City of Greenville, North Carolina

Historic District and Local Landmark Design Guidelines

Adopted March 25, 2014

2013 Historic District and Local Landmarks Design Guidelines Update Participants

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SOUTHEAST PRESERVATION

ARCHITECTURAL CONSERVATION & PRESERVATION SERVICES

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Introduction

Opposite page: A mix of Greenville's early twentieth-century commercial and residential architecture appears in this 1964 image from the *Daily Reflector* in which the Pitt County Courthouse, a National Register-listed building, stands in the background. Digital Collections, East Carolina University, Joyner Library, 741.34.c.56, http://digital.lib.ecu.edu/7629.

Introduction

Welcome to the City of Greenville's "Historic District and Local Landmark Design Guidelines." This is the central historic preservation policy document for the City of Greenville, North Carolina. It is intended to encourage and facilitate historic preservation in Greenville and to delineate the legal regulations for all work on local landmarks and properties within the city's historic district. Information about historic preservation in the City of Greenville may also be found in the City's publication "A Guide to Historic Preservation in Greenville, North Carolina." It contains additional facts about preservation and the architectural history of Greenville. Anyone interested in historic preservation in Greenville is encouraged to read both documents, however this is the regulatory document. The wording in this document provides the official current guidance on work to all historic district or local landmark properties and overrides any previous versions of the Design Guidelines and any ancillary historic preservation publications.

Historic Preservation is a general term that may refer to any one of a number of ways in which the physical heritage of society is protected and perpetuated for future generations. The primary objective of the Design Guidelines is the protection and preservation of the distinctive historic fabric of Greenville's locally designated historic resources: the local landmarks and historic district properties. To this end, this document provides detailed guidance for the treatment of all elements and materials. The general principles that should be understood to govern all of the recommendations and regulations herein are as follows:

1. Historic materials and elements are defining elements of our historic environment that should be retained to the fullest extent possible.
2. Whenever replacement of historic materials and elements is absolutely necessary, the replacement should match the original in appearance and compatibility with existing historic elements as much as possible.
3. Modern intrusions into the historic environment, such as utilities, should be installed in as sensitive and unobtrusive a manner as possible.
4. New additions and buildings should be designed to fit into the scale and architectural rhythm of the historic environment, without falsifying that environment by replicating historic buildings.

This document is also designed to help homeowners avoid the necessity of replacing materials by providing guidance on the appropriate maintenance of historic structures.

What is the Purpose of Design Guidelines?

Why should a culture work to preserve the elements of its past? There are many answers to this question that range in nature from spiritual and emotional well-being to economic and environmental benefits. In the study of history, we are cognitive of the advantage that understanding the past provides in interpreting our present and future. So too, historic buildings and places hold the power to inform us of who we have been, who we are and who we can be. Historic sites, structures, and buildings can inspire us through their artistry and craftsmanship; their stories; or merely the patina of time they possess.

Aside from the intangibles, historic preservation has quantifiable benefits. Historic buildings are bursting with the embodied energy of their materials. Every piece of every historic building that is retained rather than replaced equals calculable savings of fossil fuels burned and pollution produced in the manufacturing and transportation of new materials. Proper maintenance can save a great deal of money in replacement costs. Preservation of historic buildings also has a demonstrated positive effect on local economies. Historic buildings add value to their communities and preservation work contributes to local jobs. In short, without our historic sites and buildings, we are disadvantaged in many ways.

Replacement of a few columns, windows, or siding with synthetic modern equivalents of similar appearance may not seem like it would have a significant impact on a historic environment, but every loss of historic fabric adds up. Incremental and continuous replacement of historic features can ultimately result in the loss of the historic character and feeling of a whole neighborhood. Often, we are not stirred to protect historic places until total loss is imminent or a disaster occurs, but it is always better to plan than to react. The Historic District and Local Landmarks of Greenville have been collectively recognized as places of historic significance to the city and its residents. The Design Guidelines are a tool of proactive planning for the protection of those significant places.

How to Use this Document

This document is divided into six chapters plus appendixes. This chapter – Chapter 1 – provides an introduction to historic preservation in Greenville and the function of the Design Guidelines. Chapter 2 addresses the guidelines for work on existing buildings. This chapter has separate sections for different building elements and materials, as well as color, utilities and energy retrofit, and life safety and accessibility. Each one of these sections begins with an overview of the topic and its role in the historic character of properties and districts. This is followed by recommendations for "Maintenance and Repair" and resources for further reading, and select supplies as well. Readers should review the overview and the maintenance and repair recommendation for their topic/s of interest before focusing on the guidelines, as these provide explanation for the regulations and guidance in how to adhere to them. Each section concludes with the pertinent guidelines for the topic. To distinguish between recommendations and strict guidelines that will be enforced, the wording of previous guidelines has been revised, and specific words emboldened for additional clarity. The word "must" is now used throughout the guidelines and appears in bold print to denote rules that require adherence. The "may be considered" indicate issues that are not necessarily approved, but will be granted a thoughtful review if the application makes a compelling argument. The word "not" is also emboldened throughout the guidelines to call attention to actions that will be considered violations of the guidelines.

The goal of these guidelines is to help property owners preserve, enhance, and enjoy their historic properties. Of course, design guidelines documents are not meant to be comprehensive preservation manuals so there is certainly much information not included within these pages. Every attempt was made to direct users to resources that will provide the additional information that will fill in those gaps. When still other information is needed, property owners are encouraged to contact the Historic Preservation Liaison of the City of Greenville and the Eastern Office of the State Historic Preservation Office. Contact information for these offices is listed in the appendix. There are also additional general resources listed in the appendix that should be used to supplement the specific sources listed under individual sections. A majority of the sources listed are Preservation Briefs published by the National Park Service. These provide an excellent technical starting point for many topics, but readers are encouraged to seek other information as well. The final part of this document is a glossary. This is available to be consulted for terms found throughout the text which might be unfamiliar or require further definition. Blank pages appear at the end of sections in which text ends on an odd page. Users are encouraged to use these blank pages to make notes, jot project ideas, note contractor and product information, etc.

Financial Assistance

There are several programs which can make preservation projects more financially achievable for property owners. The City of Greenville offers a Façade Improvement Grant and a Historic Preservation Pilot Loan Program.

Façade Improvement Grant

Property owners or tenants of downtown commercial buildings are eligible to apply for facade improvement grants. These matching grants are funded by the City of Greenville and awarded on a reimbursement basis with a maximum amount of $5,000. Tenants must have the property owner sign the application, and if selected, the contract. Applications for these grants are available only at workshops where assistance is provided to complete the applications. Façade Improvement Grant program is now an "Open-Cycle" program meaning that applications can be accepted monthly. Applicants must attend a pre-grant workshop (or attended a previous workshop) where assistance is provided to complete applications. Pre-grant workshops are scheduled as-needed, provided that program funding is available. To apply or schedule a pre-grant workshop, please call the Planning Division at 329-4486. The grants are awarded on a competitive basis. The Historic Preservation Commission reviews all applications and makes recommendations to the City Manager, who makes the final decision.

Historic Preservation Pilot Loan Program

The Historic Preservation Pilot Loan Program is an opportunity to obtain interest-free loans for properties within the CVHD and Locally Designated Landmarks. Applications will be considered on the basis of program fund availability and compliance with the Design Guidelines. Residential, commercial, and non-profit entities are eligible to participate in this program.

Applications will be accepted during two cycles, one in the spring, and one in the fall. There will be a workshop prior to each cycle with notice made to property owners. Loan funds will be split between the two cycles. Any excess funds from the first cycle will carry over to the second cycle. Applications will receive consideration as long as funds are available. Loan cycles follow the City's fiscal year, which runs from July 1 to June 30. For questions regarding this program, please call the Planning Division at 329-4486. See the Appendix for a sample application.

Tax Credits

State tax credits for qualified restoration projects are available for non-incoming producing historic properties and federal tax credits are available for qualified restoration projects on income- producing properties. State tax credits are presently set to sunset at the end of 2014. Contact the Eastern Office of the State Historic Preservation Office for more information about state historic preservation tax credits at 252-830-6580, 117 West Fifth Street, Greenville, NC 27858.

Historic and Architectural Context of Greenville

Greenville was chartered in 1774 and gained its current name in 1787. This seat of Pitt County is positioned on the Tar River, which was an important route for transportation and commerce in the eighteenth and early nineteenth centuries. While some early river towns were left to fade into obscurity when railroads replaced waterways as primary conduits of transportation, Greenville was fortunate to become a stop along the Wilmington and Weldon Railroad in the 1890s. This, coupled with the rise of tobacco as a cash crop in eastern North Carolina secured Greenville's position as a small but thriving town. The development of the East Carolina Teachers Training College (today's East Carolina University) further spurred population growth and building in Greenville.

Today, Greenville' architectural heritage mostly reflects its early twentieth-century growth. Although it possesses

Men proudly pose in one of Greenville's tobacco warehouses with their commodity for this 1920s *Daily Reflector* photograph. Digital Collections, East Carolina University, Joyner Library, 741.1.a.1, http://digital.lib.ecu.edu/224.

a few distinctive remnants of the nineteenth century, twentieth century building styles characterize the city. The city's historic building stock includes modest to grand residences, and commercial, religious, institutional, educational, social and governmental accommodations of all kinds. The historic districts and individual properties of Greenville listed on the National Register encompass some of these different functions and aspects of the city's history. Greenville has five National Register Historic Districts: Dickinson Avenue Historic District, Greenville Commercial Historic District, Skinnerville-Greenville Heights Historic District, Greenville, NC Tobacco Warehouse Historic District, and College View Historic District. The College View Historic District is the only one of the five that is also locally designated and is subject to these guidelines. A description of it follows. Twenty-four Local Landmarks and five additional individual National Register properties also illustrate Greenville's range of historic resources.

The 1896 E. B. Ficklen Tobacco Co. building, part of Greenville's Tobacco Warehouse National Register Historic District.

Local Landmarks

Historic preservation is often closely associated with buildings of architectural distinction, however the significance of many historic properties is far more than their style. The most architecturally undistinguished of buildings can yet possess great significance for their role in the events of our collective history. Greenville's Local Landmarks are mostly significant for their architecture, but they are also physical connections to important chapters of local history. The E. B. Ficklen House is both an architectural landmark and a built manifestation of the strength of tobacco as a commodity in early twentieth-century Greenville. King Simmons Lodge, on the other hand, does not announce itself architecturally as a building of significance, but it played a pivotal social and economic role in the city's African-American community in the early twentieth century.

Three of Greenville's Local Landmarks, the King Simmons Lodge and Grounds, the Jones-Lee House, and the Greenville Rotary Club and Grounds.

History and Description of the College View Historic District

The College View Historic District includes the area north of East Fifth St. and East Carolina University, bounded approximately by Holly St. on the west, Eastern St. on the east, and, variously, Johnston, East First, East Second, and East Third streets on the north. It consists of parts or all of the subdivisions of College View (the original plat of April 1916 and its five additions up to September 1928), Chatham Circle (January 1928), Highland Pines (June 1928), and Johnston Heights (September 1928).

Until the founding of East Carolina Teachers Training School in 1907, the area was rolling farmland owned by Walter H. Harrington and the Johnston family and was the last undeveloped area in Greenville near the center of town. Its location was desirable because it was within walking distance of downtown at a time before

every family owned a car; also, real estate agents and landowners advertised its close proximity to the college. Few of the residents, however, were affiliated with the college. They were merchants, professional people, and trades people. College students and most of the faculty who were single women lived on campus.

Only a few houses, on Summit, Jarvis, and East Fourth streets, were built before the first plat for College View was laid out in 1916. When building began in earnest in about 1920, the first houses were built in the 400 block of Holly St., then eastward and northward along Summit, Student, Fourth and Fifth streets. The pace of construction slowed in the early 1920s as a result of the crash of the tobacco markets in eastern North Carolina, but picked up again in the mid-1920s until the Great Depression began in 1929. As the economy slowly recovered in the 1930s, construction resumed until the outbreak of World War II. The latter part of the 1930s brought a large amount of construction to the neighborhood, when the area between Johnston and First streets began to be developed. Throughout the 1940s and 1950s, College View expanded beyond its original boundaries, along East Fifth Street and north toward the Tar River.

After World War II and continuing to the present time, the tremendous growth of East Carolina University created a need for rental housing that had not previously existed. A few single-family houses were built, as well as several duplexes and apartment houses and a doctor's office; however, except for one small shopping area at the corner of Third and Jarvis streets, no retail stores exist in the neighborhood. The demand for rental housing has led to conversion of single-family houses to multi-family apartment use, while the university or sororities and fraternities have purchased several large single-family houses. Unlike the area's formative years, many university faculty and staff now reside in College View.

The architectural styles that exist in the College View Historic District reflect the design trends of the times and the region. The majority of houses here consist of one-story weatherboarded Craftsman Bungalows, which had become the most popular house style in North Carolina from the mid-1910s into the 1930s. Small, one-story modest houses were built here, as well as larger, more elaborate versions. A large number of the two-story houses in the district are of the Colonial Revival style, a traditional style popular in the region.

Some design elements that are noteworthy in the district are stucco exteriors and red clay tile roofs. They both reflect the influence of the Spanish Mission Revival style of the 1920s, while the roofs may also copy the tile roofs on the early buildings at East Carolina University. The original designs called for gray slate roofs, but at the urging of former governor Thomas J. Jarvis, a member of the building committee and daily visitor to the site, the red tile roofs were substituted. His inspiration for the red tile roofs is thought to have come from his assignment in Rio de Janeiro as United State minister to Brazil. Overall, the College View Historic District retains many of the desirable characteristics of its early years. These features, such as the proximity to downtown and the campus, the consistency of the streetscape, and attractive architectural styles, resulted in the designation of the College View Historic District in 1994.

Sources:

Scott Power, "Nomination of College View Historic District." (Manuscript, 1991)
Kate Ohno, "College View" chapter, in Michael Cotter, ed., *The Architectural Heritage of Greenville, North Carolina.* (Greenville, 1988)
Catherine W. Bishir and Michael T. Southern, *A Guide to the Historic Architecture of Eastern North Carolina.* (Raleigh, 1996)

Historic Preservation Commission

The Historic Preservation Commission, established by City Council in December of 1988, in accordance with the North Carolina Enabling Legislation for the Creation of Historic Preservation Commissions by Counties and Municipalities G.S. 160A-400.1-400.14. It consists of ten (10) citizen volunteers appointed by the City Council who have demonstrated a special interest, experience, or education in history, architecture, and/or archaeology. Each member serves a three (3) year term and may be reappointed for another term.

In order to preserve the community's historic heritage, the Commission has the power to recommend to the Greenville

City Council the designation of any building, structure, site, or object as a historic property or an area as a historic district. A property or district recommended for designation shall be of special significance in terms of its history, prehistory, architecture, and/or cultural importance and possess integrity of design, setting, materials, feeling, and association. Any property or district recommended for designation must lie within the planning and zoning jurisdiction of the City of Greenville.

The responsibility of the Greenville Historic Preservation Commission is to protect the architectural integrity of the historic district and landmarks. To meet that responsibility, the commission reviews applications from property owners and residents for Certificates of Appropriateness to make certain types of changes within the historic district and properties. Applications are reviewed to determine if the proposed changes are consistent with the Design Guidelines. You may obtain a free copy of the Design Guidelines from the Planning and Community Development Department by calling (252) 329-4486 or on the Historic Preservation page of the City of Greenville's website at the below address.

The Historic Preservation Commission normally meets on the fourth Tuesday of each month at 7:00 p.m. in the City Council Chamber of City Hall, located at 200 West 5th Street. All meetings are open to the public and are televised on GPV 9. The mailing address of the Historic Preservation Commission is P.O. Box 7207, Greenville, NC 27835-7207. For further information concerning activities of the Historic Preservation Commission, please call the Planning and Community Development Department at (252) 329-4486.

North Carolina Enabling Legislation for the Creation of Historic Preservation Commissions by Counties and Municipalities G.S. 160A-400.1-400.14
http://www.hpo.ncdcr.gov/160A.htm

City of Greenville: Historic Preservation
http://www.greenvillenc.gov/departments/community_development/information/default.aspx?id=1089

Contributing and Noncontributing Properties

When the College View Historic District was nominated to the National Register of Historic Places in 1991, 51 of its 394 buildings were considered to be "noncontributing" to the architectural significance of the district in National Register terms. Most of these were nondescript garages or sheds that postdated the period of significance. A few were residences or commercial buildings of more modern vintages. Others were historic buildings that had been so altered as to have lost their contributing architectural integrity.

Some properties that could not be considered as contributing when the National Register nomination for the College View Historic District was written simply because of their age would certainly qualify as contributing now. A notable example is the c. 1950 Lustron house. Although this property was designated as noncontributing when the district was nominated, it has since achieved and exceeded the requisite 50 years of age and would be a contributing resource if the nomination were to be amended. As the nomination noted, "The house is certainly an important resource for Greenville. . . ."

A building's designation as noncontributing does not exclude it from the application of the design guidelines. Each case must be evaluated on an individual basis to determine how any proposed work will impact the property as well as adjacent properties and the streetscape as a whole. As with contributing properties, retention of original building fabric is always encouraged. For the few properties that were considered noncontributing because of alterations and vinyl siding application, restoration of the original features and materials would be welcomed and could make the property eligible to become a contributing property in the Historic District. City of Greenville Historic Preservation loans are available to finance such projects (see Appendix).

North Carolina Historic Preservation Tax Credits for qualifying rehabilitations are another financial incentive to remove synthetic siding and restore original features. However, anyone considering taking advantage of these tax credits should contact the State Historic Preservation Office at 252-830-6580 as soon as possible to determine if their project could be eligible, and the pertaining deadlines. The tax credits are presently set to sunset at the end of 2014. Most of the district

properties that are presently covered with vinyl or aluminum siding have been so since before the National Register nomination of the district and the subsequent local district designation. In fact, buildings covered with synthetic siding comprise a good portion of the 51 properties that were considered noncontributing to the historic district at the time it was nominated to the National Register. Only buildings which are individually listed on the National Register or contributing properties in a National Register district qualify for tax credits. However, should a building that was originally considered non-contributing be restored to its original appearance, there is a potential that it could be added as a contributing building to the National Register district. Again, property owners should contact the State Historic Preservation as early in the project planning process as possible to determine if Historic Preservation Tax Credits could be applicable.

Certificates of Appropriateness

Within the local historic district, property owners are required to obtain a Certificate of Appropriateness before beginning any type of exterior construction, alteration, or demolition. The local historic district overlay zoning is in addition to all other laws and codes and does not exempt a property from, or diminish such requirements. The certificate of appropriateness is a preliminary step in obtaining a building permit, a permit required for the proposed work. A certificate of appropriateness certifies that the proposed changes are consistent with the design guidelines and are appropriate within the historic district context. Neither interior nor most normal maintenance work requires a certificate of appropriateness.

Applications for certificates of appropriateness are processed through the Planning and Community Development Department of the City of Greenville. The application forms are available from the department, located at 306 S. Greene Street. Information may be obtained by calling the Strategic Planning Division of the Planning and Community Development Department at (252) 329-4502. A sample application is included in the back of this manual. Applications must be submitted at least twenty (20) working days prior to a regularly scheduled meeting of the Historic Preservation Commission. The Commission normally meets the fourth Tuesday of the month.

If an applicant cannot appear in person at the commission meeting, he or she may appoint a duly authorized agent by executing the proper form provided in the back of this manual.

All applications shall be complete before the Historic Preservation Commission may consider them. To be complete, an application must include all the facts necessary for a full understanding of the applicant's intentions. The application must provide specific information regarding the work so that the Commission can determine if there will be any damage or detrimental change to the historic character of the district. The commission does not consider interior arrangement, nor does it take action except for the purpose of preventing demolition, construction, reconstruction, alterations, restorations, or moving of a building, structure, appurtenant fixtures, or outdoor advertising signs in the historic district, that would be incongruous with the historic aspects of the district. Applications should include any relevant supplemental materials, such as a detailed description, accurate drawings, site plans, sample of materials, and photographs. The discontinuance of work or lack of progress toward achieving compliance with the certificate of appropriateness for a period of six (6) months shall render the certificate null and void. It may be renewed as a minor work item if there has been no change to the proposal and circumstances under which the certificate was approved.

Repairs and Minor Works

Certificates of Appropriateness (COA) are not necessary for repairs using original materials, designs, and colors that do not alter the exterior appearance of the property. These are considered minor work items that require only the prior approval of the City staff person of the Historic Preservation Commission and issuance of a Minor Work Certificate of Appropriateness. However, removal of any architectural design features that would alter the appearance of the property and repair or maintenance that would change the original look or character of the property do require a COA.

Minor Work Certificates of Appropriateness (MW-COA) are defined as exterior changes that do not involve substantial alterations, additions, or removals that could impair the integrity of the property. For guidance on the proper maintenance and small repairs of historic building exteriors, see **Preservation Brief 47: Maintaining the Exteriors of Small and Medium Size Historic Buildings** (http://www.nps.gov/history/hps/tps/briefs/brief47.pdf). The following is a list of work that can be approved through a Minor Work Certificate of Appropriateness.

Minor Works

1. Repair or replacement of missing or deteriorated siding and trim, porch floors, ceilings, columns and balustrades, or architectural details, with materials that are identical to the original.
2. Repainting of a structure.
3. Re-roofing a house with like materials.
4. Repair and replacement of flat roofs.
5. Repointing with mortar of compatible strength, color, and texture contingent upon approval of mortar. Applicant may also be required to show sample of finished joint prior to completion of character defining area.
6. Installation of storm windows and doors.
7. Installation of security bars or doors.
8. Installation of roof ventilators on the back roof slopes.
9. Installation of foundation ventilators on side and rear elevations. Affect on structural integrity will be considered and applications may be recommended for further review.
10. Installation of window air conditioning units (not central units).
11. Installation of gutters and downspouts of appropriate natural finish or painted color, as long as no significant architectural features are damaged or removed.
12. Installation of mechanical equipment units on a side of the structure not facing a public street, which cannot be seen from the street or are screened from view with shrubbery or appropriate fencing.
13. Installation, alteration, or removal of temporary features which are constructed of wood that are necessary to ease difficulties associated with a medical condition but which do not permanently alter exterior features.
14. Installation of a house identification sign which (a) contains the name of the house and/or year built, (b) is compatible in color, material, and location to the house, (c) does not exceed three square feet in area, and (d) is in compliance with the city sign ordinance.
15. Installation of a satellite dishes less than 24" in diameter and other normal size television and radio antennas (does not include C.B. and ham radio equipment). Must be located in side or rear yard out of public view whenever possible.
16. Installation of decks, rear yard only.
17. Removal of artificial siding.
18. Removal of non-historic storm windows and doors.
19. Removal of accessory structures which are not architecturally or historically significant according to the National Register nomination form (To obtain a copy of the National Register nomination contact the City of Greenville Planning Staff, Historic Preservation Commission Liaison, or see http://www.hpo.ncdcr.gov/nr/PT0617.pdf.).
20. Removal of a dead, diseased, or dangerous tree as determined during consultation with a certified arborist.
21. Installation of exterior residential light fixtures.
22. Installation of rain barrels screened from view with shrubbery or appropriate fencing.
23. Repair or replacement of an existing driveway, provided materials, location, and dimensions remain the same.
24. Installation and repair of sidewalks and patios constructed of common stone or red brick, and bricked in areas on the side or rear of the structure at ground level and not abutting a right-of-way, when the height does not exceed six inches above adjacent ground level.
25. Renewal of an expired certificate of appropriateness where no change to approved plans is being proposed, and there has been no change to circumstances under which the certificate was initially approved.

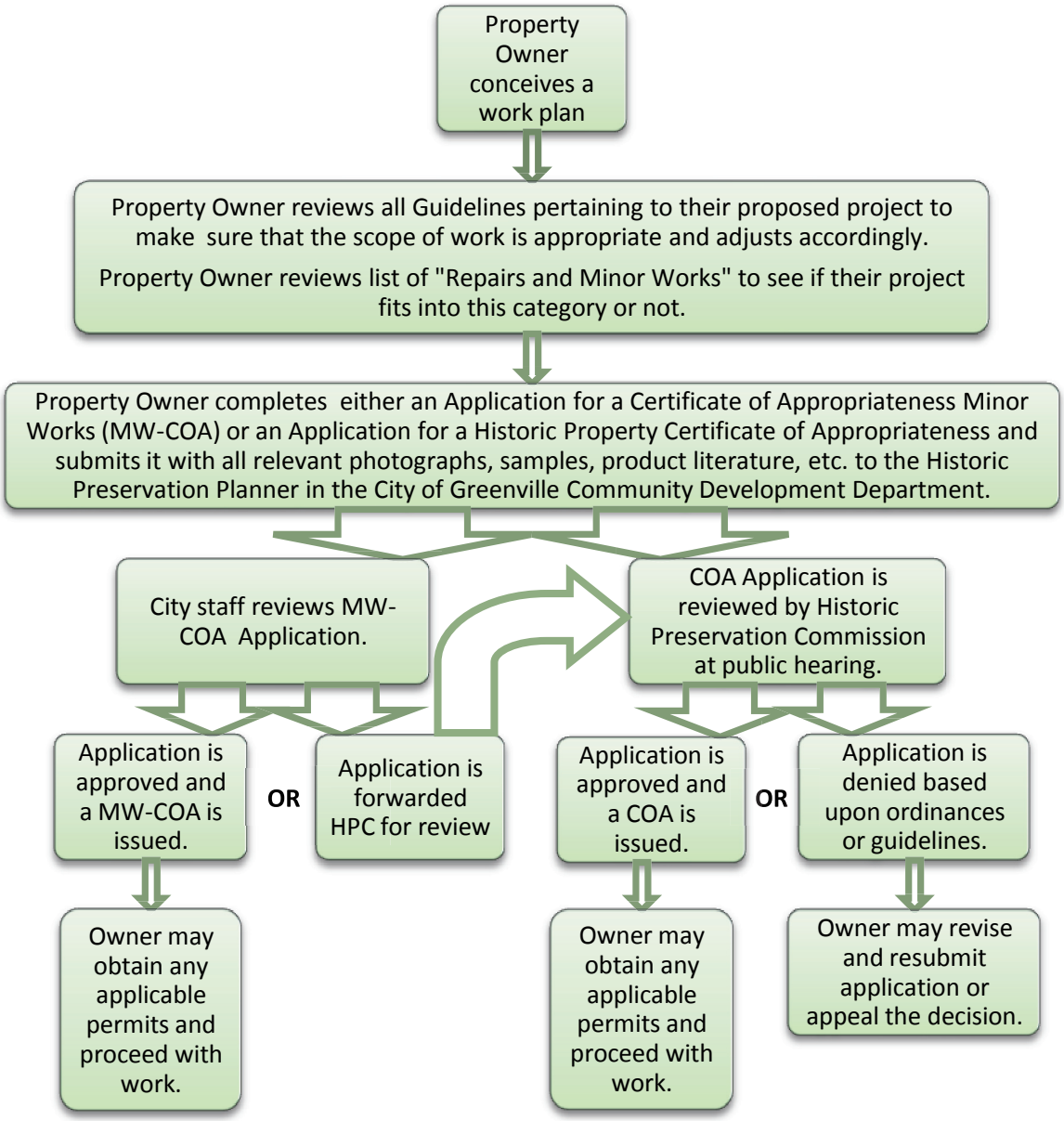
Enforcement

In any action granting or denying a certificate of appropriateness, an appeal may be taken to the Board of Adjustment, except for an action involving the State of North Carolina, in which case the appeal is heard by the North Carolina Historical Commission. Notice of intent to appeal must be given to the HPC either orally at the meeting or in writing postmarked within twenty days following the decision. An application for appeal to the Board of Adjustment must then be filed within sixty days following the commission's decision. Appeals are in the nature of certiorari. Any person or corporation who violates the provisions of the historic district regulations is subject to the same criminal misdemeanor and/or civil penalties as apply in any other violation of the city zoning code. These include a zoning violation citation issued by the Inspections Department, which has a $50 civil penalty that must be paid within forty-eight hours. Following written notice from the Inspections Department, continuing violations will result in a civil penalty of $50 for each day of the continuing violation.

Historic District residents should consider themselves a key component of Design Guidelines enforcement. Residents are most often the first witnesses to inappropriate work and must take responsibility in the task of protecting the collective historic fabric of their neighborhood from unlawful destruction. It is important to report any apparent violations to the City staff liaison as soon as possible so that enforcement may be addressed. Neighbors often complain about violations after the fact, when historic fabric has already been irreversibly lost or damaged. The bulk removal of any historic fabric like wood weatherboards or windows should be reported to the City immediately at 252-329-4486.

It is recognized that because of a lack of enforcement in past years, violations of the Design Guidelines are present in the district. It should be understood that lack of enforcement does not equal approval. Any alterations made without a MW-COA or COA contrary to the Design Guidelines after the creation of the Historic District are considered to be violations.

Certificate of Appropriateness Flow Chart



Notes

Chapter 2

Design Guidelines for Existing Buildings

Secretary of the Interior's Standards

In addition to adopting its own guidelines, the Historic Preservation Commission has adopted the United States Secretary of the Interior's Standards for Rehabilitation for use in determining the appropriateness of proposed work in the historic district and on local landmarks. The National Park Service first developed these ten national standards for rehabilitation in 1976 that were first revised 1992. These standards form the foundation of the Historic Preservation Commission's design review criteria. These and other standards and guidelines of the Secretary of the Interior may be found online at http://www.nps.gov/history/hps/tps/standguide/. The current revised version is as follows:

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 historical 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 archeological 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.

Additionally, the National Park Service has also developed the "Secretary of the Interior's Standards for Rehabilitation & Illustrated Guidelines on Sustainability for Rehabilitating Historic Buildings". This document offers very useful guidance and explanation of the interplay between the Standards and sustainability. Residents are encouraged to consult this document. It may be accessed online at the following link:
http://www.nps.gov/tps/standards/rehabilitation/sustainability-guidelines.pdf
To inquire about publications of the National Park Service Technical Preservation Services by telephone, call (202) 513-7270.

The following guidelines are supplementary to and do not replace state and local building codes and zoning ordinances including the 2009 NC Rehab Code and the City of Greenville, North Carolina Code of Ordinances. Homeowners should also be aware that as of April 2010 all exterior work on a pre-1978 building that disturbs more than 20 square feet of painted surface and any window removal must be performed in compliance with the Environmental Protection Agency's Renovation, Repair and Painting (RRP) Rule. More information about the RRP Rule and how to achieve compliance is found under the "Materials: Paint" section of the guidelines.

Notes

Roofs

By their shape, features, materials, and details, roofs can contribute significantly to the historic character of buildings. The roof form is essential to the perceived overall form of a building. The pattern, the scale, the texture, and the color of roofing material further define the historic character of a roof. Through variations in line, pitch and overhang, the roof can also reveal changes and additions to a historic building over time.

The most typical roof shapes found in the district are gable and hip. Both cross-gable and more complex multi-gable roofs are common variations of the simple gable form. Mansard and gambrel roofs are less common. Shed roofs and occasional flat roofs are primarily confined to porches and rear additions. A variety of roof features contribute to the historic character of buildings. Chimneys and dormers are typical ones. Cupolas, balustrades, and turrets add to the diversity.

The distinctive historic roofing materials found on Greenville's local landmarks and historic district properties include slate, tile, and metal. The local landmark, the E. B. Ficklen house exemplify the use of multi-colored and shaped slate and tile that extended the polychromatic textured aesthetic of the Queen Anne style through to roofs. Clay roof tiles are perhaps the most character defining of all the roof materials found in the CVHD. Red Spanish tile is an identifying feature of Mission and Spanish Revival style residences. No substitute material is truly comparable to real Spanish tile. Visually, they are very difficult to match and typically it is more practical and cost effective to replace individual tiles rather than replace this durable roof material in entirety. The National Register nomination for the CVHD noted tile as the original roofing material for many residences that had asphalt roofs at the time of its writing in 1991. When the time comes to replace the asphalt roofs on such buildings, a return to a tile roof is definitely encouraged. However, in recognition of the substantial cost of installing a new tile roof, a synthetic roofing material that imitates the tile originally used on the building may be considered.

A relatively small number of metal roofs, both standing seam and pressed-metal shingle survive on historic district and local landmark buildings. Metal is a durable roofing material with good thermal properties. Unpainted metal is naturally reflective which can help keep interiors cooler during summer months. Many metal roofs were traditionally

An example of a standing seam roof in the College View Historic District. This home also retains pressed tin shingles on its dormer.

Original pressed tin shingles cover a College View Historic District roof.

The red clay tile roof of the Third Street School is a defining feature of its Spanish Colonial Revival style.

On the preceding page: A slate roof adds distinctive character to a Colonial Revival home in the CVHD.

painted. Painting helped to protect and preserve the roofing material while contributing to the appearance of the building. Many of today's metal roofing paints in all colors are engineered to provide reflectance. Such "cool roof" coatings can provide energy savings and their use is encouraged as long as they closely match the original or appropriate historic finishes in appearance.

Of all the roofing materials found in the district and on local landmarks asphalt shingle is by far the most common. Asphalt shingles may be the original roofing material on early twentieth century buildings or the replacement roofing on older buildings. They are composed of asphalt-impregnated felt coated with ceramic or stone granules. These composition shingles are available in a variety of colors, but shingles in dark colors are the most appropriate because they often replaced earlier roofing materials such as metal, slate or tile that were traditionally dark in color. There are now many "cool roof" asphalt shingles on the market. These products are engineered to provide a high level of solar reflectance which translates into cooler attic temperatures and cooler overall house temperatures, which is desirable during Greenville's hot summer months. Most of the products come with an Energy Star rating. Residents are encouraged to use sustainable building materials, but as with any other shingle, the color and appearance must be approved by City staff or the HPC.

Flat roofs – roofs with such a low pitch that they are nearly flat – are typically covered with rolled asphalt roofing or built up tar or asphalt and aggregate. Though built-up roofing has been in use since the 19th century, copper and terne plate were also used historically on flat roofs, particularly in smaller residential applications. Terne is not a familiar roofing product today, but there are contemporary terne products available. Old terne roofs were composed of a lead and tin alloy coating over steel plates. Today's terne uses zinc instead of lead and is a safe, environmentally sound, and durable material. Because flat roofs are generally not visible from the public way, the appearance of their replacement materials does not have the same impact on the historic character of the property and surrounding area. Therefore most replacement roofing materials are considered acceptable for flat roofs. Sustainable options that may be considered for flat roofs are cool roofs and living roofs. Unlike for sloped roofs, lighter material cool roofs may be acceptable for flat roofs as long as they are not visible from the public way. Cool and living roofs can be particularly beneficial in terms of energy savings for large flat-roofed commercial buildings. Living roofs may be acceptable options for flat roofs if the vegetation is carefully selected to be discreet and does not detract from any public view of the historic property.

Maintenance and Repair

Beyond its visual role, the roof provides a weather-tight covering for any structure. Generally, the roofing system also includes the controlled removal of rainwater through gutters and downspouts. Maintenance of the entire system, including elimination of moss

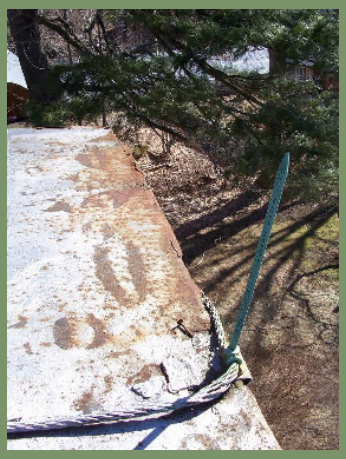
or vegetation that compromises its surface material or drainage, is critical. The protective role of roofs requires attention to the integrity of the roofing material – especially where changes in roofing planes or penetration of a chimney or dormer interrupts the roofline – as well as continuing maintenance of all gutters, downspouts, flashing, and coping. Concealed, or built-in gutters require routine monitoring and maintenance to avoid damage from unseen leaks in their decorative cornices. Roof and soffit vents facilitate the drying of wet attic or soffit areas caused by leaks or condensation.

Historically, valley flashing was the typical treatment at open valleys where roofing materials were joined at different planes. Although the technique of weaving asphalt shingles at roof valleys has become common practice, the valleys then deteriorate more rapidly than with traditional valley-flashing techniques. Copper, galvanized metal, and rolled aluminum with a baked-enamel finish are all more effective and appropriate choices for valley flashing. Care must be taken not to use metals in incompatible combinations to avoid galvanic corrosion. See more information about galvanic corrosion under Materials: Architectural Metals.

Periodic inspection of the roof, as well as the underside of the sheathing should be conducted to check the condition of the roof and the existence of leaks. Heavy rainstorms are good opportunities to inspect the attic for leaks! If a leak is discovered, a repair should be made as soon as possible. Repairs should always be executed with materials visually and physically compatible with the existing roof. Too often uninformed use of improper materials leads to more extensive roofing issues. If in doubt or the appropriate repair material and method, consult a professional. Particular care must be taken with tile and slate roofs. Accessing and replacing a broken tile or slate without damaging others requires experience and skill.

Rainstorms are also a good time to take a walk about your building and observe the function of gutters. Properly functioning gutters should direct the water away from the roof and the sides or the building without leaving it pooling around the foundation. If gutters are overflowing, clean them and check for blockages on the next dry day. If water is pooling around the foundation, the ground may be eroded and inappropriately sloping towards the building. If this is the case, consider regarding. A quick and easy solution to get water directed away from the building is the installation of plastic flexible drains at the end of the gutters. These may be buried or left at grade level. If left above ground, they should be discreetly screened with landscaping.

A flat roof covered in organic debris from an adjacent tree. Flat roofs are especially prone to the accumulation of organic material which holds moisture against the roofing and leads to its degradation. A push broom should be used to clear roofs of plant debris. Trees should also be pruned to keep branches off of direct contact with the roof or other parts of the house.



An example of galvanic corrosion. The contact of the copper lighting protection with the lead and tin alloy of the terne plate roof led to the corrosion of the latter.

During a rainstorm, a gutter's failed connections show themselves. Take the opportunity to inspect roofs and gutters when its raining.

Example of an acceptable modification to a historic roof design. The new V-channel on this dormer roof will protect the face of the dormer from excess rain runoff, but is completely invisible from the ground.

A roof restoration nears completion. Note that replacement slate appear lighter than other slate. They are in fact the same color as the unexposed portions of the older slate and will age to the same color. This is the correct approach. Replacement and repair materials should never be falsely aged or darkened to match weathered materials.

Attendees at an Edgecombe Community College, Preservation Trades Program, Preservation Trades Day learn about slate roof repair. The Preservation Trades Program is an excellent resource for property owners who want to learn how to work with historic materials. Photograph courtesy Monika Fleming, Program Coordinator, Historic Preservation, Edgecombe Community College.

Resources

Preservation Brief 4: Roofing for Historic Buildings
http://www.nps.gov/history/hps/tps/briefs/brief04.htm
Preservation Brief 29: The Repair, Replacement & Maintenance of Historic Slate Roofs
http://www.nps.gov/history/hps/tps/briefs/brief29.htm
Preservation Brief 30: The Preservation and Repair of Historic Clay Tile Roofs
http://www.nps.gov/history/hps/tps/briefs/brief30.htm
Secretary of the Interior's Standards for Rehabilitation & Illustrated Guidelines on Sustainability for Rehabilitating Historic Buildings, pgs. 18-19, and 22.
http://www.nps.gov/tps/standards/rehabilitation/sustainability-guidelines.pdf
Solar Panels on Historic Buildings National Park Service, Technical Preservation Services
http://www.nps.gov/tps/sustainability/new-technology/solar-on-historic.htm
From Asbestos to Zinc, Roofing for Historic Buildings, National Park Service
http://www.nps.gov/history/hps/tps/roofingexhibit/asbestoscement.htm
http://www.cr.nps.gov/hps/tps/roofingexhibit/roofing.pdf

Guidelines

1. The original shape, line, pitch, and overhang of historic roofs **must** be retained.
2. All architectural features that are character-defining elements of the roof, such as cupolas, chimneys, dormers, cornices, brackets, and turrets **must** be preserved and retained.
3. Historic roofing materials **must** be preserved and retained whenever possible. If replacement is necessary, new material that matches the historic material in composition, size, shape, color, pattern, and texture shall be used. Re-roofing a house with similar materials is generally considered a Minor Work that can be approved by City staff with a MW-COA. Substitute roofing materials may be considered if the original material is not technically feasible or if the roof was replaced with a non-historic material, such as asphalt shingle prior to designation of the district or individual landmark. Greater latitude in roofing material choice shall be extended for re-roofing of flat roofs not visible from public way.
4. Roofing systems should be protected in appropriate ways:
   - Repair leaks promptly to limit related damage to the roof and building.
   - Provide temporary protection to a leaking roof before repairs.
   - Clean gutters and downspouts regularly.

- Eliminate any vegetation that may cause deterioration of the roof, the gutters, or the downspouts by cutting back branches and vines.
- Replace deteriorated flashing with first quality flashing.
- Replace deteriorated flashing with first quality flashing.
- Inspect the roof sheathing from the attic for signs of insect infestation or moisture damage.
- Provide adequate ventilation of the attic space to prevent condensation.
- Provide adequate anchorage for roofing materials to guard against wind and moisture damage.

5. Roof ventilators, solar attic fans, antennas, and solar collectors **must** be located on non-character defining roofs or inconspicuously on rear slopes where they will not be visible from the street. It is not appropriate to locate them on front or street elevations**.**
6. Roofing materials that were historically not coated should not be painted or coated.
7. Concealed, or built-in gutters should generally not be replaced with exposed gutters.
8. New roof features, such as skylights and dormers **must** be installed on a discrete slope of the roof hidden from the public in a manner that avoids loss or damage to historic features and minimizes the impact on the historic character of the property. The use of tubular or tunnel skylight is encouraged because these designs maximize light delivery to the interior with minimal disruption to the structure.
9. Vents, including soffit vents and low-profile ridge vents **must** be installed in a manner that does not diminish the original design of the roof or destroy historic roofing materials and details. Roof ventilators on rear slopes hidden from the public way may be approved with Minor Work COA by City staff.
10. Historic chimney flues should be retained and preserved. Open chimney tops may be protected from animals, debris, and rain by the installation of discrete, low profile vented caps or screens. Concrete caps should be avoided because they contribute to moisture issues in chimneys by restricting air circulation.
11. If new gutters and downspouts are necessary, they **must** be installed so that no original architectural features of the structure are damaged or lost. Replacement gutters and downspouts should be coated with paint or a baked-enamel finish in a color appropriate to the color of the house, unless they are made of copper. They **shall** match historic size and profile whenever possible. Installation or replacement of gutters that does not damage the historic fabric is a Minor Work that may be approved by City staff.
12. Solar panels should be mounted as flush as possible on a side or rear roof slope hidden from view of the public way. They **must** be installed in a manner that is as discrete as possible and does not damage historic fabric.

The character defining front roof slope of the above house retains its original appearance, while solar panels are appropriately installed on a secondary slope. Photographs courtesy Heather Knight.

Notes

Exterior Walls and Trim

The form, the materials, and the details of exterior walls can contribute to a building's quality. Bays and turrets add to the diversity of wall forms in the district. The pattern, the scale, the texture, the color, and the detail of historic wall materials provide distinctiveness and scale to buildings. A variety of architectural details, including corner boards, brackets, and quoins, also add character to historic buildings.

Brick and weatherboard siding are the most common exterior wall materials among Greenville's local landmark and historic district properties. The width of exposed weatherboard varies depending on the style and the age of the building. Other types of wooden siding, such as flush siding, drop siding, and shingles are also found. Bricks appear in various colors and textures, from smooth and blond to dark and skintled. A few buildings possess historic stucco exteriors, while the Municipal Building's Indiana limestone exterior is a rare excursion into stone in Greenville. The most unusual of all the exterior materials found on Greenville's historic buildings are the porcelainized steel panels belonging to the Lustron house located in the College View Historic District. For some buildings, asbestos shingles were the original siding and survive today.

A number of weatherboard houses in the College View Historic District have been covered in aluminum or vinyl siding. The application of these synthetic sidings results in a loss of detail and historic character. Furthermore, damage to remaining exterior materials is caused both during installation of substitute siding and subsequently as it contributes to undetected moisture and insect damage. For these reasons, the **application** of such substitute materials is **not** acceptable in the historic district. **Removal** of substitute siding and restoration of the original siding **is** encouraged. If 50% or more of the existing artificial siding on a structure, element (porch, garage, balcony, entryway), or combination thereof is deteriorated to the degree of needing replacement, these guidelines mandate that the artificial siding shall be removed completely and the original material be restored or the building be resided with an appropriate siding (see Guideline 10 below). Property owners who remove synthetic and restore their building's original siding and features may be able to receive financing from the City of Greenville's, Historic Preservation Pilot Loan Program. To find out more about this program, see the appendix and/or call 252-329-4486. Such projects may also qualify for Historic Preservation Tax Credits. See Chapter 1: "Contributing and Noncontributing Properties" and the appendix.

Skintled brickwork is one of the distinctive exterior wall materials found in the College View Historic District.

Sunlight highlights the textural character of wood shingles on a bungalow in the College View Historic District.

On the previous page: Weatherboards, stucco, and decorative half-timbering are among the exterior wall and trim elements that contribute to the historic character of this College View Historic District property.

Maintenance and Repair

Typical problems encountered with wooden siding and trim, such as peeling paint and rot, generally result from a lack of proper scraping, caulking, and painting to protect the wood from moisture. To ensure the soundness of the wood structure, all the cracks and vertical joints in the siding and the trim must be sealed to prevent water from penetrating the wood. Further, all the connections between the siding and various trim pieces should be inspected regularly and caulked as necessary with a high-quality compound. Caulking of the bottom edge of weatherboards is **not** recommended because this prevents the escape of any moisture that does penetrate the wall surface and inhibits the natural movement and drying of the wall.

Minor damage to existing siding can often be repaired with a quality preservation wood consolidant or epoxy (See resources appendix for suppliers.). If major deterioration dictates replacement of a weatherboard, the new one should match the original in dimension, profile, and spacing. The availability of good replacement wood changes, so consult a preservation carpenter in the selection and sourcing of a durable wood that will match the dimension and profile. Fiber cement siding may be considered in select situations if it matches the original wood exactly in dimensions and profile, however the use of wood is always preferred and must be considered first. Sound wood must **never** be replaced with new material. Potential locations where fiber cement siding might be accepted are particularly exposed areas like dormers. New siding products are constantly being developed and other alternatives to fiber cement like wood composite may be considered if they match the original exactly in dimension and profile. Products with imitation wood grain will not be approved as this is completely incompatible with the appearance of actual wood historic siding.

In removing a deteriorated weatherboard, care should be taken not to damage adjacent boards. All the surfaces of new weatherboards should be treated with wood preservative and primer before installation. Wooden shingles should also be protected with wood preservative, but stain, not paint, should be used, to follow traditional practice. Properly maintained shingles rarely need replacement; if replacement is ever necessary, the shingles' distinctive shape and size must be duplicated. Additional information on maintenance and repair of wood appears in the guidelines for wood and paint.

Brick and stone walls should be monitored for signs of moisture damage or cracking. Heavily soiled masonry should be cleaned with **low**-pressure water washing, i.e. hose water and, if necessary, plastic or natural bristle brushes. Never use metal brushes on masonry. Vegetation should not be allowed to grow on masonry because it can cause structural damage or hinder surface ventilation and drainage. Although masonry provides a relatively low-maintenance, long-lasting exterior surface, eventually all masonry mortar joints need repointing. Care must be taken to match the old mortar in color, texture, and

strength. The guidelines for masonry present additional information on maintenance and repair or masonry.

Traditional stucco walls require maintenance similar to that indicated for masonry walls. If a stucco wall needs patching, it is important to match the original stucco in composition, texture, color, and strength. Frequently, stucco walls were originally painted; maintaining a sound paint film will help protect them from water damage.

Asbestos shingles should be gently cleaned with a mild soap and water to remove biological growth and refresh their appearance. They are a durable material and do not pose a health risk in place. When they are removed, however, proper containment and disposal of the hazardous material must occur. Therefore, for health and expense factors, as well as for preservation of the historic character, it makes sense to retain asbestos shingles. Broken shingles may be individually replaced. If a stock of extra shingles was not maintained on the property, good matches for replacement can generally be found through online sources

Resources

Preservation Brief 22: The Preservation and Repair of Historic Stucco
http://www.nps.gov/history/hps/tps/briefs/brief22.htm
Preservation Brief 47: Maintaining the Exteriors of Small and Medium Size Historic Buildings
http://www.nps.gov/history/hps/tps/briefs/brief47.pdf
Leeke, John. ***Wood Epoxy Repairs for Exterior Woodwork, Practical Restoration Report***
- ***Exterior Woodwork Details, Practical Restoration Report***

to order see,
http://www.historichomeworks.com/hhw/reports/reports.htm
Lustron Preservation
http://www.lustronpreservation.org/index.php

Guidelines

1. The original shape, form, height, materials, and details of historic exterior walls **must** be preserved to the fullest extent possible. This includes all architectural features that are character-defining elements of exterior walls, such as bays, cornices, storefronts, arches, quoins, corner boards, and brackets.
2. The removal and replacement of sound material is strictly prohibited.
3. If replacement of a wall element or detail is necessary due to irreparable deterioration as determined by a preservation professional, replacement **must** be limited to just the deteriorated element or portion of the element.
4. If replacement of any aspect of an exterior wall is determined

The porcelain-enameled-steel panels as seen above are a defining element of the iconic Lustron house.

Promoted for their fire resistance, asbestos shingles were one of the early kinds of synthetic siding. Several houses in the CVHD retain their orginal asbestos shingles.

Certificate of Appropriateness and Historic Preservation Pilot Loan Program Case Study

With financing from the Preservation Pilot Loan-Program, the exterior of this home was beautifully restored. Work included the removal of aluminum siding and the scraping and painting of the wood weatherboards. The work also qualifies for North Carolina Historic Preservation Tax Credits.

House covered in aluminum siding before project.

Original weatherboards are scraped and prepped for painting during restoration.

Original materials glow in the sunlight after the completion of restoration work

by a preservation professional to be necessary, the replacement material(s) **must** match the historic materials in composition, size, shape, color, pattern, and texture to the fullest extent possible. Substitute materials should only be considered if the original materials are not technically feasible. Fiber cement siding **may be considered** in select situations if it matches the original wood exactly in dimensions and profile, however the use of wood is always preferred and must be considered first. Applications for use of alternative materials **must** present a comparison with the use of the original material and reasons for selecting a different material.

5. Exterior walls should be protected and maintained in appropriate ways:
   - Inspect walls regularly for signs of deterioration or moisture damage.
   - Keep all joinery adequately sealed to avoid moisture damage.
   - Maintain a sound paint film on all elements that were traditionally painted.
   - Eliminate any vegetation that may cause structural damage, or that may hinder ventilation and surface drainage, thus inviting damage from moisture, mildew, fungi, or insects.
   - Maintain gutters and downspouts to avoid moisture damage to walls.
6. New vents and mechanical connections through historic walls **must** be located on non-character defining walls or inconspicuously on side or rear walls where they will not be visible from the street.
7. Unpainted wall materials that were historically not painted or coated **shall not** be painted or coated.
8. New wall features, such as vents, bays, and door or window openings, **must not** be introduced if they would diminish the original design of the wall or damage historic wall materials.
9. Wooden siding and trim **may not** be replaced or covered with a substitute cladding materials such as aluminum siding, vinyl siding, or brick veneer. It is **never** acceptable to remove and replace sound wood siding, trim, or features.
10. If 50% or more of the existing artificial siding on a structure, element (porch, garage, balcony, entryway), or combination thereof is deteriorated to the degree of needing replacement, the artificial siding **shall** be removed completely and the original material, if present shall be restored. If there is no surviving original siding or if the remaining wood weatherboards are determined by a historic preservation professional to be deteriorated to the point of being unsalvageable, replacement with a fiber cement or other composite siding may be considered. Alternative siding material may be considered only if it matches the original wood exactly in dimensions and profile, however the use of wood is always preferred and must be considered first. Applications for use of alternative materials must present a comparison with the use of wood and reasons for selecting a different material.

Windows and Doors

Windows and doors by their proportion, shape, positioning, location, pattern, and size can contribute significantly to a building's historic character and are particularly indicative of stylistic periods. Windows in the CVHD and local landmarks primarily consist of wooden double-hung sashes, vertical in proportion, with a variety of pane subdivision. Exceptions include the metal casement windows of the Municipal Building and the Lustron house and the stained glass windows of St. Paul's Episcopal Church. The number and the size of the lights, or panes, in a window are indicative of its architectural style. For example, most Craftsman Bungalows have double-hung sash windows with single-light bottom sash and top sash consisting of three or four vertical lights or single large lights featuring a row of several small lights across the top. Windows in the Colonial Revival style, on the other hand, are usually divided equally into small multiple lights within each single sash. Tudor Revival windows have small diamond-shaped lights reminiscent of leaded windows. Many bungalows feature a large picture window on the front elevation. Operable wooden shutters are somewhat common in the district.

These openings in a building's exterior also provide opportunity for natural light and ventilation. In this way, historic windows, doors, and shutters are sustainable design features that can facilitate energy savings when maintained properly. Historically, wooden blinds or shutters were functional as well as decorative. Shutters, particularly louvered shutters, were used to control the entry of light and air into historic interiors. With louvers angled to omit solar radiation while channeling air inside, shutters are very effective cooling devices.

Storm windows enhance the thermal performance of historic windows and also offer protection from the weather. A primary window that is protected by a storm window will require far less maintenance than an exposed one. Window screens add to the function of windows by keeping insects out while letting fresh air in. Both storm windows and window screens have been in use in the United States since at least the nineteenth century. They were particularly common building features in the first half of the twentieth century, before the advent of air-conditioning and more efficient heating systems. With the use of storms and screens, homes were more comfortable in all seasons. The storm and screen windows of this era differ from the metal triple-track storm and screens of the later part of the century. In the early twentieth century, storm windows and screens were typically simple wooden frames with rails that aligned

Typical bungalow windows in the CVHD.

On the previous page: A window that has it all! This well-maintained Colonial Revival window has its wooden shutter properly hanging on hinges and secured open with shutter dogs. A triple track storm and screen window protects the wooden sash, increases the R-value of the window unit, and enhances its ventilation function. Despite its deep profile, the triple track storm window is barely visible because it is properly aligned with the meeting rails of the window sash and is the same color as the sash and trim.

with the meeting rail of the double-hung windows. They were sized to fit exactly into the window casings and secured with hardware that allowed them to be switched seasonally. Screens like this can still be found in the CVHD and on other historic properties in the city. Storm windows of this vintage – if they survive – are more likely to be found stored in a garage or attic than on a building.

Like storm windows and screens, fabric awnings are a window accoutrement that were available in the nineteenth century, but grew in popularity during the early twentieth century for both residential and commercial buildings. Also, like storm windows and screens, they can be seen as a "green" building feature because they reduce the entry of solar radiation through windows during hot summer months. Traditionally, fabric awnings were put up when the weather warmed and stored during cool months. This practice allowed the sun's heat in windows when it was wanted and also helped keep the awnings in good condition for many years. By the 1950s, metal awnings were also available. These aluminum products were promoted by manufacturers as requiring less maintenance and having greater permanence. However, this very permanence makes them less effective in terms of energy savings because they leave homes darker and cooler during the winter months. Permanence also makes them less desirable as new features for historic buildings from a preservation perspective. While fabric awnings are historically appropriate for most buildings in the College View Historic District, metal awnings are not. Two local landmarks have existing metal awnings; the King Simmons Lodge and the Charles O'Hagan House. Although these awnings are existing features, since they post-date these buildings' recognized periods of local significance, removal would be appropriate in the event of any exterior renovation.

Both solid paneled wooden exterior doors and combinations of wooden panels with fixed glazing are typical in the district. Many of the original front doors remain, and a number of them are stained and varnished rather than painted. Front entries with double front doors are found on a few large residences. Sidelights and fanlights with fixed panes of glass – sometimes beveled or stained – surround some of the more formal front entries in the district. Screened and storm doors function much like storm windows and screens. See discussion above. Early twentieth century screened and storm doors were wood and often allowed for the exchange of glass to screen seasonally. Typically they were designed in ways that complimented the design proportions of the main door.

Maintenance and Repair

The preservation of original doors, windows, and shutters is always desirable in terms of retaining historic character. It is also far more cost effective over time than replacement. Preservation of these elements is also a much more sustainable choice than replacement. Well-maintained wooden windows perform well in terms of energy conservation and the energy savings of maintaining windows versus

the manufacture of new windows is enormous.

With cyclical maintenance and occasional repair, the preservation of original windows is not only readily achievable, but practical and cost-effective. All windows should be periodically cleaned and inspected for deficiencies in glazing, glass, and hardware. A small amount of effort at the right time prevents more extensive work and expense later. Since most of the windows in Greenville's local landmarks and historic district are wooden, a discussion of the maintenance and repair of wooden windows is provided below. Metal windows are somewhat more durable than wooden windows, but their maintenance and eventual repair is no less important than that of wood windows. See Preservation Brief 13 for information about steel windows. For aluminum windows, see the Preservation Tech Note, "Maintenance and Repair of Historic Aluminum Windows." (Links below.)

As with other elements, a wooden window's first line of defense against moisture and ultraviolet light is a sound paint coating. Keep windows painted to avoid unnecessary deterioration. It is also important to maintain a sound paint film on windows because failing paint on operating windows is a contributor to lead paint dust inside the home. When sash are lifted or closed, flaking paint is loosened and knocked off. See paint section for more on lead paint mitigation.

Glazing also requires periodic maintenance. When the glazing putty that seals the glass panes within the wooden sash dries and crack apart, panes may loosen and air may escape or enter. Failed glazing putty should be carefully removed and new putty properly applied. See resources – particularly Preservation Brief 9, Leeke, New York Landmarks Conservancy, and Edgecombe Community College – for further information on reglazing windows. If window panes are broken, they may be easily replaced by removing glazing points and inserting a new piece of glass.

If replacement of glass is necessary, use glass that matches original in thickness, color, and texture. Historic processes for making glass differed from those of today. Cylinder glass was common in the nineteenth century. It was made by flattening a hand blown cylinder of glass and has a distinctive appearance. Although the manufacture of plate glass began in the nineteenth century, cylinder glass continued to be used into the twentieth century as well. Age also affects the appearance of glass, lending it subtle ripples. Salvaged glass usually provides the best match, but new glass that replicates historic glass is also available. This includes new tempered cylinder glass. Tempered glass is stronger than standard glass and when broken shatters into small pieces that are less likely to cause injury. For this reason, new tempered glass may be desirable for some applications. Tempered glass is required by building codes for new construction in locations like doors, stairways, and in bath and showers, but this does not apply to rehabilitations.

Lancet arched doorway and window with stained glass at St. Paul's Episcopal Church.

Aluminum casement windows in the Lustron house.

Early twentieth-century screens on a College View Historic District home.

A missing piece of glazing is an indication that a window pane needs to be reglazed. Glazing should not be patched; one whole stretch should be completed at once for proper seal and bond. But it is not necessary to do more glazing than required at one time. Panes may be treated individually, if the glazing of other panes is truly sound, though often this will not be the case.

A student works on a complicated muntin repair at an Edgecombe Community College Preservation Trades Workshop. Even severely deteriorated window sash can typically be restored and the result is far superior to a contemporary "replacement" window. Photograph courtesy Monika Fleming.

When paint and glazing are not maintained, wooden elements of windows and doors may rot. If this occurs, repair or replacement of only the damaged portion of the frame, the sash, the sill, or the threshold will eliminate the problem. A carpenter trained in preservation techniques can cut out the deteriorated section and fit in a new piece of wood that matches the dimensions and profile of the rest of the element exactly. This is called a Dutchman repair. Alternatively, deteriorated wood may be able to be filled with a wood consolidant and epoxy. A number of two-part wood consolidant epoxy systems on the market can restore a section of rotten or damaged wood. The guidelines for wood provide more information on wood repair.

It is extremely rare for a sash to become so deteriorated that it must be replicated in its entirety. In such an event, a new sash must be fabricated from a durable wood. It must match the original in every dimension and muntin profile exactly. And don't forget the glass! If it is not broken, be sure the glass from the old window is saved to use in the new one, so that it blends in well with the other existing windows.

Vinyl replacement windows must *never* be installed in place of historic wooden windows. They simply do *not* visually match historic wood windows, nor do they match their physical quality. There is a great fallacy behind the whole notion of replacing windows, because the truth is that historic windows are irreplaceable. The wood they are made of came from old-growth trees. Its structure is far superior and more durable than the lumber commonly available today. While historic windows are irreplaceable, so-called replacement windows will *require* replacement. When their parts begin to fail, there is little that can be done to repair them and new windows will have to again be purchased. Thus, any seeming affordability of replacement windows is fleeting at best. Retention of historic windows not only preserves historic character, but it saves money, energy consumption, and landfill space.

Building owners often seek replacement windows in the belief that they will conserve energy. For this reason, some facts about the actual thermal performance of historic wooden windows versus new replacement ones are worthy of note. Contrary to many manufacturers' claims, the actual payback of a replacement window could be as long as a century (Sedovic and Gotthelf, 27). This is because the way that manufacturer figures are shaped does not reflect many of the realities of heat loss in actual buildings. Heat loss through both historic and replacement windows primarily occurs because of air infiltration where window sash meet each other and their casings. However, manufacturers of new windows like to focus on the thermal performance of the glass. Likewise, the role of windows in the thermal performance of the entire building is over emphasized. Insulating an attic will achieve far greater energy saving than replacing windows and it does not adversely affect the historic building. For detailed discussion and research results regarding

energy and windows, see *Saving Windows, Saving Money: Evaluating the Energy Performance of Window Retrofit and Replacement* and "What Replacement Windows can't Replace: The Real Cost of Removing Historic Windows" (citations below).

While replacement windows are not an appropriate way to conserve energy in a historic building, there are steps that property owners can take to ensure that their mechanically cooled or heated air – and their money along with it – isn't quite literally flying out the window. The first way to make sure that windows aren't energy sieves is to perform all of the maintenance noted above. Keeping windows well-painted and glazed will go a long way to making sure they resist heat loss or gain. Another important and overlooked aspect of window weatherization is making sure that they close properly and hardware works. If windows don't close completely, remove old paint build-up that may be hindering them and remedy any other defects. Meeting rails of double hung sash should align. Once closed, make sure that the window lock works to keep the window unit fully closed.

Beyond maintenance, there are further measures that can be taken to increase the R-value (measure of thermal resistance) of historic window units. Although heat transfer through glass is not the most significant aspect of a window's thermal performance, it certainly plays a part. The thermal performance of the glass within a historic window sash may be improved by lamination with a low-e coating. Low-e stands for low-emissivity, which means it reflects infrared radiation, but permits short-wave radiation. Appropriate low-e coatings are perfectly clear and do not block visible light, so they do not adversely affect the window appearance or receipt of natural light. Lamination of historic window panes will achieve a significant improvement in a window's thermal performance, and can be an appropriate choice for some historic buildings. However, it is unnecessary to tamper with the historic glass if storm windows are employed.

Storm windows are an extremely effective way to improve thermal performance at window openings. By adding to the window unit another layer of glass with an air pocket between, storm windows act much like the insulated glass of replacement windows. In addition, they too can be fitted with low-e glass or existing glass can be laminated. Today, there are many storm windows that are manufactured specifically for historic buildings. An internet search for "storm windows for historic buildings" will produce several manufacturer websites. Unlike the protruding triple track storm windows that many of us are most familiar with, low-profile storm windows with narrow frames can appear nearly invisible when installed. Storm windows can also be installed on the interior to avoid any exterior diminishing of historic character altogether. As noted in the third paragraph of the "Windows and Doors" overview above, wooden storm windows were commonly used in the early twentieth century and are period appropriate for most of Greenville's

An easily undervalued part of the thermal performance of windows is their hardware. Windows - old or new - must be able to stay closed to prevent air infiltration and window locks assure this. If the window locks of historic sash have broken, they are typically easily replaced. Here, a new lock from a local hardware store is ready to replace the broken one seen at right.

Students of the Edgecombe Community College Preservation Trades Program remove a window sash from its casing. When sash require extensive work, as in Dutchman repair and reglazing or stripping, it is best to remove the sash and complete work on a bench. Simple maintenance can be done in situ. Photograph courtesy Monika Fleming.

Window sash stripped of their paint by use of steam sit ready for replacement of their glass. It is not always necessary to strip a window for restoration work, but if extensive wood repairs are necessary or lead abatement is desired, steam is a good method for paint removal.

A student in the Edgecombe Community College Preservation Trades Program primes a window sash during the restoration process. Photograph courtesy Monika Fleming.

historic buildings. New versions of this style of storm window are also available today. See the windows chapter of *Green Restorations: Sustainable Building and Historic Homes* for some examples of storm window applications. Standard triple track storm windows already exist on many buildings in the CVHD. These are not preferable because their deep profile does change the appearance of the windows, but they are acceptable as long as their division aligns with that of the historic window. There are many variables in storm windows and selection should depend on how they will be used in conjunction with operation of the window and how they will impact the building. Finally, one other very simple way to insulate windows is to hang a curtain. There are heavy insulating curtains on the market, but even lighter fabrics will help prevent heat transfer through your windows.

The installation of window air conditioning units is permitted in inconspicuous locations, but this can damage historic window fabric. The installation of portable floor model air conditioning units that vent through windows is generally less damaging and therefore preferable to use of window units. See Utilities and Energy Retrofit section for further discussion of window air conditioning units.

Sadly, shutters are some of the least well preserved elements of historic buildings. Even the best maintained shutters have typically been painted to the point of being inoperable. Shutter hardware, including hinges, latches, and shutter dogs is also typically found in non-working order. When maintaining shutters, every attempt should be made not only to keep a sound painted finish, but return shutters to operability. Even if there is no intention to use them to regulate light and air, it is advisable to make sure that shutters fit the windows and can be secured shut with well-operating hardware. In this condition, shutters can offer some protection for windows during a high wind event like a hurricane.

Returning louvers to a good working condition can be challenging. Although it may be tempting to have thickly painted shutters dipped in a chemical solvent to remove old paint and return them to function, this is not advisable. Even after thorough rinsing, chemical paint removers will linger in the joints of shutter stiles, rails and louvers and eventually deteriorate the wood in these locations. See paint section for further discussion of paint removal. If louvers are frozen in layers of paint and function is desired, it may be most practical to focus paint removal effort only on the joints that need to be freed. As with all historic elements, original shutters should always be retained and preserved. If replacement shutters are necessary because of a total loss, the replacements must be wood and match the original shutters in dimension and operability.

Doors that were originally stained rather than painted are found throughout the district. Unless an originally stained door has been substantially patched, later coats of paint can be stripped off and the wood can be re-stained, then sealed with a clear varnish like

marine varnish to restore the original appearance. If the patching is too severe, painting the door in a historically appropriate color is preferable. Weatherstripping around a door can also deteriorate over time and should be replaced as needed to maintain a weathertight perimeter.

When security bars and doors are desired, designs that complement and align with window and door patterns should be selected. Many security bars are designed to fit more than one window size by expanding. Such bars will not align with the muntins, mullions, and rails of the historic windows and will be somewhat obtrusive. Custom security bars that match the vertical and horizontal divisions of the existing windows are preferable. Irreversible damage to historic fabric other than minimal fastener holes must be avoided when installing security bars or doors.

Resources

Preservation Brief 9: The Repair of Historic Wooden Windows
http://www.nps.gov/history/hps/tps/briefs/brief09.htm
Preservation Brief 13: The Repair and Thermal Upgrading of Historic Steel Windows
http://www.nps.gov/history/hps/tps/briefs/brief13.htm
Preservation Tech Note: Maintenance and Repair of Historic Aluminum Windows
http://www.nps.gov/tps/how-to-preserve/tech-notes/Tech-Notes-Windows22.pdf
Preservation Brief 33: The Preservation and Repair of Historic Stained and Leaded Glass

http://www.nps.gov/history/hps/tps/briefs/brief33.htm
Preservation Brief 44: The Use of Awnings on Historic Buildings Repair, Replacement & New Design http://www.nps.gov/history/hps/tps/briefs/brief44.htm
Secretary of the Interior's Standards for Rehabilitation & Illustrated Guidelines on Sustainability for Rehabilitating Historic Buildings, pgs. 4-7
http://www.nps.gov/tps/standards/rehabilitation/sustainability-guidelines.pdf
"Window Know-How: A Guide to Going Green." *Preservation* (March/April 2009)
http://www.preservationnation.org/magazine/2009/march-april/ma09window.html
National Trust for Historic Preservation, Preservation Green Lab. ***Saving Windows, Saving Money: Evaluating the Energy Performance of Window Retrofit and Replacement.*** 2012.
http://www.preservationnation.org/information-center/sustainable-communities/green-lab/saving-windows-saving-money/120919_NTHP_windows-analysis_v3lowres.pdf
Sedovic, Walter and Jill H. Gotthelf. **"What Replacement Windows can't Replace: The Real Cost of Removing Historic Windows."** APT Bulletin 36, no. 4 (2005): 25-38.
To order a copy of APT Bulletin 36, no 4 Special Issue on Sustainability and Preservation (2005) – which contains the above referenced article, please see http://www.apti.org/publications/bulletin.cfm

Closed shutters effectively block out solar radiation while louvers can still allow ventilation.

The vent of a portable air conditioning unit is far less obtrusive and less damaging to the window fabric than a window unit.

Above, a well preserved example of a style of door that appears on many College View Historic District homes. Below, the same style of door is fitted with a storm door that appropriately allows most of the door to be seen.

Lubeck, Aaron. ***Green Restorations: Sustainable Building and Historic Homes***. Gabriola Island, BC: New Society, 2010. chap. Windows.

Leeke, John. ***Save America's Windows, Practical Restoration Report***. 2009

To order a copy see http://www.historichomeworks.com/hhw/reports/reports.htm#Windows

New York Landmarks Conservancy. ***Repairing Old and Historic Windows: A Manual for Architects and Homeowners***. New York: John Wiley & Sons, Inc., 1992.

Courses in historic window repair are periodically offered by the **Historic Preservation Trades Program at Edgecombe Community College** in Tarboro.
http://www.edgecombe.edu/historic-preservation
For more information, contact:
Monika Fleming
Program Coordinator, Historic Preservation
Edgecombe Community College
(252) 823-5166, ext. 241
flemingm@edgecombe.edu

Glazing Putty
Viking Sales, Inc.
7710 Victor-Mendon Road
Victor, NY 14564
585-924-8070
Linseed Oil Glazing Putty
http://www.solventfreepaint.com/

Abatron, Inc.
5501 - 95th Avenue
Kenosha, WI 53144 USA
(262) 653-2000
800-445-1754
Sarco Glazing Putty (Linseed and soybean oil)
http://www.abatron.com/buildingandrestorationproducts/woodrestorationaccessories/glazingcompound.html?vmcchk=1

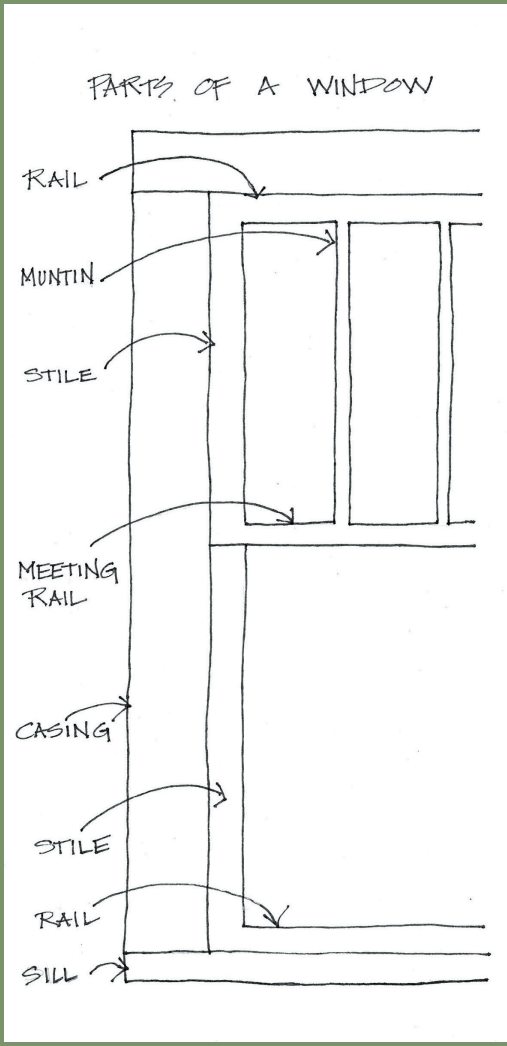
Guidelines

1. Original windows, doors, and shutters **must** be retained and preserved. This includes all wood and metal sash, glass, and hardware.
2. Openings and details of windows and doors, such as trim, casings, lintels, sills, and thresholds **must** be retained and preserved.
3. Original windows, doors, shutters, storm sash and screens should be protected and maintained in appropriate ways:
   - Maintain a sound paint film on all wooden windows and doors.
   - Maintain caulking and glazing putty to prevent air or water infiltration around glass.
   - Weatherstrip windows and doors if appropriate to prevent moisture and air infiltration.
   - Check sills and thresholds to ensure that water runs off and does not collect.
   - Monitor the condition of wooden windows and doors.
   - Keep hardware in operable condition.
   - Replace cracked glass with glass or same color, thickness, vintage and /or type of manufacture.

Note: Both the peeling of paint and the widening of joints may create false appearance of deteriorated wood.

4. Original windows, doors, and associated elements should be repaired by dutchman repairs consolidating, or otherwise reinforcing deteriorated sections.
5. If replacement of a piece or a window or door element is necessary, only the deteriorated portion should be replaced while all else **must** be retained. The replacement section **must** match the original in size, scale, proportion, profile, materials, and detail.
6. If replacement of an entire door or window is required because of total loss or irreparable deterioration as determined by a preservation professional, the replacement **must** match the original exactly in profile, dimensions, and finish. Replacement of windows and doors with stock items that do not fill the original openings or duplicate the unit in size, material, and design is **not** permitted. Vinyl replacement windows are **not** permitted and snap-in muntins are **not** appropriate replacements for true divided-light window panes.
7. Replacement of absent shutters **must** be sized to window openings. Replacement shutters**, must** match the appearance, size, design, proportions and profiles of the historic shutters. Comparable detailed drawings of both the historic and proposed replacement shutters shall be reviewed. Documentary, physical, or pictorial evidence shall substantiate replacement of missing shutters. If the proposed shutters are made of a material other than wood, the applicant shall submit detailed drawings as described above, manufacturer's literature, and a sample of the proposed shutter.

Above and below, main doors are clearly visible behind barely discernible storm doors. This is ideal.



8. Historic storm windows and screens should be retained and preserved.
9. New storm windows **must** be "full view" or "broken" in an unobtrusive manner. They **must** be installed so that existing windows and frames are not damaged or obscured. Any major horizontal or vertical dividing bars of the storm windows shall be aligned with the horizontal or vertical dividers of the windows and frames. On double hung windows, the horizontal dividers of the storm windows must align with the meeting rails of the window sash. The finish should be a color appropriate to the color of the building.
10. Historic storm or screen doors should be retained and preserved.
11. New storm or screen doors should incorporate full glazed panels to maximize the view of the existing door. Storm or screen doors **must** be installed so that the existing door and frame are not damaged or obscured. Storm or screen doors should be painted to match the building or trim
12. If fabric awnings are historically appropriate, install them in porch, door, or window openings so that architectural features are not concealed and historic materials not damaged. Select colors appropriate to the color of the building.
13. Aluminum awnings should not be installed.
14. Transparent glazing in windows or doors may **not** be replaced with tinted glazing.
15. Transparent or translucent glazing shall **not** be painted.
16. Existing window or door openings **must not** be filled or altered if it would diminish the historic character of the building. It is not appropriate to replace or cover glazing with plywood.
17. New windows or doors **must** not be introduced where they would diminish the original design of the building or damage historic materials and features. New windows and doors **must** be compatible with existing units in proportion, shape, positioning, location, pattern, size, materials, and details.
18. Front doors or matching storm or screen doors that were historically stained or varnished shall **not** be painted unless they have been so substantially patched as to destroy the natural appearance of the wood.
19. Security bars **must** be installed in a manner that avoids damage to the historic fabric. Custom security bars that align with the vertical and horizontal dividing elements of doors and windows are recommended over standard expandable models.

Foundations

The foundation ties the historic building to its site, usually raising the body of the structure well above ground level. The height, the materials, the features, and the details of a building's foundation can all contribute to its historic character.

Foundation walls in the historic district are most typically solid brick perimeter walls or spaced masonry piers with nonstructural brick panels between the piers. Often, decorative metal vents or pierced brickwork provide ventilation through the foundation. Usually, a wooden sill plate rests on the perimeter wall or the piers, connecting the foundation to the wooden framing system for the house.

The foundations of many brick structures in the district are differentiated from the walls above by the change in the pattern or texture. A water table, a distinctive band of bricks, may separate the two. Although the majority of brick foundations remain unpainted, quite a few other types of foundations have been painted over the years. Substantial plantings screen many foundations from view.

Exposed brick pier foundations support some porches and entrances. Wooden lattice panels often are used between the piers. Stone foundations, typically granite, and an occasional stucco foundation are found on a limited number of local landmarks and houses in the historic district.

Maintenance and Repair

Moisture due to improper drainage or inadequate ventilation is the most typical cause of deterioration in foundations. Another common problem is the cracking of a foundation along mortar joints due to the gradual settling or shifting of a structure over time. Tree roots or major site alterations can also damage foundations. Routine inspections of the foundation perimeter can identify such problems at an early stage.

Improper drainage results from insufficient sloping of the ground away from the foundation, allowing water to collect and gradually erode the mortar joints in the foundation wall. Vegetation growing against the foundation wall can lead to

Three examples of foundation ventilation found in the College View Historic District. Two styles of pierced brickwork and a modern louvered ventilator. Foundation ventilation is an important part of limiting moisture collection beneath a house.

Preceding page: Historic elements of this foundation in the College View Historic District include a historic window and a coal door. It also displays a decorative band of upright bricks (a soldier course) referred to as a water table.

premature deterioration of the mortar joints because it holds moisture against the foundation and its roots may begin to push into or under the foundation.

Vents and openings in the foundation wall allow natural ventilation of moist air that might otherwise be trapped in the foundation perimeter or the crawl space and cause additional moisture damage to both the foundation itself and the structural system that it supports.

In addition to eliminating the cause of moisture problems, repairing deteriorated mortar joints is essential in preventing more major foundation problems. Such repair involves removal of loose, crumbling, or cracked mortar and repointing of the mortar joint with new mortar of comparable strength, color, and composition. The new mortar joint should match the original joint in appearance and dimension. Proper repointing will extend the life of a foundation wall and prevent more serious damage that might require replacement of brickwork. The guidelines for masonry offer more information on this process.

Often, covering historic foundation walls with modern mortar, waterproofing, or paint coatings can temporarily hide foundation problems, but generally will not eliminate the initial problem and often will exacerbate it. Moreover, such coatings usually destroy the historic appearance of the foundation. Consequently, they are considered improper and inappropriate in the historic district.

Resources

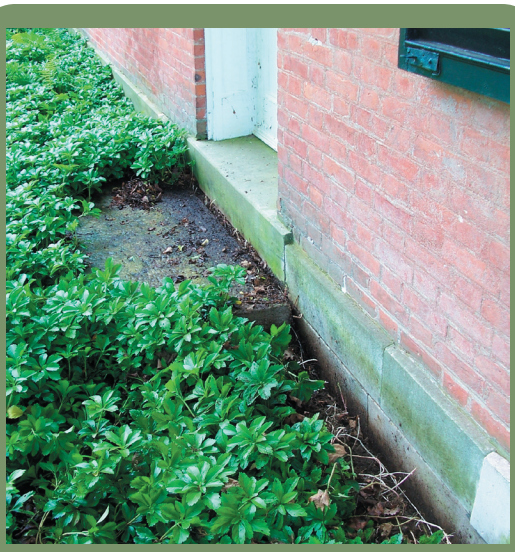
Preservation Brief 39: Holding the Line Controlling Unwanted Moisture in Historic Buildings
http://www.nps.gov/history/hps/tps/briefs/brief39.htm

Guidelines

1. The original form, pattern, color, and texture of historic foundations **must** be retained and preserved.
2. All architectural features that are character-defining elements of the foundation, such as decorative vents and grilles, access doors, lattice panels, water tables, and steps **must** be retained and preserved.
3. Historic foundation materials **must** be preserved and retained whenever possible. If repair is necessary, materials that match the historic materials in composition, size, shape, color, pattern, and texture **must** be used. Substitute materials should be considered only if the original materials are not technically feasible.
4. Protect and maintain a historic foundation in appropriate ways:
   - Provide adequate ventilation of the crawl space to prevent moisture problems.

- Provide adequate drainage of surface water by grading the site away from the foundation.
- If necessary, install drains around the foundation to eliminate surface-water problems.
- Maintain foundation plantings so that they do not hinder adequate ventilation and drainage of the foundation.
- Eliminate any vegetation that may cause structural damage to the foundation.
- Follow the guidelines for maintenance of masonry where applicable.

5. New utility and mechanical connections through foundations **must** be located inconspicuously on side or rear walls where they will not be visible from the street.
6. Unpainted foundation materials that were historically not coated shall **not** be painted or coated.
7. Previously painted foundations should be painted in dark colors that best reflect the foundation material.
8. Removal of paint from painted masonry foundations is not recommended unless the brick is of high quality and was intended to be exposed. Undertake removal only with a chemical paint remover specifically formulated for masonry. Always test the remover on an inconspicuous area or a test panel first.
9. New foundation features, such as vents or access doors, shall **not** be introduced if they would diminish the original design of the foundation or damage historic foundation features, materials, or structural integrity.
10. In the installation of any material between masonry piers, it **must** be recessed and detailed so that the original piers are still prominent. It **must** also provide ample ventilation for the underside of the building to prevent holding of moisture.
11. If repair or repointing of mortar is necessary, it is **required** that the existing mortar be duplicated in composition, color, and texture as best as possible. Repointing with a standard bagged mortar of high Portland cement content is **not** acceptable.



Vegetation should be kept off of foundations. At the above property, pachysandra was allowed to grow against the foundation, contributing to moisture issues. On the right, the vegetation has been cut back, revealing the line of biological growth that thrived on the granite in the moist environment.

Good gutter design and maintenance is essential to avoiding foundation problems. Here, a poor attempt to repair a gutter leaves water funneling directly against the foundation.

Flexible drains buried in the ground is one effective way to channel water away from a foundation.

Notes

Porches, Entrances, and Balconies

Porches, entrances, and balconies are often primary features of historic buildings and contribute significantly to their overall architectural character. The various functional components of porches and entrances, including steps, balustrades, columns, pilasters, doors, and entablatures, all add stylistic embellishment to historic buildings while providing scale and detail. Because of their prominence, front porches were sometimes altered over the years to reflect a more current architectural style than the original house.

Front porches are the dominant feature on many houses within the historic district. They generally are one story in height, often run the full width of the house, and sometimes wrap around from the front to a side elevation. Most porches in the district are constructed and detailed in wood, although some are stucco or brick and decorative iron balusters, rails, and columns can be seen as well. Painted tongue-and-groove floorboards and beaded-board ceilings are most typical of the bungalows in the historic district. Most side and rear porches are open or screened.

Typical porch-paint color schemes in the district repeat house trim colors on columns, balusters, and soffits. A medium gray is often used on the floor and a light blue-green on the ceiling. Because the non-historic enclosure of a front porch or balcony alters the historic character of a building so significantly, it is never considered appropriate in the district. For the same reason the enclosure of side or rear, porches is discouraged. Similarly, elimination or enclosure of balconies compromises the architectural integrity of buildings. However, the use of screens or glass storm panels behind or inset between railings, posts, and columns and was done on many porches historically is appropriate.

The use of screens or storm glass on a porch can increase its functionality and contribution to climate control of the rest of the house. Such applications are encouraged as long as they do not detract from the historic features of the porch and are installed in a reversible manner. Likewise, the installation of fabric awnings over the porch bays of early twentieth century residences is encouraged as long as they do not damage historic fabric and have a historically appropriate appearance. The installation of metal awnings on porches is not permitted. See window section for further discussion of awnings.

Although most of Greenville's local landmark and historic district porches are primarily wood, some like the two above examples also feature brickwork, stucco and ironwork.

This partially screened porches offers a good example of historically appropriate porch screening. Here, slender wooden uprights support the screening between the boxed columns, which remain prominent and character defining.

Preceding page: An ample porch extends living space outside and provides a solar break for the interior. Tapered, boxed wood columns on brick bases are a typical bungalow porch feature.

Creating a false historical appearance through the application of elements and details to a porch or an entrance is considered inappropriate, as is adding a porch or an entrance to a prominent elevation where none existed historically. Reconstruction of a missing porch, entrance, or balcony requires accurate evidence of the original configuration and detail. If such documentation does not exist or if reconstruction is not desired, a contemporary design that is compatible with the historic building in height, proportion, roof shape, material, texture, scale, detail, and color may be appropriate.

Maintenance and Repair

Because of the exposed nature of porches and entrances, maintenance is a continuing concern. Ensuring their water-shedding ability through proper sloping of all floors and steps and through maintenance of related roofing, gutters, and downspouts is essential. Keeping a sound paint film on all wooden porch and balcony surfaces to prevent moisture damage is critical as well.

The guidelines for wood, architectural metals, and paint contain information for maintenance and repair of each material.

Given the distinguishing character of historic porches and entrances, replacement of any element or detail should only be considered in cases of severe deterioration as determined by a preservation professional. When replacement is necessary, the new piece must match the original piece in material, shape, texture, detail, and dimension. It is not appropriate to substitute a contemporary stock item that does not match the original element, or to eliminate a detail rather than repair or replace it.

Resources

Preservation Brief 45: Preserving Historic Wood Porches
http://www.nps.gov/history/hps/tps/briefs/brief45.pdf

Kahn, Renee and Ellen Meagher. ***Preserving Porches.*** New York: Henry Holt, 1990.

Guidelines

1. Historic porches, entrances, and balconies **must** be retained and preserved.
2. All architectural features that are character defining elements of porches, entrances, and balconies, including piers, columns, pilasters, balustrades, rails, steps, brackets, soffits, and trim **must** be retained and preserved.
3. Historic porch and balcony material, such as flooring, ceiling board, lattice, and trim, **must** be retained and preserved whenever possible. If replacement is determined by a preservation professional to be necessary, new material that matches the

historic materials in dimension, shape, color, pattern, and texture **must** be used. Composition materials **may** be considered with the submission of a sample, but wood is always preferred and must always be considered first. Applications for use of alternative materials must present a comparison with the use of wood and reasons for selecting a different material.

4. Protect and maintain porches, entrances, and balconies in appropriate ways:
   - Maintain the slope of the floor and the steps to ensure that water does not collect but runs off.
   - Maintain a sound paint film on all elements that were traditionally painted.
   - Check the condition of all wooden elements regularly for signs of water damage or rot.
   - Keep wooden joinery adequately sealed to avoid moisture damage.
   - Inspect masonry piers or foundation walls regularly for signs of deterioration or moisture damage.
5. Wooden elements should be repaired by patching, splicing, consolidating, or otherwise reinforcing deteriorated sections.
6. If replacement of a porch feature is determined by a preservation professional to be necessary, replacement **must** be limited to only the deteriorated element. Any replacement **must** match the original in size, scale, proportion, material, texture, and detail.
7. If a historic porch, entrance, or balcony is completely missing, any replacement **must** be either based on accurate documentation or be a new design compatible with the historic character of the building in height, proportion, roof shape, material, texture, scale, detail, and color.
8. The introduction of reversible features to assist people with disabilities **must not** diminish or damage the original design or materials of the porch or entrance. (See Life Safety and Accessibility section for more information.)
9. Enclosure of front porches or balconies with solid walls or other non-historic designs is **not** permitted.
10. Installation of screens or glass storm windows on porches **must** not obscure or damage historic features and must be compatible with historic designs.
11. Enclosure of side or rear porches and balconies is discouraged. If enclosure of a side or rear porch is required for a new use, the enclosure **must** be designed so the historic character and features of the porch are preserved.
12. Addition of elements or details to a porch or an entrance in an attempt to create a false historical appearance is **not** permitted.
13. Replacement of wooden porch floors or steps with concrete or brick ones is **not** permitted.
14. The addition of new porches, entrances, or balconies to primary elevations where none previously existed is **not** permitted.

These precast columns demonstrate just how bad the results can be when imitation features literally fall short of original historic fabric. When replacement of an element is necessary, it must always match the original as closely as possible. Custom work is most often the best way to accomplish the job correctly and with durable materials.

The deteriorated portion of the above porch floor was properly repaired and repainted as part of a COA project.

Notes

Garages and Outbuildings

A number of original garages and smaller outbuildings, and even a few carriage houses, survive in the historic district. Many echo the materials, details, and roof form of the main house on the site and contribute to the architectural character of the district. Through their siting and relationship to the houses and streets, the accessory buildings contribute to the historic character of the district as well.

Early garages were typically single-bay structures located in the rear yard at the end of the driveway. Early storage buildings and sheds were usually small frame structures sited towards the back of the rear yard and were generally not visible from the street.

A number of later garages and sheds also exist in the historic district. These were generally considered to be noncontributing to the architectural significance of the district when it was nominated to the National Register. Changes or demolition of late twentieth-century outbuildings may be permissible; however each case must be evaluated for its impact on the character of the property and district. To find out if a garage or outbuilding was considered to be a contributing element to the district, see the National Register nomination (http://www.hpo.ncdcr.gov/nr/PT0617.pdf). For further discussion of contributing and noncontributing properties, see Chapter 1.

Historic garages and outbuildings should be treated in the same manner as the primary historic buildings. See all other sections for pertinent maintenance and repair recommendations. New garages must be located at the rear of the yard in the same relationship to the main building as historic garages. The same design considerations will be applied to garages as to other new construction or additions. See "New Construction and Additions" section for more information on this topic.

Resources

Preservation Tech Note, Historic Garage and Carriage Doors: Rehabilitation Solutions
http://www.nps.gov/tps/how-to-preserve/tech-notes/Tech-Notes-Doors01.pdf

Above and on preceding page: Like the houses of the College View Historic District, the garages display a variety of styles and materials.

Guidelines

1. Historic, contributing garages and outbuildings **must** be retained and preserved.
2. All architectural features that are character defining elements of historic, contributing garages and outbuildings **must** be retained and preserved, including foundations, steps, roof form, windows, doors, architectural trim, and lattices.
3. The guidelines for "Roofs," "Exterior Walls and Trim," "Windows and Doors," and "Foundations" apply to garages and outbuildings as well. See all pertinent sections for applicable guidelines.
4. Protect and maintain garages and outbuildings in appropriate ways:
   - Check the condition of all wooden elements regularly for signs of water damage or rot.
   - Keep wooden joinery adequately sealed to avoid moisture damage.
   - Maintain a sound paint film on all elements that were traditionally painted.
   - Inspect masonry piers or foundation walls regularly for signs of deterioration or moisture damage.
   - Follow all pertinent guidelines for elements and materials.
5. The proportion and the height of new garages and outbuildings **must** be compatible with the proportion and the height of historic garages and outbuildings in the district.
6. New garages and outbuildings **must** use roof forms, materials, and details compatible with the main building or historic outbuildings in the district. "New Construction" guidelines apply. It is not appropriate to construct prefabricated metal storage buildings in the historic district.
7. New garages and outbuildings **must** be located in the rear yard and in traditional relationship to the main building.
8. New garages and outbuildings may **not** be located in front of the main building unless such a location is historically accurate for a specific site.
9. Modern garage doors shall be decided upon on a case-by-case basis. They **must not** present false historic style inappropriate to the property. Their installation **must not** detract from or damage the historic garage.

Masonry

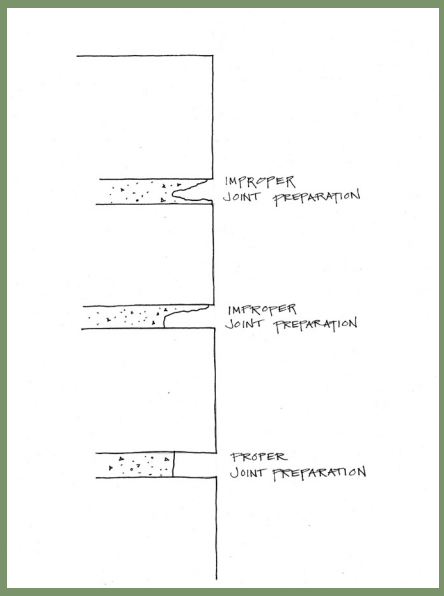
Brick, stone, tile, terra-cotta, concrete, stucco, and mortar are all typical masonry materials found on the exterior of historic buildings. The texture, the scale, the color, the bonding pattern, the joints, and the detail of masonry surfaces can all contribute significantly to the overall character of the historic building. Masonry features such as roofing tiles, chimneys, arches, quoins, lintels, sills, cornices, and pediments further define a building's historic character.

Brick is by far the most common masonry material found in the historic district. Brick and stucco appear on exterior walls and foundations. Limestone is found at local landmark buildings like the Municipal Building, the Federal Building (Former U.S. Post Office), and the Pitt County Courthouse.

Maintenance and Repair

Masonry surfaces are relatively long-lasting and require little maintenance. Moisture is the most common cause of deterioration in masonry. If water can enter the wall, the roof, or the foundation through loose masonry joints or cracks, it will cause damage as it works its way through the structure. Freezing cycles exacerbate the potential damage by causing expansion of the moisture within the masonry. Typically, mortar joints slowly deteriorate over a period of years because of exposure to the elements. The deterioration allows moisture to penetrate brick walls or foundations. Consequently, the life of a brick or stone wall depends on proper maintenance of its mortar joints.

When mortar becomes significantly deteriorated, the affected joints should be repointed. The process of replacing deteriorated mortar joints with new mortar is called repointing. All loose and deteriorated mortar is carefully removed from the joint and new mortar is inserted. Proper preparation of the joint is an essential part of repointing. Without appropriate removal of old mortar from the joint, the new mortar will not properly key into and adhere to the joint and will be prone to failure. A joint is properly prepared when all loose mortar and dirt is removed and the remaining mortar is cut to a flat surface against which new mortar will be pushed. No mortar should remain on the underside of the top brick or the top of the lower brick. It is a common repointing mistake to leave mortar on these surfaces, resulting in a curved opening from which new mortar will more likely detach. (See images in sidebar on next page.)



A typical error in preparation for repointing is inadequate cutting out of the joint. Choosing the proper chisels makes the job easier. A plugging chisel and other masonry chisels no wider than the joint are useful. Always keep chisels sharp with a sharpening stone.

A Preservation Trades student of Edgecombe Community College cleans a joint in preparation for repointing. Note that eye protection should always be worn when doing this work. Photograph courtesy Monika Fleming.

On the previous page: Early twentieth century brickwork typical of the College View Historic District.

Preparation of joints should almost always be accomplished manually with hand tools: chisels and a hammer. Some very experienced preservation masons are skilled at the use of power tools (i. e. grinders or pneumatic chisels) to clean certain types of joints, but in less skilled hands, power tools quickly cause significant and irreversible damage to historic masonry. Anyone proposing to use power tools to remove old mortar should be required to provide proof of their ability in this regard through references, examples of previous work, etc. Inexperienced operators must *never* approach historic masonry with power tools.

To maintain the historic character and the structural integrity of the wal1, the original mortar should be matched in composition, color, texture, and strength. Mortar is aesthetically and physically as important a part of a masonry wall as its bricks or stone. A poor mix of new mortar can ruin the appearance of a masonry wall and cause more damage than an old deteriorated mortar. Mortar is composed of a binder and aggregate (sand). Binders found in historic mortars are lime (calcium hydroxide), natural cement, and Portland cement. Lime was the common binder of the eighteenth and nineteenth centuries. Natural cement is found in some late nineteenth century buildings, typically larger construction projects. Although Portland cement was first manufactured in the United States in 1871, it was not widely used until the twentieth century. At the beginning of the twentieth century, pure lime mortars continued to be used as well as Portland cement and lime mortars. The primary difference between Portland cement and (nonhydraulic) lime is the ability of the former to set in the presence of water. Portland cement mortars are also harder and more brittle than lime mortars.

Most of Greenville's historic buildings are likely to have an early-twentieth century mortar that includes Portland cement as a binder. However, it is very important to understand that this is not at all the same as the standard bagged Portland-cement-based mortar sold today. Today's Portland cement is manufactured in kilns that operate at much higher temperatures than those of the past. The result is a cement with a far greater compressive strength. This may sound like a good thing, but it can actually be a real problem for historic masonry. In a masonry wall, the mortar should always have a lower compressive strength than the masonry unit – the brick, stone, or concrete block. In essence, the mortar is meant to play a supporting role to the masonry units. When the wall is stressed, it should be the mortar that gives way, not the brick, stone, or block. When this relationship is reversed and the mortar is stronger than the masonry unit, irreparable damage can occur to the wall. It is far more difficult to replace a brick or stone than to repoint a joint. (See images in sidebar.) Therefore, when selecting a new mortar mix for historic masonry, it is always better to err on the side of weaker rather than stronger.

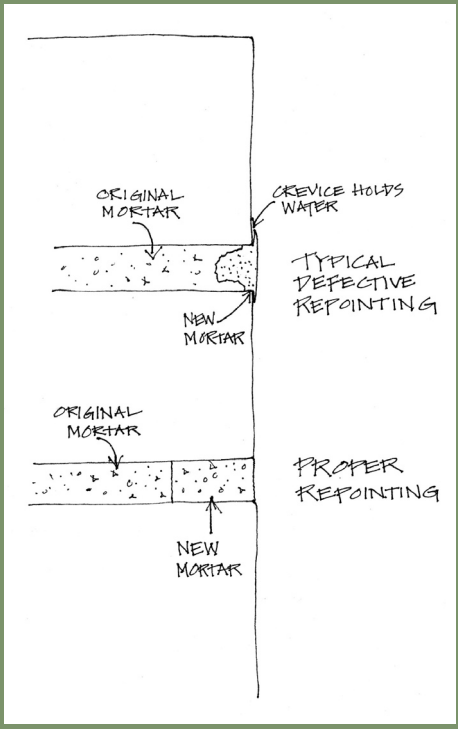
Never use standard bagged mortar from hardware or home improvement stores to repoint historic masonry. Such mortar will

not match the original in color, texture or strength. To achieve a mortar of appropriate strength, the use of a naturally hydraulic lime, a natural cement, or a mixture of hydrated lime and Portland cement is recommended. The strength of the new mortar does not have to be exactly that of the old (determining this is expensive and unnecessary), it just should not be too strong for the bricks or other masonry units. Mortar mix types O, N, and K contain acceptable proportions of Portland cement and hydrated lime for use on hard early-twentieth-century brick, but sand contained in prebagged mortar mixes may or may not match historic mortars. See Preservation Brief 2 for more information on mortar types (link provided below). Consult one of the traditional lime product suppliers listed below and/or a preservation mason for more specific recommendations relevant to your project. Prior to the twentieth century, the color of a mortar was most commonly created by the selection of sand. In the twentieth century, builders and architects began to experiment more with additives and pigments that would color the mortar for decorative affect. Such mortars can be tricky to match. Again, consult one of the traditional lime suppliers listed below and/or a preservation mason for assistance. The texture of a mortar is achieved both through the characteristics of its aggregate and the final tooling of the joint. A sand of matching particle sizes and shapes should be selected when recreating a historic mortar.

With a proper mix for the repointing mortar identified, it is time to lend close attention to the tooling of the original joints. The dimension and the profile of the original mortar joint should be duplicated. There are many different types of joints, from basic flush joints to raked joints or extruded joints. Then there is also the apparent lack of tooling that characterizes skintled brickwork. (See side bar for illustrations.) Like the mix of the mortar, final tooling of the joint is not only important for appearance, but for the durability of the joint as well. A common mistake is leaving a feathered edge of mortar over the face of the brick. This mars the appearance of the brickwork and creates a trap for moisture. (See side bar.) It is always a good idea to repoint a small, inconspicuous area to evaluate the results before completing a large and prominent area.

Repair of stucco requires much of the same considerations as repointing. The binder and aggregate mixture for the stucco must be compatible in strength with the historic substrate and surrounding stucco. Since the stucco found in the historic district is typically painted, color matching is less of a concern. The texture of the stucco mix and the tooling of it, however, is very important. Patching of stucco in a manner that blends invisibly into the original requires an artistic hand. The application also needs to be done correctly so that it will bond well to the surrounding material. Like mortar, it should not be feathered over adjacent surfaces as this not only makes the patch apparent, but will lead to its failure.

Two extreme examples of what excessively strong and impermeable mortar can do to softer brick. In the top photograph, moisture that was wicked up from the ground through this pier was forced to migrate through the brick because of the inadequate vapor permeability of the new mortar. The concentration of moisture in the bricks eventually eroded some completely, leaving a skeleton of mortar. The bottom image shows a dramatic crack that resulted from a stress of the pier. If the mortar had been appropriately weaker than the brick, the crack would have carried through the joints leaving the bricks unharmed, but the excessively strong mortar forced the stress through the bricks.



The above diagram depicts the differences between a defective repointing job and a proper one. The defective job leaves excess mortar on the face of the masonry units which is unattractive and makes an area of repointing obvious. It also traps water which can cause further damage to the masonry and will eventually cause the repointing to fail.

A close-up photograph of defective repointing indicating the edge of the newer mortar and the original mortar exposed to the right.

A piece of failed repointing mortar is held up to show how thinly it was applied.

Aside from repointing, cleaning is the primary maintenance activity occasionally required for masonry. Heavy soiling or vegetation that allows moisture to remain on the masonry surface contributes to the deterioration of masonry elements. If cleaning is necessary, the gentlest method possible should be used. Periodic cleaning with simple low pressure hose water, with or without a mild detergent, complemented by scrubbing with a natural bristle brush where needed, is generally all that is necessary. If these techniques are not successful, an architectural biocide or other masonry cleaner may be indicated. Chemical cleaners should always be tested on an inconspicuous area well in advance to determine if they cause any discoloration or damage to the masonry. High-pressure techniques such as sandblasting and pressure washing can permanently damage the surface of historic masonry and accelerate its deterioration. Consequently, such techniques must not be used on historic masonry.

If vines have grown onto masonry, clip them at ground level and allow to die before pulling off of masonry. Living vines can be so firmly attached to masonry that they detach pieces of it when pulled away, but dead vines can be pulled off more easily. To keep vines from growing back, treat just the fresh cuts with a direct application of a herbicide. Never spray a herbicide on masonry as many common formulas contain soluble salts that can penetrate and cause damage to masonry.

Painted masonry may be repainted with masonry paint, but care should be taken to investigate the condition of the coating and the underlying masonry before repainting. Paint can trap moisture against masonry and lead to its deterioration. Inspect an existing paint coating for soundness. Remove any loose paint. Hose water and a plastic scraper can work well for removing loose paint from masonry. Avoid metal scrapers and brushes as they can damage masonry. If masonry behind paint appears to be deteriorating or requires repointing, removal of paint is ideal. (See resources below for a supplier of effective paint strippers for masonry.) Once paint is removed, the masonry can be cleaned and repointed as needed. Do not paint or otherwise coat unpainted masonry. Paint and even clear coatings change the appearance of masonry and can contribute to deterioration by trapping moisture.

Resources

Preservation Brief 1: Assessing Cleaning and Water-Repellent Treatments for Historic Masonry Buildings
http://www.nps.gov/history/hps/tps/briefs/brief01.htm
Preservation Brief 2: Repointing Mortar Joints in Historic Masonry Buildings
http://www.nps.gov/history/hps/tps/briefs/brief02.htm
Preservation Brief 6: Dangers of Abrasive Cleaning to Historic Buildings
http://www.nps.gov/history/hps/tps/briefs/brief06.htm
Preservation Brief 15: Preservation of Historic Concrete

http://www.nps.gov/history/hps/tps/briefs/brief15.pdf
Preservation Brief 22: The Preservation and Repair of Historic Stucco
http://www.nps.gov/history/hps/tps/briefs/brief22.htm
Preservation Brief 38: Removing Graffiti from Historic Masonry
http://www.nps.gov/history/hps/tps/briefs/brief38.htm
Preservation Brief 42: The Maintenance, Repair and Replacement of Historic Cast Stone
http://www.nps.gov/history/hps/tps/briefs/brief42.htm
Speweik, John P. ***The History of Masonry Mortar in America 1720-1995***. Arlington, VA: National Lime Association, 1995.

Suppliers of Traditional Lime Mortars and Related Products, Workshops, Mortar Analysis, and More

deGrucy's Limeworks
Milford Square, PA
215-536-6706
http://www.palimeworks.com/lwus/
Products: St. Astier NHL (naturally hydraulic lime) and Lithomex stone and brick repair, lime paint, silicate paint

U. S. Heritage Group
Chicago, IL
773-286-2100
http://usheritage.com/
Products: Lime putty, NHL (naturally hydraulic lime), stone and brick repair, salvage brick and terracotta, limewash, churn brushes and specialty tools

Virginia Limeworks
Madison Heights, VA
434-929-8113
http://valimeworks.com/
Products: hydraulic lime composed of lime and proprietary pozzolan, lime paint

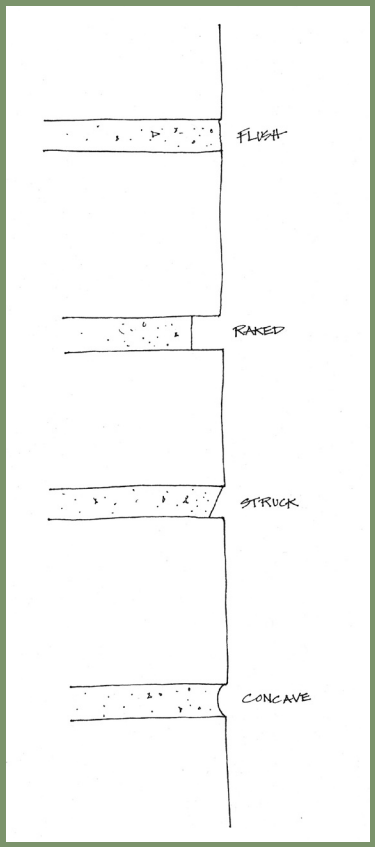
Supplier of Natural Cement

Rosendale Cement Products
Edison Coatings, Inc.
Plainville, CT
860-747-2220 or 800-341-6621
http://www.rosendalecement.net/
The website provides news, events, history, resources and product information for authentic, historic Rosendale Natural Cement Products.
Products: natural cement, injection grout, patching compounds, whitewash, hydraulic lime

Local Supplier of Hydrated Lime, Portland Cement and Masonry Products

Oldcastle/Adams Products

A mason demonstrates a quick field characterization of a mortar sample for Edgecombe Community College Preservation Trades students. By dissolving the binder of the mortar, the aggregate particle size, distribution and color can be examined as well as any additives that remain.



Some joint profiles commonly found in early twentieth-century brickwork. There are many others. The width, profile and texture of a joint should always be carefully replicated.

Edgecombe Community College Preservation Trades students repoint an exterior wall. For this application, the mortar was tinted with masonry pigments to match the original early-twentieth century tinted mortar and the joints were raked to match the profile and depth of the original.

Raking the repointed joints of the above project with a skate.

To avoid having to repoint masonry, keep it dry! In the above photograph, a leaky faucet has been routinely spraying the historic masonry wall behind it every time the sprinkler system goes off. As a result, lichen is thriving on the wall and the bricks and mortar deteriorated. A bad repair was then made with completely incompatible modern bricks and mortar, but the primary cause of the problem remains unaddressed.

Rocky Mount, NC
252-442-6168
Check local listings for other locations throughout the state.
http://www.adamsproducts.com/buy/masonry_stores.html
Note: The hydrated lime typically available for building is Type S. This should **never** be confused with Type S mortar mix which contains a high proportion of Portland cement and should not be used on historic masonry. Read labels carefully.

Manufacturer of Handmade Bricks
Old Carolina Brick Company
Salisbury, NC
705-636-8850
http://www.handmadebrick.com/

Manufacturer of Masonry and Plastering Tools
Marshalltown
Marshalltown, IA
1-800-888-0127
http://store.marshalltown.com/default.asp
Marshalltown and other brands of masonry tools can also be found at local hardware stores.

Provider of Specialty Grouts, Paint Strippers, D/2 Biological Solution and other products
Cathedral Stone Products
Hanover, MD
410-782-9150 or 800-684-0901
http://www.cathedralstone.com/

Seller of Specialty Preservation Tools, Materials, and Books
Preservation Resource Group
Rockville, MD
301-309-2222 or 800-774-7891
http://www.prginc.com/
Masonry Products: Moisture meters, crack monitors and gauges, rilem tubes

Guidelines

1. Historic masonry **must** be retained and preserved to the fullest extent possible.
2. All masonry construction features that are character defining elements of historic buildings, including chimneys, arches, quoins, cornices, and pediments **must** be retained and preserved to the fullest extent possible.
3. If replacement of any masonry material is deemed to be necessary by a preservation professional, replacement materials **must** match the historic materials as best as possible in composition, size, shape, color, pattern, and texture.

4. Historic masonry should be protected and monitored in appropriate ways:
   - Monitor masonry for cracks and signs of moisture damage.
   - Ensure that water does not collect at the base of a masonry foundation or chimney.
   - Clean masonry only if necessary to remove any heavy soiling or prevent deterioration.
   - Eliminate any vegetation that may cause structural damage or hinder ventilation and surface drainage of a masonry element.
   - Use the gentlest means possible to clean historic masonry. Cleaning with a low pressure (500 pounds per square inch or less) water wash, using detergents and natural bristle brushes, is recommended.
   - Test any proposed cleaning method on an inconspicuous sample area first.
5. Abrasive cleaning methods like sand blasting and high pressure water washing are **not** permitted for masonry.
6. If cracks in mortar joints, crumbling mortar, loose bricks, damp walls, or damaged plaster indicate deterioration, repoint mortar joints of masonry surfaces in appropriate ways:
   - Carefully remove deteriorated mortar by hand-raking the joints. Using electric saws or hammers can damage the masonry.
   - Duplicate the strength, the composition, the texture, and the color of the original mortar. Replacing a softer mortar with one high in Portland-cement content can cause serious damage to existing masonry and is **not** permitted. The ingredients and ratio of proposed mortar mix along with a cured sample **must** be submitted with application.
   - The width and the joint profile of the original mortar joints **must** be replicated. Applicants may be required to show a small example of a finished joint before being granted approval to complete work on prominent or character defining areas.
7. It is not appropriate to apply paint or other coatings to unpainted masonry elements that were historically not coated. Application of paint or other coatings to unpainted masonry elements is **not** permitted.
8. Application of nontraditional masonry coatings such as weatherproofing and water repellents to masonry as a substitute for repointing or repair is **not** permitted. Use of water repellants **may be considered** only if masonry repairs have failed to eliminate water penetration problems.
9. Painting of previously painted masonry elements in dark colors that best reflect the color of the masonry material or that of the original paint is recommended.
10. Removal of paint from masonry surfaces is not recommended unless the brick is of high quality and was intended to be exposed. Undertake removal only with a chemical paint remover specifically formulated for masonry. Always test the remover on an inconspicuous area or a test panel first.

Vegetation should *not* be encouraged to grow on masonry. Plants vary in the degree of destruction they cause, but all vegetation holds moisture against any wall on which it grows and that fosters deterioration. If vines like English ivy are growing up a wall, it is best to clip them at ground level and allow them to die before pulling them off of the building to minimize damage. Never spray an herbicide on masonry as many contain soluble salts that will accelerate deterioration of masonry. If vining plants are desired, attach them to a lattice fixed a few inches off of the building to allow air circulation over the face of the masonry.

Notes

Wood

The variety of ways in which wood can be shaped and finished make it a typical material for creating a range of architectural elements and details that contribute to the character of historic buildings. Through carving, sawing, planing, and splitting, wood can be fashioned into such diverse elements as columns, balustrades, cornices, shingles, clapboards, panels, flooring, and brackets. Wooden features often add decorative or stylistic detail to historic structures while functioning in quite pragmatic ways.

Frame houses with clapboard siding and wooden porches are typical of the historic district. Substitute materials for wooden siding and trim, such as vinyl and aluminum do not provide the same dimension, shape, texture, scale, and detail as the wooden fabric. The introduction of such substitute materials often results in damage to original wooden elements while compromising the character of a historic building. Consequently, their use in the historic district is not appropriate.

Maintenance and Repair

Wood is a traditional building material with good insulating qualities. It will last indefinitely if it is kept properly caulked and painted. Because wood expands with the introduction of moisture, caulks and flexible sealants are typically used to seal wood joints and prevent the entry of any water beneath the wood surface. Paints and coatings on the wood surface protect it from deterioration due to ultraviolet light as well as moisture. The guidelines for paint provide additional information on the preparation and the maintenance of painted surfaces.

Stains or evidence of mildew indicate that a wood surface is remaining damp, inviting insect and fungal attacks as well as wet rot. Wooden elements should be sloped to shed water, and roof and gutter systems should provide additional protection to the surface. Chemical treatment of wooden members either during manufacture or following installation can enhance wood's ability to resist rot and insect infestation. Some chemical treatments result in an initial resistance to surface paint films, requiring a weathering period of a few months before painting. Chemical treatment is particularly advantageous if the wooden element is to remain unpainted or is in direct contact with the ground.

The bottom end of a corner post mostly lost to rot.

A large scale Dutchman repair secured with a lap joint and bolts. Smaller Dutchman repairs are typically held by their tight fit and glue, with no fasteners.

On the previous page: Wood lasts longer when protected by a sound coat of paint as seen on the many character defining wooden elements of this CVHD house.

When moisture and fungal decay have been allowed to take hold of an element, deterioration may reach a point where a section of wood must be removed. It is always recommended that any removal be limited to only the deteriorated area. There are two preservation approaches to the repair and conservation of wood in such cases. One method is to cleanly cut away the decayed material in such a way that a new piece of wood can be tightly fitted into the void. This is known as Dutchman repair. It requires a medium to high degree of carpentry skill to execute a good Dutchman repair. The other approach is consolidation. With this technique, loose decayed material must be removed, but it does not have to be cut away. Instead the remaining wood fabric is impregnated with an epoxy consolidant. (See resources for suppliers.) The consolidant acts to bond together the compromised wood, after which, the remaining void may be repaired with a filler. Once the patching is complete, it is important that the material be tooled and finished to match the remainder of the element. Wood consolidants are particularly appropriate when they prevent the removal of decorative details and trim that cannot easily be replicated or when replacement of the deteriorated section of a larger element would be difficult to achieve in place. However, epoxy consolidants can easily be misused as well. In order to work well, consolidants must be applied in careful accordance with manufacturers' instructions.

When any piece of wood does need to be replaced, it is important to select a good quality durable wood. Otherwise, the replacement will disintegrate in a mere fraction of the time it took for the original to deteriorate. There are many factors which effect how well a piece of wood will perform in a building. Among them are species, growth conditions, the drying or seasoning process, and milling. The first challenge in replacing wood in a historic building is that the wood that is grown for lumber today simply is not of the same quality as the wood that was harvested from America's great old-growth forests up through the first decades of the twentieth century. In addition it is not processed with the same attention to grain orientation, flaws, defects and mill finish as in the past. Nevertheless, it *is* possible to find wood that will endure far longer than the pine on the home improvement store shelves. Cypress is a good species selection for the south for both availability and performance. However, availabilities of woods change and all the factors noted above must be considered in regards to the particular application, so contact mill yards and preservation carpenters for specific recommendations. For exterior use, look for solid wood and avoid glued, jointed pieces whenever possible. Any joint is a potential point of failure.

Resources

Hodley, R. Bruce. ***Understanding Wood: A Craftsman's Guide to Wood Technology***. Newtown, CT: Taunton Press, 1980.
Lebow, Stan and Ronald W. Anthony. ***USDA Guide for Use of Wood Preservatives in Historic Structures.*** 2012. http://ncptt.nps.gov/wp-content/uploads/GuidePreservTreatHistoric.pdf

John Leeke's Historic HomeWorks http://www.historichomeworks.com/hhw/index.htm
---------- "Epoxy Repairs" http://www.historichomeworks.com/hhw/library/OHJEpoxy2004/OHJEpoxy2004.htm

Seller of Epoxy Consolidant, Specialty Preservation Tools, Materials, and Books
Preservation Resource Group
Rockville, MD
301-309-2222 or 800-774-7891
http://www.prginc.com/
Wood Preservation Products: Borates, consolidant epoxies, moisture meters

Epoxy Consolidant
Abatron, Inc.
5501 - 95th Avenue
Kenosha, WI 53144 USA
Tel: (262) 653-2000
Fax: (262) 653-2019
http://www.abatron.com/

West System
102 Patterson Ave.
P.O. Box 665
Bay City, MI 48707-0665
Toll free 866-937-8797 / 989-684-7286
West System Epoxy Resin 105 and Hardener 205
http://www.westsystem.com/ss/epoxy-resins-and-hardeners

Guidelines

1. Original wooden siding, trim, and details as well as their paints and finishes **must** be retained and preserved to the fullest extent possible.
2. All wooden features that are character-defining elements of a historic building, such as siding, shingles, brackets, cornices, balustrades, columns, pediments, and architraves **must** be retained and preserved to the fullest extent possible.
3. If repair or replacement of any piece of a wooden element deemed to be necessary by a preservation professional, the repair or replacement **must** be limited to the minimal amount necessary. Replacement of sound material is **not** permitted.
4. If replacement of any piece of a wooden element deemed to be necessary by a preservation professional, new wood that matches the original in dimension, shape, detail, and texture **must** be used.

Pressure washer damage is evident on this wood porch floor.

Close-up of pressure washer damage.

5. Protect and maintain wood surfaces and elements in appropriate ways:
   - Inspect wood surfaces and features regularly for signs of damage from moisture, insects, fungi, or mildew.
   - Monitor the condition of wood surfaces and features. Note: Both the peeling of paint and the widening of wood joints may create the false appearance of deteriorated wood.
   - Keep wood joinery adequately sealed to avoid water penetration.
   - Maintain a slope on horizontal wood surfaces, such as porch flooring or window sills, to ensure that water does not collect but runs off.
   - Maintain roofs, gutters, and downspouts to protect wood surfaces and features from water damage.
   - Prime all exposed wood surfaces before painting.
   - Maintain a sound paint film or other coating on wood to prevent damage from ultraviolet light and moisture.
   - Repair original wooden elements and details by patching, splicing, consolidating, or otherwise reinforcing deteriorated sections.
6. Pressure washing, sandblasting, and other high-pressure cleaning methods are **not** approved for use on wood.
7. Avoid overexposing wood surfaces to caustic chemical strippers that will raise the grain of the wood and roughen the surface texture.

Architectural Metals

Cast iron, wrought iron, copper, sheet metal, aluminum, steel, and bronze are all traditional architectural metals that contribute to the architectural character of historic buildings through their distinctive forms, finishes, and details. Throughout the district and at local landmarks, distinctive elements of cast, wrought, pressed, or rolled metal can be found. These include fences, gates, columns, balustrades, hardware, gutters, downspouts, pressed-metal shingle roofs, and standing seam roofs.

Maintenance and Repair

A protective paint film is essential for metals that corrode, or rust, when exposed to air and moisture. Consequently, routine maintenance of painted metal surfaces includes prompt attention to any signs of deterioration of the paint film and subsequent corrosion. If the metal surface has begun to flake and rust, it must be thoroughly cleaned before repainting. Because the corrosion continues as long as the metal is exposed to air, immediate painting with a rust inhibiting metal primer after cleaning is essential to prevent deterioration of the metal.

Cleaning techniques vary according to the specific metal. Chemical solutions are typically used on soft metals such as lead, tin, copper, zinc, and terneplate. Copper and bronze surfaces develop a protective greenish patina over time, and it is generally desirable to maintain that patina and the protection it provides. Such surfaces should *not* be painted.

Wire brushing and hand scraping are appropriate techniques for cleaning hard metals, such as steel and cast and wrought iron. A more abrasive technique, such as low-pressure dry grit blasting, should be used only if gentler techniques are unsuccessful and if a test area reveals no damage to the metal surface. Surrounding surfaces should always be well protected with a hard barrier like metal sheeting before use of any dry grit blasting.

If repair of a deteriorated metal element requires replacement of a metal section, it is important to use the same metal as the original to avoid corrosive galvanic reactions that occur when disparate metals join.

Cast iron gate and fence at the National Register listed James Fleming House.

Prepping ironwork for painting with a wire brush drill attachment.

On the previous page: Copper gutters and a copper entry roof supported by iron brackets are distinguishing metal features of this house.

Resources

Preservation Brief 27: The Maintenance and Repair of Architectural Cast Iron
http://www.nps.gov/history/hps/tps/briefs/brief27.htm

Gayle, Margot, David W. Look, and John G. Waite. ***Metals in America's Historic Buildings: Uses and Preservation Treatments***. Washington, D.C.: U.S. Department of the Interior, 1992.

Guidelines

1. Original architectural metals, including cast iron, wrought iron, steel, pressed tin, copper, aluminum, and zinc, as well as their finishes **must** be retained and preserved to the fullest extent possible.
2. Metal features that are character-defining elements of a historic building or site, including fences, gates, cornices, rails, roofs, gutters, downspouts, flues, and hardware **must** be retained and preserved to the fullest extent possible.
3. If replacement of any metal fabric is determined by a preservation professional to be necessary, any new metal **must** match the original in composition, dimension, shape, detail, and texture. Substitute material may be considered only if the original material is not technically feasible.
4. Any replacement **must** be limited to only that which is absolutely necessary. Removal of sound material is **not** permitted.
5. Protect and maintain historic architectural metals in appropriate ways:
   - Monitor metal for cracks and signs of deterioration or corrosion.
   - Clean metal when necessary to remove corrosion before repainting or coating.
   - Maintain a sound paint film or other coating on metals that corrode.
   - Repair original architectural metal elements and details by patching, splicing, consolidating, or otherwise reinforcing deteriorated sections.
6. Use the gentlest means possible to clean historic architectural metals, including appropriate chemical solutions for soft metals and wire brushing or handscraping for hard metals.
7. Use of high pressure abrasive techniques like sandblasting is **not** permitted for the cleaning of soft metals, such as lead, copper, tin, zinc, and terneplate. If wire brushing and handscraping prove ineffective in cleaning hard metals, such as steel, cast iron, and wrought iron, dry-grit blasting **may be** used if it will not damage the metal surface. All surrounding materials **must** be protected from dry-grit blasting.

Paint

Painted finishes are just as much a defining part of historic character for individual properties and historic districts as other features and materials. Exterior paint has both an aesthetic purpose and a practical one. Paint provides an opportunity to reinforce a historic building's architectural style and accentuate its significant features through the appropriate selection of paint color. It also provides a sacrificial first line of defense against the elements for more costly materials like wood and metal. Although copper, bronze, and stainless steel surfaces are intended for direct exposure to the elements, paint protects all other metal surfaces from corrosion due to exposure to air and water. Also, paint helps protect wood surfaces from the effects of weathering due to moisture and ultraviolet light. Proper preparation and application of paint films is critical to preventing the deterioration and the need for replacement of vulnerable exterior surfaces. Therefore, proper maintenance of paint coatings is one of the most important parts of building preservation.

Maintenance and Repair

Maintaining wood surfaces that were previously painted requires routine cleaning of the surface. Often the perceived need to repaint maybe eliminated with the removal of the surface dirt film through low-pressure washing and scrubbing. However, repainting is called for if the paint film itself is deteriorated or damaged. Proper preparation includes removal of all loose or detached paint down to the first sound paint layer. It is unnecessary and undesirable to remove additional sound paint layers to expose bare wood, particularly if the wood will remain uncoated for any length of time.

It is always best to remove loose paint layers with the gentlest methods possible. Hand scraping and hand sanding are often all that is needed. Destructive methods such as sandblasting or water blasting with pressure washers and the use of propane or butane torches are never appropriate for historic wood surfaces because of the permanent damage that they can cause to the wood surface itself. Electric heat plates, hot air guns, and chemical paint strippers are appropriate only if gentler techniques have failed. Great caution should be exercised when using any heat method to remove paint because of the risk of fire. Infrared paint removers are a preferable heating device for the removal of paint because they provide a lower, more controlled source of heat.

Paint will weather differently on different elevations. Northern facing walls often stay moist and are prone to mildew while the paint on the southern elevation pictured above has suffered from long hours of UV exposure.

This wall has been scraped and just requires light-sanding and washing to be ready for priming.

On the previous page: A nice sound coat of paint protects the weatherboards, eaves, fascia board, and brackets of this house.

When removing failed and deteriorated paint, be sure to look at the paint layers for signs of the original paint colors. Original paint layers are most likely to be found in protected areas like beneath window sills or eaves. Restoration of original paint colors is always encouraged. Even if there is no intent to restore the original color immediately, care should be taken leave at least some small samples of original color undisturbed for anyone interested in restoring the colors at a later point in time. The only truly accurate way to match a historic paint color is through microscopic analysis, however visual matching of revealed and cleaned paint layers can achieve a good approximation.

Whatever type of paint is to be applied, the preparation of the surface is critical to the appearance and durability of the paint film. If a surface is damp or soiled, the new paint film will not adhere correctly, so it is important to be sure that the surface to be painted is clean and dry. The use of pressure washers for painting preparation is **not** recommended. Not only can pressure washing irreversibly damage wood and masonry surfaces, but it saturates the substrate to be painted. This is obviously not desirable as it is subsequently difficult achieve thorough drying prior to the application of paint. Instead of pressure washing, proper painting preparation includes scraping, sanding, and light washing with a natural or synthetic bristle brush and/or sponge to remove any remaining soiling or mildew.

There are many, many types of scrapers on the market. A good scraper will make the working of paint prep much easier, so it is well worth investing a few quality scrapers. Different shapes and styles excel at different tasks. Try a few to see what work best for a given surface. In typical situations, after scraping some areas of wood will be bare while paint will remain on others. To even the surface, a light sanding is generally required. Sanding also gently abrades both the the painted and bare wood so the new paint will bond better. Hand sanding is the best way to avoid any accidental damage to wood surfaces that can be caused by power tools. Orbital sanders are an acceptable power tool to use for sanding, but caution should be exercised to avoid over sanding or abrading of adjacent materials like glass. Power sanding should be avoided when existing paint contains lead. Wet sanding helps to minimize dust. Grinders and disc sanders must *never* be used on wood siding. These aggressive tools always leave behind telltale circles where they have removed a layer of wood along with paint.

Homeowners should be aware that as of April 2010 all exterior work on a pre-1978 building that disturbs more than 20 square feet of painted surface and any window replacement must be performed in compliance with the Environmental Protection Agency's Renovation, Repair and Painting (RRP) Rule (http://www.epa.gov/getleadsafe/#). This rule requires that any contractors performing such work are lead-safe certified. Homeowners doing their own work on their own home are exempt from the training and certification required of contractors, but should educate themselves about lead safety. The

intent of the RRP Rule is to protect children from lead poisoning in all environments. This includes the children of contractors, who can be poisoned by contamination brought home by their parents. Everyone should learn about the dangers of lead and how to best contain it. Good lead-safe practices include protecting the work area with plastic sheeting; wearing gloves, masks, coveralls, and booties; minimizing the creation of dust; thorough cleanup during and after work; and proper bagging of lead waste after completion. See the EPA's guide, "Steps to Lead Safe Renovation, Repair, and Painting" (http://www.epa.gov/getleadsafe/#) for more information.

Once deteriorated paint has been removed, the wood surface should be inspected. Any holes, cracks, and deteriorated areas where water might invade must be treated. Small holes can simply be filled with a wood filler. Deteriorated areas should be consolidated or otherwise treated as described in the "Wood" section.

Before it is repainted, any exposed wood should always be primed with a compatible primer coating. While opinions vary over the superiority of oil or acrylic paints, oil paints are slowly being replaced by 100% acrylic paints and have already disappeared from store shelves in some locations. One advantage of acrylic paints is their vapor permeability. They do not trap moisture in the same way that conventional oil paints can and they resist cracking and crazing. They also emit less volatile organic compounds (VOCs) than conventional oil paints, which is a primary reason they are being phased out. A popular specialty paint for historic preservation projects is linseed oil paint. (See resources below.) This type of paint has some of the advantages of both conventional acrylic and oil paints while being more sustainable, durable, and historically appropriate than either. Though this paint is more expensive than most acrylics, it offers superior coverage. It also comes in a more limited variety of premade colors, but the available palette offers colors that are historically appropriate for many eras.

Always apply new paint by brush. Sprayed on paint does not get worked into the surface as well as brushed on paint and therefore does not bond as well. Also, spraying on paint requires extensive protection of adjacent surfaces almost invariably leaves behind paint overspray on some adjacent surface where protection fails. As with scrapers, good brushes make painting much easier and are worth a little extra investment. They hold paint better and create a better overall finish. After priming, all joints or gaps around doors, windows, or vertical joints of siding where water invasion may occur should be filled with a latex caulk. Two finish coats are recommended over the primer coat.

Painted metal surfaces require similar inspection and routine cleaning before repainting. However, for metals, it is critical that all corrosion be removed and a rust-inhibiting primer coat be applied immediately to protect the surface from additional corrosion. If cleaning loose paint and corrosion from hard metals such as cast iron, wrought iron,

The rust of nail heads will emerge through a new paint job if not pretreated. Touch nail heads with a rust inhibiting priming prior to priming the rest of the wall or element. Avoiding the defacing rust that can appear after the paint job is done is a big payoff for this simple step.

Paint scrapings should always be contained during work and collected and properly disposed of in a heavy trash bag. Bags should be closed by twisting the top, folding it down in a gooseneck, and securing it with duct tape.

Paint quickly releases from the wood surface and bubbles under the heat of an infrared paint remover.

After heating with an infrared paint remover, paint is easily scraped away. This method is especially efficient for removing paint from previously varnished surfaces like doors.

and steel by hand scraping and wire brushing is unsuccessful, low-pressure grit blasting may be necessary. It is always best to test such techniques in an unobtrusive area first to determine if there will be any damage to the metal surface and always protect adjacent surfaces.

Painting of unpainted masonry surfaces is not recommended. Previously painted masonry and stucco may be repainted using compatible paint coatings specifically formulated for masonry after proper cleaning and preparation. Previously painted masonry walls should be inspected prior to repainting to determine the condition of the underlying masonry. Inappropriate paint coating can damage masonry by trapping moisture. If the masonry substrate is determined to be deteriorating beneath an existing paint coating, paint removal is recommended, so that the masonry can be allowed to dry and properly repaired (see masonry section). Previously painted masonry surfaces may be able to be stripped through the use of chemical strippers (see masonry section resources).

Resources

Preservation Brief 10: Exterior Paint Problems on Historic Woodwork
http://www.nps.gov/history/hps/tps/briefs/brief10.htm

Linseed Oil Paint, Silent Paint Remover, and Painting Accessories
Viking Sales, Inc.
7710 Victor-Mendon Road
Victor, NY 14564
585-924-8070
http://www.solventfreepaint.com/

Guidelines

1. Protect original building material that was painted by maintaining a sound paint film.
2. Maintain previously painted surfaces in appropriate ways:
   - Inspect painted surfaces to determine if repainting is necessary or if cleaning the surfaces will suffice.
   - Use the gentlest techniques possible, such as handscraping and handsanding with wood or brick, and wire brushing and handsanding with metals, to remove loose paint layers down to a sound paint layer. Employ infrared heaters and chemical paint strippers only when gentler methods are not successful and more thorough removal is necessary, and use them with caution. Heat guns should be avoided because of fire risk.
   - Use of pressure-washers and grit-blasting on wood and masonry is **not** permitted.
   - Use of disc sanders and grinders for paint removal on wood and masonry is **not** permitted.

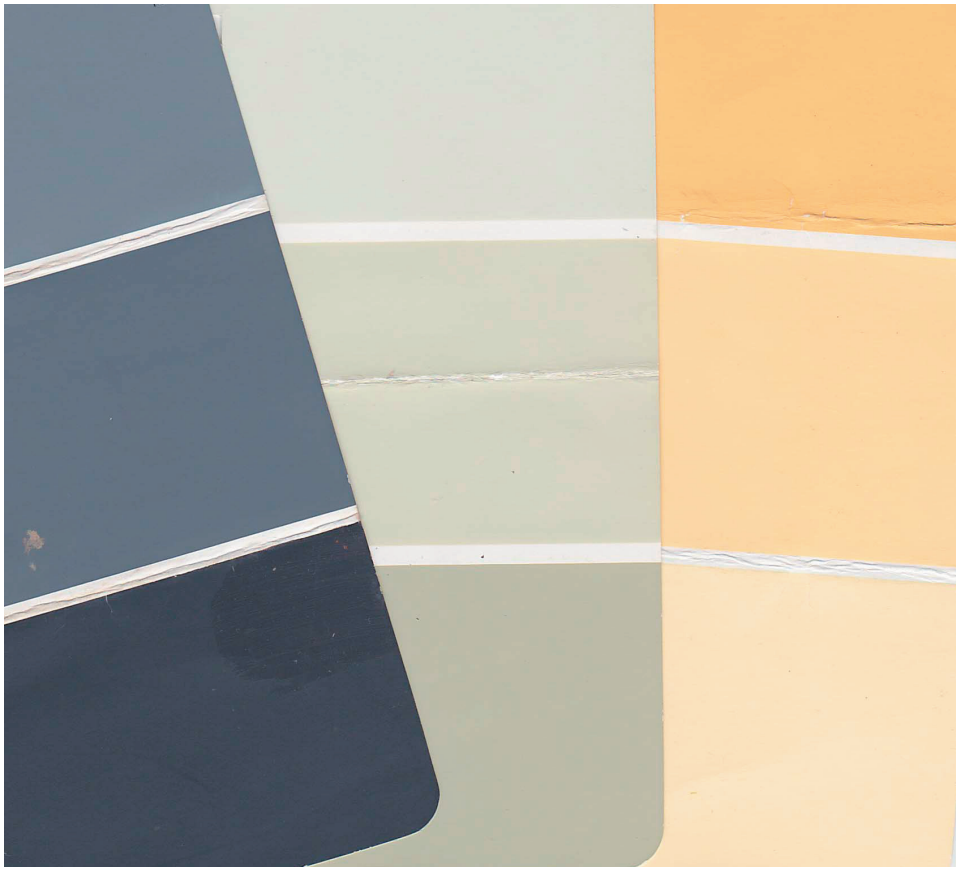
- Follow proper surface preparation, applying compatible paint-coating systems, including priming all exposed wooden surfaces.
- Follow lead-safe work practices.
- Apply paint only to clean, dry surfaces to ensure that it will properly bond.

3. Painting of unpainted wood, brick, stone, copper and bronze is **not** permitted.

A peroxide-activated stripper at work on a tough old paint coating over brick. This variety of strippers is effective and user friendly. See masonry section.

Notes

Exterior Color



The variety of architectural styles in Greenville provides a diversity of color palettes and treatments. For example, houses in the Colonial Revival style are usually painted white or soft colors such as blue or yellow, with trim painted a complementing color. Craftsman Bungalows often combined exterior materials such as shingles, stucco, and brick. Usually the brick was unpainted, the shingles were stained, and the stucco was painted a light neutral or buff color. Any trim or wood introduced was usually painted white, gray, or an earth tone. Spanish Mission Revival houses were characterized by their white or off-white stucco exteriors, while American Foursquare houses were usually painted in earth tones and contrasting trim. Queen Anne houses display the most exuberant use of color.

Exterior color includes the color of both natural materials, such as brick, granite, and slate, and painted materials, such as wood and metal. Even the colors of historic roofs contribute to the diverse district palette. Slate and tile roofs reflect the color of their respective materials, whereas pressed-metal shingles and standing-seam roofs were usually painted in deep colors such as rich reddish brown, dark green, gray, or even black. Because they are usually replacement roofing for materials such as metal or slate that were traditionally dark in color, asphalt composition shingles in dark colors are most appropriate in the historic district. Replacement gutters and downspouts are typically coated with paint or a baked-enamel finish in a color appropriate to the color of the house, unless they are made of copper.

Guidelines

1. Select material and paint colors appropriate to the historic period of the building and district.
2. Enhance the architectural character of the historic building through appropriate placement of exterior paint colors.
3. Use variations in paint colors to reflect variations in materials on the building's exterior.
4. For previously painted foundations, repaint with dark colors that best reflect the foundation material.
5. Generally, it is not appropriate to install light-colored asphalt shingles.
6. Coat replacement gutters and downspouts with paint or a baked-on enamel finish in a color appropriate to the color of the house, unless they are made of copper.

7. Coat exterior storm windows with paint or a baked-on enamel finish in a color appropriate to the color of the house, usually the same color as the window sash or trim.
8. Application of paint or other coatings to unpainted fence or wall materials that were not historically coated is **not** permitted.
9. Front doors that were historically stained or varnished **must** not be painted unless the doors have been substantially patched.
10. Paint wooden fences white or a color that coordinates with the exterior colors of the building.
11. For fabric awnings, select colors that are comparable in hue and intensity with the exterior colors of the historic building.

On the previous page: Paint swatches assist in the selection of paint colors.

Utilities and Energy Retrofit

Many features of historic buildings are inherently energy efficient. For example, operable transoms, windows, awnings, and shutters provide opportunities for conserving energy. See windows and doors section for information on energy efficiency and windows. Enclosed vestibules, extending porches, and even plantings help buffer historic interiors from the elements. Capitalizing on energy-efficient historic features and sensitively retrofitting historic buildings can maximize their energy conserving potential.

When introducing new mechanical and electrical equipment and lines, care must be taken that historic features of the building are not damaged or obscured. All such equipment should be located in the least visible location and appropriately screened. Window air-conditioning units are acceptable in the district, but they should be located as inconspicuously as possible. Large antenna and satellite dishes are intrusive, and inconsistent with the residential character of the historic district. Solar panels, like other new equipment, should be installed in as unobtrusive a manner as possible.

Resources

Preservation Brief 3: Improving Energy Efficiency in Historic Buildings
http://www.nps.gov/tps/how-to-preserve/briefs/3-improve-energy-efficiency.htm

NPS, Technical Preservation Services, Solar Panels on Historic Buildings
http://www.nps.gov/tps/sustainability/new-technology/solar-on-historic.htm

Guidelines

1. Inherent energy-conservation features of a historic building, such as porches, operable windows, transoms, and louvered shutters which are historic elements must be retained and preserved.

2. See “Windows and Doors” and “Roofs” for guidelines pertaining to these elements.
3. Vents and mechanical connections through historic foundations or walls **must** be located on non-character defining elevations or inconspicuously on side or rear walls where they will not be visible from the street.
4. Mechanical equipment such as heating and air conditioning units **must** be installed in areas and spaces requiring the least amount of alteration to the appearance and the materials of the building. The equipment **must** be screened from public view.
5. Exposed exterior pipes, wires, meters, and fuel tanks **must** be located on rear elevations or along an inconspicuous side of the building and screened from view.
6. Window air-conditioning units **must** be located on rear or inconspicuous elevations whenever possible. The use of portable air conditioners is preferred.
7. Installation of large antennas and satellite dishes is **not** permitted.
8. Satellite dishes less than 24” in diameter, less than 5’ tall, and not visible from the street shall be permitted.
9. Where hot boxes are required, they **must** be installed in a manner that screens or camouflages their appearance as much as possible.

On the previous page: A hot box is appropriately screened from the public way.

Life Safety and Accessibility

A new use or a substantial rehabilitation of a historic building can result in requirements to meet contemporary standards for both life safety and accessibility to people with disabilities. Requirements are different for commercial and institutional buildings versus residential ones. Often accessibility to a building may need to be altered to accommodate individual residents. Given the foundation of most buildings in the district, accessibility to the entrance by wheelchair is a common problem. Ramp access typically requires a run of over 20 feet. Introducing such a large feature on the exterior of a historic building without destroying or diminishing significant architectural features is clearly a challenge. Likewise, adding an exterior fire stair or fire exit requires careful study of all alternatives.

The North Carolina State Building Code and the federal guidelines for adhering to the Americans with Disabilities Act of 1990 both provide some flexibility in compliance when dealing with historic buildings. When planning any life safety or accessibility retrofit to a historic building, solutions should be sought that achieve the life safety and accessibility goals with the least visible impact on the property. Any changes should be as reversible as possible. Electric wheelchair lifts can be good options for achieving wheelchair accessibility to historic buildings. They require less length than ramps and can often be easily screened with landscaping.

Resources
Preservation Brief 32: Making Historic Properties Accessible
http://www.nps.gov/tps/how-to-preserve/briefs/32-accessibility.htm

Guidelines

1. Review proposed new uses for existing historic buildings to determine if related building code and accessibility requirements are feasible without compromising the historic character of the building and site.
2. Health and safety code and accessibility requirements **must** be met in ways that do not diminish the historic character features, materials, and details of the building.

3. If possible, fire exits, stairs, landings, and decks **must** be located on rear or inconspicuous side elevations where they will not be visible from the street.
4. New fire doors shall not be introduced in ways that would diminish the original design of the building or damage historic materials and features. New fire doors **must** be as compatible as possible with existing doors in proportion, location, size, and detail.
5. When introducing reversible features to assist people with disabilities, diminishment of the original design of the porch or the entrance and damage of historic materials or features **must** be avoided to every extent possible.
6. If possible, accessibility requirements should be complied with through portable or temporary ramps or lifts, rather than permanent ramps.

On the previous page: The handicap ramp at the local landmark Humber House provides full accessibility with minimal impact to the historic fabric. Its railings are compatible with the historic character of the building, but are appropriately interpretable as new features because they do not mimic the historic design. Eastern Office, North Carolina State Historic Preservation Office, file photograph.

Chapter 3

New Construction and Additions

New Construction

The following guidelines are applicable primarily to residential structures located in predominately residential districts. For projects related to commercial structures, and/or structures located in predominately commercial districts, allowances may be given to compatibility with the massing, size, scale, and architectural features of the surrounding structures/district.

New construction in the historic district is encouraged if the proposed design and siting are compatible with the district's character. When siting new construction, existing setbacks, the spacing of buildings, and the orientation of buildings should be considered. Compatibility of proposed landscaping, lighting, paving, signage, and accessory buildings is also important.

The purpose of guidelines for new construction is not to prevent change in the historic district, but to ensure that the district's architectural and material vocabulary is complimented. The height, the proportion, the roof shape, the materials, the texture, the scale, the details, and the color of the proposed building must be compatible with existing historic buildings in the district. Compatibility and not mimicry should be the goal of new designs. Contemporary designs rather than historic duplications are encouraged.

The consistency of building setback from the street is a unifying district characteristic that new construction should maintain. The siting of new construction should be consistent with the existing spacing pattern between district buildings. Compatible new construction should adhere to the consistent orientation of the district's front facades and entrances to the street.

Compatible additions and decks that do not compromise the character of a historic building or destroy significant features and materials are acceptable in the district. Guidelines for additions and decks are addressed separately in this section.

Site Guidelines

1. The setback of the proposed building **must** be consistent with the setback of adjacent district buildings or nearby district buildings fronting on the same street.
2. The distance between the proposed building and adjacent district buildings **must** be compatible with the spacing between existing district buildings fronting on the same street.

After the above house was irreparably damaged by a fallen tree, this new residence (below) was built in its place. It appropriately draws on the historic scale, proportion, materials and motifs of the district. The original door was smartly salvaged and reused - saving materials and memories.

On the previous page: The new back house of the Sigma Phi Epsilon fraternity was designed in keeping with the scale, proportions, and architectural character of the surrounding neighborhood.

3. The orientation of the proposed building's front elevation to the street **must** be consistent with the orientation of other existing buildings' front elevations to the street.
4. The proposed ground cover or paving treatment for the site **must** be compatible with the ground covers or the paving treatments historically found in the district.
5. All proposed site features and secondary structures, including garages, outbuildings, fences, walls, and landscaping masses, **must** be compatible with site features and secondary structures in the district.
6. All proposed exterior lighting and signage **must** meet the pertinent guidelines for design.
7. Disturbance of the terrain in the historic district **must** be minimized to reduce the possibility of destroying unknown archaeological materials and habitation levels. Refer to Chapter 4.

Building Guidelines

1. The height of the proposed building **must** be compatible with the height of historic buildings on the block or the street, not varying more than ten percent from their average height. Generally, the height of new construction should be at or under thirty-five feet. The height of proposed features not intended for human occupancy, such as chimneys, steeples, spires, and cupolas, shall be reviewed on an individual basis.
2. The proportion (ratio of the height to the width) of the proposed building's front elevation **must** be compatible with the proportion of contributing front elevations in the district.
3. New windows and doors **must** be compatible in proportion, shape, position, location, pattern, and size with windows and doors of contributing structures in the district. However, they should not exactly duplicate historic windows.
4. The roof shape and proportion of the proposed building **must** be consistent with roof shapes in the district: gable, hip, gambrel, flat, and mansard.
5. The predominant material of the proposed building **must** be visually consistent with historic materials in the district: brick, stone, stucco, and wooden siding or shingles. Imitation masonry, vinyl and aluminum sidings are prohibited, but fiber cement or other composite siding may be considered.
6. The predominant texture of the proposed building **must** be consistent with the texture of materials of contributing structures in the district.
7. The scale (the relationship of a building's mass and details to the human figure) of the proposed building **must** be compatible with the scale of contributing structures in the district.
8. Architectural details of the proposed building **must** complement the architectural details of contributing structures in the district.
9. Contemporary design that does not directly copy from historic buildings in the district but is compatible with them in height, proportion, roof shape, material, texture, scale, detail, and color, is **strongly recommended**.

Additions

The following guidelines are applicable primarily to residential structures located in predominately residential districts. For projects related to commercial structures, and/or structures located in predominantly commercial districts, additions may exceed the height limits listed below.

The introduction of additions compatible with historic buildings in the district is acceptable if the addition does not visually overpower the original building, compromise its historic character, or destroy any significant features and materials. By placing additions on inconspicuous elevations and limiting their size and height, the integrity of the original buildings can be maintained. It is important to differentiate the addition from the original building so that the original form is not lost or confounded. Additions should be designed so that they can be removed in the future without significant damage to the historic building or loss of historic materials. Also, as with any new construction project, the addition's impact on the site in terms of loss of important landscape features must be considered.

The compatibility of proposed additions with historic buildings will be reviewed in terms of the mass, the scale, the materials, the color, the roof form, and the proportion and the spacing of windows and doors. Additions that echo the style of the original structure and additions that introduce compatible contemporary design are both acceptable.

Guidelines

1. Additions **must** be constructed so that there is the least possible loss of historic fabric. Character-defining features of the historic building **must** not be obscured, damaged, or destroyed.
2. The size and the scale of additions **must** be limited so that they do not visually overpower historic buildings.
3. Additions **must** be located as inconspicuously as possible, on the rear or least character defining elevation of historic buildings.
4. Additions **must** be designed so that they are differentiated from the historic building. It is not appropriate to duplicate the form, the material, the style, and the detail of the historic building so closely that the integrity of the original building is lost, confused or compromised.
5. Additions **must** be designed so that they are compatible with the historic building in mass, materials, color, and proportion and spacing of windows and doors. Either reference design motifs from the historic building, or introduce a contemporary design that is compatible with the historic building.

The separation and difference between the original building at left edge and the new building at right edge is clearly articulated by the design of the hyphen between the two. This distinction between old and new construction is important as it helps to honestly present the property's history and avoid a muddling of old and new.

On the previous page: This COA project involved replacing a non-historic addition that did not posess architectural significance with this compatible new design.

6. For the predominant material of the addition, a material that is visually compatible with the historic materials of the original building, such as brick, stone, stucco, or wooden siding, **must** be used. Imitation masonry, vinyl and aluminum sidings are prohibited, but fiber cement or other composite siding may be considered.
7. The roof form **must** be compatible with the historic building and consistent with contributing roof forms in the historic district.
8. The foundation height and the eave lines of additions to residential structures **must** generally align with those of the historic building.
9. Additions **must** be designed and installed to minimize damage to the historic fabric and make future removal possible.
10. Additions to residential structures **must** not be taller than the original building. Additions to commercial structures and/or structures located in predominately commercial districts may exceed this height limit.

Decks

Contemporary sundecks are popular substitutes for more traditional patios and terraces. Compatible decks can be acceptable additions to historic buildings if they are located in inconspicuous locations and are screened from public view. As with other additions, it is important not to compromise a building's historic character or damage significant features and materials through the introduction of a deck. It is also important to design decks so that they can be removed in the future without significant damage to the historic building.

The compatibility of the materials, the details, the scale, and the color of proposed decks with the existing building will be evaluated by the Commission. The design of the deck's railing and the screening of its framing are both opportunities to tie the deck visually to the historic building.

Guidelines

1. Decks **must** be located in inconspicuous areas, usually on the rear or least character-defining elevation of the historic building.
2. Decks **must** be screened from public view.
3. Decks **must** be compatible in material, color, and detail with the historic building.
4. Deck railings **must** be compatible in material, color, scale, and detail with the historic building.
5. Decks **must** be constructed so that they can be removed in the future without damaging the historic structure.
6. Decks **must** be constructed so that there is the least possible loss of historic fabric. Character-defining features of the historic building **must not** be obscured, damaged, or destroyed.
7. Removal of significant features or elements of a historic building, such as a porch, to construct a deck is **not** permitted.
8. Decks should be painted or stained in colors compatible with the color of the historic building if desired.
9. The height of the deck should generally align with the floor level of the historic building. If applicable, install compatible skirt boards and, where appropriate, lattice panels to screen deck framing.

Notes

Chapter 4

Site Features and District Settings

Signs

Appropriate signage in the historic district can enhance its historic character and residential scale. Signs citing the name and the year of construction of residential buildings are fairly common. Although the district is primarily residential, there are also some commercial properties with signs.

New signage should be kept unobtrusive by selecting traditional materials such as wood, metal, or stone and by carefully placing signs in locations that do not damage or conceal architectural features and details. New signs should be sized to be consistent with the pedestrian scale of the district. Graphics should be kept simple and legible. Generally, freestanding signs should be no larger than necessary and should be mounted fairly low to the ground to avoid blocking views of historic features. An appropriate location for freestanding signs is close to the front walk and near the public sidewalk. For commercial properties, graphics painted on windows or applied to fabric awnings are also appropriate.

In reviewing applications for new signs, the Commission considers their proposed dimensions, graphics, materials, colors, supports, and locations. All proposed signs must also conform to the local sign ordinance.

Guidelines

1. New signage in the historic district **must** be simply designed and easily read.
2. New signage **must** be composed of materials found in the district, such as wood, stone, and metal.
3. Graphics **may be** applied to windows or awnings of commercial structures.
4. The number of colors on signs should be limited, and related to those of adjacent structures.
5. Identification signs for residential structures **must** be small in size, generally under three square feet.
6. Small identification signs for residential buildings **must** be installed so that architectural features and details are not concealed.
7. Flush-mounted signs **must** be installed in appropriate locations that do not conceal architectural features or details.

8. Freestanding signs **must** be installed discretely, such as on well-landscaped ground bases or low standards.
9. Lighting for signs **must** be compatible with the residential atmosphere and the historic character of the district.
10. Generally, it is not appropriate to introduce internally illuminated signs, plastic signs, neon signs, flashing signs, or portable signs in the district.
11. Generally, it is not appropriate to install large signs directly on the facades or porch roofs.

On the previous page: Signage stating the historic name and approximate construction date of a home is appropriately sized and placed so that it does not obscure any character defining features.

Lighting

The residential character of the historic district can be reinforced and even enhanced by the selection of appropriate exterior lighting. Warm-spectrum light sources and unobtrusive lighting fixtures are recommended. Lighting levels should provide adequate illumination for safety concerns, but not detract from or overly emphasize the building or the site.

All proposals for exterior lighting, including the introduction of porch and entrance lighting fixtures require a Certificate of Appropriateness. Certificates of Appropriateness are required for spotlights mounted on buildings and for freestanding lighting fixtures mounted on posts, including Greenville Utility security lights. Often, security needs in the district can be met more appropriately with residential-scale security lighting than with the standard security lights mounted on utility poles.

The compatibility of proposed exterior lighting and lighting fixtures is assessed in terms of design, material, use, size, scale, color, and brightness. Lighting should not falsely imitate historic fixtures incompatible with the property. Generally, it is preferable to use contemporary fixture designs placed in discrete locations. Review of proposals for exterior lighting may require a scaled drawing or site plan. For post-mounted fixtures the following information is required: (a) the location and the height of each pole; (b) the number of light fixtures to be located on each pole; (c) the type and the wattage of all lamps; (d) the area to be illuminated; and (e) the aiming of each light fixture.

Guidelines

1. New exterior lighting **must** be understated and compatible with the residential quality of the structure, the property, or the historic district. Compatibility of exterior lighting and lighting fixtures is assessed in terms of design, material, use, size, scale, color, and brightness.
2. Unless original lighting features exist, selection of lighting fixtures should be based on compatibility with the building and the site.

Original Arts and Crafts lighting fixtures (above and below) enhance the porch of a CVHD bungalow.

On the previous page: A soft glow emanates from what is likely an original porch ceiling light fixture. This type of inconspicuous light source is appropriate for the College View Historic District.

3. Lighting **must** be kept subtle by carefully locating light sources, rather than indiscriminately lighting broad areas.
4. Lighting levels that provide adequate safety, yet do not detract from or overly emphasize the structure or the property **must** be used.
5. Low level lighting at the public-private edge of the property should be used for the safety of pedestrians.
6. Directional lighting should be used to avoid spilling light into adjacent properties. Exterior lighting **must** not be directed unto neighboring properties because it may adversely affect enjoyment of such properties.
7. Façade lights should be screened from public view.
8. Installation of tall security lights in locations that are visible to the public **must** be avoided.
9. Introduction or removal of exterior lighting features that would alter the historic or architectural character of the structure, the property, or the historic district is **not** permitted.

Fences and Walls

Fences and walls are important constructed features of the landscape that help define the context of the site for a historic building. Within a historic neighborhoods the repetition of fences or walls also provides a strong sense of continuity to the streetscape. Wood, cast iron, and wrought iron were all traditional fence materials, just as stone and brick were popular wall materials. The selection of material and design often related to the architectural style of the house.

In the College View Historic District, historic fences and walls are not common features. Properties are more often bordered by low curbing on the street side with no hard barriers between yards. Wooden picket fences in a variety of patterns are the most typical fence type. However, there are a few cast-iron fences and low stone walls as well. Simple utilitarian fences enclose some back yards. Most fences and walls closely follow the property line. Preservation and repair of existing fences and walls is preferable to their replacement or removal.

Whereas low retaining walls, low hedges, and open fences are appropriate for front yards, privacy fences and taller walls in rear side yards and back yards can provide desirable visual screening of parking areas or mechanical equipment from the street. Traditional materials such as wood or brick are recommended for privacy walls and fences. It is not appropriate to use contemporary fence or wall materials, such as vinyl or chain link fencing, in the historic district.

The introduction of new fences or walls in the district is reviewed according to the appropriateness of their design, materials, size, details, and color to the specific site and the district, as well as the appropriateness of their location and height. The commission requires a site plan locating the fence or the wall configuration and a scaled elevation drawing or a photograph of any proposed fencing.

Maintenance and Repair

The preservation of historic fences and walls in the historic district requires routine maintenance and repair. A sound paint film is essential in maintaining and protecting both wooden and iron fences. See wood, metal and paint sections for further information on maintenance. To prevent rust and corrosion, iron fences should be cleaned with a wire

This brick retaining was newly constructed as part of a COA project. Through its proportions, design, and materials it blends in appropriately with the existing streetscape.

A proposal sketch and after photograph show how a historic concrete retaining wall was successfully preserved while the driveway was widened for improved safety and ease of entry and exit of off busy 5th Street in this COA project.

On the previous page: This photograph shows a good rear yard fence design. The fence begins at the rear of the house and is compatible with the Colonial Revival style of the building.

brush to remove all loose paint and rust, then primed immediately with a high-quality metal primer before the finish coat is applied. Corrosion will begin whenever iron is left unpainted, even in a few hours. Traditionally, iron fences are painted dark green, brown, or black. Typically picket fences are painted white or occasionally a trim color related to the house. Stone and brick walls require maintenance similar to that required for exterior building walls. Retaining walls are particularly susceptible to cracking due to uneven settling and damage caused by moisture and vegetation. The guidelines for masonry offer additional information on maintenance and repair of masonry walls.

Guidelines

1. Original fences and walls **must** be retained and preserved to the fullest extent possible.
2. All architectural features that are character-defining elements of original fences and walls, including gates, granite pillars, hardware, decorative pickets, and rails **must** be retained and preserved to the fullest extent possible..
3. Historic fence and wall material **must** be retained and preserved to the fullest extent possible. If replacement is deemed to be necessary by a preservation professional, new material that matches the historic material in composition, size, shape, color, pattern, and texture **must** be used. Substitute material can only be considered if the original material is not technically feasible.
4. Protect and maintain fences and walls in appropriate ways:
   - Inspect fences and walls regularly for signs of deterioration or moisture damage.
   - Keep all joinery adequately sealed to avoid moisture damage.
   - Maintain a sound film on all elements that were traditionally painted.
   - Follow the guidelines for maintenance of masonry, wood, or architectural metals where applicable.
   - Remove any vegetation that is uprooting posts or causing other structural damage.
   - Maintain hedges by trimming them and eliminating vegetation that threatens their health.
5. If replacement of a fence or a wall element is deemed to be necessary by a preservation professional, replacement **must** be limited to only the deteriorated element. Any replacement **must** match the original in size, scale, proportion, material, texture, and detail.
6. Unpainted wall or fence materials that were not historically coated should not be painted or otherwise coated.
7. If a new fence or wall is to be constructed, the design **must** be based on accurate documentation of a historic fence or wall, **or must** be a new design compatible with the historic character of the building and the district.

8. New picket fences **must** be substantially open in character, and painted white or a color appropriate to the color of the building.
9. Generally, new fences or walls should be constructed to follow property lines and not to abut existing structures.
10. Fences along right-of-ways **shall** be setback three (3) feet from the interior edge of the sidewalk or three (3) feet from the interior edge of the right-of-way, whichever is greater.
11. Front and side yard fences generally **shall not** exceed three (3) feet in height. When measuring fence height, consider all fence elements including posts
12. Rear yard fences **shall not** exceed six (6) feet in height and **may not** extend forward of the rear wall of the structure.
13. Elements or details **must not** be added to a fence or a wall in an attempt to create a false historical appearance.
14. Contemporary fence or wall materials, such as vinyl and chain link fencing that were not historically available and are inconsistent with the character of the district are **not** permitted.
15. Whenever possible, existing chain link fences should be screened with vegetation, such as climbing vines, ivy, or shrubbery.
16. Utilitarian fences are **not** permitted in the front yard. Restrict utilitarian fences to rear yards, and screen them from view.
17. Fences or walls **may not** be used to screen front yards. Privacy fences **must** be limited to side and rear yards. If possible, use wooden privacy fences to screen parking areas, mechanical equipment, or other intrusive site features on residential properties. Relate privacy fences and walls for commercial buildings to the materials to the building or adjacent fences and walls.

Notes

Driveways and Off-street Parking

Original driveways in the historic district are typically composed of concrete wheel strip with permeable brick paving or grass between. New driveways should be compatible with existing driveways in spacing, width, configuration, and paving material. They should be introduced in locations that do not compromise historic site features, including landscaping, walkways, and retaining walls.

Because the historic district is predominantly residential, large scale off-street parking areas are not typical. The introduction of additional off-street parking must be weighed carefully and should only be considered if the parking area can be located unobtrusively in the rear yard or rear side yard, can be visually screened from the street and adjoining properties, will not abut the house, and will not destroy the residential character of the site by eliminating significant landscape features or a substantial portion of the rear yard. Off-street parking must comply with city zoning ordinances. Impermeable surfaces are restricted to less than forty percent of the site for any property.

Proposals for new driveways or off-street parking areas must provide the commission with scaled site plans, including all landscape and groundcover changes and information on any proposed lighting.

Resources

Secretary of the Interior's Standards for Rehabilitation & Illustrated Guidelines on Sustainability for Rehabilitating Historic Buildings, pgs. 20-21 "Site Features and Water Efficiency".
http://www.nps.gov/tps/standards/rehabilitation/sustainability-guidelines.pdf

Guidelines

1. The historic configuration and materials of existing driveways and alleys **must** be retained and preserved whenever possible.

A historic driveway design worthy of emulation. It is not only period appropriate, but its permeability makes it a sound choice for water rainwater management and conservation.

This rear yard parking is appropriately screened from public view, permeable, and incorporates mature preexisting landscaping.

On the previous page: An example of a historic driveway design found in the College View Historic District: concrete wheel strips are combined with attractive and permeable brick paving between.

2. New driveways **must** conform with the spacing, the width, the configuration, and the materials of existing driveways. Driveway designs that combine wheel strips with permeable centers are encouraged, both for their historic appropriateness and for management of rain water.
3. New driveways **must** be located so that a minimum of alteration to historic site features, such as landscaping, walkways, and retaining walls, is necessary. Damage to historic curbs and sidewalks **must** be avoided.
4. Use driveways to access side and rear parking areas and garages.
5. New parking areas **must** be located as unobtrusively as possible in an area screened from public view.
6. Locating off-street parking in front yards is **not** permitted.
7. Locating off-street parking in the side yard is **not** permitted if the area would be visible from the street or the front yard.
8. Abandoned or inoperable vehicles **may not** be stored in front yards.
9. For new parking areas, paving material compatible with traditional paving materials for driveways in the district **must** be used. Permeability should be maximized.
10. All new parking areas **must** be screened from adjoining properties with fencing or shrubbery.
11. Existing mature trees should be incorporated into new parking areas whenever possible, and new trees introduced to maintain the tree canopy.
12. Large off-street parking areas encompassing so much of the rear yard that the residential character of the site is lost are **not permitted**.
13. New driveways and parking areas **may not** directly abut the principal structure.
14. In lighting parking areas, follow the guidelines for exterior lighting in the district.
15. Design lighting levels for safety. Use unobtrusive, directional lighting fixtures to avoid spilling light unto adjacent properties. For nonresidential parking areas, use lighting fixtures that turn off automatically after business hours, if possible.

Landscaping

Significant elements of the landscape, such as grassy lawns, mature trees, hedges, foundation plantings, fences, walls, ground cover, trellises, patios, terraces, fountains, and gardens, all contribute to the character of the specific site and the historic district as a whole. Consequently, the preservation of such elements is essential in preserving the historic character of Local Landmarks and the Historic District. If a mature tree or hedge is damaged or diseased so severely that removal is necessary, replacement in kind or with similar species will maintain the historic character of the landscape.

Because the historic district is primarily residential in scale and character, it is important to preserve both the proportion of green area to building mass and the formal or informal character of the landscaping. Gardens are generally located in the rear yards, but some larger lots also have side yards with gardens. Gardens – including vegetable gardens – may also be considered for front yards as long as no existing landscape features are removed, damaged, or obscured by the new plantings. Existing hedges illustrate that foliage can be as effective as fences or walls in creating physical enclosure or visual screening.

Landscaping is also an essential part of sustainable design. Trees provide cooling shade to our homes, reducing our need for air conditioning. They sequester carbon dioxide, reducing its presence in our atmosphere. Vegetation helps to manage rain water. When installing new landscaping, consider native plants compatible with the historic setting that will not require watering or irrigation.

Resources

Preservation Tech Note: Restoring Vine Coverage to Historic Buildings
http://www.nps.gov/tps/how-to-preserve/tech-notes/Tech-Notes-Site01.pdf
The Alliance for Historic Landscape Preservation
http://www.ahlp.org/

In this COA project, new trees and bushes were planted to replace older specimens that had been removed and a new row of plantings was installed along the property line.

On the previous page: A hedge row and mature trees define and distinguish the individual properties and the streetscape as a whole.

Guidelines

1. Landscaping that contributes to the character of the historic district **must** be retained and preserved as much as possible.
2. Specific landscape features that are character-defining elements of the historic district, including large trees, hedges, foundation plantings, grassy lawns, ground cover, trellises, patios, terraces, fountains, and gardens **must** be retained and preserved as much as possible.
3. If it is necessary to remove a large tree or a hedge because of disease or storm damage, it **must** be replaced with a new tree or hedge of the same species or with a similar appearance and mature size as long as it will not damage adjacent historic buildings or utilities.
4. Historic ground-cover materials, such as brick or granite pavers **must** be retained and preserved as much as possible. If replacement is necessary, new materials that match the original materials, or materials traditionally found in the historic district **must** be used. Gravel is not appropriate as a ground cover.
5. If a landscape feature is completely missing, it should be replaced with a new feature compatible with the character of the district.
6. New landscaping features should be consistent with similar elements in the historic district.
7. The location of new landscaping features should be consistent with the location of similar elements in the district.
8. Existing large trees and other significant landscape elements **must** be incorporated into plans for additions and new construction.
9. The proportion of green area to built area on an individual lot **must** not be significantly reduced through additions, new construction, or surface paving.
10. Swimming pools **must** be located only in the rear yard and completely screened from public view. On corner lots, pools **shall** be located in the portion of the rear yard furthermost from the street. The fencing for the purpose of pool security shall be in compliance with these design guidelines.
11. Raised planting beds **shall not** be introduced in front yards or side yards if they would be visible from the street.
12. Edging materials that are inconsistent with the character of the historic district, such as exposed landscaping timbers, are **not** permitted.
13. Gazebos or playground equipment **must not** be introduced in front yards or front side yards.
14. Diseased, mature trees **may only** be removed with written certification of condition by an arborist, landscape architect, a cooperative agent, or a city-designated agent.
15. Mechanical equipment such as air conditioners, heat pumps, etc. **shall be** located on non-character defining elevations of the structure whenever possible. The siting of these systems **shall be** screened by the use of planted material or appropriate fencing if they are easily visible from the street.

16. Installation of satellite dishes is permitted provided they are not visible from the street, are less than five (5) feet tall, and less than two (2) feet in diameter.
17. Public street furniture such as benches, trash receptacles, fountains or the like shall be designed to enhance and blend in with the surroundings. These elements are not allowed if they stand out and attract undue amounts of attention to themselves or their functions.
18. Rain barrels **must be** installed in a manner that is discrete and unobtrusive.

This rain barrel is appropriately placed against the side rather than the front elevation and is discretely screened from public view by plantings. Its color also helps it to blend in with the home's brick exterior.

Notes

Archaeology

Archaeological resources include all material evidence of past human activity found below the surface of the ground. Occasionally, portions of such resources may be visible above ground as well. Such resources, known or unknown, are endangered whenever substantial grading or new construction is planned. Therefore it is wise to investigate the likely presence of archaeological resources before beginning any major ground disturbing work. Staff of the Office of State Archaeology are available for consultation if there is reason to believe that significant archaeological resources will be destroyed or disturbed on a particular site.

Archaeological resources can often reveal additional information about a historic property. For example, they can indicate the location and the footprint of earlier outbuildings, porches, additions, and gardens. They can also reveal information about the life style habits of earlier residents. Protecting such valuable resources in situ, that is, in their natural or original position, is the best means of preserving them.

Resources

North Carolina Office of State Archaeology
109 E. Jones St.
Raleigh, NC
Mailing Address:
4619 Mail Service Center
Raleigh, NC 27699-4619
919-807-6556
http://www.archaeology.ncdcr.gov/ Email: susan.myers@ncdcr.gov

Guidelines

1. Known archaeological features that are important to the history of the site or the district **must** be retained and preserved as much as possible.
2. Disturbance of the terrain in the historic district **must** be minimized to reduce the possibility of destroying unknown archaeological materials whenever possible.
3. Known archaeological materials **must** be protected *in situ* whenever possible.
4. Necessary investigations using professional archaeologists and contemporary methods should be undertaken when it is not possible to preserve archaeological materials in situ.
5. Heavy machinery or equipment should not be used on sites where their presence might disturb archaeological materials.

Chapter 5

Demolition or Relocation of Buildings

Demolition

Demolition of a structure is an irreversible step and should only be pursued if there is no viable alternative. Once a historic resource is destroyed all of the connections to the past and other benefits it lent to its community are lost forever. In considering demolition, the property owner and the Commission must give careful thought to the following questions:

- Might another site serve the purpose equally well?
- Might the existing building be adapted to meet the owner's needs?
- Might the property be sold to someone willing to use the existing building?
- Might the existing building he moved to another site?

In reviewing a request to demolish a building in the district, the commission also considers whether the proposed demolition will adversely affect other historic buildings in the district or the overall character of the district. The commission discourages demolition when no subsequent use has been proposed for the site. When considering demolition of a historic building, the property owner is encouraged to work closely with the commission in reviewing all alternatives.

Delay of Demolition

An application for a Certificate of Appropriateness authorizing the demolition or destruction of a designated landmark, a building, a site, or a structure in the historic district may be delayed for up to 365 days from the date of approval. The intent of the delay is to provide sufficient time to exhaust all possibilities of saving the building. During the delay the commission should actively seek to negotiate with the owner or other interested parties to find a means of preserving the building or site. The Commission must also make it widely known that a significant building is threatened with demolition and that alternatives are sought.

The Commission may waive all or part of the delay period if it finds that the structure is of little historic or architectural value. Also, the Commission may reduce the maximum period of delay when it finds that the owner would suffer extreme hardship or be permanently deprived of all beneficial use of or return from the property by virtue of the delay.

Guidelines

1. Work with the Historic Preservation Commission to seek alternatives to demolition.
   Alternatives may include:
   - restoration through state and federal tax incentives if individually listed on the National Register of Historic Places, or a contributing property in a National Register District.
   - sale to an entity that is willing to restore it.
   - relocation.
2. If alternatives have been exhausted, follow these guidelines for demolition:
   - Make a permanent record of a significant structure before demolition. The record shall consist of digital photographs and other documents, such as drawings, that describe the architectural character and the special features of the building. The commission determines on a case-by-case basis the precise documentation of a specific building that is required and the person who is responsible for producing that documentation. The documentation must be submitted for review by the commission before the demolition. The record is retained by the City of Greenville.
   - Work with the commission to identify salvageable materials and potential buyers or recipients of salvaged materials. The removal of all salvageable building materials before demolition is encouraged, and may be required depending on the significance of the building.
   - Clear the structure quickly and thoroughly.
   - Submit a site plan illustrating proposed landscaping and any other site development to be completed after demolition.

On the previous page: The tragic loss of historic buildings from demolition must be avoided by all means possible. Eastern Office, North Carolina State Historic Preservation Office, file photograph.

Relocation

Relocation of a historic building or any building within the historic district should be carefully deliberated. A historic building should be moved only if all other preservation options have been exhausted. Relocation often results in a loss of integrity of setting and environment that compromises the significance of the relocated building. Consequently, relocation of a property in the National Register of Historic Places may result in its removal from the register. However, relocation of a building or a portion of a building can be a desirable alternative to demolition.

In reviewing a request to move a building within the district, the Commission considers whether the proposed relocation will adversely affect other historic buildings in the district or the overall character of the district.

Moving buildings into the historic district or relocating them within it should be based on thorough planning and meet the guidelines for new construction with regard to architectural compatibility, siting, orientation, and landscaping.

Guidelines

1. Document original site conditions before moving the structure. Use photographs and other written or graphic items such as site plans to record the original setting.
2. Assess the structural condition of the building before moving it, to minimize damage during the move.
3. Work with contractors experienced in successfully moving historic buildings.
4. Protect the building from weather damage and vandalism during the relocation.
5. If a structure is moved to a site within the historic district:
   - Assess the architectural compatibility of the relocated structure with adjacent buildings according to the guidelines for new construction.
   - Review the proposed siting, setback, landscaping, and other site-specific treatments according to pertinent guidelines.
   - Ensure that the relocation will not damage existing historic buildings or the character of the district.

Notes

Chapter 6

Variance Provision

Variance Provision

The Historic Preservation Commission may vary the requirements of these provisions where strict compliance with the Design Guidelines could cause an unusual and unnecessary hardship on the property owner. The Commission may impose conditions on such variance in order to secure the objectives of the Design Guidelines.

Notes

Appendix A

Sample Forms

APPLICATION FOR A CERTIFICATE OF APPROPRIATENESS (COA)
MINOR WORKS

Date: MWCOA#:

1. Street Address of Property: _____

   Tax Parcel Number: _____

   National Register List Number: _____

2. Applicant's Name: _____

   Applicant's Address: _____

3. Please provide a narrative that describes in detail all aspects of the proposal (use additional sheets if necessary):

Applicant's Signature: _____ Date: _____

Please return application to:
City of Greenville Community Development Department
Attn: Historic Preservation Commission
P.O. Box 7207
Greenville, North Carolina 27835-7207

FOR OFFICE USE ONLY

The Secretary of the Greenville Historic Preservation Commission reviewed this application as submitted and did:

Approve as Minor Work _____ Refer to Commission for COA Review _____

_____
Commission Secretary Date

#70196

INFORMATION TO APPLICANTS
FOR A CERTIFICATE OF APPROPRIATENESS

CITY OF GREENVILLE
NORTH CAROLINA

The Historic Preservation Commission meets on the fourth Tuesday of each month at 7:00 p.m. in the Council Chambers of the City Hall, located at 200 W. Fifth Street.

All applications for a Certificate of Appropriateness are due in the City of Greenville Planning and Community Development Office (Phone (252) 329-4498), located at 201 West Fifth Street, ***twenty (20) working days*** prior to the meeting of the Historic Preservation Commission at which the application is to be considered.

This application is to be used for the following types of procedures:

Alteration:	Changes to exterior appearance of existing structure.
Addition:	Construction of new portion to existing structure.
Restoration:	Changes to exterior of existing structure designed to restore earlier appearance.
Reconstruction:	Construction of new freestanding building designed to replace former building.
New Construction:	Construction of new freestanding building.
Demolition:	Removal of an existing building or a portion of an existing building.
Moving:	Removal or placement of a building or portion of a building to be relocated.
Environmental:	Changes to or addition of environmental features including fences, pavement, etc.
Other:	Any other work which will visually change the appearance of the structure or the district.

All applications must be accompanied by the following information, otherwise they will not be accepted:

- ☐ Detailed Project Description
- ☐ Photographs
- ☐ Plot Plan
- ☐ Scaled Drawings/Elevations
- ☐ Signatures of Applicants (s)

It is recommended that you consult with the City Building Inspections Office (Phone (252) 329-4466), located at 201 West Fifth Street, prior to submitting any plan to be assured of their technical acceptability. The City Zoning Administrator (Phone (252) 329-4486), may be contacted regarding setbacks for new construction and additions.

If you are unsure which guidelines and standards apply to your project, please contact the Department of Planning and Community Development at (252) 329-4498.

Your attendance or that of your authorized representative is required at the meeting of the HPC at which the application will be considered. You must give written permission to your authorized representative to attend the hearing on your behalf.

CITY OF GREENVILLE

APPLICATION FOR A HISTORIC PROPERTY
CERTIFICATE OF APPROPRIATENESS

THIS SECTION FOR STAFF USE ONLY

COA # _____ Parcel # _____ NR # _____ Date Received _____ Date Complete:_____

Meeting Date _____ APO sent _____ FOF _____

☐ description ☐ plot plan ☐ scaled drawing ☐ photos ☐ APO list

I (We) the undersigned do hereby respectfully make application for a Certificate of Appropriateness for the following plans and proposals:

1. APPLICANT INFORMATION

   Name:_____ Address: _____

   Telephone (home): _____ (business) _____

   Location of Property: _____

2. EXISTING CONDITIONS:

   Current Use : _____ Previous Renovations _____

3. PROPOSED ACTION:
   I (We) hereby apply for the Certificate of Appropriateness required by the laws of North Carolina and the Ordinances of the City of Greenville representing the following (check):

   ☐ Alteration ☐ Addition ☐ Restoration ☐ New Construction

   ☐ Reconstruction ☐ Demolition ☐ Environment ☐ Other

4. ATTACHMENTS:
   COA application must contain a detailed description of the project, plot plans, scaled drawings/elevations and photographs. Any other materials may be supplied to assist the Commission in its decision. Please label the exhibits as shown below.

   Exhibit A: Detailed Description
   Exhibit B:Plot Plans
   Exhibit C:Scaled Drawings/Elevations
   Exhibit D: Photographs

Applicant's presence or that of your authorized representative is required at the meeting of the Historic Preservation Commission at which the application is to be considered. You must give written permission to your authorized representative to attend the hearing on your behalf.

_____ _____

Applicant's Signature Date Additional Applicant's Signature Date

FOR STAFF USE ONLY

This Certificate of Appropriateness is hereby **APPROVED/APPROVED WITH CONDITIONS/DENIED**.

_____

Commission Secretary Date

Appendix B

Resources for Technical Information

The following are general resources for technical information. For technical information specific to a certain topic see the list of resources in that section of the guidelines.

Local Resources
City of Greenville
201 W. 5th Street
P.O. Box 7207
Greenville, NC 27835-7207
http://www.greenvillenc.gov/departments/community_development/information/default.aspx?id=1089
For information on Greenville's Local Landmarks or Historic District, Certificates of Appropriateness, and technical assistance, contact the Historic Preservation Planner at 252-329-4486.

State Resources
North Carolina Historic Preservation Office, Eastern Office
North Carolina Division of Archives and History
117 W. 5th Street
Greenville, NC 27835
http://www.hpo.ncdcr.gov/
For information on historic buildings, sites, and districts, the National Register of Historic Places, preservation tax credits, or technical assistance, contact 252-830-6580.

North Carolina Office of State Archaeology
109 E. Jones St.
Raleigh, NC
Mailing Address:
4619 Mail Service Center
Raleigh, NC 27699-4619
919-807-6556
http://www.archaeology.ncdcr.gov/ Email: susan.myers@ncdcr.gov

Historic Preservation Trades Program
Edgecombe Community College
2009 W. Wilson St.
Tarboro, NC 27886
http://www.edgecombe.edu/historic-preservation
For more information about current course offerings and enrollment contact Program Coordinator Monika Fleming at 252-823-5166, ext. 241 or flemingm@edgecombe.edu.

National Resources
Technical Preservation Services
National Park Service
1849 C Street, NW (org 2255)
Washington, DC 20240
(202) 513-7270
NPS_TPS@nps.gov
http://www.nps.gov/tps/index.htm
The National Park Service's Technical Preservation Services website offers many useful resources: theese include the Secretary of the Interior's Standards for the Treatment of Historic Properties; the new Guidelines on Sustainability for Rehabilitating Historic Buildings; Preservation Briefs; and Preservation Tech Notes.
Preservation Briefs from the National Park Services are excellent primers for approaches to work on historic structures, but because the understanding and technology of building preservation evolves daily, some details can be outdated. When using any technical guide for preservation work, the date of publication should be taken into account and the content compared with other recommendations.

Appendix C

Emergency Preparedness and Disaster Response

Disaster can come in many forms including hurricanes, fires, and chemical spills. Good planning is the best way to be prepared for an emergency and to be able to respond quickly to address building and property damage when danger of the disaster has passed. Taking time before an event to assess potential hazards and assemble tools and materials that may be needed before, during, and after a disaster, can save precious time and money later and help avoid preventable damages.

When a disaster strikes, the Historic Preservation Commission and the Planning staff liaison will do everything possible to facilitate and expedite approval for needed repairs. It should be remembered that most "in kind" repairs are Minor Works and can be quickly approved.

Keeping a property in good repair is one of the best ways to avoid unnecessary building damage from the wind or driving rain that accompanies a hurricane. Deteriorated windows, roofs, weatherboards, etc. are the first things to be damaged and provide egress for water damage to the interior. It is recommended that property owners become familiar with information offered by the following links *before* an emergency. If you do not use the internet, please contact the State Historic Preservation Office for information. The Eastern Office's own Reid Thomas has prepared an excellent paper entitled "The Importance of Planning for Disaster and Recovery: Lessons Learned from Irene," which includes lots of helpful advice.

North Carolina State Historic Preservation Office
Eastern Office
North Carolina Division of Archives and History
117 W. 5th Street
Greenville, NC 27835
252-830-6580
"Information for Owners Of Damaged Buildings Following A Natural Disaster"
http://www.hpo.dcr.state.nc.us/disaster.htm

The National Trust for Historic Preservation
1785 Massachusetts Avenue, N.W.
Washington, DC 20036
202-588-6296
"Treatment of Flood-Damaged Older and Historic Buildings"
http://www.preservationnation.org/resources/technical-assistance/flood-recovery/additional-resources/flood-book/Flood-Damage.pdf

Preservation Trades Network
PO Box 249
Amherst, New Hampshire 03031-0249
(866) 853-9335
www.PTN.org *and* www.IPTW.org
"Brief Guide to Understanding Repairs to Historic Homes Damaged by Hurricane Katrina and Other Related Floods"
Although this guide was created in response to Hurricane Katrina, the information is broadly applicable and is worth review even for non-disaster care.
http://ptn.org/documents/katrina-handbook.pdf

Heritage Emergency National Task Force
Co-sponsored by Heritage Preservation and the Federal Emergency Management Agency
http://www.heritagepreservation.org/PROGRAMS/TASKFER.htm

Appendix D

Glossary

ADAPTIVE REUSE – The process of converting a building to a use other than what it was originally designed
ARCHITRAVE – The casting or the molding surrounding a door or window frame; also, in classical architectural, the lowest part of an entablature
BALUSTER – A banister; the upright support of a rail, in the railing of a staircase, balcony, or porch.
BALUSTRADE – A row of balusters topped by a rail.
BEADED WEATHERBOARD – A wooden board similar to clapboard which as had a groove cut into the board for its width near the bottom of the side. The bottom edge may be slightly rounded.
BOARD AND BATTEN – Vertical flushboard that has had smaller strips of wood nailed over cracks between adjacent boards
BRACKET – An overhanging member projecting from a wall to support weight falling outside of the wall; or a similar brace to strengthen an angle. Brackets often serve a decorative purpose.
BUNGALOW STYLE – A style which had its heyday during the first three decades of the twentieth century. The true bungalow is a small single story house; the roof space may be usable by a solitary dormer or by windows in the gables. The main characteristics of the style are the small size, simplicity, low sweeping lines, and a wide veranda.
CAPITAL – The uppermost part of a column or pilaster.
CASEMENT – A hinged window frame that opens horizontally like a door.
CERTIFICATE OF APPROPRIATENESS – A document allowing an applicant to proceed with a proposed alteration, demolition or new construction of a property in a designated area or site, following the determination of the proposals suitability according to the Design Guidelines.
CLAPBOARD – A wooden board with one side thicker than the other used for weather-boarding of houses.
COLUMNS – A vertical support of round section. In classical architecture, the column has three parts: base, shaft, and capital.
CONSOLIDANT – A material used to stabilize another material by reestablishing a cohesive structure; typically refers to epoxies for use on wood, but applies to formulas for masonry and etc. as well.
CONTRIBUTING STRUCTURE – A structure determined to be a significant part of a historic district.
CORNER BOARD – A vertical board at the intersection of two walls. A corner board serves as a joint for the intersecting clap-board as well as concealing the ends of the clapboard.
CORNICE – And molded projection that crowns or finishes the part to which it is affixed; an ornamental molding, usually of wood or plaster, running around the walls of a room just below the ceiling; the molding forming the top member of a door or window frame; the exterior trim of a structure at the meeting of the roof and the wall.
CUPOLA – A small structure built on top of a roof or building to complete design and to provide a source of light and a means of ventilation.
DENTIL – A small rectangular block in a series, projecting like teeth, as under a cornice. Medallions, which are sometimes referred to as dentils, are actually larger and more separated.
DORMER – A structure projecting from a sloping roof usually housing a window or a ventilating louver.
DOUBLE-HUNG – A window frame that opens by sliding up and down.
DUTCHMAN – A repair in which a deteriorated section of an element is replaced by piece of the same material and profile that is fitted in place with a tight joint.
ENTABLATURE – In classical architecture, the horizontal members immediately above the column capitals; divided into three major parts, the architrave, the frieze, and the cornice.
FANLIGHT – A semicircular or semi-elliptical window with radiating sash bars above a door or window.
FINIAL – A roof ornament, usually projecting from the top of a gable.
FLUSHBOARD – A wooden board which has been jointed to be even in surface with adjacent boards.
FLUTING – Vertical grooving, usually found on columns or pilasters.
FRIEZE – The middle part of an entablature.
FRONTISPIECE – The principal façade; or an elaborate door enframement or other prominent element of a principal façade
GABLE– The vertical triangular portion of the end of a building having a double sloping roof, from the level of the cornice or the eaves to the ridge of the roof.
GALVANIC REACTION
GAMBREL ROOF – A roof with two slopes of different pitch on either side of the ridge.
HIP ROOF – A roof that slopes upward from all four sides of the building, requiring a hip rafter at each corner.
MANSARD ROOF – A roof with two slopes to all four sides, the lower one being much steeper than the upper.
MEDALLIONS – Ornamental blocks places in a regular pattern beneath a cornice. They are frequently referred to as

dentiled, although dentils are usually smaller and in a continuous series. Dentils usually project outward, while medallions project downward.
MOLDED WEATHERBOARD – A wooden board similar to clapboard which has had a groove cut into the board for its width near the bottom of the side and which has also had the bottom edge rounded so radically that the bottom edge has in effect been completely cut away.
MUNTIN – A divider in a window. Muntins fix the lights of a window into position and determine the number of sidelights.
PILASTER – A flat faced representation of a column against a wall.
PITCH – The degree of slope of a roof.
PORTICO – A porch or a roofed space forming the entrance to a building, open or partially enclosed, often with columns.
QUOIN – An outside corner of a building. The term also refers to decorative projections of materials by which a corner is marker.
RIDGE – The horizontal line of meeting of the upper slopes of a roof.
SASH – Any framework of a window; may be movable or fixed; may slide in a vertical plane (as in a double-hung window) or may pivot (as in a casement window).
SHED ROOF – A roof resembling a lean-to. Shed roofs are often used for extensions of gable roofs or for additions of porches.
SHUTTER – A solid panel of wood or metal to make a close over a window.
SIDELIGHT – Windows immediately to the sides of a door as part of the total doorway treatment.
SILL – The horizontal water-shedding member at the bottom of a door or window.
TERNE – An alloy historically composed of lead and tin, today utilizing zinc and tin.
TERNEPLATE – Sheet steel coated with terne.
TONGUE AND GROOVE – The term for a board having a tongue formed on one edge and a groove on the other for tight jointing.
TRANSOM – A window immediately above a door.
WATER TABLE – A horizontal exterior ledge on a wall or a pier, usually at the first floor, often sloped or provided with a drip molding to prevent water from running down the face of the foundation.