plaster. Cracks can be widened, undercut, and filled with new plaster. Large areas of missing plaster can sometimes be filled with drywall pieces and then finished with plaster. Unless the "keys" that hold plaster on the lath have broken off, or unless the plaster is so damaged it cannot be repaired, then complete removal should be unnecessary.

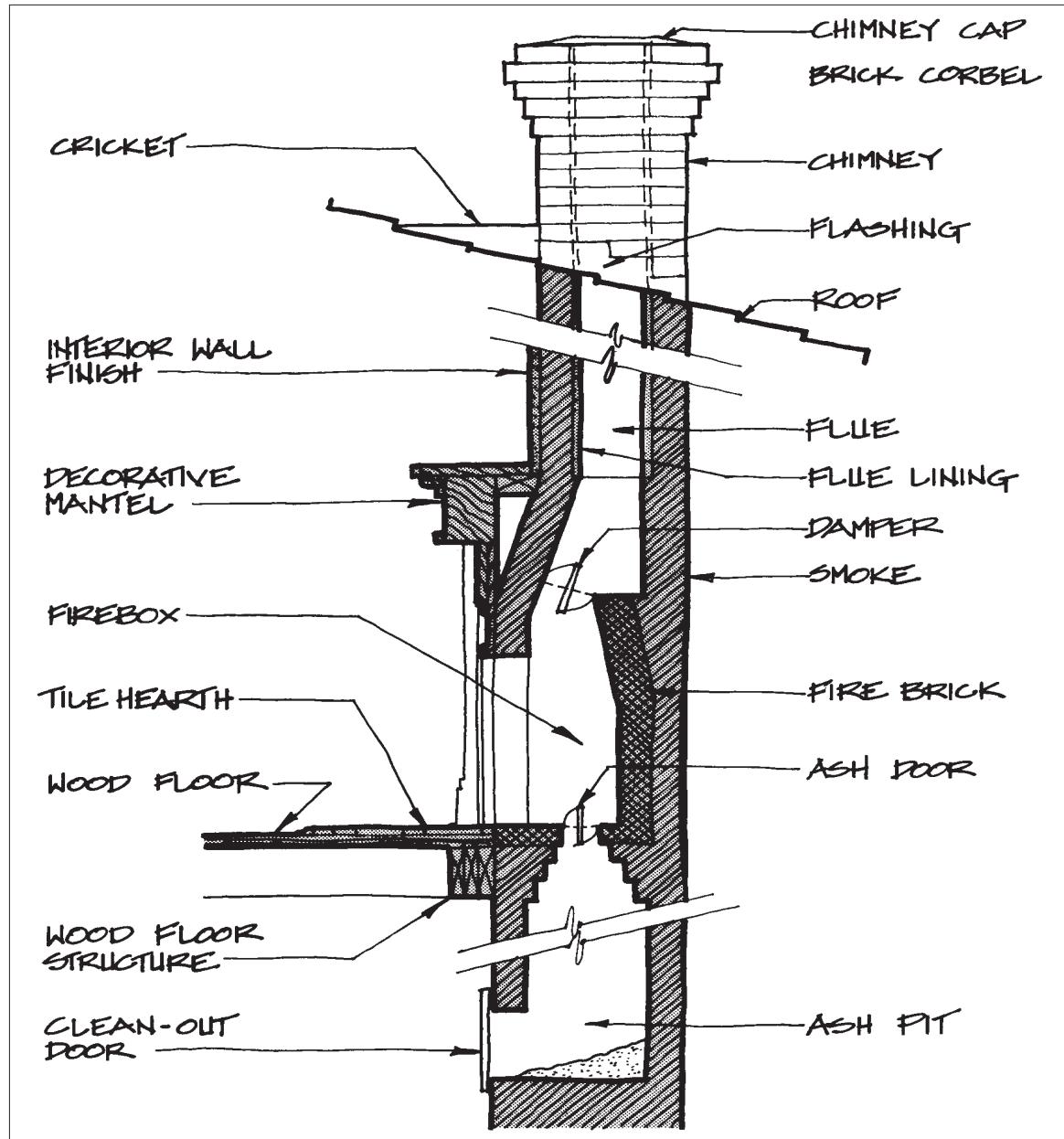
Changes to interior trim such as door and window trim and baseboards should also be avoided. If trim is missing from major rooms, sometimes it can be added by using historic material that has been "quarried" from less important spaces and replaced with new material. Material salvaged from other buildings can sometimes be appropriate, if it provides an exact match for material missing from your building. Avoid introducing large amounts of salvaged materials as a way of dressing up your building's interior — it imparts a false sense of historical development. This is especially the case with mantels, built-in bookcases, and similar elements with a major visual impact. The better choice is to construct these elements from new materials in contemporary designs so it is clear that they are not original parts of your building's design.

Mechanical systems can have an impact on a building's character, too. When installing or updating heating, air-conditioning, plumbing, or wiring, try to minimize damage to significant original interior features. Avoid cutting through trim and ornamental details; resist the temptation to lower ceilings, especially in commercial storefront spaces; try to locate mechanical chases in closets or secondary spaces. If space at the ceiling is needed for ductwork and other systems, try to use soffits that lower only part of the ceiling instead of lowering the entire ceiling.

Window air conditioners should be placed at side or rear windows and made as unobtrusive as possible, and watch where their condensate drains. Avoid letting transom-mounted air conditioners drip on customers.

CHIMNEYS AND FIREPLACES

Fireplaces were essential for heating and cooking in many older buildings, and their architectural treatment—mantels, paneling, and other details — often were major



Anatomy of a typical fireplace and chimney

elements of interior design. On the exterior, chimneys had a significant impact on the appearance of a building, and frequently they were designed and detailed to fit into the overall architectural composition.

Because chimney fires can endanger the entire building, it is important that fireplaces and chimneys be constructed and maintained properly; even if they are not used, they still require some care.

Refer to the drawing showing a cross-section through a typical fireplace and chimney. Before you attempt to use an unfamiliar fireplace, be sure it is in good condition and has all the essential equipment, as shown in the drawing, in working order. If you are at all in doubt, have the fireplace inspected by a qualified person.

From a design standpoint, probably the most important question is whether the fireplace masonry is in good condition, and whether the flue is properly lined. Deteriorated masonry or lack of a lining can provide passages through which sparks and embers may be able to reach wood structural members, and they also provide irregular surfaces on which soot and creosote can collect.

Soot is unburned material given off by burning wood; creosote is a flammable substance from the same source. Either or both can collect in a chimney, and if these materials should catch fire, it can spread to the building itself. A properly-built fireplace has smooth surfaces that discourage soot and creosote accumulation; likewise, the flue should be lined with a smooth material — ceramic tiles and stainless steel pipes are typical — that don't permit flammable materials to collect.

The other issue is maintenance. Any functioning fireplace should be cleaned regularly, a minimum of once a year. Even if you know the fireplace is properly built and the flue

properly lined, it is worth doing a regular cleaning just to be sure you are minimizing the possibility of a chimney fire.

Avoid changes to existing chimneys. Chimney height has a lot to do with how a fireplace "draws," and alterations to chimneys may affect fireplace function, as well as having an impact upon the architectural character of your building. Repair deteriorated chimneys so they retain their historic appearance and character.

SITE CONSIDERATIONS

A building's site may comprise part of its significance, particularly if it was the location of important events, or if the site has elements

Some South Carolina communities have unusual or unique streetscapes. Natural sidewalks, a wide planting strip between walk and street, and large street trees all work together to impart a sense of time and place; these elements are as important as the architecture in determining a community's character.



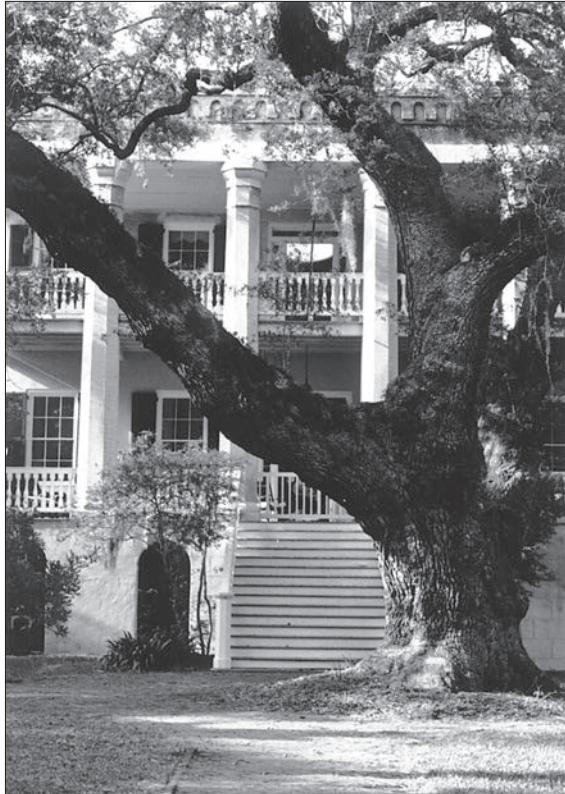


CLOCKWISE LEFT TO RIGHT: Fences are common site features in residential areas, and traditional types of fencing are the most appropriate. Picket fences, for example, provide privacy without entirely cutting pedestrians off from the views of the neighborhood. / Some fence designs provide a great deal of visual variety. This example adds a sense of character to the site and gently but firmly discourages trespassing. / Cast and wrought iron was widely used as a fence material in South Carolina in the past and remains appropriate today. This fence, which is unobtrusive and is low in height, provides visual interest and effectively separates public from private space.

of historic landscape design. In some cases, building sites may contain archaeological resources that warrant protection, or there may be site elements such as fences, gates, arbors, outbuildings, or other structures that might be considered an extension of the building's architecture. Trees, plantings, and vistas may also be significant site elements.

Evaluate your building's site before making any changes that might affect the property's overall character. Fences and outbuildings, in particular, are elements almost any property might have, and loss or alteration of original or early elements could significantly affect the property's character. Avoid removal of outbuildings such as sheds, privies, or barns. They usually are of simple construction and are not difficult to maintain. Retain existing materials or replace those materials in kind. You may find that outbuildings can provide much-needed storage space.

If your property does not have a fence and you are considering constructing one, do research into fence designs appropriate for your building's era, or study historic fences around properties of similar age and architectural design. The same is true for outbuildings such as garages or storage sheds. Remember, too, that local zoning codes may affect location, materials, height, color, and other aspects of fence and outbuilding design.



CLOCKWISE LEFT TO RIGHT: Traditional landscaping and plantings make a major contribution to the settings of historic buildings. The setting of this house would be adversely affected if the large tree in the yard was removed. / Plantings and landscaping must be appropriately sized and maintained so they do not overwhelm the buildings they are intended to enhance. / Site elements may include historic paving materials, which also can add texture and variety to a building's setting. Sometimes these may be buried under grass and soil and may have to be dug out and repaired.

In general, avoid high front yard fences that you can't see through, and use traditional materials such as cast or wrought iron and wood. Simple and traditional picket fences, which were almost always painted rather than stained or left unpainted, are generally appropriate for front yards. Height should not exceed between three and four feet, depending on what local codes allow. Side and rear yard fences can be higher and more opaque, for privacy reasons, but avoid a fortress-like look. Board fences for side and rear are most appropriate; contemporary designs such as stockade, basket-weave, or chain-link are less appropriate.

Other site elements such as planting beds and walkways may be part of historic landscape design and should be retained wherever possible. Contemporary site additions, however — pools, satellite dishes, mechanical equipment such as air conditioning compressors, and parking areas — need to be designed and located in ways that will minimize their effect upon a building and the site's character. Usually this means locating these elements toward the rear or deep in a side yard, and making use of plantings to screen views. Keep such elements as small and concealed as possible.



LEFT: Ramps for building access should be as modest and unobtrusive as possible. This example made use of a former port-cochere, a covered area for carriages or automobiles. **RIGHT:** A ramp like this, which was added to a church, provides access without significantly affecting the character of the building. The design is simple, the handrail is light and unobtrusive and its design takes advantage of a recessed area in the church wall. Note how the ramp is set back from the building's front but not so far as to be inconvenient.

ACCESS FOR PEOPLE WITH DISABILITIES

There has been a great deal of discussion among building owners about the Americans with Disabilities Act (ADA), a Congressional act intended to ensure that people with disabilities do not suffer discrimination. The act, which is considered a civil rights act and not a building code, addresses architectural barriers, among many other things unrelated to buildings. Generally, the act provides that buildings open to the public, including private businesses, must take steps to remove barriers. The act doesn't apply to private homes.

Regardless of legislation such as ADA, the design and placement of elements in order to make buildings accessible is important, because they can have a significant impact on building appearance.

Overcoming differences in elevation between exterior and interior is probably the biggest issue, since it generally involves ramps of some sort. In the case of some commercial buildings, where the interior floor level is about a foot or less above sidewalk level, the sidewalk width may permit installation of a raised section of sidewalk that overcomes the grade difference but does not require handrails. Plantings or patterns in the sidewalk can provide a visual clue that the sloped area exists.

In cases where ramps are necessary, the key to success is to keep them as small and unobtrusive as possible. Rear or side entrances, if they can provide unobstructed access to the same part of the building as the front entrance, are preferred ramp locations. Construction should be simple and open in appearance; avoid masonry ramps and solid sidewalls. In cases where the height differential is three feet or greater, it may be less expensive to construct a lift rather than a ramp, and the visual impact of a lift will usually be less.



LEFT: Additions should be located so that they do not interfere with the original form and setting of the main building. Materials, details, and overall form should also be compatible with the historic building. **RIGHT:** The design of these incompatible doors and windows was not based on the design of the historic building.

COMPATIBLE ADDITIONS

Buildings often change and grow as their owners' needs change, and with a little thought it is possible to construct an addition that provides extra space without harming an older building's character.

There are some rules of thumb that help ensure the successful and sensitive design of an addition. First, make it clear that the addition is indeed a secondary component of your building; make sure the original building still is obviously the main element, with the addition a subsidiary element. This can be done, for example, by keeping the wall height lower than that of the original, and by keeping the roof peak lower as well. Place the addition as far to the rear of the site as possible, and avoid designs that engulf the original building or obscure views of it. One successful approach is to use a low-height connecting corridor or vestibule between the original building and the addition, making the addition in effect a free-standing secondary structure.

Second, make the addition compatible with the original part of the building. Avoid starkly different design elements; draw design cues from the original building. Window proportions, for example, should be the same, though the addition's windows can be smaller in size; roof pitch should be similar, as should roofing material. Avoid odd-shaped windows and doors, and keep the overall design of the addition simpler and less ornamented than the original building. Seek compatibility through use of materials that are similar to those on the original building.

If you are careful in your efforts, your addition will be a success both in providing you with extra space and in accentuating your original building as the primary element of your property.

SELECTING CONTRACTORS AND ARCHITECTS

Selecting qualified people to help you design and carry out a building rehabilitation — or even to do some minor repair work — can be daunting. Some people who represent themselves as experts simply aren't; on the other hand, there are many

competent and skilled people who can provide high-quality services. Finding them may be the hard part.

The South Carolina State Historic Preservation Office (SHPO) provides a list of Preservation Professionals for those seeking professional assistance in historic preservation and cultural resources management. They are not a recommendation for the selection and hiring of a professional, rather merely a statement that individuals and professional firms meet certain criteria. These criteria, known as the "Professional Qualifications Standards", are found in federal regulations at 36 CFR 61. They set forth standards for categories of professionals including archaeology, architectural history, historic architecture, and history. For more information and to view the lists visit <http://shpo.sc.gov/pubs/Pages/profs.aspx>

As with other kinds of professional help, the best approach is to get advice from other building owners who have completed work similar to yours. Which people did they talk to? What firms did they end up selecting? Were they satisfied with the work, and why or why not? Reputable architects and contractors will be happy to provide you with references, but it's up to you to check these thoroughly. Visit completed or in-progress projects, and ask the references for their candid opinions about the people they hired.

It's worth taking the time to talk with people you are considering hiring. Do they have the same attitude or philosophy about older buildings that you do? Are they sensitive to design and technical issues in the same way you are? This issue of compatibility is often overlooked but can be very important.

Once you have selected the people you want to hire, be sure all parties are clear on what is expected. All scopes of work, whether for design services or for actual rehabilitation work, should be in writing, and the amount and schedule for compensation should be stated clearly and agreed to by all. Avoid open-ended arrangements such as "hourly as-needed" or "time and materials" as much as possible. Remember, though, that some older buildings may have unforeseen conditions that make it impossible to fix a price or a scope of work. In these cases, good supervision on your part is important. It's alright to ask questions as work progresses so that you understand what is being done and why.

Good supervision on your part is important no matter what the scope or scale of the project. Try to get as educated as possible on the technical needs of older buildings — this handbook recommends many published sources of good information. Take the time to visit the project frequently — not to interfere or slow things down, but to be sure that work is being done as proposed and that any changes or additions to the work are explained to you. As in any other major purchase, it's your responsibility to be an educated and competent consumer.

SUSTAINABILITY

HISTORIC PRESERVATION & SUSTAINABILITY

Older and historic buildings comprise more than half of the existing buildings in the United States. Retention and adaptive reuse of these buildings preserves the materials, embodied energy, and human capital already expended in their construction. The recycling of buildings is one of the most beneficial “green” practices, and stresses the importance and value of historic preservation in the overall promotion of sustainability.

The historic preservation community applauds the development of the sustainable design movement, but has concerns that standardized tools such as the LEED Green Building Rating System are lacking in how they address historic properties. Specifically, these standards overlook the impact of projects on cultural value; do not effectively consider the performance, longer service lives and embodied energy of historic materials and assemblies; and are overly focused on current or future technologies, neglecting how past experience helps to determine sustainable performance.

The State Historic Preservation Office promotes energy and resource conservation in historic buildings and believes this can be accomplished responsibly without compromising the qualities that define their intrinsic historic character. Resources addressing preservation and sustainability are accessible online at <http://shpo.sc.gov/tech/Pages/sustain.aspx>

ENERGY EFFICIENCY & GREEN BUILDING IN MY HISTORIC PRESERVATION PROJECT

How Do I Know What to Do First?

Think of your energy efficiency measures in three categories:

1. Reduce air infiltration
2. Improve thermal performance of the building materials
3. Maintain an efficient mechanical system

Reduce Air Infiltration

Keeping your conditioned air inside and the outside air out is critical to your feeling of comfort in the building. Outside air leaking into your conditioned space will feel drafty and uncomfortable. The following will reduce air infiltration:

- PRIORITY #1: Add weather stripping to doors and windows
- Caulk the joints around doors and windows on the interior and exterior (don't caulk the horizontal joints between siding boards — they help keep the walls dry)
- Caulk the interior baseboards or if you are removing baseboards for other reasons, you can caulk the joint between the flooring and the sill
- Add gaskets to electrical outlets and switches

Improve Thermal Performance of Building Materials

Improving the thermal performance of the building materials will help maintain a comfortable temperature. Think about how you use gloves, a hat, and a scarf to improve the thermal performance of your clothes in the winter. The following items will help to improve thermal performance:

- PRIORITY #1: Insulate the ceiling of the top floor
- Repair historic windows and add storm windows (interior storms preferred, or exterior) rather than replacing them (some replacement windows can take up to 45 years to pay back the energy saved versus the replacement costs)
- Insulate under the floor of the lowest level
- Exercise extreme caution when adding insulation to the stud cavities of wood frame walls. Improperly installed insulation may trap moisture, cause or accelerate deterioration of the structural frame of the building, support mold growth, and/or cause the exterior paint to fail prematurely. **Before** insulating frame walls consult a building science professional, such as a Certified Energy Manager (CEM) or a Home Energy Rating System (HERS) specialist.

Maintain an Efficient Mechanical System

Retaining an inefficient older mechanical system can actually cost as much as an open window! Newer systems are consistently more and more efficient. Just like most electronic equipment, energy efficiency in mechanical systems is continuously improving.

- PRIORITY #1: Replace your mechanical system if it is more than 15 years old
- Install and use a "set-back" thermostat

Think Outside the Box

Other changes in the way you *use* your building can help, too. Not all energy efficiency measures are architectural. Here are a few common items to consider:

- PRIORITY #1: Replace your refrigerator if more than 15 years old
- Close the damper in your fireplace when not in use
- Add thermal drapes
- Replace your air filters on a regular basis
- Wash dishes or clothes only when you have a full load
- Turn off lights when not in a room and install efficient bulbs in light fixtures that are on a long time each day

■ DISASTER PREPAREDNESS & RECOVERY ■

In addition to their terrible human and economic costs, natural disasters can also wreak havoc on historic properties. A number of resources that are available online provide guidance on preparing for and recovering from hurricanes and other natural disasters.

South Carolina Emergency Management Division / www.scemd.org

The Federal Emergency Management Agency (FEMA) / www.fema.gov

Integrating Historic Property and Cultural Resource Considerations into Hazard Mitigation Planning: State and Local Mitigation Planning How-To Guide
www.fema.gov/plan/ehp/hp/fema386-6.shtm

Repairing Your Flooded Home, a guide prepared by FEMA and the American Red Cross / www.fema.gov/library

Before and After Disasters: Federal Funding for Cultural Institutions, a joint effort of FEMA and Heritage Preservation / www.heritagepreservation.org/pdfs/disaster.pdf

The website for Heritage Preservation's ***Heritage Emergency National Task Force*** includes numerous resources intended for cultural heritage institutions and the general public. / www.heritagepreservation.org/PROGRAMS/TFcurrent.html

Disaster Planning for Florida's Historic Resources, a comprehensive manual for integrating historic preservation into emergency management
www.1000friendsofflorida.org

The website of the Georgia State Historic Preservation Office includes ***After the Flood: Rehabilitating Historic Resources and After the Flood: Rebuilding Communities Through Historic Preservation.***

<http://hpd.dnr.state.ga.us/content/displaycontent.asp?txtDocument=115>

The website of the North Carolina State Historic Preservation Office includes links to multiple information sheets to assist historic property owners in recovering from natural disasters. www.hpo.ncdcr.gov/disaster.htm

The National Trust for Historic Preservation's publications include the ***Treatment of Flood Damaged Older and Historic Buildings*** (FREE) and ***Hurricane Readiness Guide for Owners and Managers of Historic Resources*** (\$6.00). National Trust publications can be ordered at www.preservationbooks.org.

The Crisis Handbook—A Guide to Community Action, published by Preservation Pennsylvania, provides helpful advice for responding to a preservation emergency.
www.preservationpa.org/resources/crisis/index.php

Disaster Planning and Recovery for South Carolina State and Local Government Records, SC Department of Archives & History / <http://arm.scda.sc.gov/disaster>

GRANTS

GRANTS AND TAX INCENTIVES

Several financial incentives are available to owners who preserve historic buildings and sites in South Carolina.

Historic Preservation Grants are federal funds from the US Department of the Interior's National Park Service and are administered by the South Carolina Department of Archives and History. There are two categories of projects: Survey and Planning Projects, and Stabilization Projects. These matching grant programs provide financial support for preservation projects.

Other institutions and organizations have financial incentive programs that support a variety of preservation-related activities.

Federal, state, and local tax incentives encourage the rehabilitation of historic buildings and donation of conservation easements. The State Historic Preservation Office (SHPO) helps owners meet the standards required for these programs. Both owner-occupied homes and buildings used to produce income — stores, offices, apartment buildings, for example — may be eligible for tax incentives.

FEDERAL HISTORIC PRESERVATION GRANTS

Currently, all federal historic preservation grants will be awarded to projects that are in Certified Local Government (CLG) localities only. CLGs may apply for grant funding, as well as third party non-profit organizations that are located within the incorporated limits and have their application signed by the Chief Elected Official of the municipality. Non-CLG availability varies from year to year.

There are two categories of projects: (1) Survey and Planning Projects, and (2) Stabilization Projects. Please note: the following descriptions are very brief and do not include all grant restrictions and requirements.

SURVEY AND PLANNING PROJECTS

Eligible Applicants

Grants may ONLY be used in cities and towns that are CLGs. A CLG may apply, or any non-profit organization or institution within the incorporated limits of a CLG may apply as long as they have the signature of the Chief Elected Official on the application. At least ten percent of the State Historic Preservation Office's federal appropriation from the National Park Service is awarded annually to CLGs in the form of matching grants.

Eligible Projects

Survey and Planning Grants can be used for a variety of historic preservation projects under the following categories:

Identifying, Recording, and Recognizing Historic Properties

- ◆ Surveys to record historic properties with historical or architectural importance in a town or county
- ◆ Studies that identify potential locations of archaeological sites
- ◆ Archaeological surveys of multiple sites
- ◆ National Register nominations for historic districts or multiple properties

Planning for Historic Districts and Multiple Historic Properties

- ◆ Plans for historic districts which may include recommendations for streetscape improvements, landscaping, traffic flow, parking, building use, guidelines for new construction, zoning, gateways, etc.
- ◆ Recommendations for rehabilitating facades in historic districts
- ◆ Preparation of an historic preservation overlay zoning ordinance
- ◆ Preparation of, or revisions to, the historic properties sections of local comprehensive plans

Strengthening Local Government Historic Preservation Programs

- ◆ Development and publication of design guidelines for planning and reviewing changes to locally designated historic properties and new construction in historic districts
- ◆ Writing or amending preservation ordinances
- ◆ Publications to inform and educate property owners in locally designated historic districts

Preservation Education

- ◆ Preservation workshops or conferences
- ◆ Curriculum materials for public schools
- ◆ Walking/driving tours of historic districts, which may include audio-visual programs
- ◆ Publications highlighting historic properties identified through surveys
- ◆ Audio-visual programs about local historic properties
- ◆ Technical assistance programs for owners of historic properties

Planning for Individual Historic Properties

- ◆ Feasibility and adaptive re-use studies for a historic building
- ◆ Conditions assessment for a historic building
- ◆ Plans and specifications for repairs to a historic building
- ◆ Studies and management plans for archaeological sites

STABILIZATION PROJECTS

Building Stabilization Projects

CLG grant funds may be used to help pay for stabilization repairs to National Register-listed buildings (**excluding churches and church-owned property**). Examples of eligible projects include replacing a leaking roof, repairing the structural framework of a building, and repairing deteriorated doors and windows to make a building watertight. Routine maintenance, climate control, and plumbing/electrical are not eligible for funding. Interior work is not eligible unless it is structural. All work must meet the *Secretary of the Interior's Standards for Rehabilitation*.

GRANT REQUIREMENTS

Match and Reimbursement

Because these are 50/50 reimbursable matching grants, each grant applicant must demonstrate a dollar-for-dollar match and pay for the project costs up front. Matching funds must be from any non-federal source, except in the case of Community Development Block Grant funds and certain tribal funds. The South Carolina Department of Archives and History will reimburse grantees after it approves the project work and receives appropriate documentation of expenditures.

Selection Process

Grants are awarded on a competitive basis through a review process that considers the merits of each application based on the selection criteria.

A committee made up of SHPO staff will review applications. The committee will rank applications according to the selection criteria. Applications will be funded in the order that they are ranked until all available funds are depleted. The SHPO will seek the concurrence of the South Carolina Archives and History Commission before awarding grants.

More information about historic preservation grants is available online at
<http://shpo.sc.gov/programs/Pages/Grants.aspx>

OTHER FINANCIAL INCENTIVES

Please note: the following descriptions are very brief and do not include all grant restrictions and requirements.

Preserve America Grants

Eligible applicants for these federal grants include designated Preserve America communities and neighborhoods, Certified Local Governments (CLGs) in the process of applying for Preserve America designation, State Historic Preservation Offices, and Tribal Historic Preservation Offices. The grants, which are administered by the National Park Service, support preservation efforts through heritage tourism, education, and historic preservation planning. Each grant requires a dollar-for-dollar match. The minimum grant request is \$20,000; the maximum grant request is \$150,000. More information about Preserve America communities and the Preserve America grants program is available at
<http://www.nps.gov/history/hps/hpg/preserveamerica/index.htm>

Preservation Services Fund Grants

Administered by the National Trust for Historic Preservation, these grants are awarded to nonprofit organizations and public agencies for preservation planning and education efforts. The matching grants range from \$500 to \$5,000 (typically from \$1,000 to \$1,500). Funds may be used to obtain professional expertise in areas such as architecture, archaeology, engineering, preservation planning, land-use planning, fund raising, organizational development, and law as well as preservation education activities to educate the public. Application deadlines are February 1, June 1, and October 1. For more information, contact the Southern Office of the National Trust for Historic Preservation at 843-722-8552 or soro@nths.org and the National Trust website at <http://www.preservationnation.org/resources/find-funding/>.

Save America's Treasures Grants

These grants, which are administered by the National Park Service, are awarded for preservation work on nationally significant historic structures and sites. Grant amounts range from \$250,000 to \$1 million. All the awards must be matched. Nonprofit organizations, units of state or local government, federally recognized Indian Tribes, and some federal agencies are eligible to apply. The State Historic Preservation Office reviews plans for funded projects. More information about Save America's Treasures grants is available at www.nps.gov/history/hps/treasures/.

South Carolina Conservation Bank Grants

The Conservation Bank was created to protect the state's significant natural resource lands, wetlands, historical properties, and archaeological sites. The Bank will provide grants or loans for the outright purchase of a property or the acquisition of an easement to protect a property. Eligible recipients of the grants include not-for-profit charitable corporations or trusts whose principal activity is the acquisition and management of interests in land for conservation or historic preservation purposes; municipalities of the state; the SC Department of Natural Resources; the SC Forestry Commission; and the SC Department of Parks, Recreation and Tourism. There must be some provision for public access to the property that is protected. There are two application cycles each year with deadlines on March 31 and July 31. For more information visit the Conservation Bank website at <http://sccbank.sc.gov/>.

HISTORIC PRESERVATION TAX INCENTIVES

The descriptions that follow are brief and do not include all of the detailed requirements for each program. Taxpayers/owners should read the other sources of information indicated at the end of each description and consult with an accountant or other professional tax advisor for help in determining whether the programs will be of benefit to them. For rehabilitation projects, contact the State Historic Preservation Office (SHPO) early in the planning process. Some of the programs require approval before work begins.

20% Federal Historic Rehabilitation Tax Credit

Owners and some lessees of income-producing buildings listed in the National Register may be eligible for a federal income tax credit equal to 20% of their rehabilitation expenses under the Tax Reform Act of 1986. For more information visit the SHPO website (<http://shpo.sc.gov/programs/tax/Pages/Income.aspx>) and the National Park Service website (www.nps.gov/tps/tax-incentives.htm).

10% State Historic Rehabilitation Tax Credit

In South Carolina, taxpayers who qualify for the 20% federal income tax credit may also qualify for a state income tax credit of 10% of their rehabilitation costs under the South Carolina Rehabilitation Incentives Act. For more information visit the SHPO website (<http://shpo.sc.gov/programs/tax/Pages/Income.aspx>).

Easement Donations

The federal Internal Revenue Code also provides for federal income, estate, and gift tax deductions for charitable contributions of partial interests in a historic structure that is listed in the National Register or a "historically important land area." For more information visit the SHPO website (<http://shpo.sc.gov/programs/tax/Pages/Easements.aspx>) and the National Park Service website (www.nps.gov/tps/tax-incentives.htm).

25% State Historic Rehabilitation Tax Credit

Under the South Carolina Historic Rehabilitation Incentives Act, owners who rehabilitate their historic residences that are listed in or individually eligible for the National Register may be eligible to subtract 25% of the costs of many expensive repairs and renovations from their state income taxes. For more information visit the SHPO website (<http://shpo.sc.gov/programs/tax/Pages/Homeowner.aspx>).

Local Property Tax Abatement

Some local governments have implemented ordinances providing special property tax assessments to encourage the rehabilitation of historic buildings within their jurisdiction. These ordinances allow the local government to place a temporary ceiling on the assessed value of a historic building that has been substantially rehabilitated. The state enabling legislation for this program (Section 4-9-195) is often referred to as the "Bailey Bill." Check with your local government to determine if it has passed an ordinance and for details about its incentive program.

10% Federal Non-Historic Rehabilitation Tax Credit

This credit, created by the Tax Reform of 1986, is available for the rehabilitation of buildings constructed before 1936 that are not listed in the National Register. The 10% credit applies only to buildings rehabilitated for non-residential uses. No State Historic Preservation Office or National Park Service review of work is required for these projects. More information about the 10% federal credit is available on the National Park Service website (<http://www.nps.gov/tps/tax-incentives.htm>).

Tax Incentives for Rehabilitating Textile Mill Buildings

The South Carolina Textiles Communities Revitalization Act (Section 6-32-10, S.C. *Code of Laws*) provides tax incentives to encourage the renovation and redevelopment of abandoned textile mill sites. A taxpayer who meets the requirements of the law and improves, renovates, or redevelops an abandoned textile mill building may be eligible for one of two tax credits: a credit against local property taxes equal to 25% of rehabilitation expenses or a state income tax credit equal to 25% of rehabilitation expenses. For more information visit the SHPO website (<http://shpo.sc.gov/programs/tax/Pages/TextileMill.aspx>).

Federal Income Tax Credit for Low Income Housing

The Tax Reform Act of 1986 also created an income tax credit for acquisition, construction, or rehabilitation of low income housing. For more information, contact the State Housing Finance and Development Authority (www.sha.state.sc.us), which allocated the Low Income Housing Credits in South Carolina.

READING LIST AND ORGANIZATIONS

BASIC PRESERVATION READING LIST

APT Bulletin: the Journal for Preservation Technology is published three times a year by the Association for Preservation Technology (APT) and features up-to-date information regarding advances in preservation technology. Feature articles and book reviews keep readers current on preservation issues. The journal is a benefit of membership in APT or back issues are available through JSTOR, a not-for-profit online digital archive.

Association for Preservation Technology
3085 Stevenson Drive
Suite 200
Springfield, IL 62703
217-529-9039
www.apti.org

Preservation Magazine is published bi-monthly by the National Trust for Historic Preservation. The magazine is a benefit of membership in the National Trust or back issues can be ordered from the address below. The publication covers current preservation issues, legislation, funding, design, heritage tourism, heritage education and other preservation concerns.

National Trust for Historic Preservation
1785 Massachusetts Avenue N.W.
Washington, D.C. 20036
202-588-6000
www.preservationnation.org/magazine

Old House Journal is a bi-monthly publication full of practical ideas for repair, rehabilitation and restoration of older structures. It mainly focuses on residential architecture, although much of the information is applicable to commercial and institutional structures as well. Many of the articles are presented in a "how-to" format especially helpful for those working on their own buildings.

Old House Journal
4125 Lafayette Center Drive
Suite 100
Chantilly, VA 20151
800-826-3893
www.oldhousejournal.com

Traditional Building is a bi-monthly publication focusing on products for repair, maintenance and restoration of older buildings. The publication is targeted toward professionals (architects, designers, builders) involved in rehabilitation and restoration. It includes articles and source lists for materials. A different topic is highlighted in each issue.

Traditional Building
45 Main Street
Suite 705
Brooklyn, NY 11201
718-636-0750
www.traditional-building.com

The Secretary of the Interior's Standards for Historic Preservation with Guidelines for Applying the Standards. This is the full publication from which the rehabilitation standards in this publication were taken.

Order No. 024-005-01157-9
Superintendent of Documents
U.S. Government Printing Office
Washington, D.C. 20402
866-512-1800
www.nps.gov/history/hps/tps/standguide

Preservation Briefs are a series of short technical brochures addressing a variety of physical preservation and design problems. The Briefs are published by the National Park Service and are available from the South Carolina Department of Archives and History. An individual may order up to five briefs for no charge. The National Park Service continues to add to this series. Contact the department for a current list of titles. These are also available online at <http://www.nps.gov/tps/how-to-preserve/briefs.htm>.

- #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 *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*
- #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*
- #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 of Historic Buildings*
- #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 and Repair 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*
- #38 *Removing Graffiti from Historic Masonry*
- #39 *Holding the Line: Controlling Unwanted Moisture in Historic Buildings*
- #40 *Preserving Historic Ceramic Tile Floors*
- #41 *The Seismic Retrofit of Historic Buildings: Keeping Preservation in the Forefront*
- #42 *The Maintenance, Repair and Replacement of Historic Cast Stone*
- #43 *The Preparation and Use of Historic Structure Reports*
- #44 *The Use of Awnings on Historic Buildings; Repair, Replacement, and New Design*
- #45 *Preserving Historic Wood Porches*
- #46 *The Preservation and Reuse of Historic Gas Stations*
- #47 *Maintaining the Exterior of Small and Medium Size Historic Buildings*

Preservation Tech Notes are published by the National Park Service and are available through the State Historic Preservation Office and online at <http://www.nps.gov/tps/how-to-preserve/technotes.htm>. Relevant Tech Notes are listed below.

Masonry (#1) Substitute materials to replace deteriorated serpentine stone with pre-cast concrete

Doors (#1) Historic garage and carriage doors

Windows (#17) Repair and retrofit industrial steel windows

Exterior woodwork (#2) Paint removal on historic wood buildings

Exterior woodwork (#3) Log crown repair and selective replacement using epoxy and fiberglass reinforcing rebars

Metals (#1) Conserving outdoor bronze sculpture

Mechanical Systems (#1) Replicating historic elevator enclosures

Historic Interior Spaces (#2) Preserving historic office building corridors

The National Register of Historic Places

National Register listing honors a property by recognizing its importance to its community, the state or the nation. This recognition increases local awareness of the value of historic properties and can validate and spur preservation efforts. More information about the National Register is available online at <http://www.nps.gov/history/nr/index.htm>.

The National Register of Historic Places Bulletins

These bulletins provide guidance to document, evaluate and nominate historically significant sites to the National Register. Available online at <http://www.nps.gov/history/nr/publications/index.htm#bulletins>.

OTHER USEFUL PUBLICATIONS AVAILABLE FROM THE SOUTH CAROLINA STATE HISTORIC PRESERVATION OFFICE

Preservation Hotlines

These are also available online at <http://shpo.sc.gov/pubs/Pages/Hotlines.aspx>. Relevant Preservation Hotlines are listed below.

#1 *How to Nominate a South Carolina Property to the National Register of Historic Places*

Outlines the procedures you should follow if you wish to place your property in nomination for listing on the National Register.

#2 *National Register Listing/Local Designation*

Compares National Register listing to local government designation of historic properties. Lists the benefits of each.

#5 *Protecting Historic Properties with Conservation Easements*

Learn how easements encourage owners to preserve historic properties.

#8 *Tracing the History of Your Historic Building*

Outlines sources of information that can help piece together a building's history.

#9 *Selecting a Consultant for Cultural Resource Surveys and Evaluations*

Basic guidance for selecting a cultural resource consultant, including suggested questions for references.

#10 *Frequently Asked Questions About Local Historic Districts*

Answers questions and dispels myths about local historic district zoning overlays.

#11 *Tax Savings for Owners of Historic Buildings*

Describes the local, state and federal tax incentives that are available to help owners rehabilitate historic properties.

Technical Leaflets

No. 1: Window Survey

Supplies steps and a sample form to help you describe the condition of existing windows when planning for their repair or replacement.

No. 2: Replacement Windows: Documentation Requirements

Describes the information needed by the State Historic Preservation Office to review proposed replacement windows.

Publications

Smiling Faces Historic Places: The Economic Benefits of Historic Preservation in South Carolina. This booklet describes how historic preservation activity benefits the state and includes case studies. <http://shpo.sc.gov/pubs/Pages/default.aspx>

Historic Districts are Good for Your Pocketbook: The Impact of Local Historic Districts on House Prices in South Carolina. Describes the results of four studies in communities around South Carolina on the positive impact local historic district designation has on property values. Available only online at <http://shpo.sc.gov/pubs/Pages/default.aspx>

A Financial Incentives Guide for South Carolina's Historic Resources. Compiled by the SHPO, this guide includes a variety of sources that may provide financial assistance to historic preservation projects. Also available online at <http://shpo.sc.gov/programs/Documents/hpfinancialincent.pdf>

Make Your Dream a Reality. Many successful building rehabilitation projects begin with no more than a dream. The guidance found in this booklet is intended to provide a path to your dream's reality. In it, you will find critical steps that will help ensure your project's success. Available online at <http://shpo.sc.gov/pubs/Pages/default.aspx>

BUILDING STYLES READING LIST

American Buildings and Their Architects. Garden City, N.Y.: Doubleday, 1970. Five volumes. This series covers architectural history in the United States from the colonial era to the present.

Volume 1: *The Colonial and Neoclassical Styles.* New York: Oxford University Press, 1986.

Volume 2: *Technology and the Picturesque, the Corporate and the Early Gothic Styles.* New York: Anchor Press for Doubleday, 1980.

Volume 3: *The Architecture of Abundance.* Not yet published.

Volume 4: *Progressive and Academic Ideals at the Turn of the Twentieth Century,* 420 pp.
William H. Jordy, 1972.

Volume 5: *The Impact of European Modernism in the Mid-Twentieth Century,* 469 pp.
William H. Jordy, 1972.

Gowans, Alan. *The Comfortable House: North American Suburban Architecture, 1890-1930.* Cambridge, Mass: MIT Press, 1986. ISBN 0-262-57076-9. Discusses the social aspects of American suburban architecture — how architecture expressed Americans' aspirations, their feeling of optimism and self-confidence.

Howard, Hugh. *How Old Is This House?: A Skeleton Key to Dating, Identifying, and Understanding Three Centuries of the American House.* New York: Farrar, Straus, and Giroux, 1989. ISBN 0-374-52179-4. Examines architectural styles and construction details as tools to determine the construction date of historic buildings.

Howe, Barbara J. *Houses and Homes: Exploring Their History.* American Association for State and Local History book series. Walnut Creek, CA: AltaMira Press, 1997. ISBN 0-91-005084-8. Provides research techniques and an historical framework to help compose a house history; gives tips on examining written records and analyzing the

- house itself.
- Jennings, Jan, and Herbert Gottfried. *American Vernacular Interior Architecture, 1870-1940*. Iowa State University Press, 1993 edition of 1988 text. ISBN 0-44-222810-4. Describes and classifies the interior vernacular features (walls, floors, ceilings), support systems (lighting, plumbing) and design aesthetics that dominated American homes and public buildings from 1870-1940.
- Klein, Marilyn W., David P. Fogle, and Wolcott B. Etienne. *Clues to American Architecture*. Washington, DC: Starrhill Press, 1986. ISBN 0-91-351518-3. Introduces the most prevalent types of American architecture from colonial times to the present using descriptions and line drawings to identify a building's architectural style.
- McAlester, Virginia, and A. Lee McAlester. *A Field Guide to American Houses*. New York: Knopf, 1984. ISBN 0-394-73969-8. Each chapter discusses one of the major styles in American houses with a drawing showing three or four identifying features of the style.
- Phillips, Steven J. *Old-House Dictionary: An Illustrated Guide to American Domestic Architecture, 1600-1940*. Lakewood, Colo: American Source Books, 1989. ISBN 0-89133-171-9. Designed and illustrated for the nonprofessional.
- Pierson, William Harvey, and William H. Jordy. *American Buildings and Their Architects*. Garden City, N.Y.: Doubleday, 1970.
- Poppeliers, John C., S. Allen Chambers, and Nancy B. Schwartz. *What Style Is It?: A Guide to American Architecture*. Washington, D.C.: Preservation Press, 1983. ISBN 0-89133-116-6. An overview of styles, this book gives a concise look at the history and appearance of American buildings with chapters on the 22 most important styles.
- Stevenson, Katherine H., and H. Ward Jandl. *Houses by Mail: A Guide to Houses from Sears, Roebuck and Company*. Washington, D.C.: Preservation Press, 1986. ISBN 0-89133-124-7. Discusses the history of mail order houses from Sears, Roebuck and Company and includes a detailed guide to the various house types.
- Stickley, Gustav. *Craftsman Homes: Architecture and Furnishings of the American Arts and Crafts Movement*. New York: Dover Publications, 1979. ISBN 0-486-23791-5. A reprint of Stickley's classic work on Craftsman architecture and furniture.
- Wells, John E., and Robert E. Dalton. *The South Carolina Architects, 1885-1935: A Biographical Dictionary*. Richmond, Va: New South Architectural Press, 1992. ISBN 1-882595-00-9.
- Whiffen, Marcus. *American architecture since 1780: a guide to the styles*. Cambridge, Mass.; London: The M.I.T. Pr, 1988. ISBN 0-262-73097-9. A laymen's guide to American architectural styles divided into six major historical periods.

PROJECT PLANNING READING LIST

- Auer, Michael. *The Interiors Handbook for Historic Buildings: Volume II*. Washington, DC: Historic Preservation Education Foundation, 1993.
- Bernhard, Sandy, and Tom Ela. *The House Journal: Recording the Challenges of Caring for Your Home*. Washington, D.C.: Preservation Press, National Trust for Historic Preservation, 1993. Written by a systems planning consultant and a construction firm owner to help homeowners apply the principles of historic preservation to all houses.
- Chambers, J. Henry. *Cyclical Maintenance for Historic Buildings*. [Washington, D.C.] Interagency Historic Architectural Services Program, Office of Archeology and Historic Preservation, National Park Service, U.S. Dept. of the Interior, 1976. Provides a step-by-step process for building managers, architects, and others involved in routine maintenance of historic properties.
- Cullinane, John J. *Understanding Architectural Drawings: A Guide for Non-Architects*. Washington, D.C.: Preservation Press, National Trust for Historic Preservation, 1993. A guide for homeowners, members of design review boards or anyone unfamiliar with architectural terms and drawings. Contains drawings with explanations and a glossary.
- Elliott, Lynn. *The Old-House Journal Restoration Directory*, 1995. Gloucester, MA: Dovetail Publishers, 1994.
- Fisher, Charles E., Michael Auer, and Anne E. Grimmer. *The Interiors Handbook for Historic Buildings*. Washington, D.C.: Historic Preservation Education Foundation, 1988. A large loose-leaf binder with sections covering a range of topics from planning the project to fire protection; includes manufacturers and a bibliography.
- Kay, Gersil Newmark. *Mechanical & Electrical Systems for Historic Buildings: Profitable Tips for Professionals, Practical Information for Preservationists*. New York: McGraw-Hill, 1992. Describes how to install new systems with the least damage to original building fabric.
- Leighton, Ann. *American Gardens of the Nineteenth Century: "for Comfort and Affluence"*. Amherst: University of Massachusetts Press, 1987. ISBN 0-87023-533-8. About the early botanists, the rise of public landscaped gardens and special gardens (one color or rock work) with an appendix of 19th century garden plants.
- Moss, Roger W. *Lighting for Historic Buildings: A Guide to Selecting Reproductions*. Washington, D.C.: Preservation Press, 1988. ISBN 0-89133-131-X. A catalog of reproductions of historic lighting fixtures with a brief historic overview of the development of interior lighting and solutions for various lighting problems.
- National Trust for Historic Preservation. *Maintaining Your Old House Attic to Basement*. Washington, D.C.: The Preservation Press, 1993. 48 minute VHS videotape with 39 page booklet. Gives advice on where to look for and prevent problems in an old house, as well as how to remedy problems once they occur.
- The 1994 Old House Journal Restoration Directory*, 345 pp. Gloucester, MS: Dovetail Publishers. ISBN 0-942202-26-0. Catalog lists companies that sell services and products useful in the rehabilitation of old houses.

- Nylander, Jane C., and Richard C. Nylander. *Fabrics and Wallpapers for Historic Buildings*. Hoboken, NJ: Wiley, 2005. ISBN 0-89133-175-1. Contains information on locating historic fabrics and selecting appropriate fabrics for period furniture. Includes a catalog of more than 600 fabric types and patterns and a chapter on 20th-century fabrics.
- Nylander, Richard C. *Wallpapers for Historic Buildings: A Guide to Selecting Reproduction Wallpapers*. Washington, D.C.: Preservation Press, 1983. ISBN 0-89133-193-X. Tells how to select the right wallpaper for an old or historic house and provides a catalog of more than 350 authentically reproduced designs.
- Poore, Patricia. *The Old-House Journal Guide to Restoration*. New York, N.Y., U.S.A.: Dutton, 1992. ISBN 0-525-93551-7. A reference source book specifically designed for the old house owner, it covers all aspects of old-house ownership, from the purchase to repair and maintenance.
- Rhode Island Historical Preservation Commission and Pamela A. Kennedy. *Easy Guide to Rehab Standards / [Prepared by Pamela A. Kennedy]*. Providence, R.I.: The Commission, 1992. A summary of the principles which should guide the rehabilitation of historic buildings. Part I answers questions about zoning and Part II helps you analyze a building to determine which elements are part of its historic quality.
- Stephen, George. *New Life for Old Houses*. Landmark reprint series. Washington, D.C.: Preservation Press, National Trust for Historic Preservation, 1989. ISBN 0-89133-149-2. This book explains functional and design issues from how to finance a project to retrofitting for energy conservation.
- _____. *Respectful Rehabilitation: Answers to Your Questions About Old Buildings*. Washington, D.C.: Preservation Press, 1982. ISBN 0-89133-103-4. Here are the answers to 150 of the most often-asked questions about rehabilitation.
- _____. *The Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings*. Washington, D.C.: U.S. Dept. of the Interior, National Park Service, Heritage Preservation Services, 2000. GPO stock number: 024-005-01091-2. In the "Recommended" and "Not Recommended" columns are techniques and materials that should and should not be used on building interiors and exteriors along with some discussion of health and safety requirements.
- Von Rosentiel, Helene, and Gail Caskey Winkler. *Floor Coverings for Historic Buildings: A Guide to Selecting Reproductions*. New York: J. Wiley, 1996. ISBN 0-89133-130-1. Explains how to research floor coverings that may have been used previously in a room and how to go about finding a suitable reproduction.
- Winkler, Gail Caskey, and Roger W. Moss. *Victorian Interior Decoration: American Interiors, 1830-1900*. New York: H. Holt, 1986. ISBN 0-8050-0078-X. Describes the kinds of wall and window treatments the original builder may have used, what color schemes were popular, what floor coverings used, what sort of draperies and shutters covered windows, etc.

HISTORIC BUILDING MATERIALS READING LIST

Building Conservation International. The following seven videos are available from Building Conservation International at 1901 Walnut Street, Apt 902, Philadelphia, PA 19103.

(215) 568-0315

*Christ Church • Ornamental Painting • Ornamental Plastering • Ornamental Wrought Iron
Polychrome Slate Roofing • Retrofitting Light Fixtures • Stained Glass Restoration*

Gayle, Margot, and John G. Waite. *Metals in America's Historic Buildings: Uses and Preservation Treatments*. Washington, D.C.: U.S. Dept. of the Interior, National Park Service, Cultural Resources, Preservation Assistance, 1992. ISBN 0-16-038073-1. Part I presents short, illustrated surveys of the architectural metals most often used in American buildings. Part II examines how architectural metals deteriorate and offers effective techniques to preserve and maintain historic metal components.

London, Mark. *Masonry: How to Care for Old and Historic Brick and Stone*. Respectful rehabilitation. Washington, D.C.: Preservation Press, 1988. ISBN 0-89133-125-5. Explains how to care for old brick and stone structures, describing when to repoint, when to clean, and how to control moisture.

Marx, Ina Brosseau, Allen Marx, and Robert Marx. *Professional Painted Finishes*. New York: Whitney Library of Design, 1991. ISBN 0-82-304418-1. Set includes one book and six videos: *Marbling I, Marbling II, Marbling & Stones, Graining, Graining II and Glazing*.

Miller, Judith, Martin Miller, James Merrell, and Freda Parker. *Period Design & Furnishing*. New York: Crown Publishers, 1989. A pictorial guide to creating a period look through the use of furnishings, wall coverings and fabrics.

Myers, Denys Peter. *Gaslighting in America: A Guide for Historic Preservation*. Washington: U.S. Dept. of the Interior, Heritage Conservation and Recreation Service, Office of Archeology and Historic Preservation, Technical Preservation Services Division, 1978. Reissued by Dover Publications, Mineola, N.Y., 1990. Surveys the types and styles of gas fixtures for rooms and streets that were used in the 19th and early 20th centuries.

New York Landmarks Conservancy. *Repairing Old and Historic Windows*. Washington, D.C.: Preservation Press, National Trust for Historic Preservation, 1992. ISBN 0-89133-185-9. Windows are part of nearly all rehabilitations and the problems of repair versus replacement are presented here with practical information for the professional and homeowner.

Phillips, Morgan W., and Judith E. Selwyn. *Epoxies for Wood Repairs in Historic Buildings*. Washington: Office of Archeology and Historic Preservation, Heritage Conservation and Recreation Service, U.S. Dept. of the Interior, Technical Preservation Services Division, 1978. NTIS order number PB85-180834. Presents research, findings on the use of epoxies to preserve historic wood features rather than replace them.

Robson, Patrick. *Structural Appraisal of Traditional Buildings*. Aldershot, Hants, England: Gower Technical, 1991. ISBN 0-566-09081-3. A guide to the common causes of structural damage that helps predict the effects of the damage.

Schwin, Lawrence. *Old House Colors: An Expert's Guide to Painting Your Old (or Not so Old) House*. New York: Sterling Pub. Co, 1990. ISBN 0-8069-7430-3. Describes authentic exterior colors of houses, using examples of good American Architecture, but not the finest houses.

Shivers, Natalie W. *Walls & Molding: How to Care for Old and Historic Wood and Plaster*. Respectful rehabilitation. Washington, D.C.: Preservation Press, 1990. ISBN 0-89133-155-7. Gives the history of plaster molding, shaped woodwork and colorful painted finishes and explains how to save and revive them.

U.S. Department of the Interior, National Park Service and the Center for Architectural Conservation, Georgia Institute of Technology. *The Window Handbook: Successful Strategies for Rehabilitating Windows in Historic Buildings*. Sixteen Technical Notes, by different authors, are grouped by subject in a loose-leaf binder. Collected with an introduction in 1992.

Van Den Branden, Felicien, Thomas L. Hartsell, and Felicien Van Den Branden. *Plastering Skills*. Alsip, Ill: American Technical Pub, 1984. ISBN 0-8269-0657-5. Covers all kinds of plasterer's techniques.

Wellikoff, Alan. *The Historical Supply Catalogue: A Nineteenth-Century Sourcebook*. Charlotte, VT: Camden House, 1993. ISBN 0-944475-44-2.

Winkler, Gail Caskey, and Charles E. Fisher. *The Well-Appointed Bath: Authentic Plans and Fixtures from the Early 1900s*. Landmark reprint series. Washington, D.C.: Preservation Press, National Trust for Historic Preservation, 1989. ISBN 0-89-133151-4. Presents authentic plans and bathroom fixtures from the early twentieth century.

SPECIAL PROBLEMS: BUILDING CODES, ACCESS FOR DISABLED, ETC. READING LIST

Curtis, John Obed. *Moving Historic Buildings*. Washington: U.S. Dept. of the Interior, Heritage Conservation and Recreation Service, Technical Preservation Services Division, 1979, reprinted 1991. When moving is the only way to save a historic structure, the building loses its integrity of setting. This report explains the best procedures to follow to cause the least damage to the character and fabric of the building.

Fallon, Stacie Alexander. *Getting the Lead Out: State Policy on Lead Paint*. Lombard, Ill: Midwestern Legislative Conference, Council of State Governments, 1993. Examines the dimensions of the lead poisoning problem, an overview of federal legislation, and the states' legislative response to the problem. Contains a case study of Massachusetts' legislative efforts to combat lead poisoning.

Grimmer, Anne E. *Keeping It Clean: Removing Exterior Dirt, Paint, Stains, and Graffiti from Historic Masonry Buildings*. Washington, D.C.: U.S. Dept. of the Interior, National Park Service, Preservation Assistance Division, Technical Preservation Services, 1988. This technical discussion identifies building materials, stains to be removed and test cleaning procedures.

Haynes, Wesley, Andrew Rudin, and J. Thomas Ryan. *Inspecting and Maintaining Religious Properties*. New York: The Conservancy, 1991.

National Trust for Historic Preservation. *The Impact of the Americans with Disabilities Act on Historic Structures*. Information Series No. 55, 1991. One of the 48 titles available in binder: See National Trust for Historic Preservation Information Series in Section C.U.S. Department of the Interior, National Park Service. Accessibility and Historic Preservation: Resource Guide. National Park Service, et al. A loose-leaf notebook with a wide range of information, (including the current laws) about making historic properties accessible to persons with disabilities and a video, *Entrances to the Past*, illustrating means of access.

_____. *Preserving the Past and Making it Accessible to Everyone: How Easy a Task?* 12 pp. Washington, DC: A Cultural Resources Management Supplement, 1991. Discusses the accessibility requirements for public historic properties and the need for careful planning to serve the disabled while preserving the historic character of buildings.

_____. *Safeguarding Your Historic Site: Basic Preparedness and Recovery Measures for Natural Disasters: Developed Through the Experiences of the Historic Districts of Nantucket, Massachusetts and Montpelier, Vermont*. Boston, Mass: Federal Emergency Management Agency, Region I, 1993. A step-by-step guide to disaster preparation and recovery and repair in its aftermath.

HELPFUL AGENCIES AND ORGANIZATIONS

Association for Preservation Technology

3085 Stevenson Drive
Suite 200
Springfield, IL 62703
217-529-9039
www.apti.org

The Association for Preservation Technology International (APT) is a cross-disciplinary, membership organization dedicated to promoting the best technology for conserving historic structures and their settings.

National Center for Preservation Technology and Training

645 University Parkway
Natchitoches, LA 71457
318-356-7444
www.ncptt.nps.gov

The National Center for Preservation Technology and Training (NCPTT) protects America's historic legacy by equipping professionals in the field of historic preservation with progressive technology-based research, education and training.

National Trust for Historic Preservation
Southern Regional Office
William Aiken House
456 King Street
Charleston, South Carolina 29403
803-722-8552
www.preservationnation.org

The National Trust for Historic Preservation is a private, non-profit preservation organization which was established by Congress in 1949. The Trust promotes historic preservation nationwide through its ownership and management of historic properties; workshops, seminars and other educational programs; the National Main Street Center for downtown revitalization; Rural Conservation program for rural areas; grant assistance programs; and its preservation press and bookstore. Technical assistance is provided to communities and organizations through its network of regional offices.

Main Street South Carolina
Municipal Association of South Carolina
P.O. Box 12109
Columbia, SC 29211
803-799-9574
www.masc.sc/programs/knowledge/Pages/Main-Street-SC.aspx

Main Street South Carolina advocates revitalization of downtowns, neighborhood commercial districts and cities/towns into vibrant centers of commerce and community. Main Street South Carolina follows the National Main Street's Four Point Approach — Organization, Promotion, Design and Economic Restructuring.

Palmetto Trust for Historic Preservation
8301 Parklane Road
Columbia, SC 29223
803-896-6234
www.palmettotrust.org

The Palmetto Trust for Historic Preservation is a non-profit organization that was established to increase awareness and appreciation of the state's historic resources and is the only statewide partner with the National Trust for Historic Preservation.

State Historic Preservation Office
South Carolina Department of Archives and History
8301 Parklane Road
Columbia, SC 29223
803-896-6100
<http://shpo.sc.gov>

South Carolina's State Historic Preservation Office (SHPO) was established in the South Carolina Department of Archives and History in 1969 in response to the National Historic Preservation Act of 1966. Its professional staff administers federally mandated preservation programs such as the National Register of Historic Places; the Certified Local Government; design review of projects using the 20 and 25 percent Investment Tax Credit for historic rehabilitation; and ongoing survey and planning efforts statewide.

Local Historical Societies, Historic Preservation Organizations, and Design Review Boards

A number of South Carolina communities have both private organizations that promote community history and/or historic preservation activities at the local level, as well as official design review boards which are established by a community to oversee changes to its individually designated historic structures and within any designated historic districts. The South Carolina State Historic Preservation Office (see above listing) maintains a list of these organizations throughout the state.

GLOSSARY

BALUSTER / A vertical support post for a railing.

BALUSTRADE / A railing and its supporting balusters; may include intervening piers.

BARGEBOARD / Ornamental trim piece along a roof at the gable.

BRACKET / A projecting member, often decorative, that supports an overhanging element such as a cornice.

BULKHEAD / The area below the display window in a commercial storefront.

CASEMENT WINDOW / A window that swings inward or outward on side hinges.

CLAPBOARD / One of several forms of beveled siding, which is thin at the top and thicker at the lower edge. Weatherboards are similar but of greater width.

COLUMN / A round, vertical support member, usually with ornamentation or stylistic treatment; it may be fluted or smooth.

CORBEL / A bracket or support produced by courses of wood or masonry extending in successive stages from a wall surface.

CORNERBOARD / A vertical flat wood element, sometimes with beading or other ornamentation, used to cover or abut siding at a frame building's corners.

CORNICE / The projecting uppermost portion of a wall, often treated in a decorative manner with brackets or other ornamentation.

DENTIL / One of a row of small, tooth-like blocks used as part of the ornamentation in a frieze or cornice.

DORMER / An upward projection in a roof surface, usually gabled and containing one or more windows.

DOUBLE-HUNG WINDOW / A window with two balanced sashes, each sliding vertically over the other so that either the upper or the lower portion of the window can be left open.

DRIP EDGE / A projection at the lower edge of a surface such as a wall or roof, with an undercut edge to force rainwater to drip away from a building.

EAVES / The lower portion of the sloping surface of a roof, especially the part that overhangs a building's wall.

FACADE / The "face" or main elevation of a building.

FANLIGHT / A semi-elliptical or semi-circular window, usually over a door. When filled with radiating wood vanes rather than glass it is called a "fan."

FASCIA / A flat horizontal wood member, placed on edge and covering the ends of roof rafters or placed in a cornice area.

FLASHING / Flat metal or other material used to keep water from penetrating the joint between a roof and a projection or interruption such as a chimney or a change in pitch.

FOUNDATION / The part of a structure that is in direct contact with the ground and serves to transmit the load of the structure to the earth.

FRIEZE / A long, narrow panel on a wall, used primarily for ornamentation, usually found just below the point where the wall surface meets the roof.

HOODMOLD / A decorative projecting element placed over a window; it may extend down the sides of the window as well as over the top.

IN-KIND / Replacement of a building element with a new one of the same material, design, size, appearance, and finish.

JOIST / Horizontal framing members that run parallel to each other from wall to wall. Joists can support a floor or a ceiling.

LATTICE / A screen or grille, usually of wood, made of intersecting or overlapping strips.

LINTEL / A horizontal structural element at the top of a window or door. In masonry buildings, lintels may be of wood, stone, or metal; in frame buildings lintels usually are of wood only.

MULLION / A vertical division, often structural, between a series of windows or doors.

MUNTIN / Horizontal and vertical elements of wood or metal that divide a window into individual lights or panes.

ORNAMENTATION / Architectural elements not necessary for structural or practical purposes which are added to a design to provide visual variety and interest.

PALLADIAN WINDOW / A design in which a central arched window is flanked by two smaller rectangular windows.

PARAPET / The portion of an exterior wall that rises above the roof. Usually in the form of a low wall, a parapet may be shaped, stepped, or plain.

PEDIMENT / A triangular architectural form often found over windows and doors or in the gable end of a building. Sometimes the upper portion is curved.

PIAZZA / In Italian, refers to an open public space or square; also, a covered porch or veranda as in many Charleston houses.

PIERS / Vertical supporting members that are part of the foundation.

PILASTER / An engaged or attached column or pillar on the wall of a building. Like a column, it may have a base and a capital and may be smooth, or fluted.

PILLARS / Rectangular upright members used to support a superstructure.

PORTICO / A porch characterized by a series or row of columns.

POST / Any vertical, isolated structural members used to support a superstructure, typically smaller than a pillar. Posts may also be round, as in turned posts.

PRISM GLASS / Small panes of glass, usually set in a wood or metal framework in the transom over a storefront; the glass is molded in a special pattern that projects daylight into the building's interior.

RAFTER / One of a series of closely-spaced sloping members, usually wood, which support a building's roof.

SASH / The framework of a window that supports the glass; if the sash is multiple-paned, muntins provide support for the individual panes. Sash may be fixed, sliding, hinged, or pivoted.

SEGMENTAL ARCH / A type of circular arch which does not extend on the sides to a full half-circle; it incorporates only a segment of a circle.

SHEATHING / A covering over the rafters of a roof or the vertical structural members of a wall; sheathing is covered with roofing materials or siding and is not left exposed.

SIDELIGHT / A glass panel, usually of multiple panes, to either side of a door.

SILL / The lowest horizontal structural member; a foundation sill rests directly on the foundation; a window sill is the lowest member of a window opening; floor joists rest on a sill plate.

SOFFIT / The downward-facing or under-side of a projecting element such as an eave or cornice.

STUDS / In wood frame buildings, the slender vertical members used in wall and partition construction.

TERRAZZO / A flooring material composed of concrete and stone chips, polished to a smooth surface.

TRANSOM / A glass panel, either fixed or moveable, placed over a door or window to provide additional natural light to the interior.

TURRET / A tower-like structure, usually found at the corner of a building and projecting upward above the top of the wall.

VAPOR BARRIER / A material such as sheet plastic which is impervious to moisture, used to prevent accumulation of water in insulation materials.

VERANDA / A long porch, sometimes two-story, projecting from a building wall.

VERNACULAR / Architecture that draws on traditional forms and functionalism rather than on formal design principles.

BUILDING INSPECTION CHECKLIST

Use this handy checklist to record important information about your building and to help you track possible preservation problems and their solutions.

The checklist is designed so it can be filled out easily and quickly. It provides an organized way to record significant information about the history, development, and current status of your building. This information can be very helpful to a contractor or architect who is planning work on your building.

You should do an inspection of your building twice a year and should copy this form so you can complete a new one for each inspection. From inspection to inspection, take particular note of any problems you recorded and treatments or solutions you tried. This can help you assess whether the treatments are working or whether a problem is getting worse. File the completed forms in a safe place, and if you sell or move from your building be sure the next owner or occupant has access to the forms.

Begin by recording the following basic information about your building:

Construction date

Original use

Current use

Architectural style, if any

Is there a basement? **A crawl space?**

Foundation materials

Wall structural material

Exterior wall material and finish

Roof shape and material

Dates and types of exterior alterations

Dates and types of interior alterations

Important interior and exterior architectural elements

Types of mechanical systems and dates installed (heating, air conditioning, wiring, plumbing)

Sketch plan of original (if known) and current floor plan

Next, inspect your building, looking at everything included in the list below. Note that you should record any new evidence of problems, and treatments or repairs done since the last inspection, and whether earlier problems seem to be getting better. It might even be a good idea to go out when it's raining (but not during lightning storms!) to watch what the rainwater is doing and see whether it is draining away properly from both the building and the site.

ROOFS, GUTTERS, DOWNSPOUTS

Watch for: Water spilling over edge of gutter (indicates sagging, twisted, or loose gutters or blocked downspouts); water coming out of downspout joints (blocked downspouts); water coming up out of ground drain (blocked drain line).

New problems:

Treatments completed:

Effectiveness of treatments:

FOUNDATIONS AND SITE DRAINAGE

Watch for: Cracks in building walls; out-of-line support piers (could indicate loss of soil bearing capacity); pooling of water near foundation (negative drainage back toward building).

New problems:

Treatments completed:

Effectiveness of treatments:

MASONRY AND WOOD WALLS

Watch for: Moss or mildew growth (indicates long-term moisture retention; could be due to foundation plantings; growth of vines on buildings; bad gutters or downspouts; moisture coming from inside building); peeling paint (moisture in wood); blistering paint (possible improper preparation or application); chipping paint (possible poor preparation before painting). Also watch for loose or missing masonry mortar; newly opened cracks in masonry (could indicate a foundation problem); missing or lose wood siding or shingles.

New problems:

Treatments completed:

Effectiveness of treatments:

ARTIFICIAL SIDING

Watch for: Dented, broken, loose or missing pieces of siding, especially ones that could let moisture get in behind siding; mildew or dampness immediately under siding (indicates trapped moisture that could lead to dry rot in old siding or wood structure of building); evidence of insect infestation such as small sawdust piles of "frass" left behind by termites.

New problems:

Treatments completed:

Effectiveness of treatments:

ARCHITECTURAL METALS

Watch for: Loose pieces or open joints (indicates missing fasteners or deterioration of wood sub-structure); moisture stains or rust holes (indicates regular infiltration and trapping of moisture); peeling paint (possible moisture problems); evidence of bird nests or other animal problems.

New problems:

Treatments completed:

Effectiveness of treatments:

ORNAMENTATION AND DECORATIVE ELEMENTS

Watch for: Loose or missing elements; damaged elements; evidence of moisture problems (mildew, moss growth, retained or dripping moisture).

New problems:

Treatments completed:

Effectiveness of treatments:

PORCHES

Watch for: Loose or damaged flashing where porch meets building; swollen or buckled floor boards; mildew, moss, or peeling paint (indicates excessive moisture retention); blocked ventilation holes at columns; blocked ventilation for area under floor; growth of plantings too close to porch (can cause moisture retention); water staining on porch ceiling (indicates roof or flashing problem); soft or "punk" wood (indicates dry rot).

New problems:

Treatments completed:

Effectiveness of treatments:

DOORS AND WINDOWS

Watch for: Peeling, chipping, or blistering paint (indicates moisture retention or poor preparation or application); loss of putty and/or glaziers' points in window sash; opening up of joints in doors or window sash (indicates possible moisture retention); damage to glazing or hardware.

New problems:

Treatments completed:

Effectiveness of treatments:

COMMERCIAL STOREFRONTS

Watch for: Mildew, moss, or paint loss, especially near lower edge of bulkhead under display window (indicates moisture retention); water dripping from air-conditioning units (should be carried away in a drain line); blockage or ventilation openings, if any; loose or damaged steps, sidewalk or paving/flooring materials that could be hazardous; loose or missing retaining strips at display windows; loose missing or broken glazing in transom windows; mildew or moss on awning (indicates moisture retention); wind or vandal damage to awning canvas.

New problems:

Treatments completed:

Effectiveness of treatments:

ENERGY CONSERVATION

Watch for: In summer, moisture condensation on windows covered by exterior storm windows (indicates excessive infiltration of moist outside air); damp or "clammy" feeling, mildew or damp smell on interior (could indicate inadequate ventilation, especially in cavity walls); blocked eave or ridge vents; leaves or other blockage of vents in air-conditioning units; improper burning of fuel or venting of exhaust from furnace.

New problems:

Treatments completed:

Effectiveness of treatments:

INTERIORS AND MECHANICAL SYSTEMS

Watch for: Peeling paint, blistering or powdery plaster, mildew or dampness in walls or ceilings (indicates moisture penetration from roof or flashing); appearance of cracks in walls or gaps in woodwork or trim, or uneven floors (possible foundation problems); leaks in plumbing supply or drain lines (but don't mistake condensed humidity on pipes for leaks); bare wires or frayed insulation; evidence (such as smudges or melted outlet holes) of short circuits or overloads of wiring; outmoded or under-capacity fuse or circuit-breaker box; gaps or open joints in ducts or heating system; inadequate ventilation or exhaust for furnace.

New problems:

Treatments completed:

Effectiveness of treatments:



■+■ NOTES■+■

