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# City of Concord Historic District Handbook

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**The City of Concord would like to extend appreciation  
to the following present and former staff members who helped author this handbook  
in its original form in 1982.**

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## Welcome to the Concord Historic District!

On behalf of the Historic Preservation Commission and Concord's Planning & Zoning staff, I would like to welcome you and thank you for your part in contributing to the preservation of this great neighborhood.

This handbook was written in 1993 and updated in 2001 and 2015. It has been developed as a resource to aid property owners in the districts, as well as, architects, builders, landscape architects, realtors and others who are involved with any project that will have an impact on any property or structure within the districts.

The Historic Districts are a source of great civic pride and recognized as being an asset to our community. We recognize the important part that the districts play in our history as well as preserving a unique quality of life. The Commission's objective is to work with you and your goals while maintaining the historic integrity of the neighborhood. We offer this handbook as a guide and we encourage its use when property improvements are considered. It is not meant to limit ideas but rather act as a catalyst for creative design solutions that allow for individual interpretation while placing value on preservation.

Together, as members of this unique community, we have a responsibility to respect our past as we progress forward.

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# City of Concord Historic District Handbook

## Table of Contents

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APPROVAL REQUIREMENT  
NEEDS.....Pg 1

PREFACE  
..... Chapter 1 – Pg 11

HISTORY  
..... Chapter 2- Pg 15

WORKING WITH THE HISTORIC  
PRESERVATION COMMISSION  
..... Chapter 3- Pg 18

LOCAL STANDARDS..... Chapter 4 – Pg 21

NEW CONSTRUCTION  
..... Chapter 5 – Section 1 – Pg 25

NEW ADDITION CONSTRUCTION..... Chapter 5 – Section 2 – Pg 27

NEW ACCESSORY CONSTRUCTION ... Chapter 5 – Section 3 – Pg 29

SIDING  
and EXTERIOR MATERIAL..... Chapter 5 – Section 4 – Pg 31

FENESTRATIONS.....Chapter 5 - Section 5 – Pg 35

PORCHES..... Chapter 5 – Section 6 – Pg 37

ROOFING ..... Chapter 5 – Section 7 – Pg 39

LANDSCAPING.....Chapter 5 – Section 8 - Pg 41

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*S. Dayvault House  
26 Franklin Avenue NW*

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**FENCES and WALLS**

..... Chapter 5 – Section 9 – Pg 43

**DRIVEWAYS and PARKING**

..... Chapter 5 – Section 10 – Pg 46

**LIGHTING and  
TRANSFORMERS**

..... Chapter 5 – Section 11 – Pg 47

**MECHANICAL and  
INCIDENTAL EQUIPMENT**

..... Chapter 5 – Section 12 – Pg 48

**DEMOLITION**..... Chapter 5 – Section 13 - Pg 49

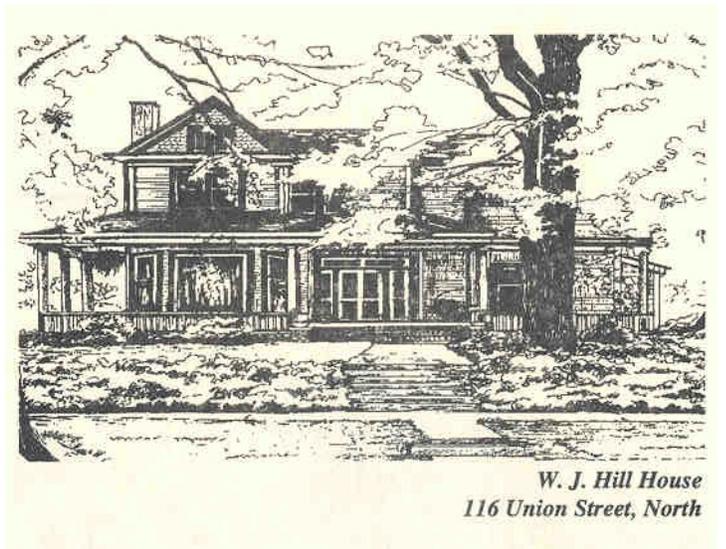
**HOUSING CODE**..... Chapter 5 – Section 14 – Pg 50

**SECRETARY OF THE INTERIOR’S  
STANDARDS FOR REHABILITATION  
and GUIDELINES FOR HISTORIC BUILDINGS**

..... Appendix A – Pg 51

**TREE CARE and MAINTENANCE**..... Appendix B – Pg 102

**REFERENCES**..... Appendix C – Pg 113



*W. J. Hill House  
116 Union Street, North*



*N. Felix Yorke House  
103 Union Street, North*

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## **APPROVAL REQUIREMENT NEEDS**

<b>Type of Work:</b>	<b>No Approval Required For:</b>	<b>Planning Department May Extend Approval For:</b>	<b>Commission Hearing and Approval Required For:</b>	<b>Handbook Section Cross-reference</b>
Accessory Buildings (Sheds)			New construction, demolition, and moving.	<i>Chapter 5 Section 3</i>
Attachments			Attachments such as utility buildings and carports.	<i>Chapter 5 Section 2</i>
Awnings and Canopies			Adding awnings and canopies.	<i>Chapter 5 Section 5</i>
Balconies and Decks	Repair of existing with same materials.	Rebuilding or replicating and original.	Addition of balcony and deck where none previously existed.	<i>Chapter 5 Section 6</i>
Carrara, Pigmented, and Leaded Glass	Removal of broken or hazardous pieces; repairing existing glass.		Removal of existing intact glass.	<i>Chapter 5 Section 5</i>
Certificate of Appropriateness		Renewal of a Certificate of Appropriateness before 6 months.	Certificate of Appropriateness.	<i>Chapter 3</i>
Chain Link Fences (See <i>Fencing and Gates</i> )	Removal			<i>Chapter 5 Section 9</i>
Cleaning Masonry	Chemical or low pressure water cleaning.		Use of harsh cleaning treatments.	<i>Chapter 5 Section 4</i>

<b>Type of Work:</b>	<b>No Approval Require For:</b>	<b>Planning Department May Extend Approval For:</b>	<b>Commission Hearing and Approval Required For:</b>	<b>Handbook Section Cross-reference</b>
Color			Pre-finished or factory finished building components.	<i>Chapter 4</i>
Cornices	Repair using existing materials and duplicating design.	Rebuilding formerly existing cornice detailing.	Any work that does not duplicate original appearance.	<i>Chapter 5 Section 7</i>
Demolition			Demolition of any building or part thereof.	<i>Chapter 5 Section 13</i>
Doors	Repair of existing or original doors with same materials.		Replacement of original doors. Changes in door openings. Stained glass panels. Security grills or bars.	<i>Chapter 5 Section 5</i>
Fencing and Gates (See Masonry Walls)	Replacing or repair of existing with same materials.		All types.	<i>Chapter 5 Section 9</i>
Fire Escapes	Repair of existing escapes.		All types of fire escapes.	<i>Chapter 5 Section 6 and Section 14</i>
Flag Pole	Any installations.			
Gutters	Replacement or repair with similar style and material of existing.	Roofing over built-in gutters and adding new gutter to overhang if style and color is appropriate and no architectural details are obscured.	Installing gutters which obscure or change architectural detailing of style of facade or building.	<i>Chapter 5 Section 7</i>

<b>Type of Work:</b>	<b>No Approval Required For:</b>	<b>Planning Department May Extend Approval For:</b>	<b>Commission Hearing and Approval Required For:</b>	<b>Handbook Section Cross-reference</b>
Landscaping <i>(See Trees)</i>	Tree planting and general landscaping (excluding tree removal and pruning).			<i>Chapter 5 Section 8 and Appendix B</i>
Lighting (Exterior)			Removal or alteration of significant architectural fixtures. Or Additions of permanent, general illumination fixtures within public view.	<i>Chapter 5 Section 11</i>
Masonry Foundation	Repair or replacement of masonry foundations where the original foundation material is retained or where new material matches the original as closely as possible. Installation of metal foundation vents (on sides and rear only), and replacement of wood access doors. Installation of foundation access doors which are not in public view.		Repair or replacement where new material does not match existing.  Installation of metal foundation vents and foundation access doors which are in public view.	<i>Chapter 5 Section 5</i>
Masonry Walls	Walls not in public view and under 18 inches in height.		All walls in public view or over 18 inches in height.	<i>Chapter 5 Section 9</i>

<b>Type of Work:</b>	<b>No Approval Required For:</b>	<b>Planning Department May Extend Approval For:</b>	<b>Commission Hearing and Approval Required For:</b>	<b>Handbook Section Cross-reference</b>
Mechanical Equipment	Installation of residential mechanical equipment such as heating and air conditioning units which are not in public view.		All commercial mechanical equipment.  Installation of residential mechanical equipment such as heating and air conditioning units which are in public view (excluding temporary window units).	<i>Chapter 5 Section 12</i>
Metal Storefronts (Architectural Metals)	Cleaning with appropriate methods. (See Painting).		Removal or alteration.	<i>Appendix A</i>
Miscellaneous			Any type of alteration of exterior features of a building, site, or environment which is not specifically listed.	
Moving a Building			Moving a building.	<i>Chapter 5 Section 2 and Section 3</i>
New Construction or Additions			All new construction and additions.	<i>Chapter 5 Section 1, Section 2, and Section 3</i>

<b>Type of Work:</b>	<b>No Approval Required For:</b>	<b>Planning Department May Extend Approval For:</b>	<b>Commission Hearing and Approval Required For:</b>	<b>Handbook Section Cross-reference</b>
Paintings and Coatings	Repainting any material other than masonry and using gentle paint removal methods.		Paint colors for new construction. Painting unpainted masonry—stone, brick, terra cotta.	<i>Chapter 5 Section 9 and Appendix B</i>
Parking Lots	Resurfacing with same material.		Construction or enlargement of parking lot.	<i>Chapter 5 Section 10</i>
Patios, Walks, and Driveways	Repair or replacement of patios, walks, and driveways with similar materials and design.		All new patios, walks, and driveways.	<i>Chapter 5 Section 10</i>
Playground Equipment, Commercial and Institutional	Residential playground equipment		All new commercial and institutional playground equipment.	<i>Appendix A</i>
Porch Fixtures (See Lighting)	Flag brackets, house or address numbers, mail boxes.			<i>Chapter 5 Section 6 and Section 11</i>
Porches (also see “Stair or Steps”)	Repair of existing with same materials and color provided existing details and features such as handrails, balusters, columns, and roofs are not altered.		Removal of porches, adding a new porch, altering the porch or enclosing a porch.	<i>Chapter 5 Section 6</i>

<b>Type of Work:</b>	<b>No Approval Required For:</b>	<b>Planning Department May Extend Approval For:</b>	<b>Commission Hearing and Approval Required For:</b>	<b>Handbook Section Cross-reference</b>
Public Right-of-Way Improvements			Changes in street lights, paving, disturbing root systems, landscaping, and sidewalks.	<i>Varies depending on improvement.</i>
Repointing Old or Existing Mortar Joint	Repointing with mortar of same color as original.		Repointing with material different than existing.	<i>Chapter 5 Section 4</i>
Roof Shape	Repairs which do not change the shape or texture.		Repairs or changes which alter roof shape.	<i>Chapter 5 Section 1, Section 2, Section 3, and Section 7</i>
Roofing Material	Repairs or replacement using same materials, color, and texture and existing architectural features such as dormers, windows, cupolas, cornices, brackets, chimneys and crestings are retained.		Roofing repair or replacement with materials currently existing inappropriate to style and period of building or repairs which obscure or change original architectural features. Replacement of shingles with a lighter color.	<i>Chapter 5 Section 1, Section 2, Section 3, and Section 7</i>
Roofing Vents	Additions not visible from the public right-of-way.		Additions in public view.	<i>Appendix A</i>
Sandblasting, Waterblasting, Etc.	Sandblasting metal and low pressure water cleaning.		Blasting all other materials.	<i>Chapter 5 Section 4 and Appendix A</i>

<b>Type of Work:</b>	<b>No Approval Required For:</b>	<b>Planning Department May Extend Approval For:</b>	<b>Commission Hearing and Approval Required For:</b>	<b>Handbook Section Cross-reference</b>
Satellite Dishes and Transmitting Antennas	Interior installation.		All other installation.	<i>Chapter 5 Section 12</i>
Security Grilles			Addition and removal.	<i>Appendix A</i>
Siding	Replacement of missing or deteriorated siding and trim, porch floors, ceilings, columns, balusters or architectural details with new materials that are identical to the original.		Alteration of siding from one material to another (shingles to clapboard etc).  Applications of any simulated materials, aluminum siding, plastic siding, etc.	<i>Chapter 4, Chapter 5: Section 1, Section 2, Section 3, and Section 4</i>
Siding Removal		Removal of asbestos, asphalt, or other artificial siding when the original siding is to be repaired and repainted to original condition.	Removal of siding to be replaced with another material (shingles to clapboard etc).	<i>Chapter 5 Section 4</i>
Signs	Repair of existing signs when signs meet City Code. Temporary signs – real estate, political, removal of signs.		New permanent signs.	<i>Appendix A</i>
Skylights		Removal and replace with like roofing	Any installations.	<i>Chapter 5 Section 7</i>

<b>Type of Work:</b>	<b>No Approval Required For:</b>	<b>Planning Department May Extend Approval For:</b>	<b>Commission Hearing and Approval Required For:</b>	<b>Handbook Section Cross-reference</b>
Stair or Steps <i>(See Porches)</i>	Repair and replacement with like materials.		Removal, addition or alteration of external stairs or steps.	<b><i>Chapter 5 Section 6</i></b>
Storefronts	Repair or replacement of existing with same materials and colors.		Remodeling of storefronts which results in new or different door, storefront or window placements or use of materials different from existing. Restorations of original storefronts using documented photos or other references. Construction of new storefronts.	<b><i>Appendix A</i></b>
Storm Doors, Storm Windows, Screen Windows	Addition or replacement if it matches trim and does not obscure details (full view).		Other additions.	<b><i>Chapter 5 Section 5</i></b>
Street Furniture	Replacing existing furniture in same material, temporary benches or trash receptacles.		Permanent placement of benches, street lights, kiosks, fountains, bollards.	<b><i>Varies depending on improvement.</i></b>
Stucco	Repair of existing stucco.		Addition of stucco to any previously unstuccoed surface.	<b><i>Chapter 4, Chapter 5: Section 4, and Appendix A</i></b>

Type of Work:	No Approval Required For:	Planning Department May Extend Approval For:	Commission Hearing and Approval Required For:	Handbook Section Cross-reference
Trees	Pruning tree limbs that have a diameter of <b>6 inches or less</b> on trees that are located outside the street rights-of-way and located more than 15 feet from the street pavement	<p>Removal of healthy trees in any location on the property which have a trunk diameter of 6 inches or less. (Replacement is required.)</p> <p>Removal of damaged or unhealthy trees of any size and in any location if recommended by a certified Arborist.</p> <p>Pruning damaged or unhealthy tree limbs of any size and in any location if pruning is recommended by a certified Arborist due to potential hazard.</p>	<p>Removal of healthy trees or pruning of limbs over six inches in diameter in any location on the property.</p> <p>Tree topping. Removal of more than one-third of green surface of canopy, or leaving stubs larger than 3 inches in diameter.</p>	<p><b><i>Chapter 5 Section 8 and Appendix B</i></b></p>
Utility Work <i>(See Public Right-of-Way improvements)</i>			<p>Major utility work that would impact such items as tree canopies, streetlights, sidewalks, curb and gutters, etc.</p> <p>Installation of new utilities including signal boxes, stop lights, etc.</p>	<p><b><i>Varies depending on improvement.</i></b></p>

<b>Type of Work:</b>	<b>No Approval Required For:</b>	<b>Planning Department May Extend Approval For:</b>	<b>Commission Hearing and Approval Required For:</b>	<b>Handbook Section Cross-reference</b>
Waterproof Coatings on Original Masonry	Clear waterproofing.		All opaque masonry coatings.	<i>Chapter 5 Section 4</i>
Windows	Repair of windows.		Replacement/changes in window design. Removal of original windows, window components and changes in the window openings. Addition of shutters not original to building and stained glass windows.	<i>Chapter 5 Section 5 and Appendix A</i>

# Chapter 1:

## PREFACE



*J. W. Cannon House  
65 Union Street, North*

The Historic Preservation Commission's authority and the guidelines of the Historic Handbook are incorporated into the City's Zoning Ordinance by reference. This "handbook" was originally published and adopted in 1983. Since that time, Concord's Historic Districts have grown in popularity and continue to be focal points of the community. The revised and expanded handbook is intended to further enhance the preservation efforts of Concord's Historic Districts.

The handbook explains how the regulations work and answers the most frequently asked questions about living in a Historic District. It also provides background about the history and the architecture of Concord's Historic Districts. It illustrates the importance of physical features and sound site planning practice in the process of historic preservation. Additionally, the handbook is intended to serve as a supplement to the City of Concord Zoning Ordinance and as a guide and reference manual for the Historic Preservation Commission in their deliberations.

Included in this information is a glossary of common architectural terms and a list of reference materials. Also included is The Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings, the basis for a majority of the design requirements of the Districts. Whenever possible, photographs and illustrations have been included as examples of desirable features, details, and architectural styles.

One purpose of traditional zoning is to plan a community's ultimate physical design. Conversely, historic zoning is designed to preserve significant architectural and historical character. Historic zoning encompasses a specific geographical area and may include properties which have no distinctive historic features; however, combined with the properties which have such features, a total historic character is created.

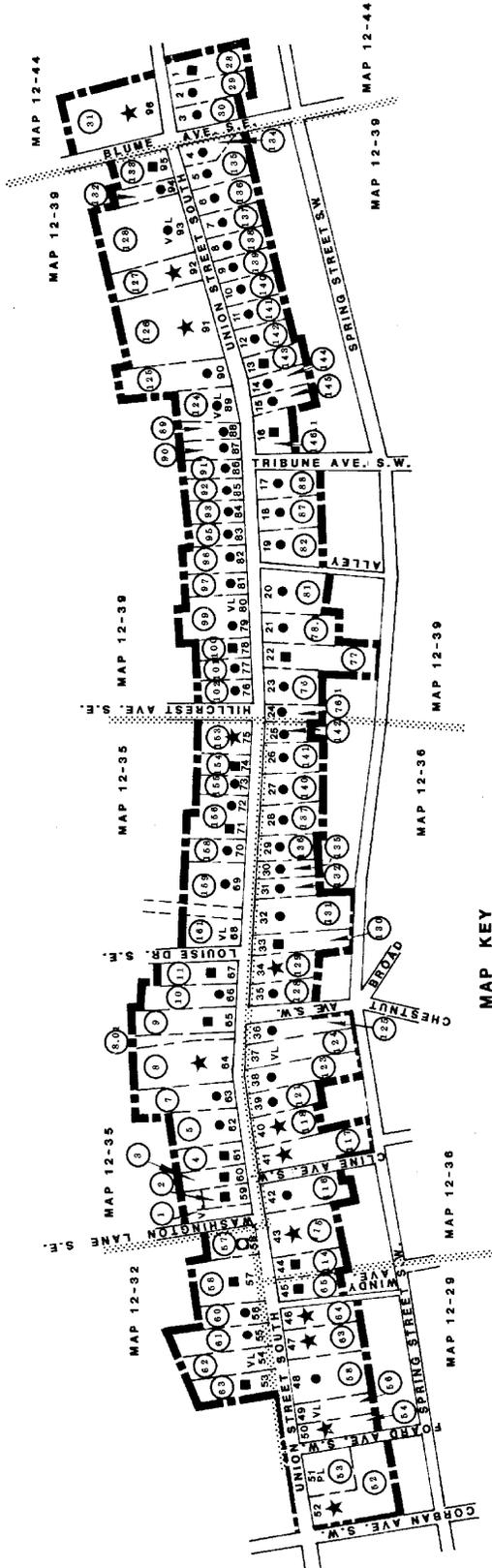
Concord's Historic Districts consist of three such areas. The North and South Union Street Historic Districts were established in 1982. In 1988, the Edgewood Neighborhood was designated as a Historic District. The North and South Union Street Historic Districts are listed in "The National Register of Historic Places," whereas the Edgewood District is a locally designated district.

With the first designations, the Concord Historic District Commission was established in order to promote, enhance and preserve the character of the district, and to administer the Commission's Ordinance. With the passage of Senate Bill 139 in 1989, the North Carolina General Statutes were amended to allow consolidation of historic district and historic properties commissions into "historic preservation commissions." As a result, the name of the Concord Historic District Commission was changed to the Concord Historic Preservation Commission in June 1991.



**OFFICIAL MAP  
SOUTH UNION HISTORIC DISTRICT  
CABARRUS COUNTY  
CONCORD, NORTH CAROLINA**

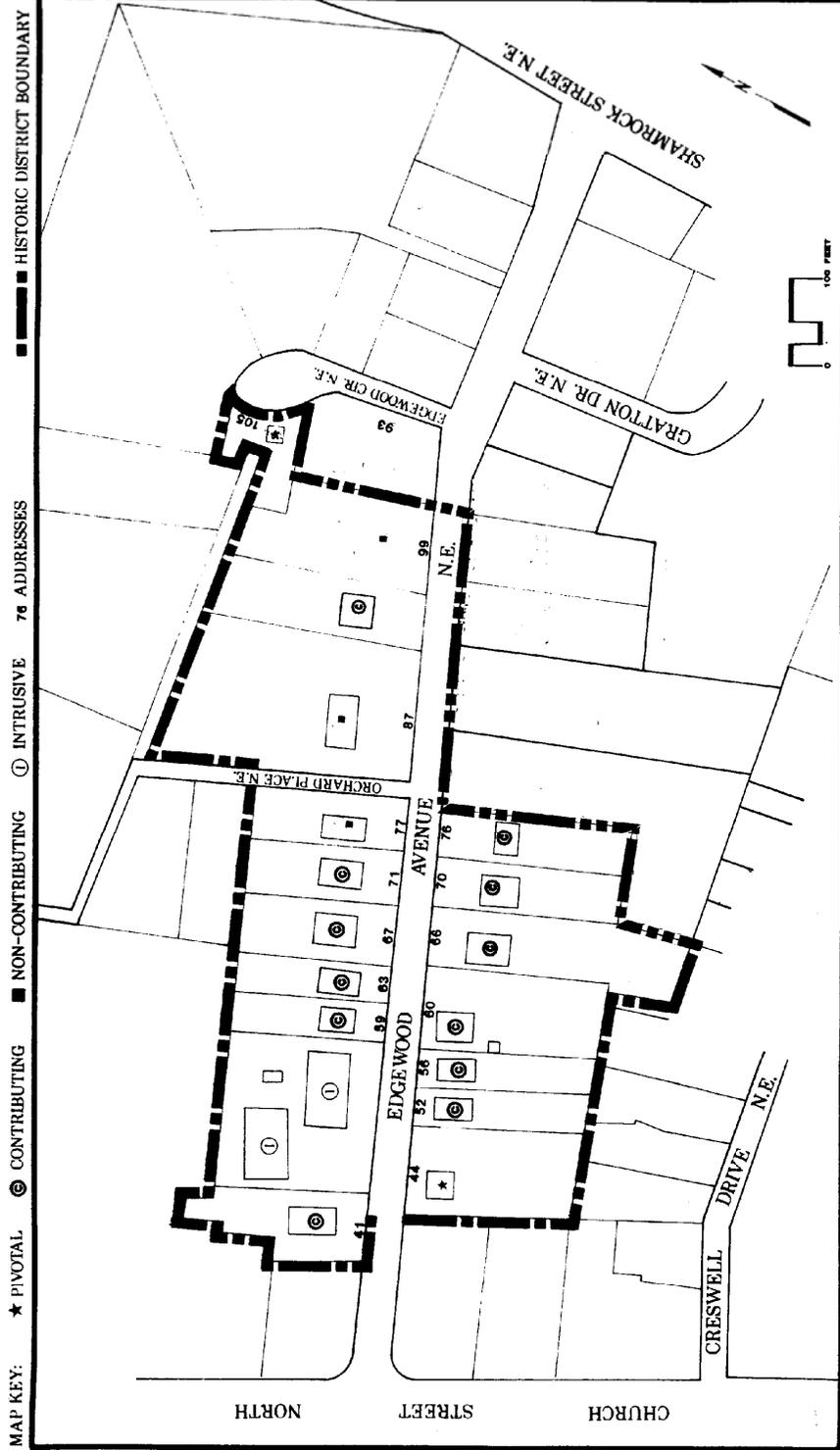
SCALE 1:200



- |                   |                            |              |                |                              |
|-------------------|----------------------------|--------------|----------------|------------------------------|
| <b>MAP LEGEND</b> | PROPERTY MAP BOUNDARY      | PIVOTAL      | INTRUSIVE      | 44 KEY NUMBER                |
| PARCEL NUMBER     | HISTORIC DISTRICT BOUNDARY | CONTRIBUTING | VL VACANT LOT  | VOL VACANT CONTRIBUTING LAND |
|                   |                            | FILL         | PL PARKING LOT |                              |

PLANNING DEPARTMENT JULY 1983

OFFICIAL MAP  
 EDGEWOOD HISTORIC DISTRICT  
 CABARRUS COUNTY  
 CONCORD, NORTH CAROLINA



## Chapter 2: HISTORY



*E. T. Cannon House  
(First Presbyterian Church Fellowship Bldg.)  
58 Union Street, North*

Settlement of present day Cabarrus County began in the mid-eighteenth century. The area was populated primarily by Dutch, Scotch-Irish, Germans, and a small group of Welsh-English families, all of whose influences are apparent in the designs of many of the homes in the Districts.

In 1792, the North Carolina Legislature approved the formation of Cabarrus County from what was then part of Mecklenburg. Crucial support for a separate county came from Stephen Cabarrus of Edenton, the

Speaker of the House of Commons, and the new county was named in his honor.

For some time following its creation there was much discussion and disagreement as to the location of the new county seat and the courthouse for the new town. Finally, Stephen Cabarrus wrote a letter appealing to the citizens to bury their differences and have “concord.”

Accordingly, a site was selected, and it was agreed to name the town “Concord.” The principal street was named “Union” to mark the resolution of the dispute about the town’s location.

The town of Concord was established near the center of the County in February 1796, when Samuel Huie sold 26 acres of his land to the newly appointed town commissioners: John Means, James Scott, and Leonard Barberick. Union Street and Corban Avenue was the primary intersection for much of the daily activities.



Odell-Locke Mill

In 1837, Concord was incorporated, and a city government was organized with a land area of one square mile.

In 1839-1840, the Concord Manufacturing Company built a textile mill on the highest point on the newly extended North Union Street, (The current Odell-Locke-Randolph Cotton Mill, 1 Buffalo Avenue NW).

This prevented Union Street from extending any further north, but insured that Concord would grow in that direction. Completion of the North Carolina Railroad on the western edge of town also spurred growth and opened an additional route of transportation, Depot Street, now known as Cabarrus Avenue.

In 1882, the North Union Street neighborhood began to take on the stately appearance it has today. In contrast, the southern and eastern sides of town remained sparsely inhabited.



Franklin C. Niblock house

By the turn of the century, the textile industry had transformed agrarian Concord into a leading industrial town. The more prosperous textile mill owners and professional citizens built residences along North Union Street. These homes were built on the remaining lots and in some instances, existing dwellings were moved to a side street location so that a more “modern” residence could be built. During this same period, South Union Street experienced more limited growth; however, gradual residential development emerged making the street a residential thoroughfare for the owners of small retail, service

enterprises and the employees of the downtown stores. Greater development occurred between Corban Avenue and Chestnut Street, but it was not until the late 1920’s, with the construction of the F.C. Niblock residence (449 South Union Street), that this area began to establish its present architectural and developmental patterns. By 1930, development around Concord had extended primarily to the north and south of the original city boundaries.



James Dayvault house

In the late 1970’s, Peter Kaplan was hired by the city and county governments to do an inventory of the historic properties of Cabarrus County. His work, The Historic Architecture of Cabarrus County North Carolina, was published in 1981. This research generated public support for the establishment of the Historic Districts for Concord.

A variety of architectural styles are present in Concord’s Districts. The most prominent styles are Queen Anne, Colonial Revival, Bungalow, and Italianate. Less common styles include Gothic and Jacobethan Revival, and there are several examples of “hybrids” which blend characteristics of more than one style.



Moses L. Brown house

One of the most prominent examples of Queen Anne architecture is the James Dayvault house at 216 Union Street, South. This home was constructed in the early 1900’s and features asymmetrical massing which is one of the style’s main features.

The Charles Wagoner house at 106 Cabarrus Avenue, West, is representative of the Colonial Revival style. The home was constructed in 1903

and has a symmetrical facade, and a portico, which are significant features of Colonial Revival architecture.

An example of Bungalow design is located at 156 Union Street, North. The Levi Sides house was constructed in the early 1920's and features the large square piers and overall design simplicity associated with the architectural style.

The Moses L. Brown home at 168 Union Street, South, is one of the best examples of the Italianate style, with its molded cornices and sawn brackets. However, several elements of the Queen Anne style were added after the original construction of the home in the early 1800's.



*John Milton Odell House  
288 Union Street, North*

A rare example of Gothic Revival architecture is the B. Franklin Rogers house at 40 Franklin Avenue, N.W. The prominent features of the style represented in this structure include pointed rooflines and sharply pitched dormers, with wavy bargeboard.

The E.T. Cannon house at 58 Union Street, North, is the only example of the Jacobethan Revival style in the entire county. This house was designed by Charlotte architect William H. Peeps, and features many of the characteristic features of the style. These features include tall corbeled chimneys, parapeted roof lines and brick construction with stone trim. This structure is currently used as the fellowship hall for the First Presbyterian Church.



*James William Cannon House  
65 Union Street, North*

Two of the most visible and easily identifiable structures in the Districts employ combinations of more than one architectural style. The John Milton Odell house at 288 Union Street, North, combines elements of Italianate and Second Empire styles. Main features include the use of a projecting central bay with cast iron cresting. The James William Cannon house at 65 Union Street North, combines elements of Queen Anne and Colonial Revival styles. The home was constructed about 1900 and has a two story gable and domed turret which are elements of Queen Anne architecture and fluted columns on the front porch which are elements of Colonial Revival. The structure is best known as the former site of Cabarrus Academy.

## Chapter 3: WORKING WITH THE HISTORIC PRESERVATION COMMISSION

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*Dr. P. R. MacFadyen House  
75 Grove Avenue NW*

### A. IN GENERAL

The Official Maps, (Chapter 1-Preface), of the Districts have been adopted by the City Council and designate the boundaries of the Districts. These maps classify the individual properties into the following categories according to their relative importance to the character of the district.

**Pivotal** – Those properties which, because of their historical, architectural, or cultural characteristics, play a primary, central or “pivotal” role in establishing the qualities for which the District is significant.

**Contributing** – Those properties which, while not pivotal, support and add to the historical, architectural, or cultural characteristics for which the District is significant.

**Noncontributing** - Those properties which do not have an especially negative impact on the general characteristics of the District. They may be similar in form, height, and materials to contributing buildings in the District, but cannot be considered contributing because of the date of construction.

**Intrusive** – Those properties which have a definite negative impact on the historical, architectural, or cultural characteristics for which the District is significant.

**Fill** – Those properties which were constructed on single or scattered site undeveloped lots in established neighborhoods, after the period of significance of the more important structures, but prior to official establishment of the District.

The Historic Preservation Commission is a seven member citizen’s board appointed by the City Council to administer the Historic District regulations. The Commission has the responsibility to:

- Review plans for alteration to the exterior of structures and the removal of trees from properties within Historic Districts, and approve the issuance of Certificates of Appropriateness if those plans are consistent with the Standards and Requirements.

- Provide technical advice to property owners concerning restoration and the treatment of architectural features.
- Delay the demolition of important structures within Historic Districts for up to 365 days in order to explore alternatives.
- Make recommendations to the Board of Adjustment and the Planning and Zoning Commission regarding proposed zoning changes and related matters within the Districts.

The Commission meets the third Thursday of each month at 7:00 p.m. in the City Council Chambers of City Hall (26 Union Street, South). Since the Commission is a quasi-judicial body under North Carolina law, certain rules of procedure must be followed. These procedures include official notification of adjacent property owners, public advertisement in the newspaper, and placement of a public hearing sign on the property.

The Commission's review criteria for Certificates of Appropriateness include taking into account the historic and visual aspects that give the Districts their character, as well as reviewing the proposal's compatibility. Additional information on approval criteria may be found in the Appendix B, "Approval Requirements," Appendix C, The Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings, and in Article 4 – Section 12 of the City of Concord Unified Development Ordinance.

## **B. OBTAINING A CERTIFICATE OF APPROPRIATENESS**

Prior to new construction, demolition, installation of permanent identification signs, and most alteration and rehabilitation activities within the Districts, a Certificate of Appropriateness must be obtained. Alterations to the interior of the structures are not subject to Certificates of Appropriateness. In some matters the City of Concord Planning Department can issue a Certificate. If the proposed alteration is one that the Planning Department can approve, then the applicant does not have to go before the Historic Preservation Commission. The types of work for which Certificates are required are shown in the "Approval Requirement Needs" section at the beginning of the Handbook.

The alteration of any site or exterior feature which is not specifically listed in Appendix B will require approval by the Historic Preservation Commission for a Certificate of Appropriateness. The Zoning Administrator shall have the option of referring any item that could be approved within the Planning and Zoning Department to the Historic Preservation Commission for approval.

A property owner must obtain a Certificate of Appropriateness prior to the issuance of a building permit, or any other permit required by the City for construction, alteration, or demolition of a structure within a District. Prior to beginning work on a house or property (including extensive tree pruning and removal), the owner should contact the City's Planning Department for a determination on whether a Certificate of Appropriateness will be required.

If the work to be performed requires Historic Preservation Commission approval, an application for a Certificate of Appropriateness must be filed. The application and processing is required to be submitted to the Planning Department at least 28 days prior to a regularly scheduled Commission meeting. Application forms may be obtained from the Planning Department or the City's website.

### **C. APPEALS**

Decisions of the Historic Preservation Commission may be appealed to the Board of Adjustment. An appeal may be taken by the applicant or by any other aggrieved party. The appeal application must be filed with the Zoning Administrator within 30 days of the decision. Any appeals from the Board of Adjustment are to be taken to the Superior Court of Cabarrus County.

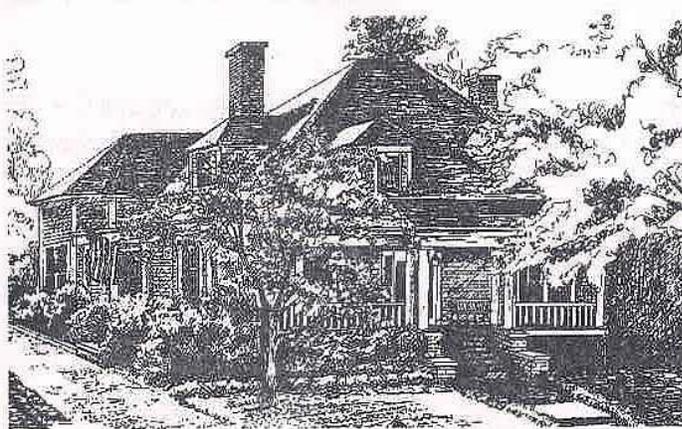
The appeal of a decision by the Historic Preservation Commission to the Board of Adjustment is in the nature of "certiorari." The aggrieved party cannot present new evidence but must show that the Commission failed to follow the appropriate administrative or procedural regulation or that the decision was contrary to the evidence or was arbitrary and capricious.

### **D. ENFORCEMENT**

Enforcement of any of the provisions of the City of Concord Zoning Ordinance is done by the Code Enforcement Department. A Certificate of Appropriateness must be obtained before issuance of a building permit or any other permit needed for constructing or altering buildings, structures, or signs. Failure to do so is a zoning violation and if not corrected or remedied will result in legal action.

## Chapter 4: LOCAL STANDARDS and GENERAL POLICIES

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*C. M. Llewelyn House  
81 Grove Avenue NW*

Local Standards and General Policies are statements based on the Commissioner's past actions and experiences in administering Historic requirements.

**Artificial siding:** The Commission views each of Concord's Historic Districts as a whole and thus more than the sum of its individual parts. For this reason, all buildings within the Districts are deemed to be of architectural significance, unless otherwise expressed by the Commission.

Because artificial siding is not considered an authentic, historical material, it is prohibited from being used on structures defined by the Commission as Pivotal and Contributing to the Historic Districts.

Artificial siding would be considered on structures defined by the Commission as Non-Contributing, Intrusive or Fill properties if the following conditions are met:

- The facility is considered not to have existing wood damage or other forms of structural damage that would be concealed by vinyl siding.
- That the structure must have been built during a time and consistent in style with a time during which vinyl siding was commonly used in new construction.
- The application of the vinyl siding nor the vinyl siding itself shall not alter even in the smallest detail historical features that may exist and are considered by the Concord Historic Preservation Commission as important in defining the historic character of the structure.

Where artificial siding is considered, the Commission will require a sample of the siding be submitted at the time of the hearing, and that the applicant be present at the Commission hearing.

Approval of the application for artificial siding to any building in the Historic Districts does not automatically permit or prohibit the issuance of a Certificate of Appropriateness for other projects which involve the application of artificial siding to existing structures in the Districts.

- 1. Synthetic Stucco:** Because synthetic stucco is not considered an authentic, historical material, it is prohibited from being used on structures defined by the Commission as Pivotal and Contributing to the Historic Districts.

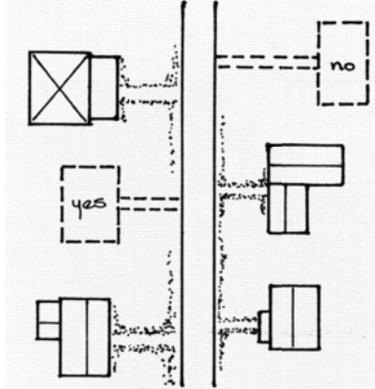
Synthetic stucco would be considered on structures defined by the Commission as Non-Contributing, Intrusive, or Fill properties if the following conditions are met:

- Its use as a building material shall be limited to a maximum of ten percent (10%) on any one exterior building elevation.
  - It shall not be used in any condition below 8ft above grade.
  - Its use should be limited to detailed areas on masonry buildings such as cornices and window / door headers and not used in large expanses of wall area. The use of this material in the construction of architectural columns is inappropriate.
  - If used it shall be detailed with appropriate reveals and other details to simulate the use of cut stone.
  - Its use is prohibited on any existing structure with regard to additions, renovations, or infill wall areas.
- 2. Synthetic Spray-On Coatings:** Because synthetic spray-on coatings (i.e. spray-on vinyl/spray-on ceramic) are not considered an authentic, historical material, and there is a potential for loss of detail with its use or application, and due to questionable removal and reversal processes related to the product, it is prohibited from being used on structures located within the Concord Historic Districts.
  - 3. Hardiplank and similar synthetic materials that replicate historic materials such as brick, wood, and clay:** Modern synthetic products are created to give the appearance of historic materials. The materials are historically inaccurate and should not be used on Contributing or Pivotal structures or as part of additions to those buildings. Accessory buildings for Pivotal and Contributing structures should utilize the same siding and roof material as the primary structure. If the primary structure is not Contributing or Pivotal, new accessory structures, such as detached garages or outbuildings, may utilize these materials. In any case, prefabricated storage buildings that are not visible from the street, may utilize synthetic materials (excluding vinyl, metal, or plastic) if they are equal to or under 144 square feet.
  - 4. Alterations:** Alterations having no historical basis shall be avoided whenever possible. Any type of alteration of exterior features of a building, site, or environment within the Historic Districts which is not specifically listed within these regulations shall be referred to the Historic Preservation Commission for action on the issuance of a Certificate of Appropriateness.

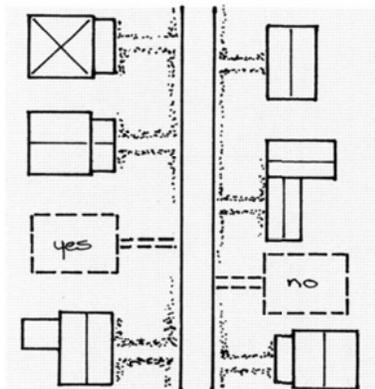
5. **Staff Referral of Proposed Projects:** The Zoning Administrator shall have the option of referring any item that could be approved at the staff level to the Historic Preservation Commission for approval.
6. **Projects Within Right-of-Ways:** Any utilities or other public improvement projects to be constructed within a street or utility right-of-way which have the potential of damaging root systems of trees shall require Commission approval.
7. **Use of The Secretary of the Interior's Standards:** The Commission officially adopts The Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings, (Appendix C), as part of this document in order to provide guidance for rehabilitation and to assist in administration of its duties. Recommendations that are not found in the Historic Handbook may be found in Appendix C.
8. Every reasonable effort shall be made to provide a compatible use for a property which requires minimal alteration of the building, structure, site or environment, or to use the property for its originally intended purpose.
9. Original qualities or character of a building, structure, site or environment shall not be destroyed. The removal, alteration or destruction of any historic material or distinctive feature shall be avoided.
10. All buildings, structures and sites shall be recognized as products of their own time. Alterations that have no historical basis and which seek to create an earlier appearance shall be discouraged.
11. Changes which may have taken place in the course of time are evidence of the history and development of a building, structure or site and its environment. These changes may have acquired significance in their own right and this significance shall be recognized and respected.
12. Distinctive stylistic features shall be repaired rather than replaced, whenever possible. In the event replacement is necessary, the new material should match the material being replaced in composition, design, color, texture and other visual qualities. Repair or replacement of missing architectural features, should be based on accurate duplications of features, substantiated by historic, physical or pictorial evidence rather than conjectural designs or the availability of different architectural elements from other buildings or structures.
13. Surface cleaning shall be undertaken with the gentlest means possible. Sandblasting and other harsh cleaning methods that may damage historic building materials is discouraged, although each case will be judged individually.
14. Every reasonable effort shall be made to protect and preserve archeological resources affected by, or adjacent to, any project.

- 15.** Contemporary design for alterations and additions to existing properties shall be encouraged when such alterations and additions do not destroy significant historical, architectural or cultural material, and such design is compatible with the size, scale, color, material and character of the property, neighborhood or environment.
- 16.** New additions or alterations shall be construed in such a manner as to preserve the essential form and integrity of the structure, should the addition or alteration be removed.
- 17.** Historically, all structures within the districts and in older neighborhoods throughout the City were “site built,” and the use of prefabricated building materials is a fairly recent development. As a result, prefabricated metal utility buildings and carports are inappropriate throughout the districts, however, their use will be considered by the Commission on a case by case basis.
- 18.** The presence of lead based paint can lead to serious health problems for some individuals. Many historic homes have lead paint somewhere on the premises. If deteriorating lead paint is detected, removal and abatement should be undertaken with the utmost care by experienced professionals.

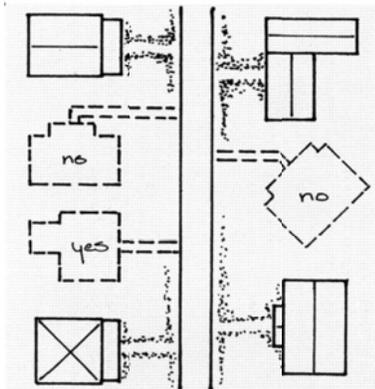
# Chapter 5 – Section 1: NEW PRINCIPAL STRUCTURE CONSTRUCTION



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.

The Historic Preservation Commission recognizes that there are only a few undeveloped lots within the districts; however, their treatment is critical to the future of the districts. The successful integration of new structures or building additions to the neighborhood depends on how well the building will preserve existing site features such as trees, slopes, natural drainage patterns, rock outcrops, etc. Further, the Historic Preservation Commission will consider how well the proposed construction will maintain the unifying features that exist, such as tree canopies, clean boundaries, and architectural and landscape details. Other considerations include how compatible the proposed structure will be in material, scale, site setting, spatial relationships, color and details with immediate neighbors.



Site planning is a major consideration when designing a new structure. Careful consideration should be given to the design and placement of driveways, landscaping, lighting, signage and walkways and the retention of mature trees or other historic features of landscape.

Building materials, features, fenestration, and texture are also important to consider when designing for compatibility. A wide range of features and materials presently used in the neighborhood provide a broad range of options from which to choose. Through the use of porches, chimneys, bays and other details, new buildings can be designed to have texture compatible with the Historic context.

### DESIGN GUIDELINES AND RECOMMENDATIONS

1. New construction shall coordinate in material, scale, size, site position, spatial relationship and details with immediate neighbors within one hundred feet (100') of the proposed construction.
2. Where feasible, roof forms should be consistent and compatible to others in the district. Large flat expanses of walls or roofs should be avoided.
3. New construction should avoid A-frame, dome, shed, and flat roofs.
4. Locate and size window and door openings so they are compatible in placement, orientation, spacing, proportion, size and scale with the surrounding historic buildings.
5. The historic Preservation Commission encourages compatible contemporary design in order to reflect accurately the differences between historic buildings and newer structures.
6. Introduce features such as porches, chimneys, bays and architectural details as appropriate so that the texture of new residential structures is compatible with surrounding historic structures. Detailing on new structures should be consistent with its overall scheme and design.
7. Contemporary substitute materials such as hardiplank may be approved on a case by case basis for new structures. In order to qualify for use in new construction, these materials must have a demonstrated record of overall quality and durability. The physical properties of substitute materials must be similar to those of the historic materials they mimic. When considering substitute materials, the closer an element is to the viewer, the more closely the material and craftsmanship should match the original. The appropriateness of substitute materials shall be reviewed on an individual basis.
8. Vinyl siding for new construction is not appropriate.

#### **- Green Tip -**

**The use of  
locally available building  
materials reduced energy**

## Chapter 5 – Section 2: NEW ADDITION CONSTRUCTION

Over time buildings change to accommodate changing needs and lifestyles. When making an alteration to a historic building the challenge is to balance the individual property owner's need with the community's intent to maintain architectural integrity. Wherever possible, new additions to buildings shall be done in such a manner that if they were to be removed in the future, the essential form and integrity of the original building would not be impaired. New addition design for historic structures shall be compatible with the size, scale, color, material and character of the neighborhood, the building and its environment. Although designed to be compatible with the historic building, an addition should be discernible from the original building.

### **Guidelines: Additions**

1. Site new additions as inconspicuously as possible, preferably on rear elevations and where historic character defining features are not damaged, destroyed, or obscured.
2. Additions on the front elevation will not be allowed.
3. Inset additions from rear building corners to differentiate them from the existing building and to reduce public visibility.
4. Design additions so they are compatible with the existing building in height, massing, roof form and pitch.
5. Reduce the visual impact of an addition on a historic building by limiting its scale and size. Do not overpower the site or substantially alter the site's proportion of built area to green space.
6. New additions should be installed in such a manner that would allow the home to be reverted to its original state without damaging historic features.
7. New additions should be compatible in character but use a contemporary design in order to differentiate additions from the historic structure.
8. Windows in additions should be similar to those in the original buildings in their proportions, spacing, and materials.
9. Select exterior surface siding and details that are compatible with the existing building in material, texture, color, and character.

8. Contemporary substitute materials for siding and roofing on additions should only be considered in cases in which the structure utilizes the subject material or a similar non-historic material or if the material used on the structure is no longer available.
10. Additions should be constructed in a structurally self-supporting manner to reduce damage to the historic building. Construct additions in such a way that loss of historic material or details is minimized.
11. Foundations and eaves or other major horizontal elements, should not generally align on buildings and their additions.
12. Protect significant site and landscape features from damage during or as a result of construction by minimizing ground disturbance.

## **Chapter 5 – Section 3: NEW ACCESSORY STRUCTURE CONSTRUCTION**

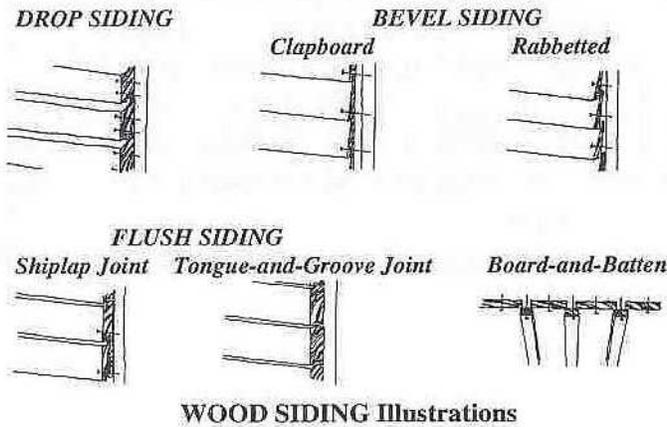
A number of original garages and smaller outbuildings, and even a few carriage houses, survive in the historic district. Many echo the materials, the details, and the roof form of the main house on the site and contribute to the architectural character of the district. Through their siting and relationship to the houses, the streets, and the alleys, 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 toward the back of the rear yard and were generally not visible from the street.

### **DESIGN GUIDELINES AND RECOMMENDATIONS**

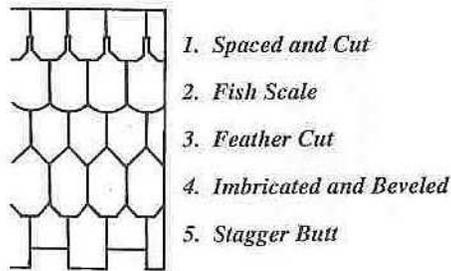
1. Original carriage houses, garages, and accessory structures should be retained and preserved in their original location.
2. Retain and preserve all architectural features that are character defining elements of carriage houses, garages and accessory structures, including foundations, steps, roof form, windows, doors, architectural trim, and lattices. Original style and character of carriage houses and accessory structures, doors and openings shall be maintained.
3. Retain and preserve historic garages and outbuilding materials, such as siding, masonry, roofing materials, and wooden trim. If replacement is necessary, use new materials that match the historic materials in composition, dimension, shape, color, pattern, and texture.
4. If replacement of an element or a detail is necessary, replace only the deteriorated item to match the original in size, scale, proportion, material, texture, and detail.
5. If an original carriage house, garage or outbuilding is completely missing, replace it with either a reconstruction based on accurate documentation or a new design compatible with the historic character of the main building or historic accessory structures in the district.
6. Keep the proportion of new garages and accessory structures compatible with the proportion of the main house. Typically these buildings were smaller in scale than the main house.
7. New garages and accessory structures must use traditional roof forms, materials, and details compatible with the main building or historic accessory structures in the district.

8. Locate new garages and accessory structures in rear yards and in traditional relationship to the main buildings.
9. It is not appropriate to locate a garage or an outbuilding in front of the main building unless such a location is historically accurate for a specific site.
10. All accessory structures shall remain detached from the main building.
11. Metal utility sheds, metal carports, and metal garages are prohibited.
12. Accessory buildings for Pivotal and Contributing structures should complement the siding and roof material of the primary structure.
13. Prefabricated storage buildings which are not visible from the street may utilize synthetic materials (excluding vinyl, metal or plastic) if they are equal to or less than 144 square feet. Prefabricated buildings should have contemporary roof styles compatible with the primary structure. Gable or hip roofs are most appropriate. Barn style buildings are not appropriate.

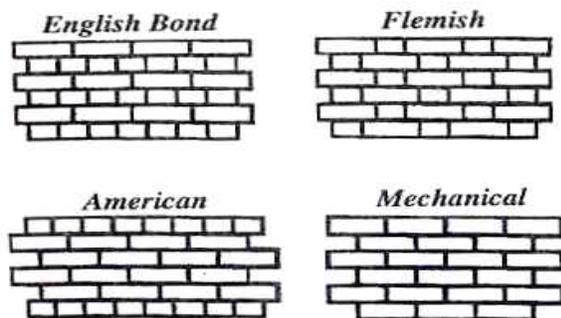
## Chapter 5 – Section 4: SIDING and EXTERIOR MATERIALS



WOOD SIDING Illustrations



CUT WOOD Illustrations



MASONRY Illustrations

There are a variety of materials available for use on the exterior of both existing structures and for new construction. Wood siding is the predominate exterior material within the Historic Districts, although some structures have masonry. The most common type of wood siding is clapboard, which consists of beveled boards that are thicker on the bottom, and are installed so there is some overlap. Other types of wood siding that may be encountered include rabbeted, drop, flush, and board and batten.

Another type of exterior material found in the districts is cut wood which covers the frame of the building. Examples of cut wood shingles are spaced and cut, fish scale, feather cut, imbricated and beveled, and stagger butt.

Stone and brick exteriors are also found within the Districts. English, Flemish, American and “mechanical bonds” are all common brick patterns.

Masonry will eventually need to be repointed (replacing deteriorated mortar with new mortar). Cleaning techniques for masonry include chemical and low pressure washing; however, sandblasting is not permitted.

The historic integrity of structures should not be compromised by altering the original siding, even if the proposed siding is composed of historically accurate materials (example: wood siding to shingle siding) unless proof can be provided that the proposed alteration has a historic basis.

A number of artificial sidings have been developed since the construction of many of the structures in the Districts. Artificial products that are found on some structures may include asbestos shingles or vinyl or aluminum siding. Artificial or synthetic siding is not appropriate for additions on Pivotal and Contributing structures or for large accessory structures. Artificial and synthetic siding, when used for additions or accessory structures on lots containing noncontributing, fill, or intrusive structures, may be considered on a case by case basis.

### **DESIGN GUIDELINES AND RECOMMENDATIONS**

1. To the greatest extent possible, wood siding should be preserved and maintained.
2. In the replacement of wood siding, materials should match the original as closely as possible. “Rough-sawn” siding should be avoided.
3. The use of artificial siding to cover original siding is prohibited.
4. The removal of artificial siding and restoration of original siding materials is encouraged.
5. Artificial and synthetic siding is permitted for new construction on a limited basis in coordination with this section and Chapter 4: “Local Standards and General Policies” of this Handbook.

#### **- Green Tip -**

Existing “old growth” wood siding and existing masonry materials have already made their carbon footprint. Maintain existing materials to the greatest extent possible to diminish raw material usage and energy usage that would be required for the production of new materials!

## Exterior Siding Maintenance:

**Wooden** features and surfaces on a building should be maintained and repaired in a manner that enhances their inherent qualities and preserves their original character. Appropriate routine maintenance and repair methods for wood features include:

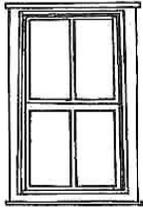
- Inspect surfaces routinely for signs of moisture damage, mildew, fungi, termites or other infestation and provide adequate drainage to prevent standing water.
- Keep wooden joints properly sealed or caulked to prevent moisture infiltration.
- Treat traditionally unpainted, exposed wooden features with chemical preservatives to prevent or slow their decay and deterioration.
- Retain protective surface coatings, such as paint, to prevent damage from ultraviolet light and moisture.
- Clean painted surfaces regularly and repaint them only when the paint film is damaged or deteriorated. When repairing deteriorated wooden elements it is best to selectively replace portions in kind through splicing or piecing, or apply a wood consolidant to stabilize the deteriorated portion in place. Use decay resistant wood species for replacement of deteriorated wooden elements to prevent future deterioration. The application of wood preservatives or the use of pressure-treated wood can also extend the life of wooden elements and surfaces. However, most pressure-treated wood must weather for six to twelve months before it is primed and painted.

**Masonry material** surfaces require minimal maintenance and are known for their durability. Appropriate routine maintenance methods for masonry surfaces include the following:

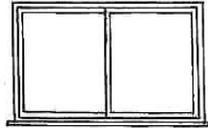
- Inspect surfaces and features regularly for signs of moisture damage, vegetation, structural cracks or settlement, deteriorated mortar, and loose or missing masonry units.
- Provide adequate drainage to prevent water from standing on flat, horizontal surfaces, collecting on decorative elements or along foundations and piers, and rising through capillary action.
- Clean masonry only when necessary to remove heavy soiling or prevent deterioration. Use the gentlest method possible.
- Re-point deteriorated mortar joints to prevent damage caused by moisture penetration.
- Re-paint previously painted masonry surfaces as necessary. Masonry surfaces develop a patina over time and should be cleaned only when heavy soiling or stains hold moisture and accelerate deterioration. Gently clean with a low pressure water wash and detergent or scrub with a natural bristle brush. If a chemical masonry cleaner is necessary, select one that is appropriate for the specific masonry material and be sure to test on an inconspicuous area in advance. Recommended application procedures should be followed and the surface neutralized and rinsed thoroughly to prevent any further chemical reaction. The use of abrasive methods such as sandblasting and power washing are destructive to historic masonry surfaces and are not appropriate. Repainting previously painted surfaces is recommended over the use of chemicals or abrasive cleaning methods. Remove loose or deteriorated mortar with hand tools prior to repointing, taking care not to chip or damage the surrounding masonry. The new mortar should match the visual and physical properties of the original mortar. Mortar high in Portland cement exceeds the strength of historic brickwork and will deteriorate it. Moisture damage may also cause a stucco coating to separate from its masonry backing. To repair, remove loose or deteriorated stucco and patch area with new stucco to match the original in composition, texture, color, and strength.

PAINT REMOVAL METHODS FOR WOOD – ORDER OF PREFERENCE		
	<u>Advantages</u>	<u>Disadvantages</u>
Most Favorable	Hand scraping and sanding	time consuming
	Chemical	potentially toxic
	Low pressure water blasting	time consuming
	Electric Heat Gun or Heat Plate (limited use)	time consuming
NO CERTIFICATE REQUIRED		
CERTIFICATE REQUIRED		
	Disc and power sanding	leaves swirl marks, damages wood
	High pressure water or Sand blasting	pits and damages wood
Least Favorable	Other forms of extensive heat removal (including torches)	damaging to wood, potential fire hazard

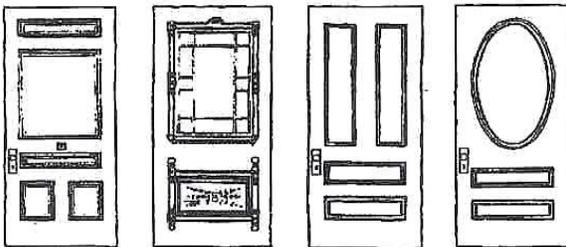
## Chapter 5 – Section 5: FENESTRATIONS



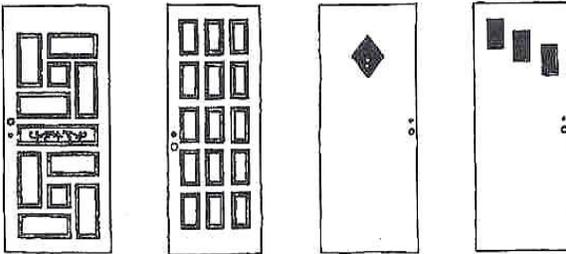
*THIS  
Window*



*NOT THIS  
Window*



*Appropriate Doors*



*Not Appropriate Doors*

There are a variety of existing patterns and forms of windows and doors within all the Historic Districts. Windows on most of the historical homes are of the double hung variety. Emphasis is on vertical rather than horizontal orientation of windows. The number of lights (panes) in the sash varies with the style and period of the house. Although doors are often obscured by porches, they are an important characteristic of the architecture of the period of the house. The typical doors in the Historic Districts are solid-paneled or with one or more light panels. New doors should be compatible with the period and style of the structure. Doors to avoid include flat-surfaced doors and those with conventional light panels.

Whenever possible, the original windows and doors and their features (sashes, glass, lentsils, sills, architraves, shutters, door frames, pediments, hoods, steps, and hardware) should be preserved. In the event that only a portion of the existing windows need repair/replacement, replace only the damaged or deteriorated section with appropriate

material. If total replacement of a window or a door is necessary, one should be used that matches the original in dimension, configuration, material, and detail. Replacements should not alter the original door or window opening.

Alteration in door and window openings, especially on the principal facade, should be avoided whenever possible, except as a restorative measure to return an opening to its original size. New openings should be located in areas where they are not visible from the street or in areas where they are compatible with the original design

New windows should be consistent or compatible with existing units. The emphasis of the new windows should be vertical rather than horizontal. Wood is the most appropriate material, and vinyl and aluminum clad windows are inappropriate in most instances. Modern window production includes hybrid windows that include synthetic components or mixed composition of wood and synthetic products. This type of window should not be used for replacement of traditional wooden windows or within structures designated as Pivotal or Contributing. Mixed composition synthetic windows may be used under the following circumstances (1)New

construction of primary structures (2) New construction of accessory buildings on lots with buildings not designated as Pivotal or Contributing, and (3) New construction of additions to structures not designated as Pivotal or Contributing.

For the most part, only wooden shutters should be installed in the districts. The shutters should match the size of the window opening, sash spacing, and should be attached to the casing and not to the siding.

Storm windows and doors should not obscure the appearance or conflict with the style of the inner door and window and should look like an original feature, not an accessory. Unpainted aluminum storm doors and windows should be avoided.

Awnings and canopies constructed of canvas are appropriate with commercial structures and in some instances with residential structures. Types of residential structures with which awnings are most compatible are Bungalow, Queen Ann, and Colonial Revival. Awnings are not appropriate on structures where shutters were historically used. Aluminum awnings or canopies are inappropriate. Canopies and awnings shall reflect a close visual association with the fenestration involved.

### **DESIGN RECOMMENDATIONS**

1. Choose windows that are appropriate for the style of building, maintain vertical emphasis, and avoid large single paned units.
2. Use doors that are appropriate for the style of building while avoiding flat-surfaced doors, those with small decorative glass panels, and pre-finished window/side lite art glass units.
3. Avoid unpainted aluminum storm doors, and select a style which does not distort or change the appearance of the inner door.
4. Awnings or canopies should be mounted within the opening, directly on the window or door frame, or as an alternate, just outside the opening. The awning or canopy should reflect a close visual association with the opening. Awnings and canopies attached to roofs are inappropriate.

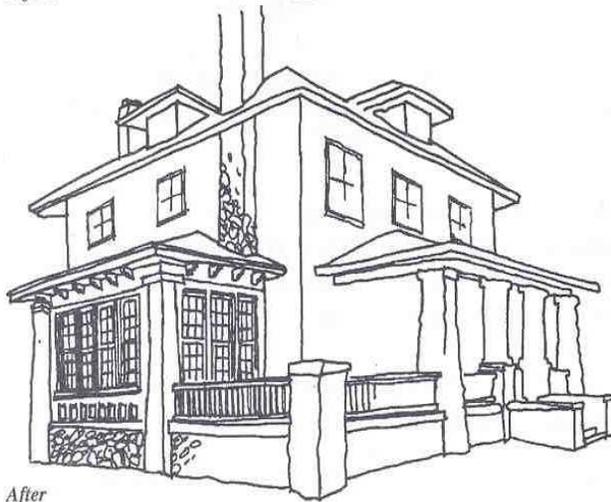
#### Window and Door Repair and Maintenance

- Protect and maintain existing windows and doors in appropriate ways:
- Maintain caulking and glazing putty to prevent air or water infiltration around glass.
- Weatherstrip windows and doors to prevent moisture and air infiltration.
- Check sills and thresholds to ensure that water runs off and does not collect.
- Maintain a sound paint film on all wooden windows and doors.
- Monitor the condition of wooden windows and doors.

## Chapter 5 – Section 6: PORCHES



Before



After

Porches which are original or are compatible with the design of the structure should be retained. Replacement of original wooden porch columns with metal substitutes should be avoided.

The enclosure of original porches, particularly front porches, should be avoided. Enclosing original side and rear porches with solid walls should also be avoided. However, their conversion to “sun parlors” may be appropriate in some instances. Windows in these enclosures should be smaller, multi-paned, and compatible with existing windows. Larger expanses of glass are not appropriate.

Original steps should be retained and handrails should match the railing on the porch. The replacement of wooden steps with precast concrete should be avoided.

Stairs and fire escapes are often required by North Carolina State Building Code when single family residences are converted to multifamily or nonresidential uses. To the greatest extent possible, stairs and fire escapes

should be located where they are not visible from the street.

Decks are generally not appropriate for homes within the districts. However, when decks are constructed, they should be located in the rear yard only, and should not project into the interior side yard. Decks should be avoided on corner lots, since their view can not be completely obscured from both streets. Rails on decks should match those on the porches. Lattice and shrubbery around the foundations enhance the appearance of decks, and should be utilized when possible.

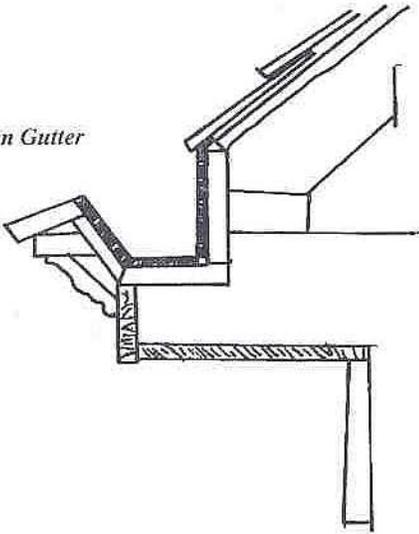
### **DESIGN GUIDELINES AND RECOMMENDATIONS**

- 1.** Alterations to original porches that have no historic basis are not appropriate.
- 2.** Enclosure of side or rear porches and balconies is discouraged. If enclosure of a side or rear porch is required for a new use, design the enclosure so that the historic character and features of the porch are preserved.
- 3.** Decks may only be located in the rear of the property.
- 4.** Design decks to be compatible in material, color, and detail with the historic building.
- 5.** Construct decks so that they can be removed in the future without damaging the historic structure.
- 6.** Construct decks so that there is the least possible loss of historic fabric. Also, ensure that character-defining features of the historic building are not obscured, damaged, or destroyed.
- 7.** Inset decks from the corner of the primary structure where necessary in order to prevent visibility from the street.
- 8.** Handicap accessible ramps should be temporary structures and able to be removed once no longer needed. Ramps deemed appropriate by a Certificate of Appropriateness should not detract from the aesthetic and architectural character of the principle dwelling unit nor should the removal of a ramp jeopardize any portion of the unit's structural integrity. To the greatest extent feasible, handicap ramps should be located where they are not visible from the street.

## Chapter 5 – Section 7

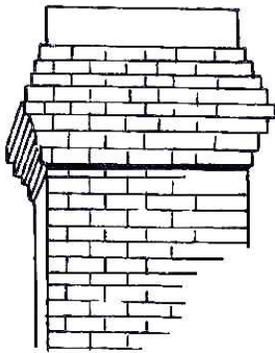
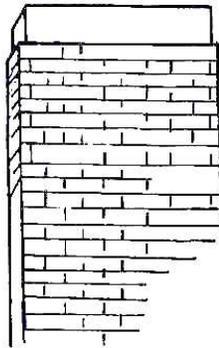
### ROOFING

Hidden Gutter



Existing patterns of roofs are usually pitched with variations in steepness, shapes, orientations and combinations. No more than one-half of the height of a structure should appear as roof. Materials are usually consistent over the entire structure, although there are changes in material where there are changes in steepness or shapes. Typical roofing materials used are tin, copper, slate, tiles, wood, and composition shingles.

Changes to roof pitch, configuration, and materials from that of the original should be avoided. Specialty roofing materials such as slate and tile should be maintained and repaired rather than be replaced with other roofing materials. The few metal roofs that exist in the districts should also be preserved. Soffits, fascias, mouldings, and brackets should be restored or replaced with reproductions. Adding new dormers, gables, turrets, and towers should be avoided unless it can be shown that their use is architecturally appropriate.

Corbeled  
ChimneyTraditional  
Chimney

Gutters that are hidden or built in the eaves should be retained whenever possible, as should attached copper gutters. Installation of traditional attached seamless aluminum gutters or “half round” gutters are appropriate.

Skylights are not generally appropriate for historic structures. In most instances, the addition of new dormers are preferred to skylights, provided that the dormer is architecturally compatible with the rest of the structure. However, when skylights are considered, they should be placed so as to be as

inconspicuous as possible. New skylights should be flat rather than the “bubble” type. The addition of new dormers should be avoided on the front façade but may be considered on a case by case basis. New dormers should be constructed in a manner in which they may be easily removed to revert the structure to its original appearance.

Original features on chimneys such as corbeling should be preserved. Enlarging, altering, removing, or shortening chimneys should be avoided.

### DESIGN GUIDELINES AND RECOMMENDATIONS

1. New construction should avoid A-frame, dome, shed and flat-alone roof shapes.
2. New construction should avoid the roof being more than one-half the building's height.
3. Use materials in new construction that are consistent with the style of the building; materials should be unobtrusive in texture as well as color.
4. Skylights and solar energy hardware are to be considered on a case by case basis, and when proposed, should be located in such a manner as to not be readily visible from the street.
5. Roof shapes, texture and material should be compatible with new construction as well as with immediate buildings.
6. Original roof material should be maintained and/or replaced with like roofing if possible.
7. The use of synthetic products that mimic historic materials are inappropriate in most circumstances including the replacement of historic materials and on Pivotal and Contributing structures. These materials may be used on a case by case basis.
8. When replacing asphalt shingles, darker color shingles should be used since they are more historically appropriate.

### Roof Maintenance:

Protect and maintain the roofing system in appropriate ways:

- Repair leaks promptly to limit related damage to the roof and the 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.
- Replace deteriorated flashing with first-quality flashing.
- Inspect the roof sheathing for signs of insect infestation or moisture damage.
- Provide adequate ventilation of the attic space to prevent condensation.
- Provide adequate anchorage for roofing material to guard against wind and moisture damage.

## **Chapter 5 – Section 8: LANDSCAPING and TREES**

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One of the most visible features of the Districts is the landscaping and the associated tree canopy. Activities which negatively impact any aspect of the landscape should be avoided, such as the removal of healthy trees and mature shrubs.

Tree health may be decided upon by the acquisition of a Tree Hazard Evaluation Report issued by the City Arborist or a report submitted by a certified arborist. Healthy trees are trees that have a hazard rating of 4 or lower. Removal of healthy trees over the size of 6 inches in diameter (measured 4 feet above ground) or pruning of healthy tree limbs over 6 inches in diameter requires Historic Preservation Commission review and approval. City staff may approved a Certificate of Appropriateness for the removal of healthy trees under 6 inches in diameter. Staff may also approve removal or pruning of unhealthy trees/limbs of any size and in any location if the tree is deemed hazardous by the Tree Hazard Evaluation Report. City Staff may refer any tree pruning or removal request to the Historic Preservation Commission.

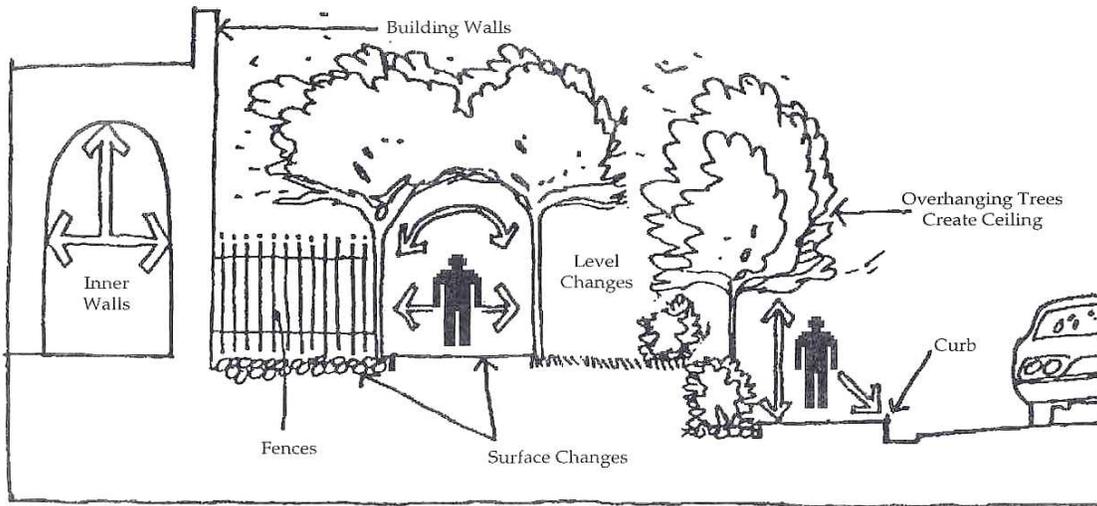
All trees that are removed should be replaced with a tree of similar species in an appropriate location unless no suitable location exists on the subject site. Trees removed within street view must also have the stumps removed below ground level.

Planting of parking lot landscaping and buffering materials for new or converted nonresidential and multifamily dwellings must be in accordance with the City of Concord’s Zoning Ordinance.

### **DESIGN GUIDELINES AND RECOMMENDATIONS**

1. Property owners should provide proper care and maintenance for the existing landscape and landscape patterns.
2. Trees which are removed shall be replaced by a species which, upon maturity, is similar in scale to the removed specimen. For example, canopy trees shall be replaced with canopy trees, and understory trees with understory trees.
3. Placement of all vegetation should not interfere with utilities and vehicular traffic (sight-triangles).
4. Residential uses should maintain the four characteristic placements for canopy: to soften building ground line, to separate public/private edge, to separate the boundary of the property, and to maintain property lines. It is also recommended that placement be varied and types of vegetation enhance the appearance of the existing property yet maintain and preserve its historical significance.

## TYPICAL STREET CROSS-SECTION

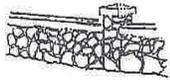
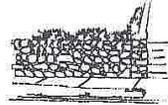
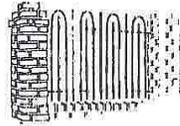
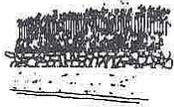
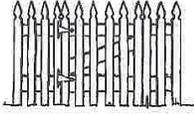


\* Refer to Appendix B for tips on Tree maintenance and care

### **Green Tip:**

Large shade trees provide excellent shade from the sun during hot summer months. Maintain the health of your trees and use less energy cooling your home during hot weather!

## Chapter 5 – Section 9: FENCES and WALLS



*Appropriate Fences and Walls*

Chain link, shadow-box, basket weave, plastic/vinyl, and split-rail fences are prohibited within the historic districts. However, where chain link fences already exist, they should be accompanied by landscaping materials, which will “climb” the fence and act as a screen. Fences should be compatible with most structures in the districts.

The style of fence or wall should respond to the historic nature of the property. All wooden fences should be “stick-built” on site. The styles shown to the left are encouraged as well as custom designs with appropriate architectural detailing. Wooden fences visible from the street and/or wooden fences in front yards and side yards of corner lots are required to be painted or stained white or a color matching the body or trim of the structure, including shutters, foundation color, etc. Painting or staining is recommended, but not required, for rear yard fences unless they are visible from the street. If a fence is designed as a single-sided fence, one with detailing on only one side, the finished detail should be on the outside face of the fence (facing neighboring property).

Additionally, wood picket fences should have pickets spaced at a minimum of 1 inch or half the width of the picket. (See notes regarding “Privacy Fences” for allowable exceptions to this rule.) Additionally, it is not appropriate to introduce walls or fences in front yards and side yards at corner lots that are more than 65% solid. Cast-iron, aluminum, or wrought-iron fences should be designed to follow historic precedent.

Where fences are desired in front yards and side yards at corner lots, the design should be primarily decorative in nature. Front yard fences should not exceed four feet in height. Wooden fences should be painted or stained white or a color matching the body or trim of the structure, including shutters, foundation color, etc.

Rear yard fences are defined as fences, which do not extend forward on the applicant’s property beyond the side centerline of the house in plain view. Approval of the location may also be handled on a case-by-case basis to determine the best natural break in the rear and front yards for placement of fences. Rear yard fences may be higher than four feet. The portions of rear yard fences that face the street should be landscaped with shrubs and trees of a planting size that will fully hide the fence from the street within two years. Size, type, and growth habits of plant materials to screen rear yard fences that face the street should be submitted at time of application. If a front yard fence adjoins a rear yard fence, or an existing neighboring property fence, attention should be given to the transition between the two. Also, attention should be

given to the design of fences placed along a sloping grade. All proposed fences and walls should not negatively effect existing trees and mature landscaping.

Privacy fences are defined as fences with no spacing between pickets. Privacy fences may be allowed at the discretion of the Commission in the following circumstances:

1. Privacy fences are most appropriate in rear yards.
2. Privacy fences may be allowed where the applicant's rear yard is directly adjacent to property that is either not in a historic district, or is within a historic district but is non-contributing or intrusive in that district. The applicant shall show to the satisfaction of the Commission:
  - (a) that the adjacent property is unsightly in comparison to other properties surrounding the applicant's property,
  - (b) that the adjacent property or nearby property raises reasonable security concerns for the applicant, or
  - (c) that the adjacent property could reasonably be determined to negatively impact the property value of the applicant's property.

Privacy fences shall be allowed only on the applicant's property line directly adjoining the aforesaid adjacent property unless the Commission feels that such a partial privacy fence would not be visually appropriate or would not accomplish the purpose(s) of the privacy fence set forth above.

3. Privacy fences encompassing an area of no more than 250 square feet may be allowed at the discretion of the Commission when adjacent to the applicant's house, garage, or other outbuilding in order to screen from view trash cans, mechanical equipment, cars or other unsightly items, provided such fence does not unreasonably impact any neighbor by blocking windows or the like.

Privacy fences allowed by the Commission should be landscaped where practical with appropriate shrubbery to soften the appearance of the fence.

Where walls are concerned, natural stone or brick-masonry walls are encouraged and should not be coated or painted. The type and color of stone and masonry should respond to the historic nature of the property. The transparency or openings in the walls will be considered on an individual basis. Poured-in-place concrete walls are discouraged. Concrete-masonry walls and walls constructed from railroad ties are prohibited.

**DESIGN GUIDELINES AND RECOMMENDATIONS**

1. Do not use high walls or fences to screen front yards.
2. Use materials like stone, brick, wood and iron.
3. Avoid chain link or plastic materials. Also avoid adding slats to chain link fences for screening purposes.
4. Materials and style should coordinate with building and neighboring buildings as well as other walls and fences in the area.

## Chapter 5 - Section 10: DRIVEWAYS, WALKWAYS and PARKING

The first residential driveways constructed in the districts were fairly narrow, because cars were smaller than they are now. Some of these driveways consist of two parallel “runners” with a grass strip in between. These driveways should be retained, and the style can serve as a model for new driveways. When new driveways are constructed, they should be separated from existing driveways by a grass strip, and should be narrow, since double width driveways are out of scale with the relatively small lots in the districts. Gravel and pavement are acceptable materials for driveways, as are some alternative materials such as cobblestone, brick, and pervious pavers.

Gravel may be appropriate in some instances for established commercial driveways and parking areas. The Zoning Ordinance dictates that some parking areas be paved; however, if the Historic Preservation Commission finds that gravel parking is more appropriate to the historic nature of the property, it can recommend to the Planning and Zoning Commission that a waiver of the paving requirement be granted. New nonresidential and some multifamily structures are subject to the Zoning Ordinance paving requirements and in the North Carolina State Building Code.

New walkways should consist of appropriate natural material including gravel, concrete, stone, brick or pervious pavers. Walkways should avoid prefabricated and imprinted stepping stones within front yards.

### DESIGN GUIDELINES AND RECOMMENDATIONS

1. Parking areas should not be the focal point of the property, and should be located in such a manner as to minimize their visibility from the street.
2. Trees should be planted or retained in order to maintain the tree canopy and to minimize the focus of the parking areas.
3. Excessive expanses of paving should be avoided.
4. Use vegetation screen or berms to reduce reflection and visual confusion. Within residential areas, integrate parking areas into landscaping and surface with the appropriate materials such as concrete, brick, crushed stone or gravel. In general, asphalt should only be used for areas not visible from the street; its use will be considered on a case by case basis by the Historic Preservation Commission.

### - Green Tip -

Water-pervious materials such as gravel, crushed stone, or pervious paving blocks minimize runoff, increase infiltration, and are strongly encouraged for new or deteriorated driveways and offstreet parking areas.

## Chapter 5 – Section 11: LIGHTING and TRANSFORMERS

Adding security lights and transformers on either new or existing poles requires approval of the Commission. Security needs can usually be met with low profile lights which are compatible with the neighborhood.

Street lights typically occur at intersections and at midpoints on long blocks; concentrations of light are used in potentially hazardous areas. In commercial areas, lights are used to accent building facades and signs.

Residential lighting is historically minimal. Therefore, minor usage of low level landscape lighting added at ground level, with fixtures not visible from the street, that do not shine upon the building façade are appropriate. New exterior lighting units that produce higher levels of lighting or a fixture that is visible from the street are discouraged and require review and approval from the Historic Preservation Commission.

Removal of historic light fixtures is inappropriate.

### DESIGN GUIDELINES AND RECOMMENDATIONS

1. Maintain subtle effects with selective spots of light rather than indiscriminate area lighting.
2. Do not concentrate light on facades and avoid casting light on surrounding properties.
3. Use lights to define spaces and accent vegetation.
4. Hide non-decorative light fixtures.
5. Do not use fixtures which are incompatible with existing details, styles, etc.

#### **Green Tip:**

**The use of motion sensors and timers can limit the impact of exterior lighting and conserve energy at the same time.**

## **Chapter 5 – Section 12: MECHANICAL and INCIDENTAL EQUIPMENT**

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The Commission recognizes that mechanical equipment such as air conditioning and central heat units, compressors, and electrical service equipment are necessary modern conveniences. However, these items, along with solar hardware and satellite dishes, should be placed out of public view. Equipment that is visible from the street should utilize shrubbery or fencing for screening from the street and adjacent property. When possible, refrigerant lines, vent pipes, and similar features should be located on the inside of the structure.

North Carolina State Building Code and ADA (Americans with Disabilities Act) require handicap ramps for some nonresidential and multifamily structures. Although their design is largely dictated by the Building Code, thoughtful planning can result in a design that requires little change to the appearance of the building and not be visible from the street.

### **DESIGN GUIDELINES AND RECOMMENDATIONS**

- 1.** Place mechanical equipment in areas which utilize existing features such as fences, walls, and landscaping to screen their view.
- 2.** Integrate new screening walls into the design of the structure, making them as inconspicuous as possible.
- 3.** Tie handicap ramps to existing porches and avoid alterations to the porches when practical. Construct new handicap ramps to match the existing features of the structure.

## **Chapter 5 – Section 13: DEMOLITION**

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Demolition of any pivotal or contributing structure in any Historic District is undesirable. Historic Preservation Commission approval is required for any demolition.

In accordance with The City of Concord Zoning Ordinance - Historic Preservation Overlay Districts, Delay in Demolition, - states that an application for a Certificate of Appropriateness authorizing the demolition of a building or structure within the District may not be denied. However, the effective date of such a certificate may be delayed for a period of up to 365 days from the date of approval. The maximum period of delay authorized by this section shall be reduced by the Historic Preservation Commission where it finds that the owner would suffer extreme hardship or be permanently deprived of all beneficial use of or return from such property by virtue of the delay. During such period, the Historic Preservation Commission may negotiate with the owner and other parties in an effort to find a means of preserving the building. If the Historic Preservation Commission finds that the building has no particular significance or value toward maintaining the character of the District, it shall waive all or part of such period and authorize earlier demolition or removal.

## **Chapter 5 – Section 14: HOUSING CODE**

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Historic regulations do not require owners to restore or maintain their property at a level higher than that of the Housing Code. Information on the Housing Code is available through the Code Enforcement Department.

# **Appendix A: The Secretary of the Interior's STANDARDS FOR REHABILITATION And Guidelines for Historic Buildings**

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## **INTRODUCTION**

The Secretary of the Interior is responsible for establishing standards for all programs under the developmental authority and for advising Federal agencies of the preservation of historic properties listed or eligible for listing in the National Register of Historic Places. In partial fulfillment of this responsibility, the Secretary of the Interior's Standards for Historic Preservation Projects have been developed to guide work undertaken on historic buildings – there are separate standards for acquisition, protection, stabilization, preservation, rehabilitation, restoration, and reconstruction. The Standards for Rehabilitation (codified in 36 CFR 67) comprise that section of the overall preservation project standards and addresses the most prevalent treatment. “Rehabilitation” is defined as the “process of the returning a property to a state of utility, through repair or alteration, which makes possible an efficient contemporary use while preserving those portions and features of the property which are significant to its historic, architectural, and cultural values.”

Initially developed by the Secretary of the Interior to determine the appropriateness of proposed project work on registered properties within the Historic Preservation Fund grant-in-aid program. The Standards for Rehabilitation have been widely used over the years – particularly to determine if a rehabilitation qualifies as a Certified Rehabilitation for Federal tax purposes. In addition, the Standards have guided federal agencies in carrying out their historic preservation responsibilities for properties in Federal ownership or control; and State and local officials in reviewing both Federal and nonfederal rehabilitation proposals. They have also been adopted by historic district and planning commissions across the country.

The intent of the Standards is to assist the long-term preservation of a property's significance through the preservation of historic materials and features. The Standards pertain to historic buildings of all materials, construction types, sizes and occupancy and encompass the exterior and interior of the buildings. They also encompass related landscape features and the building's site and environment, as well as attached, adjacent, or related new construction. To be certified for Federal tax purposes, a rehabilitation project must be determined by the Secretary to be consistent with the historic character of the structure(s), and where applicable, the district in which it is located.

The Secretary of the Interior is responsible for establishing professional standards and providing advice on the preservation and protection of all cultural resources listed on or eligible for the National Register of Historic Places.

The Secretary of the Interior's Standards for the Treatment of Historic Properties, initially developed in 1975 and revised in 1983 and 1992, are intended to be applied to a wide variety of resource types, including buildings, sites, structures, objects and districts. The Standards are not codified as program regulations and may be used as a guide by anyone planning work on historic properties.

## TREATMENTS

There are Standards for four distinct, but interrelated, approaches to the treatment of historic properties – Preservation, Rehabilitation, Restoration, and Reconstruction. **Preservation** focuses on the maintenance and repair of existing historic materials and retention of a property's form as it has evolved over time. (Protection and Stabilization have now been consolidated under this treatment.) **Rehabilitation** acknowledges the need to alter or add to a historic property to meet continuing or changing uses while retaining the property's historic character. **Restoration** is undertaken to depict a property at a particular period of time in its history, while removing evidence of other periods. **Reconstruction** re-creates vanished or non-surviving portions of a property for interpretive purposes.

In summary, the simplification and sharpened focus of these revised sets of treatment Standards is intended to assist users in making sound historic preservation decisions. Choosing an appropriate treatment for a historic property, whether preservation, rehabilitation, restoration, or reconstruction is critical. This choice always depends on a variety of factors, including the property's historical significance, physical condition, proposed use, and intended interpretation.

## REHABILITATION

**Rehabilitation** is defined as the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values.

## STANDARDS FOR REHABILITATION

1. A property shall be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces, and spatial relationships.
2. The historic character of a property shall be retained and preserved. The removal of distinctive materials or alteration of features, spaces and spatial relationships 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 elements from other historic properties, shall not be undertaken.
4. Changes to a property that have acquired historic significance in their own right shall be retained and preserved.

5. **Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a property shall be preserved.**
6. **Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and where possible, materials. Replacement of missing features shall be substantiated by documentary and physical evidence.**
7. **Chemical or physical treatments, if appropriate, shall be undertaken using the gentlest means possible. Treatments that cause damage to historic materials shall not be used.**
8. **Archeological resources 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, features, and spatial relationships that characterize the property. The new work shall be differentiated from the old and shall be compatible with the historic materials, features, size, scale and proportion, and massing to protect the 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.**

## **REHABILITATION AS A TREATMENT**

When repair and replacement of deteriorated features are necessary; when alterations or additions to the property are planned for a new or continued use; and when its depiction at a particular period of time is not appropriate, Rehabilitation may be considered as a treatment. Prior to undertaking work, a documentation plan for Rehabilitation should be developed.

## **PRESERVATION**

**Preservation** is defined as the act or process of applying measures necessary to sustain the existing form, integrity, and materials of a historic property. Work, including preliminary measures to protect and stabilize the property, generally focuses upon the ongoing maintenance and repair of historic materials and features rather than extensive replacement and new construction. New exterior additions are not within scope of this treatment; however, the limited and sensitive upgrading of mechanical, electrical, and plumbing systems and other code-required work to make properties functional is appropriate within a preservation project.

## **STANDARDS FOR PRESERVATION**

1. **A property shall be used as it was historically, or be given a new use that maximizes the retention of distinctive materials, features, spaces, and spatial relationships. Where a**

treatment and use have not been identified, a property shall be protected and, if necessary, stabilized until additional work may be undertaken.

2. **The historic character of a property shall be retained and preserved. The replacement of intact or repairable historic materials or alteration of features, spaces and spatial relationships that characterize a property shall be avoided.**
3. **Each property shall be recognized as a physical record of its time, place and use. Work needed to stabilize, consolidate and conserve existing historic materials and features shall be physically and visually compatible, identifiable upon close inspection, and properly documented for future research.**
4. **Changes to a property that have acquired historical significance in their own right shall be retained and preserved.**
5. **Distinctive materials, features, finishes and construction techniques or examples of craftsmanship that characterize a property shall be preserved.**
6. **The existing condition of historic features shall be evaluated to determine the appropriate level of intervention needed. Where the severity of deterioration requires repair of limited replacement of a distinctive feature, the new material shall match the old in composition, design, color and texture.**
7. **Chemical or physical treatments, if appropriate, shall be undertaken using the gentlest means possible. Treatments that cause damage to historic materials shall not be used.**
8. **Archeological resources shall be protected and preserved in place. If such resources must be disturbed, mitigation measures shall be undertaken.**

## **PRESERVATION AS A TREATMENT**

When the property's distinctive materials, features and spaces are essentially intact and thus convey the historic significance without extensive repair or replacement; when depiction at particular a period of time is not appropriate; and when a continuing or new use does not require additions or extensive alterations, Preservation may be considered as a treatment. Prior to undertaking work, a documentation plan for Preservation should be developed.

## **RESTORATION**

**Restoration** is defined as the act or process of accurately depicting the form, features and character of a property as it appeared at a particular period of time by means of the removal of features from other periods in its history and reconstruction of missing features from the restoration period. The limited and sensitive upgrading of mechanical, electrical and plumbing systems and other code-required work to make properties functional is appropriate within a restoration project.

## **STANDARDS FOR RESTORATION**

- 1. A property shall be used as it was historically or be given a new use which reflects the property's restoration period.**
- 2. Materials and features from the restoration period shall be retained and preserved. The removal of materials or alteration of features, spaces and spatial relationships that characterize the period shall not be undertaken.**
- 3. Each property shall be recognized as a physical record of its time, place and use. Work needed to stabilize, consolidate and conserve materials and features from the restoration period shall be physically and visually compatible, identifiable upon close inspection, and properly documented for future research.**
- 4. Materials, features, spaces and finishes that characterize other historical periods shall be documented prior to their alteration or removal.**
- 5. Distinctive materials, features, finishes and construction techniques or examples of craftsmanship that characterize the restoration period shall be preserved.**
- 6. Deteriorated features from the restoration period 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 where possible, materials.**
- 7. Replacement of missing features from the restoration period shall be substantiated by documentary and physical evidence. A false sense of history shall not be created by adding conjectural features, features from other properties, or by combining features that never existed together historically.**
- 8. Chemical or physical treatments, if appropriate, shall be undertaken using the gentlest means possible. Treatments that cause damage to historic materials shall not be used.**
- 9. Archeological resources affected by a project shall be protected and preserved in place. If such resources must be disturbed, mitigation measures shall be undertaken.**
- 10. Designs that were never executed historically shall not be constructed.**

## **RESTORATION AS A TREATMENT**

When the property's design, architectural, or historical significance during a particular period of time outweighs the potential loss of extant materials, features, spaces and finishes that characterize other historical periods, when there is substantial physical and documentary evidence for the work; and when contemporary alterations and additions are not planned, Restoration may be considered as a treatment. Prior to undertaking work, a particular period of

time, i.e., the restoration period should be selected and justified and a document plan for Restoration developed.

## **RECONSTRUCTION**

**Reconstruction** is defined as the act or process of depicting, by means of new construction, the form, features and detailing of a non-surviving site, landscape, building, structure or object for the purpose of replicating its appearance at a specific period of time and in its historic location.

### **STANDARDS FOR RECONSTRUCTION**

- 1. Reconstruction shall be used to depict vanished or non-surviving portions of a property when documentary and physical evidence is available to permit accurate reconstruction with minimal conjecture and such reconstruction is essential to the public understanding of the property.**
- 2. Reconstruction of a landscape, building, structure or object in its historic location shall be preceded by a thorough archeological investigation to identify and evaluate those features and artifacts which are essential to an accurate reconstruction. If such resources must be disturbed, mitigation measure shall be undertaken.**
- 3. Reconstruction shall include measures to preserve any remaining historic materials, features and spatial relationships.**
- 4. Reconstruction shall be based on the accurate duplication of historic features and elements substantiated by documentary or physical evidence rather than on conjectural designs or the availability of different features from other historic properties. A reconstructed property shall re-create the appearance of the non-surviving historic property in materials, design, color and texture.**
- 5. A reconstruction shall be clearly identified as a contemporary re-creation.**
- 6. Designs that were never executed historically shall not be constructed.**

### **RECONSTRUCTION AS A TREATMENT**

When a contemporary depiction is required to understand and interpret a property's historic value (including the re-creation of missing components in a historic district or site); when no other property with the same associative value has survived; and when sufficient historical documentation exists to ensure an accurate reproduction, Reconstruction may be considered as a treatment. Prior to undertaking work, a documentation plan for Reconstruction should be developed.

## HISTORIC RESOURCE

**The Secretary of the Interior's Standards for the Treatment of Historic Properties** may be applied to one historic resource type or a variety of historic resource types; for example, a project may include a complex of buildings such as a house, garage and barn; the site, with a designed landscape, natural features, and archeological components; structures such as a system of roadways and paths or a bridge; and objects such as fountains and statuary.

## HISTORIC RESOURCE TYPES & EXAMPLES

**Buildings:** houses, barns, stables, sheds, garages, courthouses, city halls, social halls, commercial buildings, libraries, factories, mills, train depots, hotels, theaters, stationary mobile homes, schools, stores and churches.

**Site:** habitation sites, funerary sites, rock shelters, village sites, hunting and fishing sites, ceremonial sites, petroglyphs, rock carvings, ruins, gardens, grounds, battlefields, campsites, sites of treaty signings, trails, areas of land, shipwrecks, cemeteries, designed landscapes, and natural features, such as springs and rock formations and land areas having cultural significance.

**Structure:** bridges, tunnels, gold dredges, firetowers, canals, turbines, dams, power plants, corn-cribs, silos, roadways, shot towers, windmills, grain elevators, kilns, mounds, cairns, palisade fortifications, earthworks, railroad grades, systems of roadways and paths, boats and ships, railroad locomotives and cars, telescopes, carousels, bandstands, gazebos and aircraft.

**Object:** sculpture, monuments, boundary markers, statuary and fountains.

**District:** college campuses, central business districts, residential areas, commercial areas, large forts, industrial complexes, civic centers, rural villages, canal systems, collection of habitation and limited activity sites, irrigation systems, large farms, ranches, estates, or plantations, transportation networks and large landscaped parks.

## TECHNICAL GUIDANCE PUBLICATIONS

The National Park Service, U.S. Department of the Interior, conducts a variety of activities to guide federal agencies, States, and the general public in historic preservation project work. In addition to establishing standards and guidelines, the Service develops, publishes, and distributes technical information on appropriate preservation treatments, including Preservation Briefs, case studies, and Preservation Tech Notes.

## **GUIDELINES FOR REHABILITATING HISTORIC BUILDINGS**

The Guidelines were initially developed in 1997 to help protect property owners, developers, and Federal managers apply the Secretary of the Interior's "Standards for Rehabilitation" during the project planning stage by providing general design and technical recommendations. Unlike the Standard's the Guidelines are not codified as program requirements. Together with the "Standards for Rehabilitation" they provide a model process for owners, developers, and Federal agency managers to follow.

It should be noted at the outset that the Guidelines are intended to assist in applying the Standards to projects generally; consequently, they are not meant to give case-specific advice or address exceptions or rare instances. For example, they cannot tell an owner or developer which features of their historic building are important in defining the historic character and must be preserved – although examples are provided in each section- or which features could be altered, if necessary, for the new use. This kind of careful case-by-case decision making is best accomplished by seeking assistance from qualified historic preservation professionals in the planning stage of the project. Such professionals include architects, architectural historians, historians, archeologists, and others who are skilled in the preservation, rehabilitation, and restoration of historic properties.

The Guidelines pertain to historic buildings of all sizes, materials, occupancy, and construction types; and apply to interior and exterior work as well as new exterior additions. Those approaches, treatments, and techniques that are consistent with the Secretary of the Interior's "Standards for Rehabilitation" are listed in the "**Recommended**" column on the left; those approaches, treatments, and techniques which could adversely affect a building's historic character are listed in the "**Not Recommended**" column on the right.

To provide clear and consistent guidance for owners, developers, and federal agency managers to follow, the "Recommended" courses of action in each section are listed in the order of historic preservation concerns so that a rehabilitation project may be successfully planned and completed – one that, first, assures the preservation of a building's important or "character-defining" architectural materials and features and, second, makes possible an efficient contemporary use. Rehabilitation guidance in each section begins with protection and maintenance, that work, which should be maximized in every project to enhance overall preservation goals. Next, where some deterioration is present, repair of the building's historic materials and features is recommended. Finally, when deterioration is so extensive that repair is not possible, the most problematic area of work is considered: replacement of historic materials and features with new materials.

To further guide the owner and developer in planning a successful rehabilitation project, those complex design issues dealing with new use requirements such as alterations and additions are highlighted at the end of each section to underscore the need for particular sensitivity in these areas.

## Identify, Retain, and Preserve

The guidance that is basic to the treatment of all historical buildings – **identifying, retaining, preserving** the form and detailing of those architectural materials and features that are important in defining the historic character – is always listed in the “Recommended” column. The parallel “Not Recommended” column lists the types of actions that are most apt to cause the diminution or even loss of the building’s historic character. It should be remembered, however, that such loss of character is just as often caused by the cumulative effect of a series of actions that would seem to be minor interventions. Thus, the guidance in all of the “Not Recommended” columns must be viewed in that larger context, e.g. for the total impact on a historic building.

## Protect and Maintain

After identifying those materials and features that are important and must be retained in the process of rehabilitation work, then **protecting and maintaining** them are addressed. Protection generally involves the least degree of intervention and is preparatory to the other work. For example, protection includes the maintenance of historic material through treatments such as rust removal, caulking, limited paint removal, and re-application of protective coatings; the cyclical cleaning of roof gutter systems; or installation of fencing, protective plywood, alarm systems and other temporary protective measures. Although a historic building will usually require more extensive work, an overall evaluation of its physical condition should always begin at this level.

## Repair

Next, when the physical condition of character-defining materials and features warrants additional work **repairing** is recommended. Guidance for the repair of historic materials such as masonry, wood, and architectural metals again begins with the least degree of intervention possible such as patching, piecing-in, splicing, consolidating, or otherwise reinforcing or upgrading them according to recognized preservation methods. Repairing also includes the limited replacement in kind- or with compatible substitute material – of exclusively deteriorated or missing parts of features when there are surviving prototypes (for example, brackets, dentils, steps, plaster, or portions of slate or tile roofing). Although using the same kind of material is always the preferred option, substitute material is acceptable if the form and design, as well as the substitute material itself, convey the visual appearance of the remaining parts of the feature and finish.

## Replace

Following repair in the hierarchy, guidance is provided for **replacing** an entire-defining feature with new material because the level of deterioration or damage of materials includes repair (for example, an exterior cornice; an interior staircase; or a complete porch or storefront). If the essential form and detailing are still evident so that the physical evidence can be used to re-establish the feature as an integral part of the rehabilitation project, then its replacement is appropriate. Like the guidance for repair, the preferred option is always replacement of the entire feature in kind, that is, with the same material. Because this option may not always be

technically or economically feasible, provisions are made to consider the use of a compatible substitute material.

It should be noted that, while the National Park service guidelines recommend the replacement of an entire character-defining feature under certain well-defined circumstances, they never recommend removal and replacement with new material of a feature that –although damaged or deteriorated – could reasonably be repaired and thus preserved.

### **Design for Missing Historic Features**

When an entire interior or exterior feature is missing (for example, an entrance, or cast iron facade, or a principal staircase), it no longer plays a role in physically defining the historic character of the building unless it can be accurately recovered in form and detailing through the process of carefully documenting the historical appearance. Where an important architectural feature is missing, its recovery is always recommended in the guidelines as the first or preferred, course of action. Thus, if adequate historical, pictorial, and physical documentation exists so that the feature may be accurately reproduced, and if it is desirable to re-establish the feature as part of the building's historical appearance, then designing and constructing a new feature based on such information is appropriate. However a second acceptable option for the replacement feature in a new design that is compatible with the remaining character-defining features of the historic building. The new design should always take into account the size, scale, and material of the historic building itself and, most importantly, should be clearly differentiated so that a false historical appearance is not created.

### **Alterations/Additions to Historic Buildings**

Some exterior and interior alteration to the historic building are generally needed to assure its use, but it is most important that such alterations do not radically change, obscure, or destroy character-defining spaces, materials, features, or finishes. Alterations may include providing additional parking space on an existing historic building site; cutting new entrances or windows on secondary elevations; inserting an additional floor; installing an entirely new mechanical system; or creating an atrium or light well. Alteration may also include selective removal of buildings or other features of the environment or building site that are intrusive and therefore detract from the overall historic character.

The construction of an exterior addition to a historic building may seem to be essential for the new use, but it is emphasized in the guidelines that such new additions should be avoided, if possible, and considered only after it is determined that those needs cannot be met by altering secondary, i.e., non character-defining interior spaces. If, after a thorough evaluation of interior solutions, an exterior addition is still judged to be the only viable alternative, it should be designed and constructed to be clearly differentiated from the historic building and so that the character-defining features are not radically changed, obscured, damaged, or destroyed.

Additions to historic buildings are referenced within specific sections of the guidelines such as Site, Roof, Structural Systems, etc. but are also considered in more detail in a separate section, **NEW ADDITIONS TO HISTORIC BUILDINGS.**

**Health and Safety Code Requirements; Energy Retrofitting**

These sections of the rehabilitation guidance address work done to meet health and safety code requirements (for example, providing barrier-free access to historic buildings); or retrofitting measures to conserve energy (for example, installing solar collectors in an unobtrusive location on the site). Although this work is quite often an important aspect of rehabilitation projects, it is usually not part of the overall process of protecting or repairing character-defining features; rather, such work is assessed for its potential negative impact on the building’s historic character. For this reason, particular care must be taken not to radically change, obscure, damage, or destroy character-defining materials or features in the process of rehabilitation work to meet code and energy requirements.

**CONTENTS**

**BUILDING EXTERIOR**

**Masonry: Brick, stone, terra-cotta, concrete, adobe, stucco, and mortar**

Preservation of Historic Features (maintenance, repair, replacement) . . . . . C.14  
 Design for Missing Historic Features . . . . . C.17

**Wood: Clapboard, weatherboard, shingles, and other wooden siding and decorative elements**

Preservation of Historic Features (maintenance, repair, replacement) . . . . . C.18  
 Design for Missing Historic Features . . . . . C.19

**Architectural Metals: Cast iron, steel, pressed tin, copper, aluminum, and zinc**

Preservation of Historic Features (maintenance, repair, replacement) . . . . . C.20  
 Design for Missing Historic Features . . . . . C.22

**Roofs**

Preservation of Historic Features (maintenance, repair, replacement) . . . . . C.22  
 Design for Missing Historic Features . . . . . C.24  
 Alterations/ Additions for the New Use . . . . . C.24

**Windows**

Preservation of Historic Features (maintenance, repair, replacement) . . . . . C.25  
 Design for Missing Historic Features . . . . . C.26  
 Alterations/ Additions for the New Use . . . . . C.26

**Entrances and Porches**

Preservation of Historic Features (maintenance, repair, replacement) . . . . . C.27

Design for Missing Historic Features . . . . . C.28  
 Alterations/ Additions for the New Use . . . . . C.28

**Storefronts**

Preservation of Historic Features (maintenance, repair, replacement) . . . . . C.29  
 Design for Missing Historic Features . . . . . C.30

**BUILDING INTERIOR**

**Structural Systems**

Preservation of Historic Features (maintenance, repair, replacement) . . . . . C.31  
 Alterations/ Additions for the New Use . . . . . C.32

**Interior Spaces, Features and Finishes**

Preservation of Historic Features (maintenance, repair, replacement) . . . . . C.33  
 Design for Missing Historic Features . . . . . C.36  
 Alterations/ Additions for the New Use . . . . . C.36

**Mechanical Systems**

Preservation of Historic Features (maintenance, repair, replacement) . . . . . C.37  
 Alterations/ Additions for the New Use . . . . . C.38

**BUILDING SITE**

Preservation of Historic Features (maintenance, repair, replacement) . . . . . C.39  
 Design for Missing Historic Features . . . . . C.41  
 Alterations/ Additions for the New Use . . . . . C.42

**DISTRICT/NEIGHBORHOOD**

Preservation of Historic Features (maintenance, repair, replacement) . . . . . C.42  
 Design for Missing Historic Features . . . . . C.44  
 Alterations/ Additions for the New Use . . . . . C.44

**HEALTH AND SAFETY CODE REQUIREMENTS . . . . . C.46**

**ENERGY RETROFITTING . . . . . C.47**

**NEW ADDITIONS TO HISTORIC BUILDINGS . . . . . C.50**

**BUILDING EXTERIOR**

**Masonry: Brick, stone, terra cotta, concrete, adobe, stucco and mortar**

Masonry features (such as brick cornices and door pediments, stone window architraves, terra cotta brackets and railings) as well as masonry surfaces (modeling, tooling, bonding patterns, joint size, and color) may be important in defining the historic character of the building. It should be noted that masonry is among the most susceptible to damage by improper maintenance or repair techniques and by harsh or abrasive cleaning methods. Most preservation guidance on masonry thus focuses on such concerns as cleaning and the process of repointing.

<u>Recommended</u>	<u>Not Recommended</u>
<p>Identifying, retaining, and preserving masonry features that are important in defining the overall historic character of the building such as walls, brackets, railings, cornices, window architraves, door pediments, steps, and columns; and joint and unit size, tooling and bonding patterns, coatings, and color.</p>	<p>Removing or radically changing masonry features which are important in defining the overall historic character of the building so that , as a result, the character is diminished.</p> <p>Replacing or rebuilding a major portion of the exterior masonry walls that could be repaired so that, as a result, the building is no longer historic and is essentially new construction. Applying paint or other coatings such as stucco to masonry that has been historically unpainted or uncoated to create a new appearance.</p> <p>Removing paint from historically painted masonry.</p> <p>Radically changing the type of paint or coating or its color.</p>
<p>Protecting and maintaining masonry by providing proper drainage so that water does not stand on flat, horizontal surfaces or accumulate in curved decorative features.</p>	<p>Failing to evaluate and treat the various causes of mortar joint deterioration such as leaking roofs or gutters, differential settlement of the building, capillary action, or extreme weather exposure.</p>
<p>Cleaning masonry only when necessary to halt deterioration or remove heavy soiling.</p>	<p>Cleaning masonry surfaces when they are not heavily soiled to create a new appearance, thus needlessly introducing chemicals or moisture into historic materials.</p>
<p>Carrying out masonry surface cleaning tests after it has been determined that such cleaning is necessary. Tests should be observed over a sufficient period of time so that both the immediate effects and the long range effects are known to enable selection of the gentlest method possible.</p>	<p>Cleaning masonry surfaces without testing or without sufficient time for testing to be of value.</p>

Masonry (continued) <i>Recommended</i>	<i>Not Recommended</i>
<p>Cleaning masonry surfaces with the gentlest method possible, such as low pressure water and detergents, using natural bristle brushes.</p>	<p>Sandblasting brick or stone surfaces using dry or wet grit or other abrasives. These methods of cleaning permanently erode the surface of the material and accelerate deterioration.</p> <p>Using a cleaning method that involves water or liquid chemical solutions when there is any possibility of freezing temperatures.</p> <p>Cleaning with chemical products that will damage masonry, such as using acid on limestone or marble, or leaving chemicals on masonry surfaces.</p> <p>Applying high pressure water cleaning methods that will damage historic masonry and the mortar.</p>
<p>Inspecting painted masonry surfaces to determine whether repainting is necessary.</p>	<p>Removing paint that is firmly adhering to, and thus protecting masonry surfaces.</p>
<p>Removing damaged or deteriorated paint only to the next sound layer using the gentlest method possible (e.g. handscraping) prior to repainting.</p>	<p>Using methods of removing paint which are destructive to masonry, such as sandblasting, application of caustic solutions, or high pressure waterblasting.</p>
<p>Applying compatible paint coating systems following proper surface preparation.</p>	<p>Failing to follow manufacturers' product and application instructions when repainting masonry.</p>
<p>Repainting with colors that are historically appropriate to the building and the district.</p>	<p>Using new paint colors that are inappropriate to the historic building and district.</p>
<p>Evaluating the overall condition of the masonry to determine whether more than protection and maintenance are required, that is, if repairs to the masonry fence will be necessary.</p>	<p>Failing to undertake adequate measures to assure the preservation of masonry features.</p>
<p><b>Repairing</b> masonry walls and other masonry features by repointing the mortar joints where there is evidence of deterioration such as disintegrating mortar, cracks in mortar joints, loose bricks, damp walls, or damaged plaster work.</p>	<p>Removing nondeteriorated mortar from sound joints, then repointing the entire building to achieve a uniform appearance.</p>
<p>Removing deteriorated mortar by carefully hand-raking the joints to avoid damaging the masonry.</p>	<p>Using electric saws and hammers rather than hand tools to remove deteriorated mortar from joints prior to repointing.</p>

Masonry (continued)	
<u><i>Recommended</i></u>	<u><i>Not Recommended</i></u>
<p>Duplicating old mortar in strength, composition, color, and texture.</p>	<p>Repointing with mortar of high portland cement content (unless it is the content of the historic mortar). This can often create a bond that is stronger than the historic material and can cause damage as a result of the differing coefficient of expansion and the differing porosity of the material and the mortar.</p> <p>Repointing with a synthetic caulking compound.</p> <p>Using a “scrub” coating technique to repoint instead of traditional repointing methods.</p>
<p>Duplicating old mortar joints in width and in joint profile.</p>	<p>Changing a width or joint profile when repointing.</p>
<p>Repairing stucco by removing the damaged material and patching with new stucco that duplicated the old in strength, composition, color, and texture.</p>	<p>Removing sound stucco; or repairing with new stucco that is stronger than the historic material or does not convey the same visual appearance.</p>
<p>Using mud plaster as a surface coating over unfired, unstabilized adobe because the mud plaster will bond to the adobe.</p>	<p>Applying cement stucco to unfired, unstabilized adobe. Because the cement stucco will not bond properly, moisture can become entrapped between materials, resulting in accelerate deterioration of the adobe.</p>
<p>Repairing masonry features by patching, piecing-in, or consolidating the masonry using recognized preservation methods. Repair may also include the limited replacement in kind – or with compatible substitute material of those extensively deteriorated or missing parts of masonry features when there are surviving prototypes such as terra-cotta brackets or stone balusters.</p>	<p>Replacing an entire masonry feature such as a cornice or balustrade when repair of the masonry and limited replacement of deteriorated or missing parts are appropriate.</p> <p>Using a substitute material for the replacement part does not convey the visual appearance of the surviving parts of the masonry feature or that is physically or chemically incompatible.</p>
<p>Applying new or non-historic surface treatment such as water-repellent coatings to masonry only after repointing and only if masonry repairs have failed to arrest water penetration problem.</p>	<p>Applying waterproof, water-repellant, or non-historic coatings such as stucco to masonry as a substitute for repointing and masonry repairs. Coatings are frequently unnecessary, expensive, and may change the appearance of historic masonry as well as accelerated its deterioration.</p>

<p>Masonry (continued)</p> <p style="text-align: center;"><b><u>Recommended</u></b></p> <p>Replacing in kind an entire masonry feature that is too deteriorated to repair – if the overall form and detailing are still evident – using the physical evidence to guide the new work. Examples can include large sections of a wall, a cornice, balustrade, column, or stairway. If using the same kind of material is not technically or economically feasible, then a compatible substitute material may be considered.</p> <p><b>Design for Missing Historic Features</b></p> <p><b>Designing and installing a new masonry feature such as steps or a door pediment when the historic feature is completely missing. It may be an accurate restoration using historical, pictorial, and physical documentation; or be a new design that is compatible with the size, scale, material, and color of the historic building.</b></p>	<p style="text-align: center;"><b><u>Not Recommended</u></b></p> <p>Removing a masonry feature that is unrepairable and not replacing it; or replacing it with new feature that does not convey the same visual appearance.</p> <p>Creating a false historical appearance because the replaced masonry feature is based on insufficient historical, pictorial, and physical documentation.</p> <p>Introducing a new masonry feature that is incompatible in size, scale, material, and color.</p>
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The aforementioned work is highlighted in bold to indicate that it represents the particularly complex technical or design aspects of rehabilitation projects and should only be considered after the preservation concerns listed above have been addressed.

**Wood: Clapboard, weatherboard, shingles, and other wooden siding and decorative element**

Because it can be easily shaped by sawing, planing, carving, and gouging, wood is the most commonly used material for architectural features such as clapboards, cornices, brackets, entablatures, shutters, columns and balustrades. These wooden features – both functional and decorative – may be important in defining the historic character of the building and thus their retention, protection, and repair are of particular importance in rehabilitation projects.

<p style="text-align: center;"><b><u>Recommended</u></b></p> <p><b>Identifying, retaining, and preserving</b> wood features that are important in defining the overall historic character of the building such as siding, cornices, brackets, window architraves, and doorway pediments; and their paints, finishes, and colors.</p>	<p style="text-align: center;"><b><u>Not Recommended</u></b></p> <p>Removing or radically changing wood features which are important in defining the overall character of the building so that, as a result, the character is diminished.</p> <p>Removing a major portion of the historic wood instead of repairing or replacing only the deteriorated wood, then reconstructing the facade with new material in order to achieve a uniform or “improved” appearance.</p>
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Wood (continued)	
<p style="text-align: center;"><b><u>Recommended</u></b></p> <p><b>Protecting and maintaining</b> wood features by providing proper drainage so that water is not allowed to stand on flat, horizontal surfaces or accumulate in decorative features.</p> <p>Applying chemical preservatives to wood features such as beam ends or outriggers that are exposed to decay hazards and are traditionally unpainted.</p> <p>Retaining coatings such as paint that help protect the wood from moisture and ultraviolet light. Paint removal should be considered only where there is paint surface deterioration and as part of an overall maintenance program which involves repainting or applying other appropriate protective coatings.</p> <p>Inspecting painted wood surfaces to determine whether repainting is necessary or if cleaning is all that is required.</p> <p>Removing damaged or deteriorated paint to the next sound layer using the gentlest method possible (handscraping and handsanding), then repainting.</p> <p>Using with care electric hot-air guns on decorative wood features and electric heat plates on flat wood surfaces when paint is so deteriorated that total removal is necessary prior to repainting.</p> <p>Using chemical strippers primarily to supplement other methods such as handscraping, handsanding</p>	<p style="text-align: center;"><b><u>Not Recommended</u></b></p> <p>Radically changing type of finish or its color or accent scheme so that the historic character of the exterior is diminished.</p> <p>Stripping historically painted surfaces to bare wood, then applying clear finishes or stains in order to create a “natural look.”</p> <p>Stripping paint or varnish to bare wood rather than repairing or reapplying a special finish, i.e., a grained finish to an exterior wood feature such as a front door.</p> <p>Failing to identify, evaluate, and treat the causes of wood deterioration, including faulty flashing, leaking gutters, cracks and holes in siding, deteriorated caulking in joints and seams, plant material growing too close to wood surfaces, or insect or fungus infestation.</p> <p>Using chemical preservatives such as creosote which can change the appearance of wood features unless they were used historically.</p> <p>Stripping paint or other coatings to reveal bare wood, thus exposing historically coated surfaces to the effects of accelerated weathering.</p> <p>Removing paint that is firmly adhering to, and thus, protecting wood surfaces.</p> <p>Using destructive paint removal methods such as a propane or butane torches, sandblasting or waterblasting. These methods can irreversibly damage historic woodwork.</p> <p>Using thermal devices improperly so that the historic woodwork is scorched.</p> <p>Failing to neutralize the wood thoroughly after using chemicals so that new paint does not adhere.</p>

<p>and the above-recommended thermal devices. Detachable wooden elements such as shutters, doors, and columns may – with the proper safeguards be chemically dip-stripped.</p> <p>Applying compatible paint coating systems following proper surface preparation.</p> <p>Repainting with colors that are appropriate to the historic building and district.</p> <p>Evaluating the overall condition of the wood to determine whether more than protection and maintenance are required, that is, if repairs to wood features will be necessary.</p> <p><b>Repairing</b> wood features by patching, piecing-in, consolidating, or otherwise reinforcing the wood using recognized preservation methods. Repair may also include the limited replacement in kind or with compatible substitute material of those extensively deteriorated or missing parts of features where there are surviving prototypes such as brackets, moldings, or sections of siding.</p> <p><b>Replacing</b> in kind an entire wood feature that is too deteriorated to repair if the overall form and detailing are still evident – using the physical evidence to guide the new work. Example of wood features include a cornice, entablature or balustrade. If using the same kind of material is not technically or economically feasible, then a compatible substitute material may be considered.</p> <p><b>Design for Missing Historic Features</b></p> <p><b>Designing and installing a new wood feature such as cornice or a doorway when the historic feature is completely missing. It may be an accurate restoration using historical, pictorial, and physical documentation; or be a new design that is compatible with the size, scale, material, and color of the historic building.</b></p>	<p>Allowing detachable wood features to soak too long in a caustic solution so that the wood grain is raised and the surface roughened.</p> <p>Failing to follow manufacturers' product and application instructions when repainting exterior woodwork.</p> <p>Using new colors that are inappropriate to the historic building or district.</p> <p>Failing to undertake adequate measures to assure the preservation of wood features.</p> <p>Replacing an entire wood feature such as a cornice or wall when repair of the wood and limited replacement of deteriorated or missing parts are appropriate.</p> <p>Using substitute materials for the replacement part that does not convey the visual appearance of the surviving parts of the wood feature or that is physically or chemically incompatible.</p> <p>Removing an entire wood feature that is unrepairable and not replacing it; or replacing it with a new feature that does not convey the same visual appearance.</p> <p>Creating a false historical appearance because the replaced wood feature is based on insufficient historical, pictorial, and physical documentation.</p> <p>Introducing a new wood feature that is incompatible in size, scale, material, and color.</p>
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The aforementioned work is highlighted in bold to indicate that it represents the particularly complex technical or design aspects of rehabilitation projects and should only be considered after the preservation concerns listed above have been addressed.

**Architectural Metals: Cast iron, steel, pressed tin, copper, aluminum, and zinc.**

Architectural metal features – such as cast-iron facades, porches, and steps; sheet metal cornices, roofs, roof cresting and storefronts; and cast or rolled metal doors, window sash, entablatures, and hardware – are often highly decorative and may be important in defining the overall historic character of the building. Their retention, protection, and repair should be a prime consideration in rehabilitation projects.

<u><i>Recommended</i></u>	<u><i>Not Recommended</i></u>
<p><b>Identifying, retaining, and preserving</b> architectural metal features such as columns, capitals, window hoods, or stairways that are important in defining the overall historic character of the building; and their finishes and colors.</p>	<p>Removing or radically changing architectural metal features which are important in defining the overall character of the building so that, as a result, the character is diminished.</p> <p>Removing a major portion of the historic architectural metal instead of repairing or replacing only the deteriorated metal, then reconstructing the facade with new material in order to achieve a uniform or “improved” appearance.</p> <p>Radically changing the type of finish or its historic color or accent scheme.</p>
<p><b>Protecting and maintaining</b> architectural metals by providing proper drainage so that water does not stand on flat, horizontal surfaces or accumulate in curved decorative features.</p>	<p>Failing to identify, evaluate, and treat the causes of corrosion, such as moisture from leaking roofs or gutters.</p> <p>Placing incompatible metals together without providing a reliable separation material. Such incompatibility can result in galvanic corrosion of the noble metal, e.g. copper will corrode cast iron, steel, tin, and aluminum.</p>
<p>Cleaning architectural metals, when necessary, to remove corrosion prior to repainting or applying other appropriate protective coatings.</p>	<p>Exposing metals which were intended to be protected from the environment.</p> <p>Applying paint or other coatings to metals such as copper, bronze, or stainless steel that were meant to be exposed.</p>
<p>Identifying the particular type of metal prior to any cleaning procedure and then testing to assure that the gentlest cleaning method possible is selected or determining that cleaning is inappropriate for the particular metal.</p>	<p>Using cleaning methods which alter or damage the historic color, texture, and finish of the metal.</p> <p>Removing the patina of historic metal. The patina may be a protective coating on some metals, such as bronze or copper, as well as a significant historic finish.</p>

Architectural Metals (continued)	
<u><i>Recommended</i></u>	<u><i>Not Recommended</i></u>
<p>Cleaning soft metals such as lead, tin, copper,terneplate, and zinc with appropriate chemical methods because their finishes can be easily abraded by blasting methods.</p>	<p>Cleaning soft metals such as lead, tin, copper,terneplate, and zinc with grit blasting which will abrade the surface of the metal.</p>
<p>Using the gentlest cleaning methods for cast iron, wrought iron, and steel – hard metals – in order to remove paint build up and corrosion. If handscraping and wire brushing have proven ineffective, low pressure dry grit blasting may be used as long as it does not abrade or damage the surface.</p>	<p>Failing to employ gentler methods prior to abrasively cleaning cast iron, wrought iron or steel; or using high pressure grit blasting.</p>
<p>Applying appropriate paint or other coating systems after cleaning in order to decrease the corrosion rate of metals or alloys.</p>	<p>Failing to re-apply protective coating systems to metals or alloys that require them after cleaning so that accelerated corrosion occurs.</p>
<p>Repainting with colors that are appropriate to the historic building or district.</p>	<p>Using new colors that are inappropriate to the historic building or district.</p>
<p>Applying an appropriate protective coating such as lacquer to an architectural metal such as a bronze door which is subject to heavy pedestrian use.</p>	<p>Failing to assess pedestrian use or new access patterns so that architectural metal features are subject to damage by use or inappropriate maintenance such as salting adjacent sidewalks.</p>
<p>Evaluating the overall condition of the architectural metals to determine whether more than protection and maintenance are required, that is, if repairs to the features will be necessary.</p>	<p>Failing to undertake adequate measures to assure the preservation of architectural metal features.</p>
<p><b>Repairing</b> architectural metal features by patching, splicing, or otherwise reinforcing the metal using recognized preservation methods. Repair may also include the limited replacement in kind – or with compatible substitute material – of those extensively deteriorated or missing parts of features where there are surviving prototypes such as porch balusters, column capitals or bases, or porch cresting.</p>	<p>Replacing an entire architectural metal feature such as a column or a balustrade when repair of the metal and limited replacement of deteriorated or missing parts are appropriate.</p> <p>Using a substitute material for the replacement part that does not convey the visual appearance of the surviving parts of the architectural metal feature or that is physically or chemically incompatible.</p>

Architectural Metals (continued)	
<u><i>Recommended</i></u>	<u><i>Not Recommended</i></u>
<p><b>Replacing</b> in kind an entire architectural metal feature that is too deteriorated to repair – if the overall form and detailing are still evident – using the physical evidence to guide the new work. Examples could include cast iron porch steps or steel sash windows. If using the same kind of material is not technically or economically feasible, then a compatible substitute material may be considered.</p>	<p>Removing an architectural metal feature that is unrepairable and not replacing it; or replacing it with a new architectural metal feature that does not convey the same visual appearance.</p>
<p><b>Design for Missing Historic Features</b></p>	
<p><b>Designing and installing a new architectural metal feature such a sheet metal cornice or a cast iron capital when the historic feature is completely missing. It may be an accurate restoration using historical, pictorial, and physical documentation; or be a new design that is compatible with the size, scale, material, and color of the historic building</b></p>	<p>Creating a false historical appearance because the replaced architectural metal feature is based on insufficient historical, pictorial, and physical documentation.</p> <p>Introducing a new architectural metal feature that is incompatible in size, scale, material, and color.</p>

The aforementioned work is highlighted in bold to indicate that it represents the particularly complex technical or design aspects of rehabilitation projects and should only be considered after the preservation concerns listed above have been addressed.

**Roofs**

The roof – with its shape; such as cresting, dormers, cupolas, and chimneys; and the size, color, and patterning of the roofing material- can be extremely important in defining the building’s overall historic character. In addition to the design role it plays, a weather tight roof is essential to the preservation of the entire structure; thus, protecting and repairing the roof as a “cover” is a critical aspect of every rehabilitation project.

<u><i>Recommended</i></u>	<u><i>Not Recommended</i></u>
<p><b>Identifying, retaining, and preserving</b> roofs- and their functional and decorative features- that are important in defining the overall historic character of the building. This includes the roofs’ shape, such as hipped, gambrel, and mansard; decorative features such as cupolas, cresting, chimneys, and weathervanes; and roofing material such as slate, wood, clay tile, and metal, as well as its color, and patterning.</p>	<p>Radically changing, damaging, or destroying roofs which are important in defining the overall historic character of the building so that, as a result, the character is diminished.</p> <p>Removing a major portion of the roof or roofing material that is repairable, then reconstructing it with new material in order to create a uniform, or “improved” appearance.</p>

Roof (continued)	
<u><i>Recommended</i></u>	<u><i>Not Recommended</i></u>
<p><b>Protecting and maintaining</b> a roof by cleaning the gutters and downspouts and replacing deteriorated flashing. Roof sheathing should also be checked for proper venting to prevent moisture condensation; and to insure that materials are free from insect infestation.</p>	<p>Changing the configuration of a roof by adding new features such as dormer windows, vents, or skylights so that the historic character is diminished.</p>
<p>Providing adequate anchorage for roofing material to guard against wind damage and moisture penetration.</p>	<p>Stripping the roof of sound historic material such as slate, clay tile, wood, and architectural metal.</p>
<p>Protecting a leaking roof with plywood and building paper until it can be properly repaired.</p>	<p>Applying paint or other coatings to roofing material which has been historically uncoated.</p>
<p><b>Repairing</b> a roof by reinforcing the historic materials which comprise roof features. Repairs will also generally include the limited replacement in kind – or with compatible substitute material – of those extensively deteriorated or missing parts of features when there are surviving prototypes such as cupola louvers, dentils, dormer roofing; or slates, tiles, or wood shingles on a main roof.</p>	<p>Failing to clean and maintain gutters and downspouts properly so that water and debris collect and cause damage to roof fasteners, sheathing, and underlying structure.</p>
<p><b>Replacing</b> in kind an entire feature of the roof that is too deteriorated to repair- if the overall form and detailing are still evident – using the physical evidence to guide the new work. Examples can include a large section of roofing, or a dormer or chimney. If using the same kind of material is not technically or economically feasible, then a compatible substitute material may be considered.</p>	<p>Allowing roof fasteners, such as nails and clips to corrode so that roofing material is subject to accelerated deterioration.</p>
	<p>Permitting a leaking roof to remain unprotected so that accelerated deterioration of historic building materials- masonry, wood, plaster, paint and structural members – occurs.</p>
	<p>Replacing an entire roof feature such as a cupola or dormer when repair of the historic materials and limited replacement of deteriorated or missing parts are appropriate.</p>
	<p>Using a substitute material for the replacement part that does not convey the visual appearance of the surviving parts of the roof or that is physically or chemically incompatible.</p>
	<p>Removing a feature of the roof that is unrepairable, such as a chimney or dormer, and not replacing it; or replacing it with a new feature that does not convey the same visual appearance.</p>

Roof (continued)	
<u><i>Recommended</i></u>	<u><i>Not Recommended</i></u>
<p><b>Design for Missing Historic Features</b></p> <p><b>Designing and constructing a new feature when the historic feature is completely missing, such as a chimney or cupola. It may be an accurate restoration using historical, pictorial, and physical documentation or be a new design that is compatible with the size, scale, material and color of the historical building.</b></p>	<p>Creating a false historical appearance because the replaced feature is based on insufficient historical, pictorial, and physical documentation.</p> <p>Introducing a new roof feature that is incompatible in size, scale, material, and color.</p>
<p><b>Alterations/Additions for the New Use</b></p> <p><b>Installing mechanical and service equipment on the roof such as air conditioning, transformers, or solar collectors when required for the new use so that they are inconspicuous from the public right-of-way and do not damage or obscure character-defining features.</b></p>	<p>Installing mechanical or service equipment so that it damages or obscures character-defining features; or is conspicuous from the public right of way.</p>
<p><b>Designing additions to roofs such as residential, office, or storage spaces; elevator housing; decks and terraces; or dormers or skylights when required by the new use so that they are inconspicuous from the public right-of-way and do not damage or obscure character-defining features.</b></p>	<p>Radically changing a character-defining roof shape or damaging or destroying character-defining roofing material as a result of incompatible design or improper installation techniques.</p>

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**Windows**

A highly decorative window with an unusual shape, or glazing pattern, or color is most likely identified immediately as a character-defining feature of the building. It is far more difficult, however, to assess the importance of repeated windows on a facade, particularly if they are individually simple in design and material, such as the large, multi-paned sash of many industrial buildings. Because rehabilitation projects frequently include proposals to replace window sash or even entire windows to improve thermal efficiency or to create a new appearance, it is essential that their contribution to the overall historic character of the building be assessed together with their physical condition before specific repair or replacement work is taken.

<u><i>Recommended</i></u>	<u><i>Not Recommended</i></u>
<p><b>Identifying, retaining, and preserving</b> windows- and their functional and decorative features – that are important in defining the overall historic character of the building. Such features can include frames, sash, muntins, glazing, sills, heads, hoodmolds, panelled or decorated jambs and moldings, and interior and exterior shutters and blinds.</p> <p><b>Protecting and maintaining</b> the wood and architectural metal which comprise the window frame, sash, muntins, and surrounds through appropriate surface treatments such as cleaning, rust removal, limited paint removal, and re-application of protective coating systems.</p> <p>Making windows weathertight by recaulking and replacing or installing weatherstripping. These actions also improve thermal efficiency.</p> <p>Evaluating the overall condition of materials to determine whether more than protection and maintenance are required, i.e. if repairs to windows and window features will be required.</p>	<p>Removing or radically changing windows which are important in defining the overall historic character of the building so that, as a result, the character is diminished.</p> <p>Changing the number, location, size or glazing pattern of windows, through cutting new openings, blocking-in windows, and installing replacement sash which does not fit the historic window opening.</p> <p>Changing the historic appearance of windows through the use of inappropriate designs, materials, finishes, or colors which radically change the sash, depth of reveal, and muntin configuration; the reflectivity and color of the glazing; or the appearance of the frame.</p> <p>Obscuring historic window trim with metal or other material.</p> <p>Stripping windows of historic material such as wood, iron, cast iron, and bronze.</p> <p>Failing to provide adequate protection of materials on a cyclical basis so that deterioration of the window results.</p> <p>Retrofitting or replacing windows rather than maintaining the sash, frame, and glazing.</p> <p>Failing to undertake adequate measures to assure the preservation of historic windows.</p>

Windows (continued)	
<u><i>Recommended</i></u>	<u><i>Not Recommended</i></u>
<p><b>Repairing</b> window frames and sash by patching, splicing, consolidating or otherwise reinforcing. Such repair may also include replacement in kind of those parts that are either extensively deteriorated or missing when there are surviving prototypes such as architraves, hoodmolds, sash, sills and interior or exterior shutters and blinds.</p>	<p>Replacing an entire window when repair of materials and limited replacement of deteriorated or missing parts are appropriate.</p>
<p><b>Replacing</b> in kind an entire window that is too deteriorated to repair – if the overall form and detailing are still evident – using the physical evidence to guide the new work. If using the same kind of material is not technically or economically feasible, then a compatible substitute material may be considered.</p>	<p>Failing to reuse serviceable window hardware such as brass lifts and sash locks.</p>
	<p>Using a substitute material for the replacement part that does not convey the visual appearance of the surviving parts of the window or that is physically or chemically incompatible.</p>
<p><b>Design for Missing Historic Features</b></p>	<p>Removing a character-defining window that is unrepairable and blocking it in; or replacing it with a new window that does not convey the same visual appearance.</p>
<p><b>Designing and installing new windows when the historic windows (frame, sash and glazing) are completely missing. The replacement windows may be an accurate restoration using historical, pictorial, and physical documentation; or be a new design that is compatible with the new window openings and the historic character of the building.</b></p>	<p>Creating a false historical appearance because the replaced window is based on insufficient historical, pictorial, and physical documentation.</p>
	<p>Introducing a new design that is incompatible with the historic character of the building.</p>
<p><b>Alterations/Additions for the New Use</b></p>	
<p><b>Designing and installing additional windows on rear and on other-non character defining elevations if required by the new use. New windows openings may also be cut into exposed party walls. Such design should be compatible with the overall design of the building, but not duplicate the fenestration pattern and detailing of a character-defining elevation.</b></p>	<p>Installing new windows, including frames, sash, and muntin configuration that are incompatible with the building's historic appearance or obscure, damage, or destroy character-defining features.</p>

<p>Windows (continued)</p> <p style="text-align: center;"><b><u>Recommended</u></b></p> <p><b>Providing a setback in the design of dropped ceilings when they are required for the new use to allow for the full height of the window openings.</b></p>	<p style="text-align: center;"><b><u>Not Recommended</u></b></p> <p>Inserting new floors or furred-down ceilings which cut across the glazed areas of windows so that the exterior form and appearance of the windows are changed.</p>
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**Entrances and Porches**

Entrances and porches are quite often the focus of historic buildings, particularly when they occur on primary elevations. Together with their functional and decorative features such as doors, steps, balustrades, pilasters, and entablatures, they can be extremely important in defining the overall historic character of a building. Their retention, protection, and repair should always be carefully considered when planning rehabilitation work.

<p style="text-align: center;"><b><u>Recommended</u></b></p> <p><b>Identifying, retaining, and preserving</b> entrances – and their functional and decorative features – that are important in defining the overall historic character of the building such as doors, fanlights, sidelights, pilasters, entablatures, columns, balustrades, and stairs.</p> <p><b>Protecting and maintaining</b> the masonry, wood, and architectural metal that comprise entrances and porches through appropriate surface treatments such as cleaning, rust removal, limited paint removal, and re-application of protective coating systems.</p>	<p style="text-align: center;"><b><u>Not Recommended</u></b></p> <p>Removing or radically changing entrances or porches which are important in defining the overall historic character of the building so that, as a result, the character is diminished.</p> <p>Stripping entrances and porches of historic material such as wood, iron, cast iron, terra cotta, tile and brick. Removing an entrance or porch because the building has been reoriented to accommodate a new use.</p> <p>Cutting new entrances on a primary elevation.</p> <p>Altering utilitarian or service entrances so they appear to be formal entrances by adding panelled doors, fanlights, and sidelights.</p> <p>Failing to provide adequate protection to materials on a cyclical basis so that deterioration of entrances and porches results.</p>
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Entrances and Porches (continued)	
<u><i>Recommended</i></u>	<u><i>Not Recommended</i></u>
<p>Evaluating the overall condition of materials to determine whether more than protection and maintenance are required, that is, if repairs to entrance and porch features will be necessary.</p>	<p>Failing to undertake adequate measures to assure the preservation of historic entrances and porches.</p>
<p><b>Repairing</b> entrances and porches by reinforcing the historic materials. Repair will also generally include the limited replacement in kind – or with compatible substitute material – of those extensively deteriorated or missing parts of repeated features where there are surviving prototypes such as balustrades, cornices, entablatures, columns, sidelights, and stairs.</p>	<p>Replacing an entire entrance or porch when the repair of materials and limited replacement of parts are appropriate.</p> <p>Using a substitute material for the replacement parts that does not convey the visual appearance of the surviving parts of the entrance and porch or that is physically or chemically incompatible.</p>
<p><b>Replacing</b> in kind an entire entrance or porch that is too deteriorated to repair – if the overall form and detailing are still evident – using the physical evidence to guide the new work. If using the same kind of material is not technically or economically feasible, then a compatible substitute material may be considered.</p>	<p>Removing an entrance or porch that is unrepairable and not replacing it; or replacing it with a new entrance or porch that does not convey the same visual appearance.</p>
<p><b>Design for Missing Historic Features</b></p>	
<p><b>Designing and constructing a new entrance or porch if the historic entrance or porch is completely missing. It may be a restoration based on historical, pictorial, and physical documentation; or be a new design that is compatible with the historic character of the building.</b></p>	<p>Creating a false historical appearance because the replaced entrance or porch is based on insufficient historical, pictorial, and physical documentation.</p> <p>Introducing a new design that is incompatible with the historic character of the building.</p>
<p><b>Alterations/Additions for the New Use</b></p>	
<p><b>Designing enclosures for historic porches when required by the new use in a manner that preserves the historic character of the building. This can include using large sheets of glass and recessing the enclosure wall behind existing scrollwork, posts, and balustrades.</b></p>	<p>Enclosing porches in a manner that results in a diminution or loss of historic character such as using solid materials such as wood, stucco, or masonry.</p>

<p>Entrances and Porches (continued)</p> <p style="text-align: center;"><b><u>Recommended</u></b></p> <p><b>Designing and installing additional entrances or porches when required for the new use in a manner that preserves the historic character of the building, i.e., limiting such alteration to non-character-defining elevations.</b></p>	<p style="text-align: center;"><b><u>Not Recommended</u></b></p> <p>Installing secondary service entrances and porches that are incompatible in size and scale with the historic building or obscure, damage, or destroy character-defining features.</p>
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**Storefronts**

Storefronts are quite often the focus of historic commercial buildings and can thus be extremely important in defining the overall historic character. Because storefronts also play a crucial role in a store's advertising and merchandising strategy to draw customers and increase business, they area often altered to meet the needs a new business. Particular care is required in planning and accomplishing work on storefronts so that the building's historic character is preserved in the process of rehabilitation.

<p style="text-align: center;"><b><u>Recommended</u></b></p> <p><b>Identifying, retaining, and preserving</b> storefronts – and their functional and decorative features – that are important in defining the overall historic character of the building such as display windows, signs, doors, transoms, kick plates, corner posts, and entablatures.</p> <p><b>Protecting and maintaining</b> masonry, wood, and architectural metals which comprise storefronts through appropriate treatments such as cleaning, rust removal, limited paint removal, and reapplication of protective coating systems.</p>	<p style="text-align: center;"><b><u>Not Recommended</u></b></p> <p>Removing or radically changing storefronts – and their features – which are important in defining the overall historic character of the building so that, as a result, the character is diminished.</p> <p>Changing the storefront so that it appears residential rather than commercial in character.</p> <p>Removing historic material from the storefront to create a recessed arcade.</p> <p>Introducing coach lanterns, mansard overhangings, wood shakes, nonoperable shutters, and small-paned windows if they cannot be documented historically.</p> <p>Changing the location of a storefront's main entrance.</p> <p>Failing to provide adequate protection to materials on a cyclical basis so that deterioration of storefront features result.</p>
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Storefronts (continued)	
<u><i>Recommended</i></u>	<u><i>Not Recommended</i></u>
<p>Protecting storefronts against arson and vandalism before work begins by boarding up windows and installing alarm systems that are keyed into local protection agencies.</p>	<p>Permitting entry into the building through unsecured or broken windows and doors so that interior features and finishes are damaged through exposure to weather or through vandalism.</p>
<p>Evaluating the overall condition of storefront materials to determine whether more than protection and maintenance are required, that is, if repairs to features will be necessary.</p>	<p>Stripping storefronts of historic material such as wood, cast iron, terra cotta, carrara glass, and brick.</p> <p>Failing to undertake adequate measures to assure the preservation of the historic storefront.</p>
<p><b>Repairing</b> storefronts by reinforcing the historic materials. Repairs will also generally include the limited replacement in kind – of those extensively deteriorated or missing parts of storefronts where there are surviving prototypes such as transoms, kick plates, pilasters, or signs.</p>	<p>Replacing an entire storefront when repair of materials and limited replacement of its parts are appropriate.</p>
<p><b>Replacing</b> in kind an entire storefront that is too deteriorated to repair – if the overall form and detailing are still evident – using the physical evidence to guide the new work. If using the same material is not technically or economically feasible, then compatible substitute materials may be considered.</p>	<p>Using substitute material for the replacement parts that does not convey it with a new storefront or that is physically or chemically incompatible.</p>
<p><b>Design for Missing Historic Features</b></p>	<p>Removing a storefront that is unrepairable and not replacing it; or replacing it with a new storefront that does not convey the same visual appearance.</p>
<p><b>Designing and constructing a new storefront when the historic storefront is completely missing. It may be a restoration based on historical, pictorial, and physical documentation; or be a new design that is compatible with the size, scale, material, and color of the historic building. Such new design should generally be flush with the facade; and the treatment of secondary design elements, such as awnings or signs, kept as simple as possible. For example, new signs should fit flush with the existing features of the facade, such as the fascia board or cornice.</b></p>	<p>Creating a false historical appearance because the replaced storefront is based on insufficient historical, pictorial, and physical documentation.</p>
	<p>Introducing a new design that is incompatible in size, scale, material, and color.</p>
	<p>Using new illuminated signs; inappropriately scaled signs and logos; signs that project over the sidewalk unless they were a characteristic feature of the historic building; or other types of signs that obscure, damage, or destroy remaining character-defining features of the historic building.</p>

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**BUILDING INTERIOR**

**Structural System**

If features of the structural system are exposed such as load bearing brick walls, cast iron columns, roof trusses, post and beams, vigas, or stone foundation walls, they may be important in defining the building's overall historic character. Unexposed-defining or an entire structural system may nonetheless be significant in the history of building technology; therefore, the structural system should always be examined and evaluated early in the project planning stage to determine both its physical condition and its importance to the building's historic character or historical significance. See also Health and Safety Code Requirements.

<u><i>Recommended</i></u>	<u><i>Not Recommended</i></u>
<p><b>Identifying, retaining, and preserving</b> structural systems- and individual features of systems that are important in defining the overall historic character of the building, such as post and beam systems, trusses, summer beams, vigas, cast iron columns, above grade stone foundation walls, or loadbearing brick or stone walls.</p> <p><b>Protecting and maintaining</b> the structural system by cleaning the roof gutters and downspouts; replacing roof flashing; keeping masonry, wood, and architectural metals in a sound condition, and assuring that structural members are free from insect infestation.</p> <p>Examining and evaluating the physical condition of the structural system and its individual features using non-destructive techniques such as x-ray photography.</p>	<p>Removing, covering, or radically changing features of structural systems which are important in defining the overall historic character of the building so that, as a result, the character is diminished.</p> <p>Putting a new use into the building which could overload the existing structural system, or installing equipment or mechanical systems which could damage the structure.</p> <p>Demolishing a loadbearing masonry wall that could be augmented and retained and replacing it with a new wall (i.e. brick or stone), using the historic masonry only as an exterior veneer.</p> <p>Leaving known structural problems untreated such as deflection of beams, cracking and bowing of walls, or racking of structural members.</p> <p>Utilizing treatments or products that accelerate the deterioration of structural material such as introducing urea-formaldehyde foam insulation into frame walls.</p> <p>Failing to provide proper building maintenance on a cyclical basis so that deterioration of the structural system results.</p> <p>Utilizing destructive probing techniques that will damage or destroy structural material.</p>

Structural System (continued)	
<u><i>Recommended</i></u>	<u><i>Not Recommended</i></u>
<p><b>Repairing</b> the structural systems by augmenting or upgrading individual parts or features. For example, weakened structural members such as floor framing can be spliced, braced, or otherwise supplemented and reinforced.</p>	<p>Upgrading the building structurally in a manner that diminishes the historic character of the exterior, such as installing strapping channels or removing a decorative cornice; or damages interior features or spaces.</p>
<p><b>Replacing</b> in kind-or with substitute material-those portions or features of the structural system that are either extensively deteriorated or are missing when there are surviving prototypes such as cast iron columns, roof rafters or trusses, or sections of loadbearing walls. Substitute material should convey the same form, design, and overall visual appearance as the historic features; and, at a minimum, be equal to its loadbearing capabilities.</p>	<p>Replacing a structural member or other feature of the structural system when it could be augmented and retained.</p> <p>Installing a replacement feature that does not convey the same visual appearance, e.g., replacing an exposed wood summer beam with a steel beam.</p> <p>Using substitute material that does not equal the loadbearing capabilities of the historic material and design or is otherwise physically or chemically incompatible.</p>
<p><b>Alterations/Additions for the New Use</b></p>	
<p><b>Limiting any new excavations adjacent to historic foundations to avoid undermining the structural stability of the building or adjacent historic buildings.</b></p>	<p>Carrying out excavations or regrading adjacent to or within a historic building which could cause the historic foundation to settle, shift, or fail; or could have a similar effect on adjacent historic buildings.</p>
<p><b>Correcting structural deficiencies in preparation for the new use in a manner that preserves the structural system and individual character-defining features.</b></p>	<p>Radically changing interior spaces or damaging or destroying features or finishes that are character defining while trying to correct structural deficiencies in preparation for the new use.</p>
<p><b>Designing and installing new mechanical or electrical systems when required for the new use which minimize the number of cutouts or holes in structural members.</b></p>	<p>Installing new mechanical and electrical systems or equipment in a manner which results in numerous cuts, splices, or alterations to the structural members.</p>
<p><b>Adding a new floor when required for the new use if such an alteration does not damage or destroy the structural system or obscure, damage, or destroy character-defining spaces, features, or finishes.</b></p>	<p>Inserting a new floor when such a radical change damages a structural system or obscures or destroys interior spaces, features, or finishes.</p>

Structural System (continued)	
<u><i>Recommended</i></u>	<u><i>Not Recommended</i></u>
<p><b>Creating an atrium or a light well to provide natural light when required for the new use in a manner that assures the preservation of the structural system as well as character-defining interior spaces, features, and finishes.</b></p>	<p>Inserting new floors or furred-down ceilings which cut across the glazed areas of windows so that the exterior form and appearance of the windows are radically changed.</p> <p>Damaging the structural system or individual features; or radically changing, damaging, or destroying character-defining interior spaces, features, or finishes in order to create an atrium or a light well.</p>

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**Interior: Spaces, Features, and Finishes**

An interior floor plan, the arrangement of spaces, and built in features and applied finishes may be individually or collectively important in defining the historic character of the building. Thus, their identification, retention, protection, and repair should be given prime consideration in every rehabilitation project and caution exercised in pursuing any plan that would radically change character-defining spaces or obscure, damage or destroy interior features or finishes.

<u><i>Recommended</i></u>	<u><i>Not Recommended</i></u>
<p><b>Interior Spaces</b></p> <p><b>Identifying, retaining, and preserving</b> a floor plan or interior spaces that are important in defining the overall historic character of the building. This includes the size, configuration, proportion, and relationship of rooms and corridors; the relationship of features to spaces; and the spaces themselves such as lobbies, reception halls, entrance halls, double parlors, theaters, auditoriums, and important industrial or commercial use spaces.</p>	<p>Radically changing a floor plan or interior spaces-including individual rooms-which are important in defining the overall historic character of the building so that, as a result, the character is diminished.</p> <p>Altering the floor plan by demolishing principal walls and partitions to create a new appearance.</p> <p>Altering or destroying interior spaces by inserting floors, cutting through floors, lowering ceilings, or adding or removing walls.</p> <p>Relocating an interior feature such as a staircase so that the historic relationship between features and space is altered.</p>

Interior Features and Finishes (continued)	
<p style="text-align: center;"><b><u>Recommended</u></b></p> <p><b>Interior Features and Finishes</b></p> <p><b>Identifying, retaining, and preserving</b> interior features and finishes that are important in defining the overall historic character of the building, including columns, cornices, baseboards, fireplaces and mantles, paneling, light fixtures, hardware, and flooring; and wallpaper, plaster, paint, and finishes such as stenciling, marbling, and graining; and other decorative materials that accent interior features and provide color, texture, and patterning to walls, floors, and ceilings.</p> <p><b>Protecting and maintaining</b> masonry, wood, and architectural metals which comprise interior features through appropriate surface treatments such as cleaning, rust removal, limited paint removal, and reapplication of protective coating systems.</p> <p>Protecting interior features and finishes against arson and vandalism before project work begins, erecting protective fencing, boarding-up windows, and installing fire alarm systems that are keyed to local protection agencies.</p>	<p style="text-align: center;"><b><u>Not Recommended</u></b></p> <p>Removing or radically changing features and finishes which are important in defining the overall historic character of the building so that, as a result, the character is diminished.</p> <p>Installing new decorative material that obscures or damages character-defining interior features or finishes.</p> <p>Removing paint, plaster, or other finishes from historically finished surfaces to create a new appearance (e.g. removing plaster to expose masonry surfaces such as brick walls or a chimney piece).</p> <p>Applying paint, plaster, or other finishes to surfaces that have been historically unfinished to create a new appearance.</p> <p>Stripping historically painted wood surfaces to bare wood, then applying clear finishes or stains to create a “natural look.”</p> <p>Stripping paint to bare wood rather than repairing or reapplying grained or marbled finishes to features such as doors and paneling.</p> <p>Radically changing the type of finish or its color, such as painting a previously varnished wood feature.</p> <p>Failing to provide adequate protection to materials on a cyclical basis so that deterioration of interior features results.</p> <p>Permitting entry into historic buildings through unsecured or broken windows and doors so that interior features and finishes are damaged by exposure to weather or through vandalism.</p>

Interior Features and Finishes (continued)	
<u><i>Recommended</i></u>	<u><i>Not Recommended</i></u>
<p>Protecting interior features such as a staircase, mantel, or decorative finishes and wall coverings against damage during project work by covering them with heavy canvas or plastic sheets.</p>	<p>Stripping interiors of features such as woodwork, doors, windows, light fixtures, copper piping, radiators; or of decorative materials.</p>
<p>Installing protective coverings in areas of heavy pedestrian traffic to protect historic features such as wall coverings, parquet flooring and panelling.</p>	<p>Failing to provide proper protection of interior features and finishes during work so that they are gouged, scratched, dented, or otherwise damaged.</p>
<p>Removing damaged or deteriorated paints and finishes to the next sound layer using the gentlest method possible, then repainting or refinishing using compatible paint or other coating systems.</p>	<p>Failing to take new use patterns into consideration so that interior features and finishes are damaged.</p>
<p>Repainting with colors that are appropriate to the historic building.</p>	<p>Using destructive methods such as propane or butane torches or sanblasting to remove paint or other coatings. These methods can irreversibly damage the historic materials that comprise interior features.</p>
<p>Limiting abrasive cleaning methods to certain industrial or warehouse buildings where the interior masonry or plaster features do not have distinguishing design, detail, tooling, or finishes; and where wood features are not finished, molded, beaded, or worked by hand. Abrasive cleaning should only be considered after other, gentler methods have been proven ineffective.</p>	<p>Using new paint colors that are inappropriate to the historic building.</p>
<p>Evaluating the overall condition of materials to determine whether more than protection and maintenance are required, that is, if repairs to interior features and finishes will be necessary.</p>	<p>Changing the texture and patina of character-defining features through sandblasting or using other abrasive methods to remove paint, discoloration or plaster. This includes both exposed wood (including structural members) and masonry.</p>
<p><b>Repairing</b> interior features and finishes by reinforcing the historic materials. Repair will also generally include the limited replacement in kind – or with compatible substitute material – of those extensively deteriorated or missing parts of repeated features when there are surviving prototypes such as stairs, balustrades, wood panelling, columns; or decorative wall coverings or ornamental tin or plaster ceilings.</p>	<p>Failing to undertake adequate measures to assure the preservation of interior features and finishes.</p>
	<p>Replacing an entire interior feature such as a staircase, panelled wall, parquet floor, or cornice; or finish such as a decorative wall covering or ceiling when repair of materials and limited replacement of such parts are appropriate.</p>
	<p>Using a substitute material for the replacement part that does not convey the visual appearance of the surviving parts or portions of the interior feature or finish or that is physically or chemically incompatible.</p>

Interior Features and Finishes (continued)	
<p style="text-align: center;"><b><u>Recommended</u></b></p> <p><b>Replacing</b> in kind an entire interior feature or finish that is too deteriorated to repair – if the overall form and detailing are still evident – using the physical evidence to guide the new work. Examples could include wainscoting, a tin ceiling, or interior stairs. If using the same kind of material is not technically or economically feasible, then a compatible substitute material may be considered.</p> <p><b>Design for Missing Historic Features</b></p> <p><b>Designing and installing a new interior feature or finish if the historic feature or finish is completely missing. This could include missing partitions, stairs, elevators, lighting fixtures, and wall coverings; or even entire rooms if all historic spaces, features, and finishes are missing or have been destroyed by inappropriate “renovations.” The design may be a restoration based on historical, pictorial, and physical documentation; or be a new design that is compatible with the historic character of the building, district, or neighborhood.</b></p> <p><b>Alterations/ Additions for the New Use</b></p> <p><b>Accommodating service functions such as bathrooms, mechanical equipment, and office machines required by the building’s new use in secondary spaces such as first floor service areas or on upper floors.</b></p> <p><b>Reusing decorative materials or features that have had to be removed during the rehabilitation work including wall and baseboard trim, door moulding, panelled doors, and simple wainscoting; and relocating such material or features in areas appropriate to their historic placement.</b></p> <p><b>Installing permanent partitions in secondary spaces; removable partitions that do not destroy the sense of space should be installed when the new use requires the subdivision of character defining interior spaces.</b></p>	<p style="text-align: center;"><b><u>Not Recommended</u></b></p> <p>Removing a character defining feature or finish that is unrepairable and not replacing it; or replacing it with a new feature or finish that does not convey the same visual appearance.</p> <p>Creating a false historical appearance because the replaced feature is based on insufficient physical, historical, and pictorial documentation or on information derived from another building.</p> <p>Introducing a new interior feature or finish that is incompatible with the scale, design, materials, color, and texture of the surviving interior features and finishes.</p> <p>Dividing rooms, lowering ceilings, and damaging or obscuring character-defining features such as fireplaces, niches, stairways or alcoves, so that a new use can be accommodated in the building.</p> <p>Discarding historic material when it can be reused within the rehabilitation project or relocating it in historically inappropriate areas.</p> <p>Installing permanent partitions that damage or obscure character-defining spaces, features, or finishes.</p>

Interior Features and Finishes (continued)	
<u>Recommended</u>	<u>Not Recommended</u>
<p><b>Enclosing an interior stairway where required by code so that its character is retained. In many cases, glazed fire-rated walls may be used.</b></p>	<p>Enclosing an interior stairway with fire-rated construction so that the stairwell space or any character-defining features are destroyed.</p>
<p><b>Placing new code-required stairways or elevators in secondary and service areas of the historic building.</b></p>	<p>Radically changing, damaging, or destroying character-defining spaces, features, or finishes when adding new code-required stairways and elevators.</p>
<p><b>Creating an atrium or a light well to provide natural light when required for the new use in a manner that preserves character-defining interior spaces, features, and finishes as well as the structural systems.</b></p>	<p>Destroying character-defining interior spaces, features, or finishes; or damaging the structural system in order to create an atrium or light well.</p>
<p><b>Adding a new floor if required for the new use in a manner that preserves character-defining structural features, and interior spaces, features, and finishes.</b></p>	<p>Inserting a new floor within a building that alters or destroys the fenestration; radically changes a character-defining interior space; or obscures, damages, or destroys decorative detailing.</p>

The aforementioned work is highlighted in bold to indicate that it represents the particularly complex technical or design aspects of rehabilitation projects and should only be considered after the preservation concerns listed above have been addressed.

**Mechanical Systems; Heating, Air Conditioning, Electrical, and Plumbing**

The visible feature of historic heating, lighting, air conditioning and plumbing systems may sometimes help define the overall historic character of the building and should thus be retained and repaired, whenever possible. The systems themselves (the compressors, boilers, generators, and their ductwork, wiring and pipes) will generally either need to be upgraded, augmented, or entirely replaced in order to accommodate the new use and to meet code requirements. Less frequently, individual portions of a system or an entire system are significant in the history of building technology; therefore, the identification of character-defining features or historically significant systems should take place together with an evaluation of their physical condition early in project planning.

<u>Recommended</u>	<u>Not Recommended</u>
<p><b>Identifying, retaining, and preserving</b> visible features of early mechanical systems that are important in defining the overall historic character of the building, such as radiators, vents, fans, grilles, plumbing fixtures, switchplates, and lights.</p>	<p>Removing or radically changing features of mechanical systems that are important in defining the overall historic character of the building so that, as a result, the character is diminished.</p>

Mechanical Systems (continued)	
<u><i>Recommended</i></u>	<u><i>Not Recommended</i></u>
<p><b>Protecting and maintaining</b> mechanical, plumbing, and electrical systems and their features through cyclical cleaning and other appropriate measures.</p>	<p>Failing to provide adequate protection of materials on a cyclical basis so that deterioration of mechanical systems and their visible features results.</p>
<p>Preventing accelerated deterioration of mechanical systems by providing adequate ventilation of attics, crawlspaces, and cellars so that moisture problems are avoided.</p>	<p>Enclosing mechanical systems in areas that are not adequately ventilated so that deterioration of the systems results.</p>
<p><b>Repairing</b> mechanical systems by augmenting or upgrading system parts, such as installing new pipes and ducts; rewiring; or adding new compressors or boilers.</p>	<p>Replacing a mechanical system or its functional parts when it could be upgraded and retained.</p>
<p><b>Replacing</b> in kind – or with compatible substitute material – those visible features of mechanical systems that are either extensively deteriorated or are missing when there are surviving prototypes such as ceiling fans, switchplates, radiators, grilles, or plumbing fixtures.</p>	<p>Installing a replacement feature that does not convey the same visual appearance.</p>
<p><b>Alteration/Additions for the New Use</b></p>	
<p><b>Installing a completely new mechanical system if required for the new use so that it causes the least alteration possible to the building's floor plan, the exterior elevations, and the least damage to historic building material.</b></p>	<p>Installing a new mechanical system so that character-defining structural or interior features are radically changed, damaged, or destroyed.</p>
<p><b>Installing the vertical runs of ducts, pipes, and cables in closets, service rooms, and wall cavities.</b></p>	<p>Installing vertical runs of ducts, pipes, and cables in places where they will obscure character – defining features.</p>
	<p>Concealing mechanical equipment in walls or ceilings in a manner that requires the removal of historic building material.</p>
<p><b>Installing air conditioning units if required by the new use in such a manner that the historic materials and features are not damaged or obscured.</b></p>	<p>Installing “dropped” acoustical ceilings to hide mechanical equipment when this destroys the proportions of character –defining interior spaces.</p> <p>Cutting through features such as masonry wall in order to install air conditioning units.</p>

Mechanical Systems (continued)	
<u><i>Recommended</i></u>	<u><i>Not Recommended</i></u>
<p><b>Installing heating/air conditioning units in the window frames in such a manner that the sash and frames are protected. Window installations should be considered only when all other heating/cooling systems would result in significant damage to historic materials.</b></p>	<p>Radically changing the appearance of the historic building or damaging or destroying windows by installing heating/air conditioning units in historic window frames.</p>

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**BUILDING SITE**

The relationship between a historic building or buildings features within a property’s boundaries – or building site – helps to define the historic character and should be considered an integral part of overall planning for rehabilitation project work.

<u><i>Recommended</i></u>	<u><i>Not Recommended</i></u>
<p><b>Identifying, retaining, and preserving</b> buildings and their features as well as features of the site that are important in defining its overall historic character. Site features can include driveways, walkways, lighting, fencing, signs, benches, fountains, wells, terraces, canal systems, plants and trees, berms, and drainage or irrigation ditches; and archeological features that are important in defining the history of the site.</p> <p>Retaining the historic relationship between buildings, landscape features, and open space.</p>	<p>Removing or radically changing buildings and their features or site features which are important in defining the overall historic character of the building site so that, as a result, the character is diminished.</p> <p>Removing or relocating historic buildings or landscape features, thus destroying the historic relationship between buildings, landscape features, and open space.</p> <p>Removing or relocating historic buildings on a site or in a complex of related historic structures – such as a mill complex or farm – thus diminishing the historic character of the site or complex.</p> <p>Moving buildings onto the site, thus creating a false historical appearance.</p>

Building Site (continued)	
<u><i>Recommended</i></u>	<u><i>Not Recommended</i></u>
<p><b>Protecting and maintaining</b> buildings and the site by providing proper drainage to assure that water does not erode foundation walls; drain toward the building; nor erode the historic landscape.</p>	<p>Lowering the grade level adjacent to a building to permit development of a formerly below-grade area such as a basement in a manner that would drastically change the historic relationship of the building to its site.</p>
<p>Minimizing disturbance of terrain around buildings or elsewhere on the site, thus reducing the possibility of destroying unknown archeological materials.</p>	<p>Failing to maintain site drainage so that buildings and site features are damaged or destroyed; or, alternatively, changing the site grading so that water no longer drains properly.</p>
<p>Surveying areas where major terrain alteration is likely to impact important archeological sites.</p>	<p>Introducing heavy machinery or equipment into areas where their presence may disturb archeological materials.</p>
<p>Protecting, e.g. preserving in place known archeological material whenever possible.</p>	<p>Failing to survey the building site prior to the beginning of rehabilitation project work so that, as a result, important archeological material is destroyed.</p>
<p>Planting and carrying out any necessary investigation using professional archeologists and modern archeological methods when preservation in place is not feasible.</p>	<p>Leaving known archeological material unprotected and subject to vandalism, looting and destruction by natural elements, such as erosion.</p>
<p>Protecting the building and other features of the site against arson and vandalism before rehabilitation work begins, i.e., erecting protective fencing and installing alarm systems that are keyed into local protection agencies.</p>	<p>Permitting unqualified project personnel to perform data recovery so that improper methodology results in the loss of important archeological material.</p>
	<p>Permitting buildings and site features to remain unprotected so that plant materials, fencing, walkways, archeological features, etc. are damaged or destroyed.</p> <p>Stripping features from buildings and the site such as wood siding, iron fencing, masonry balustrades; or removing or destroying landscape features, including plant material.</p>

Building Site (continued)	
<u><i>Recommended</i></u>	<u><i>Not Recommended</i></u>
<p>Providing continued protection of masonry, wood, and architectural metals which comprise building and site features through appropriate surface treatments such as cleaning, rust removal, limited paint removal, and re-application of protective coating systems; and continued protection and maintenance of landscape features, including plant material.</p>	<p>Failing to provide adequate protection of materials on a cyclical basis so that deterioration of building and site features results.</p>
<p>Evaluating the overall condition of materials to determine whether more than protection and maintenance are required, that is, if repairs to building and site features will be necessary.</p>	<p>Failing to undertake adequate measures to assure the preservation of building and site features.</p>
<p><b>Repairing</b> features of buildings and the site by reinforcing the historic materials. Repair will also generally include replacement in kind – with a compatible substitute material – of those extensively deteriorated or missing parts of features where there are surviving prototypes such as fencing and paving.</p>	<p>Replacing an entire feature of the building or site such as a fence, walkway, or driveway when repair of materials and limited replacement of deteriorated or missing parts are appropriate.</p>
<p><b>Replacing</b> in kind an entire feature of the building or site that is too deteriorated to repair – if the overall form and detailing are still evident – using the physical evidence to guide the new work. This could include an entrance or porch, walkway, or fountain. If using the same kind of material is not technically or economically feasible, then a compatible substitute material may be considered.</p>	<p>Using a substitute material for the replacement part that does not convey the visual appearance of the surviving parts of the building or site feature or that is physically or chemically incompatible.</p>
<p><b>Design for Missing Historic Features</b></p>	<p>Removing a feature of the building or site that is unrepairable and not replacing it; or replacing it with a new feature that does not convey the same visual appearance.</p>
<p><b>Designing and constructing a new feature of a building or site when the historic feature is completely missing, such as an outbuilding, terrace, or driveway. It may be based on historical, pictorial, and physical documentation; or be a new design that is compatible with the historic character of the building and site.</b></p>	<p>Creating a false historical appearance because the replaced feature is based on insufficient historical, pictorial, and physical documentation.</p>
	<p>Introducing a new building or site feature that is out of scale or otherwise inappropriate.</p>
	<p>Introducing a new landscape feature or plant material that is visually incompatible with the site or that destroys site patterns or vistas.</p>

Building Site (continued)	
<u><i>Recommended</i></u>	<u><i>Not Recommended</i></u>
<p><b>Alterations/Additions for the New Use</b></p> <p><b>Designing new on site parking, loading docks, or ramps when required by the new use so that they are as unobtrusive as possible and assure the preservation of character-defining features of the site.</b></p> <p><b>Designing new exterior additions to historic buildings or adjacent new construction which is compatible with the historic character of the site and which preserve the historic relationship between a building or buildings, landscape features, and open space.</b></p> <p><b>Removing nonsignificant buildings, additions, or site features which detract from the historic character of the site.</b></p>	<p>Placing parking facilities directly adjacent to historic buildings where automobiles may cause damage to the buildings or landscape features or be intrusive to the building site.</p> <p>Introducing new construction onto the building site which is visually incompatible in terms of size, scale, design, materials, color and texture or which destroys historic relationships on the site.</p> <p>Removing a historic building in a complex, a building feature, or a site feature which is important in defining the historic character of the site.</p>

The aforementioned work is highlighted in bold to indicate that it represents the particularly complex technical or design aspects of rehabilitation projects and should only be considered after the preservation concerns listed above have been addressed.

### DISTRICT NEIGHBORHOOD

The relationship between historic buildings, and streetscape and landscape features within a historic district or neighborhood helps to define the historic character and therefore should always be a part of the rehabilitation plans.

<u><i>Recommended</i></u>	<u><i>Not Recommended</i></u>
<p><b>Identifying, retaining, and preserving</b> buildings, and streetscape, and landscape features which are important in defining the overall historic character of the district or neighborhood. Such features can include streets, alleys, paving, walkways, streetlights, signs, benches, parks and gardens, and trees.</p> <p>Retaining the historic relationship between buildings, and streetscape and landscape features such as town square comprised of row houses and stores surrounding a communal park or open space.</p>	<p>Removing or radically changing those features of the district or neighborhood which are important in defining the overall historic character so that, as a result, the character is diminished.</p> <p>Destroying streetscape and landscape features by widening existing streets, changing paving material, or introducing inappropriately located new streets or parking lots.</p>

District Neighborhood (continued)	
<u><i>Recommended</i></u>	<u><i>Not Recommended</i></u>
<p><b>Protecting and maintaining</b> the historic masonry, wood, and architectural metals which comprise building and streetscape features, through appropriate surface treatments such as cleaning, rust removal, limited paint removal, and reapplication of protective coating systems, and protecting and maintaining landscape features, including plant material.</p> <p>Protecting buildings, paving, iron fencing, etc. against arson and vandalism before rehabilitation work begins by erecting protective fencing and installing alarm systems that are keyed into local protection agencies.</p> <p>Evaluating the overall condition of building, streetscape and landscape materials to determine whether more than protection and maintenance are required, that is, if repairs to features will be necessary.</p> <p><b>Repairing</b> features of the building, streetscape, or landscape by reinforcing the historic materials. Repair will also generally include the replacement in kind – or with a compatible substitute material – of those extensively deteriorated or missing parts or features when there are surviving prototypes such as porch balustrades, paving materials, or streetlight standards.</p> <p><b>Replacing</b> in kind an entire feature of the building, streetscape, or landscape that is too deteriorated to repair – when the overall form and detailing are still evident – using the physical evidence to guide the new work. This could include a storefront, a walkway, or a garden. If using the same kind of material is not technically or economically feasible, then a compatible substitute material may be considered.</p>	<p>Removing or relocating historic buildings, or features of the streetscape and landscape, thus destroying the historic relationship between buildings, features, and open space.</p> <p>Failing to provide adequate protection of materials on a cyclical basis so that deterioration of building, streetscape, and landscape features results.</p> <p>Permitting buildings to remain unprotected so that windows are broken; and interior features are damaged.</p> <p>Stripping features from buildings or the streetscape such as wood siding, iron fencing, or terra cotta balusters; or removing or destroying landscape features, including plant material.</p> <p>Failing to undertake adequate measures to assure the preservation of building, streetscape, and landscape features.</p> <p>Replacing an entire feature of the building, streetscape, or landscape such as a porch, walkway, or streetlight, when repair of materials and limited replacement of deteriorated or missing parts are appropriate.</p> <p>Using a substitute material for the replacement part that does not convey the visual appearance of the surviving parts of the building, streetscape, or landscape feature or that is physically or chemically incompatible.</p> <p>Removing a feature of the building, streetscape, or landscape that is unrepairable and not replacing it; or replacing it with a new feature that does not convey the same visual appearance.</p>

District Neighborhood (continued)	
<u><i>Recommended</i></u>	<u><i>Not Recommended</i></u>
<p><b>Design for Missing Historic Features</b></p> <p><b>Designing and constructing a new feature of the building, streetscape or landscape when the historic feature is completely missing, such as row house steps, a porch, streetlight, or terrace. It may be a restoration based on historical, pictorial, and physical documentation; or be a new design that is compatible with the historic character of the district or neighborhood.</b></p> <p><b>Alterations/Additions for the New Use</b></p> <p><b>Designing required new parking so that it is as unobtrusive as possible, i.e., on side streets or at the rear of buildings. “Shared” parking should also be planned so that several businesses can utilize one parking area as opposed to introducing random, multiple lots.</b></p> <p><b>Designing and constructing new additions to historic buildings when required by the new use. New work should be compatible with the historic character of the district or neighborhood in terms of size, scale, design, material, color and texture.</b></p> <p><b>Removing nonsignificant buildings, additions, or streetscape and landscape features which detract from the historic character of the district or the neighborhood.</b></p>	<p style="text-align: center;"><u><i>Not Recommended</i></u></p> <p>Creating a false historical appearance because the replaced feature is based on insufficient historical, pictorial, and physical documentation.</p> <p>Introducing a new building, streetscape or landscape feature that is out of scale or otherwise inappropriate to the setting’s historic character, e.g. replacing picket fencing with chain link fencing.</p> <p>Placing parking facilities directly adjacent to historic buildings which cause the removal of historic plantings, relocation of paths and walkways, or blocking of alleys.</p> <p>Introducing new construction into historic districts that is visually incompatible or that destroys historic relationships within the district or neighborhood.</p> <p>Removing a historic building, building feature, or landscape or streetscape feature that is important in defining the overall historic character of the district or the neighborhood.</p>

The aforementioned work is highlighted in bold to indicate that it represents the particularly complex technical or design aspects of rehabilitation projects and should only be considered after the preservation concerns listed above have been addressed.

**Although the work in these sections is quite often an important aspect of rehabilitation projects, it is usually *not part* of the overall process of preserving character-defining features (maintenance, repair, replacement); rather, such work is assessed for its potential negative impact on the building's historic character. For this reason, particular care must be taken not to obscure, radically change, damage, or destroy character-defining features in the process of rehabilitation work to meet new use requirements.**

## HEALTH AND SAFETY CODE REQUIREMENTS

As a part of the new use, it is often necessary to make modifications to a historic building so that it can comply with current health, safety and code requirements. Such work needs to be carefully planned and undertaken so that it does not result in a loss of character-defining spaces, features, and finishes.

<u><i>Recommended</i></u>	<u><i>Not Recommended</i></u>
<p>Identifying the historic building's character-defining spaces, features, and finishes so that code required work will not result in their damage or loss.</p>	<p>Undertaking code-required alterations to a building or site before identifying those spaces, features, or finishes which are character-defining and must therefore be preserved.</p>
<p>Complying with health and safety code, including seismic codes and barrier-free access requirements, in such a manner that character-defining spaces, features, and finishes are preserved.</p>	<p>Altering, damaging, or destroying character-defining spaces, features, and finishes while making modifications to a building or site to comply with safety codes.</p>
<p>Working with local code officials to investigate alternative life safety measures or variances available under some codes so that alterations and additions to historic buildings can be avoided.</p>	<p>Making changes to historic buildings without first seeking alternatives to code requirements.</p>
<p>Providing barrier-free access through removable or portable, rather than permanent, ramps.</p>	<p>Installing permanent ramps that damage or diminish character-defining features.</p>
<p>Providing seismic reinforcement to a historic building in a manner that avoids damaging the structural system and character-defining features.</p>	<p>Reinforcing a historic building using measures that damage or destroy character-defining structural and other features.</p>
<p>Upgrading historic stairways and elevators to meet health and safety codes in a manner that assures their preservation, i.e. so that they are not damaged or obscured.</p>	<p>Damaging or obscuring historic stairways and elevators or altering adjacent spaces in the process of doing work to meet code requirements.</p>
<p>Installing sensitively designed fire suppressions systems, such as a sprinkler system for wood frame mill buildings, instead of applying fire-resistant sheathing to character-defining features.</p>	<p>Covering character-defining wood features with fire-resistant sheathing which results in altering their visual appearance.</p>
<p>Applying fire-retardant coatings, such as intumescent paints, which expand during fire to add thermal protection to steel.</p>	<p>Using fire-retardant coatings if they damage or obscure character-defining features.</p>
<p>Adding a new stairway or elevator to meet health and safety codes in a manner that preserves adjacent character-defining features and space.</p>	<p>Radically changing, damaging, or destroying character-defining spaces, features, or finishes when adding a new code required stairway or elevator.</p>

<p>Health and Safety Code Requirements (continued)</p> <p style="text-align: center;"><b><u>Recommended</u></b></p> <p>Placing a code-required stairway or elevator that cannot be accommodated within the historic building in a new exterior addition. Such an addition should be located at the rear of the building or an inconspicuous side; and its size and scale limited in relationship to the historic building.</p>	<p style="text-align: center;"><b><u>Not Recommended</u></b></p> <p>Constructing a new addition to accommodate code-required stairs and elevators on character-defining elevations highly visible from the street; or where it obscures, damages or destroys character-defining features.</p>
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**ENERGY RETROFITTING**

Some character-defining features of a historic building or site such as cupolas, shutters, transoms, skylights, sun rooms, porches, and plantings also play a secondary energy conserving role. Therefore, prior to retrofitting historic buildings to make them more energy efficient, the first step should always be to identify and evaluate the existing historic features to assess their inherent energy conserving potential. If it is determined that retrofitting measures are necessary, then such work needs to be carried out with particular care to insure that the building's historic character is preserved in the process of rehabilitation.

<p style="text-align: center;"><b><u>Recommended</u></b></p> <p><b>District/Neighborhood</b></p> <p>Maintaining those existing landscape features which moderate the effects of the climate on the setting such as deciduous trees, evergreen wind-blocks, and lakes or ponds.</p> <p><b>Building Site</b></p> <p>Retaining plant materials, trees, and landscape features, especially those which perform passive solar energy functions, such as sun shading and wind breaks.</p> <p>Installing freestanding solar collectors in a manner that preserves the historic property's character-defining features.</p> <p>Designing attached solar collectors, including solar greenhouses, so that the character-defining features of the property are preserved.</p>	<p style="text-align: center;"><b><u>Not Recommended</u></b></p> <p>Stripping the setting of landscape features and landforms so that the effects of the wind, rain, and the sun result in accelerated deterioration of historic materials.</p> <p>Removing plant materials, trees, and landscape features, so that they no longer perform passive solar energy functions.</p> <p>Installing freestanding solar collectors that obscure, damage, or destroy historic landscape or archeological features.</p> <p>Locating solar collectors where they radically change the property's appearance; or damage or destroy character-defining features.</p>
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Energy Retrofitting (continued)	
<u><b>Recommended</b></u>	<u><b>Not Recommended</b></u>
<p><b>Masonry/Wood/Architectural Metals</b></p>	
<p>Installing thermal insulation in attics and in unheated cellars and crawlspaces to increase the efficiency of the existing mechanical systems.</p>	<p>Applying urea of formaldehyde foam or any other thermal insulation with a water content into wall cavities in an attempt to reduce energy consumption.</p>
<p>Installing insulating material on the inside of masonry walls to increase energy efficiency where there is no character-defining interior moulding around the window or other interior architectural detailing.</p>	<p>Resurfacing historic building materials with more energy efficient but incompatible materials, such as covering historic masonry with exterior insulation.</p>
<p>Installing passive solar devices such as a glazed “trombe” wall on a rear or inconspicuous side of the historic building.</p>	<p>Installing passive solar devices such as an attached glazed “trombe” wall on primary or other highly visible elevations; or where historic material must be removed or obscured.</p>
<p><b>Roofs</b></p>	
<p>Placing solar collectors on non-character-defining roofs or roofs of non-historic-adjacent buildings.</p>	<p>Placing solar collectors on roofs when such collectors change the historic roofline or obscure the relationship of the roof to character-defining roof features, such as dormers, skylights, and chimneys.</p>
<p><b>Windows</b></p>	
<p>Utilizing the inherent energy conserving features of a building by maintaining windows and louvered blinds in good operable condition for natural ventilation.</p>	<p>Removing historic shading devices rather than keeping them in an operable condition.</p>
<p>Improving thermal efficiency with weather-stripping, storm windows, caulking, interior shades, and, if historically appropriate, blinds and awnings.</p>	<p>Replacing historic multi-paned sash with new thermal sash utilizing false muntins.</p>
<p>Installing interior storm windows with airtight gaskets, ventilating holes, and/or removable clips to insure proper maintenance and to avoid condensation damage to historic windows.</p>	<p>Installing interior storm windows that allow moisture to accumulate and damage the window.</p>
<p>Installing exterior storm windows which do not damage or obscure the windows and frames.</p>	<p>Installing new exterior storm windows which are inappropriate in size or color and which are inoperable.</p>

Energy Retrofitting (continued)	
<u><i>Recommended</i></u>	<u><i>Not Recommended</i></u>
<p>Considering the use of lightly tinted glazing on non-character defining elevations if other energy retrofitting alternatives are not possible.</p>	<p>Replacing windows or transoms with fixed thermal glazing or permitting windows and transoms to remain inoperable rather than utilizing them for their energy conserving potential.</p>
<p><b>Entrances and Porches</b></p>	<p>Using tinted or reflective glazing on character-defining or other conspicuous elevations.</p>
<p>Utilizing the inherent energy conserving features of a building by maintaining porches, and double vestibule entrances in good condition so that they can retain heat or block the sun and provide natural ventilation.</p>	<p>Enclosing porches located on character-defining elevations to create passive solar collectors on airlock vestibules. Such enclosures can destroy the historic appearance of the building.</p>
<p><b>Interior Features</b></p>	<p>Removing historic interior features which play a secondary energy conserving role.</p>
<p>Retaining historic interior shutters and transoms for their inherent energy conserving features.</p>	<p>Installing new additions, such as multistory solar greenhouses additions, which obscure, damage, destroy character-defining features.</p>
<p><b>New Additions to Historic Buildings</b></p>	<p>Installing new additions, such as multistory solar greenhouses additions, which obscure, damage, destroy character-defining features.</p>
<p>Placing new additions that have an energy conserving function, such as a solar greenhouse on non-character-defining elevations.</p>	<p>Apply urea formaldehyde foam or any other thermal insulation with a water content or that may collect moisture into wall cavities</p>
<p><b>Mechanical Systems</b></p>	<p>Apply urea formaldehyde foam or any other thermal insulation with a water content or that may collect moisture into wall cavities</p>
<p>Installing thermal insulation in attics and in unheated cellars and crawlspaces to conserve energy.</p>	<p>Apply urea formaldehyde foam or any other thermal insulation with a water content or that may collect moisture into wall cavities</p>

**NEW ADDITIONS TO HISTORIC BUILDINGS**

An attached exterior addition to a historic building expands its “outer limits” to create a new profile. Because such expansion has the capacity to radically change the historic appearance, an exterior addition should be considered only after it has been determined that the new use cannot be successfully met by altering non-character-defining *interior* spaces. If the new use cannot be this way, then an attached exterior addition is usually an acceptable alternative. New additions should be designed and constructed so that the character-defining features of the historic building are not radically changed, obscured, damaged, or destroyed in the process of rehabilitation. New design should always be clearly differentiated so that the addition does not appear to be part of the historic resources.

<u><i>Recommended</i></u>	<u><i>Not Recommended</i></u>
<p>Placing functions and services required for the new use in non-character-defining interior spaces rather than installing a new addition.</p>	<p>Expanding the size of the historic building by constructing a new addition when the new use could be met by altering non-character-defining interior spaces.</p>
<p>Constructing a new addition so that there is the least possible loss of historic materials and so that character-defining features are not obscured, damaged, or destroyed.</p>	<p>Attaching a new addition so that the character-defining features of the historic building are obscured, damaged, or destroyed.</p>
<p>Locating the attached exterior addition at the rear or on an inconspicuous side of a historic building; and limiting its size and scale in relationship to the historic building.</p>	<p>Designing a new addition so that its size and scale in relation to the historic building are out of proportion, thus diminishing the historic character.</p>
<p>Designing new additions in a manner that makes clear what is historic and what is new.</p>	<p>Duplicating the exact form, material, style, and detailing of the historic building in the new addition so that the new work appears to be part of the historic building.</p>
<p>Considering the attached exterior addition both in terms of the new use and the appearance of other buildings in the historic district or neighborhood. Design for the new work may be contemporary or may reference design motifs from the historic building. In either case, it should always be clearly differentiated from the historic building and be compatible in terms of mass, materials, relationship of solids to voids, and color.</p>	<p>Imitating a historic style or period of architecture in new additions, especially for contemporary uses such as drive-in banks or garages.</p> <p>Designing and constructing new additions that result in the diminution or loss of the historic character of the resource, including its design, materials, workmanship, location, or setting.</p> <p>Using the same wall plane, roof line, cornice height, materials, siding lap or window type to make additions appear to be a part of the historic building.</p>
<p>Placing new additions such as balconies and greenhouses on non-character-defining elevations and limiting the size and scale in relationship to the historic building.</p>	<p>Designing new additions such as multistory greenhouse additions that obscure, damage, or destroy character-defining features of the historic building.</p>

New Additions to Historic Buildings (continued)	
<p data-bbox="407 262 589 294" style="text-align: center;"><b><u>Recommended</u></b></p> <p data-bbox="199 331 797 457">Designing additional stories, when required for the new use, that are set back from the wall plane and are as inconspicuous as possible when viewed from the street.</p>	<p data-bbox="1015 262 1226 294" style="text-align: center;"><b><u>Not Recommended</u></b></p> <p data-bbox="824 348 1419 407">Constructing additional stories so that the historic appearance of the building is radically changed.</p>

## **Appendix B: TREE CARE and MAINTENANCE**

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### **Selecting Your Tree**

Trees are for a lifetime, so it pays to spend time now making sure you get the best. In fact, several months before you plant is not too soon to start shopping. Here are four steps to help you make the right decisions:

1. Think clearly about the purpose of your new tree.  
(Examples: shade, privacy, aesthetics, windbreak, etc.)
2. Write down the limitations of the site where you will be planting.  
(Examples: overhead wires, confined root zone, dry climate, clay soil, etc.)
3. Select the species or cultivar to plant that best matches the above conditions you have identified.
4. Examine the trees before you buy, and buy for quality.

Buy only from reputable nurseries (local or mail order). Are they members of professional organizations such as the Mailorder Association of Nurseries or the American Association of Nurserymen? If local, do they have knowledgeable staff to answer questions and care for trees properly “behind the scenes?”

### **Look for These Physical Characteristics in Your Trees:**

#### **Trunk-**

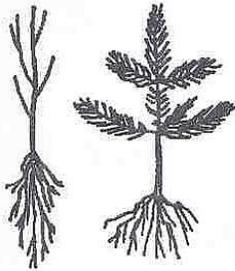
- Is it reasonably straight? Does the trunk taper nicely?
- Is the bark free of cuts and scrapes?  
(Reject trees with wounds wider than  $\frac{1}{4}$  the circumference of the trunk.)
- Are pruning wounds healed over?  
Is it free of frost cracks, sunscald, swollen areas and evidence of disease or insect injury?

## Trunk-

### What is Caliper?

Trunk diameter on young trees is referred to as its caliper size. For standardization, this measurement is taken 6" above the ground on trees with a diameter of 4" or smaller, and 12" above the ground on larger planting stock. The diameter of larger trees is measured approximately 4 ½ feet above ground level and is expressed as diameter breast high (DBH).

#### Bare Root Seedlings-



- Roots should be moist and fibrous.
- Deciduous seedlings up to 10" in height should have roots approximately equal to the stem length; from 12" – 24", look for roots approximately 10" – 12" long.

**NOTE:** Bare root trees of large sizes are also available, but at fewer and fewer nurseries. It may be worth locating a source, as this can often save you 30 to 50 percent of the cost. Careful storage is necessary to prevent drying and planting must be completed before dormancy ends. Success is best with species that continue stem elongation all summer, such as locust hackberry and elm.

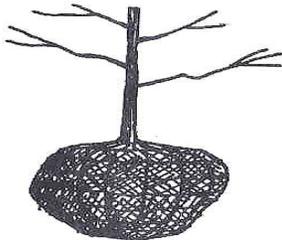
#### Containerized Seedlings-



- The soil plug should be moist and firm.
- Avoid tall, spindly tops. Well developed roots are more important than height of the seedling.

## Roots-

- Is the root ball firm to the touch, especially near the trunk?
- Is the root ball adequate for the tree's size? (See Chart, Page 4)
- Are large, circling roots absent?  
(Check this by feeling down into the top 3' or 4" of the pot.)
- Are pruned roots cut cleanly and no wider than an average finger?
- Are soil and roots joined tightly?



(B & B) Balled and Burlapped



Potted

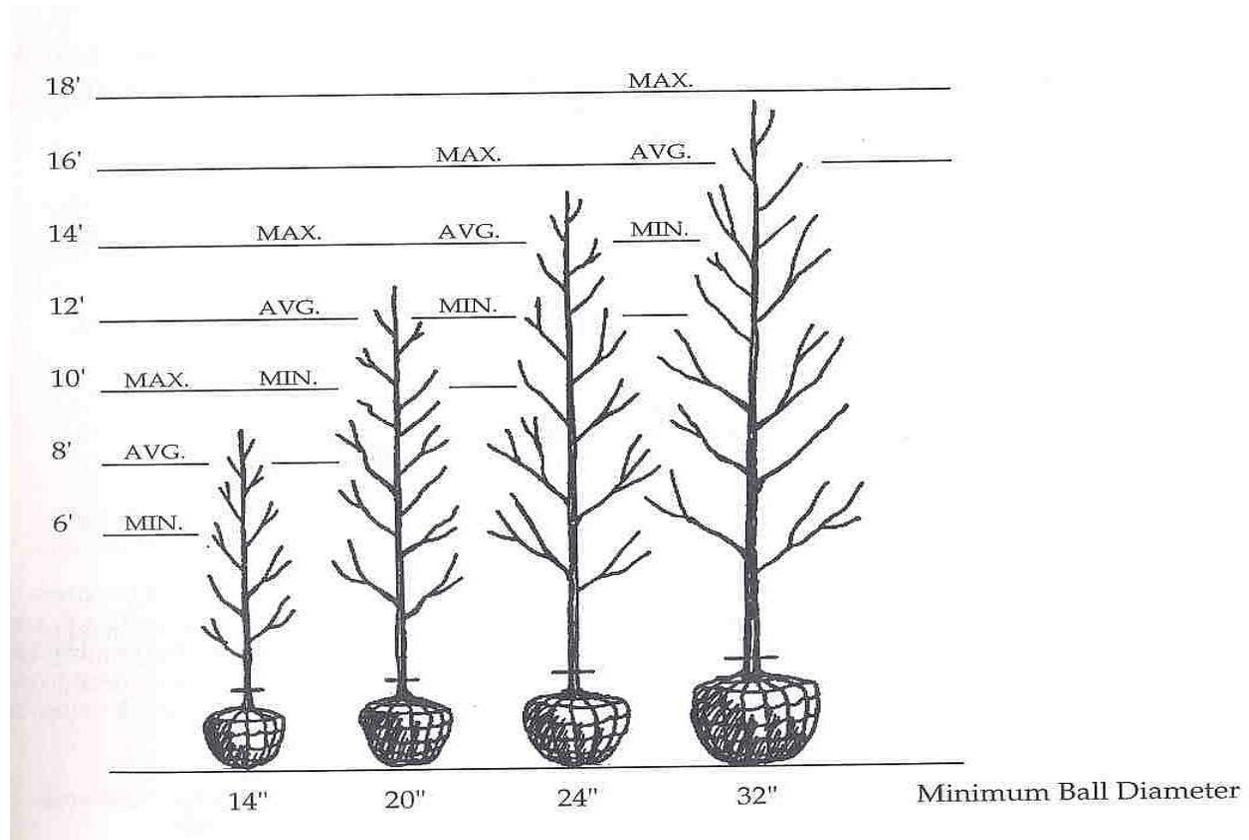
## Crown/Branches

- Is the tree symmetrical?
- Is there a single, well developed leader?
- Are buds plump and healthy looking?
- Are branches well distributed around the trunk and considerably smaller than the trunk?
- Do branches approach the ideal spacing of 8"-12" apart and form at least a 45 degree angle with the trunk?

**NOTE:** Avoid trees that have been “headed back,” the undesirable practice of pruning off the ends of branches. This is sometimes done to reduce the size of an overgrown tree to meet specifications.

## How to Check Proper Size and Root Ball Proportions

To reduce transplanting shock and assure that adequate feeding roots are moved with the tree, the American Association of Nurserymen has established standards for height-diameter relationships and root ball sizes. This chart illustrates these standards for most deciduous shade trees. A more complete range of sizes may be found in American Standard for Nursery Stock.



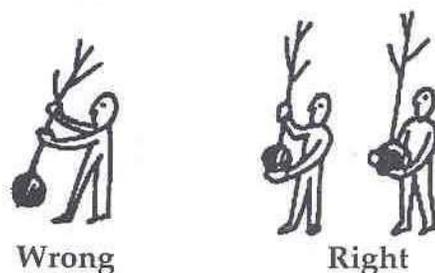
## How to Plant a Tree So It Lives

The goal of tree planting is to have a vigorous, healthy tree that lives to the limits of its natural longevity. Achieving this goal begins with careful tree selection. Next, the tree must be handled carefully until it is safely installed in its new home.

### Trees-Handle With Care

Trees are perishable products and must be treated accordingly. Reputable nursery operators know how to protect trees in shipment or while on display, but after that it is up to you. These two cardinal rules will help keep your trees alive until you get them into the ground.

1. **Carry trees carefully.** When transporting, load and unload gently, being careful not to break branches. Always provide support beneath balled or potted plants.



2. **Keep roots moist!** Depending on the trees and how long you must store them before planting, techniques to prevent drying vary. They include re-dampening the packing material around small bare root seedlings and storing in a refrigerator between 30- 40 degrees F. Bare root trees of all sizes may also be stored by placing the roots and their packing material under loose soil in a shallow trench. The garden often is a handy place to do this. While actually planting, continue to protect the roots from wind and sun by wrapping in wet burlap or carrying in a bucket of water, possibly with mud, moss or sawdust added.

Balled and burlapped or potted trees should be checked for dryness by finger length probing into the soil. Sprinkle or water if necessary. Then store them in a cool garage or shaded area out of the wind.

**Tip:** Buy early in the season to get the best selection of trees – then plant without delay.

## Planting Bare Root Seedlings



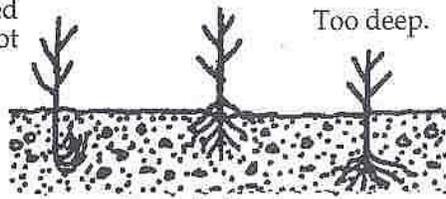
In light or sandy soil, a planting slot makes the job fast and easy. Planting small seedlings in a garden or other temporary spot for the first year is a way to assure better protection, watering and weed control until the seedling is larger. Then it may be transplanted to a permanent location.



In heavier (clay) soil or when planting larger bare root stock, it is best to use the shovel and hole method. This prevents soil compaction and glazing of the hole's sides, allowing new roots to spread more easily.

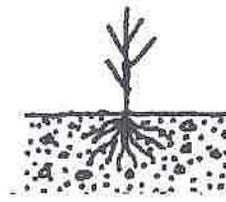
## Avoid These Common Planting Errors:

J- or U- shaped roots. Hole not large enough.



Too deep.

Too shallow or soil washed away.



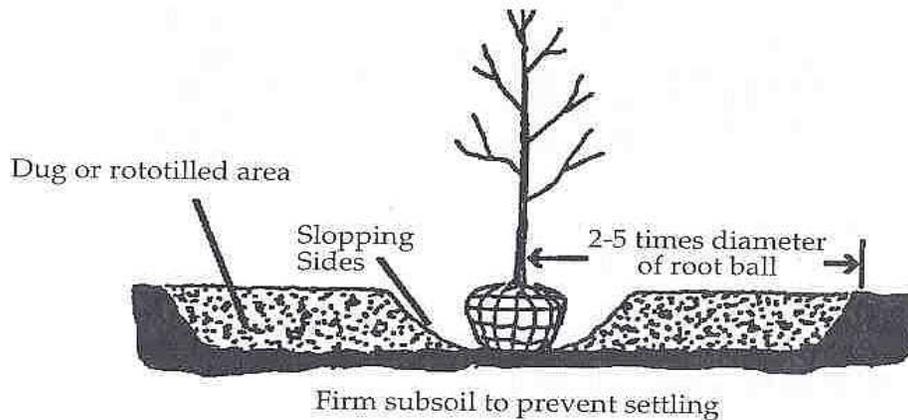
Roots spread down and outward. Soil level even with root collar (soil level where the seedling was grown in the nursery).

## Planting Burlapped or Potted Trees

Recommendations for planting have evolved in recent years as more is learned about the nature of roots and urban soils. Local conditions make generalizations difficult, but here are some guidelines that reflect the latest opinions of tree experts:

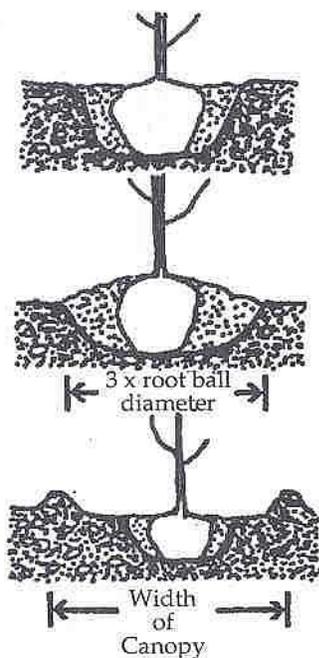
## The Planting Hole

More than any other change in tree planting procedures is the new focus on the planting hole. It can be summed up by the saying, “Don’t plant a \$100 hole!” Proper preparation will encourage root growth rather than adding to the difficulties already challenging the young tree. Here’s the way to give your tree a boost toward rapid growth and recovery from transplant shock.



This method recognizes the fact that most roots spread through the top 12” of soil in a wide periphery around the tree. Therefore, slope the side of the hole and dig or deeply rototill an area around the hole at least twice the diameter of the ball or container. An area up to five times the diameter is recommended if the soil is particularly compacted, the roots of other trees will not be damaged, and space and aesthetics allow.

## How Deep Should You Plant?



- Under normal conditions, root growth is best encouraged by planting even with the surrounding terrain.
- When wet conditions or heavy soil are problems, raising about 1/3 of the root ball above ground will aid the spread of lateral roots.
- In arid climates, a basin can be used to collect precious water.

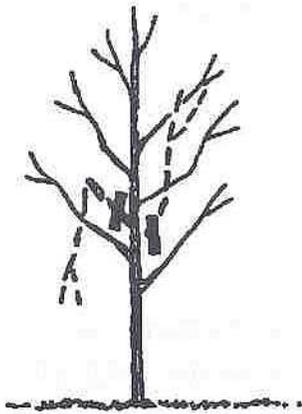
## Filling the Hole

Backfill with native soil unless it is clay from basement excavation or other undesirable fill material. In that case, mix in soil amendments according to instructions from a local nursery, or bring in as much good topsoil as possible. Tamp gently and add water to fill large air spaces and to give your tree its first good drink in its new home. As the tree grows, be sure to water the surrounding soil area to encourage root spread.

## What About the Wrapping Material?

Research has not yet provided a definite answer about the potential harm of leaving wire baskets in place after planting. However, the most prudent action is to cut and remove the top two tiers of wire after the ball is set in the hole. Problems more serious than wire baskets are treated burlap (feels like plastic) and nylon rope. Both should be completely removed. Other kinds of burlap and twine, even if biodegradable, should be cut away from the upper 1/3 of the ball. Never let the remaining pieces protrude above the soil or they can act as wicks, drying the soil. Trees in pots or cans should be gently removed before planting. Cut away the plastic or metal if the root ball does not slide out easily. Paper or plastic trunk wrappers should also be removed. This material was put on the tree to protect it during shipment and will generally do more harm than good if allowed to remain on the tree.

## Following Up After Planting



*Leave as much leaf as possible to help the tree build food reserves. Properly prune out dead or broken limbs, or those that rub. Do corrective pruning for shape the second year.*

### Watering

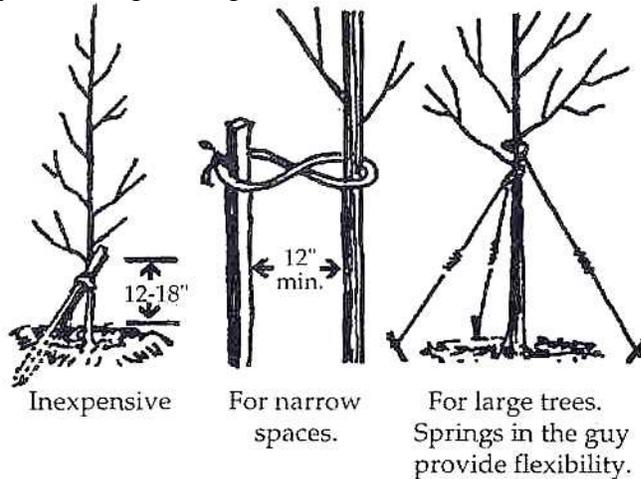
Watering is the key to tree survival. It should be used when filling the planting hole to eliminate large air cavities, firm the soil around fine roots and make nourishment available to the new tree. During planting, bare root trees can be dipped in water absorbing polymers. This amazing chemical comes under a variety of brand names and is available from nurseries. Its function is to attract water when abundant and hold it longer than soil when condition get dry. It can also be used with balled and burlapped trees, being mixed with the backfill. The effects last for about two years. With or without the aid of polymers, water deeply around your tree once a week during warm dry spells.

### Fertilizing

Avoid fertilizing shade trees until late spring of the second year following planting. fertilizers can “burn” roots or stimulate crown growth faster than the roots can supply water.

## Staking

Stakes and guy wires should be used only if support is necessary. Stakes sometimes create tripping hazards and can weaken a young tree. However, when using, avoid common problems by following these guidelines:



- If the main stem droops, find the best place for support ties by moving your hands up the trunk to locate the point above which the top can stand up on its own. Place the support ties about 6" above the point.

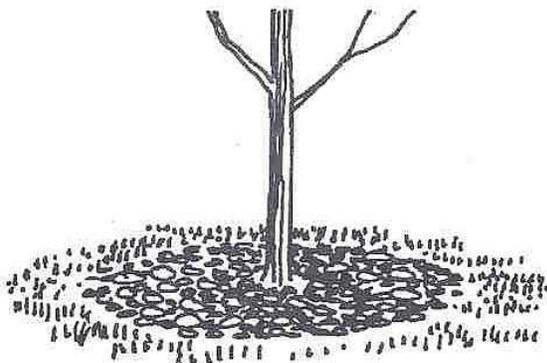
- Ties can be made many ways, but a loosely-fitted figure 8 tie made of polyethylene, cloth or webbed strap is easy to install, provides good support and cushions the tree from rubbing against the stake. Using two ties will also minimize the chance of bark damage from rubbing.

*Stakes vary with space available and personal preference, but should be used only when absolutely necessary.*

- Regardless of the tie used, allow slack for the top to sway.
- Avoid driving stakes through the rootball, or using stakes with flanges that will break roots when removed.
- Remove support ties after one or two years.

## Pruning

Unless directions specify otherwise, it is better not to prune after the planting if the tree will be watered regularly. Leaves manufacture the food needed for root growth, so the young tree needs as much of its crown as possible. Exceptions to this rule include trees that will be exposed to strong winds or drought conditions, in which cases early pruning will reduce the demand for water from the roots. Always prune dead or broken branches.



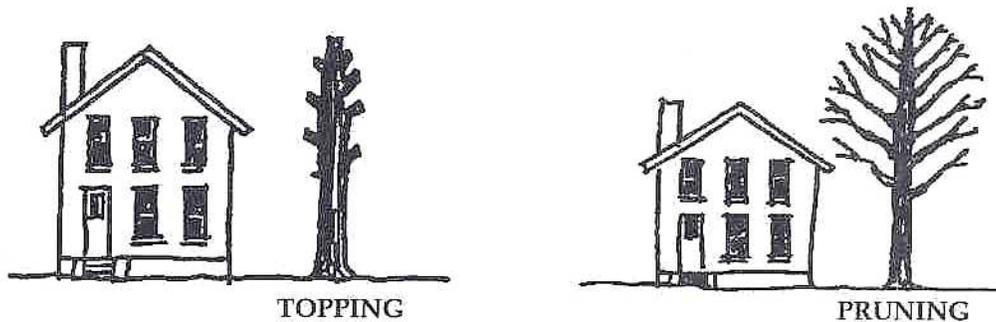
*Mulch is any material placed on soil to protect it and that does not cause the plant problems. Common mulches include bark, wood chips, decorative gravel and crushed lava.*

## Mulch

Mulch is a young tree's best friend. It holds down competing weeds or grass, retains soil moisture, prevents soil cracking that can damage new roots, protects the trunk from lawnmower damage, and helps prevent soil compaction. Organic mulches such as wood chips or pine needles also contribute to better soil structure and aeration as they decompose. Avoid limestone rock and allow no mulch to touch the tree's trunk or be piled higher than 3 inches.

## What is Topping?

Topping is the excessive trimming and/or elimination of the tree crown, limbs and branches which gives the tree an abnormal vertical orientation.



## What is Pruning?

Pruning is the acceptable process of removing branches and limbs in such a manner as to reduce potential hazards from overgrowth, and produce a desirable form, minimizing the negative effects which occur from excessive removal, or “topping.”

## Why NOT to “Top”

**Starvation:** Good pruning practices rarely remove more than 1/4 to 1/3 of the crown, which in turn does not seriously interfere with the ability of a tree’s leafy crown to manufacture food. Topping removes so much of the crown that it upsets an older tree’s well developed crown to root ratio and temporarily cuts off its food making ability.

**Shock:** A tree’s crown is like an umbrella that shields much of the tree from the direct rays of the sun. By suddenly removing this protection, the remaining bark tissue is so exposed that scalding may result. There may also be a dramatic effect on neighboring trees and shrubs. If these thrive in shade and the shade is removed, poor health or death may result.

**Insects and Disease:** The large stubs of a topped tree have a difficult time forming callus. The terminal location of these cuts, as well as their large diameter, prevent the tree’s chemically based natural defense system from doing its job. The stubs are highly vulnerable to insect invasion and the spores of decay fungi. If decay is already present in the limb, opening the limb will speed the spread of disease.

**Weak Limbs:** At best, the wood of a new limb that sprouts after a larger limb is truncated is more weakly attached than a limb that develops more normally. If rot exists or develops at the severed end of the limb, the weight of the sprout makes a bad situation even worse.

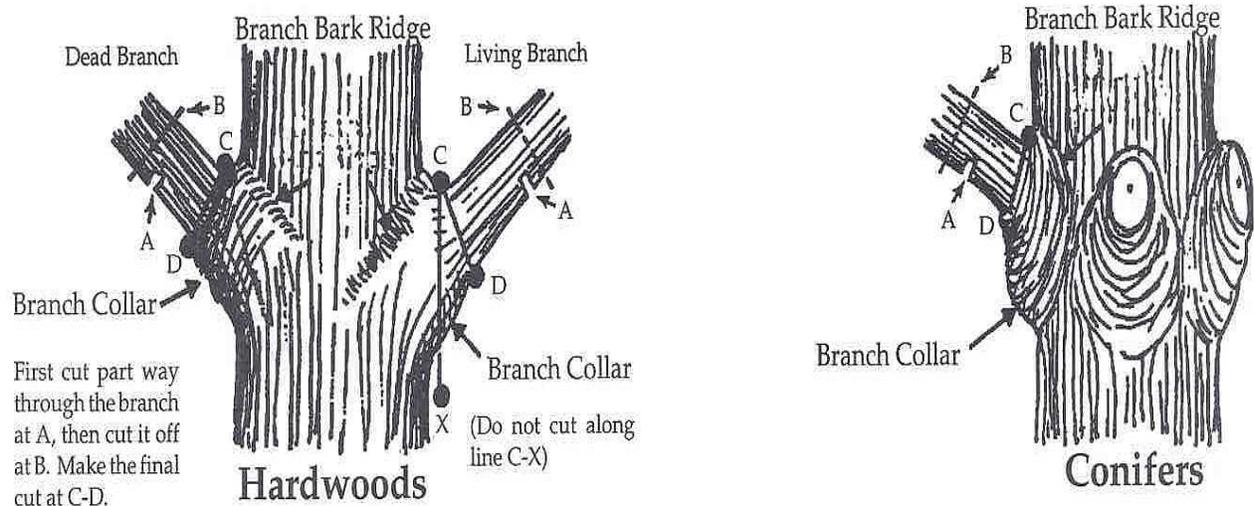
**Rapid New Growth:** The goal of topping is usually to control the height and spread of a tree. Actually, it has just the opposite effect. The resulting sprouts (often called water sprouts) are far

more numerous than normal new growth and they elongate so rapidly that the tree returns to its original height in a very short time with a far denser crown.

**Tree Death:** Some older trees are more intolerant to topping than others. Beeches, for example, do not sprout readily after severe pruning and the reduced foliage most surely will lead to death of the tree.

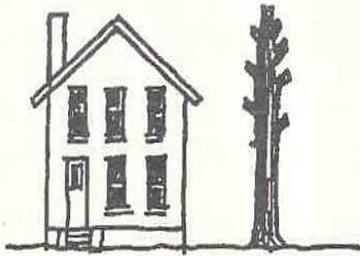
**Ugliness:** A topped tree is a disfigured tree. Even with its regrowth it never regains the grace and character of its species. The landscape and the community are robbed of a valuable asset.

## Proper Pruning Principles



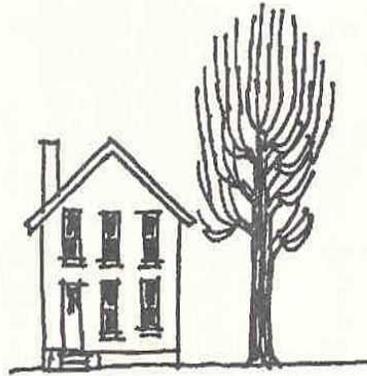
Thanks largely to the work of Dr. Alex L. Shigo and other scientists at the USDA Forest Service's Northeastern Forest Experiment Station in Durham, NH, much is now understood about a tree's natural system of defense against infections from wounds. Based on this knowledge, these methods of making pruning cuts are recommended to help work with rather than against a tree's natural tendency to wall off injured tissues and prevent the spread of decay. In these illustrations, final cuts should be made from points C to D. Do not cut along line C-X, which is simply an imaginary vertical line to help you locate C-D.

## TOPPING



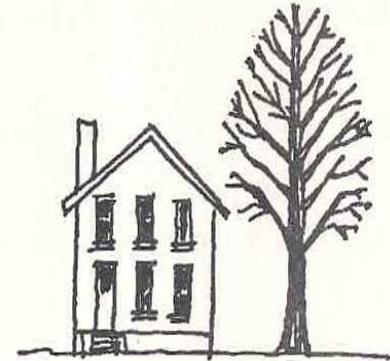
*Original*

## PRUNING



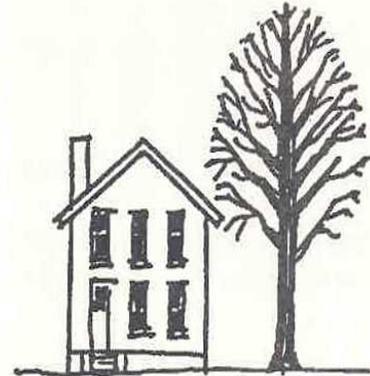
### Year 3

Vigorous sprouts have sprung out of the topped tree in large numbers and are growing with abnormal rapidity. The pruned tree adds growth more slowly and more normally distributed.



### Year 6

In a relatively short time, the topped tree is as tall - and far bushier and more dangerous - than it was to begin with. The properly pruned tree is safer, more beautiful, and its size better controlled.



## Canker Worm Prevention:

Cankerworms (commonly called inchworms) are quite common in Concord and the surrounding areas. Their existence leads to unwelcome webs hanging from trees and causes a loss of leaves in the spring.

Cankerworms emerge from the ground during the late fall and early winter months following cold snaps. The females crawl up the tree to mate with the winged males. The female then lays her eggs, typically encompassing small clusters of branches. Around March and April the eggs begin to hatch and the cankerworm larvae begin to feast on the spring leaves. Within about a month, the fully matured worms spin silk, web-like, threads and descend towards the ground. They burrow into the ground, spin a cocoon, and begin the process again.



The best defense against these small but bothersome worms is tree banding.

### What is Tree banding?

Tree banding is a method by which a sticky barrier is installed around the tree trunk, trapping the wingless female cankerworm moths as they attempt to climb the tree. They are unable to reach the top, mate, and lay eggs. This prevention method is best performed around the last week of November or the month of December, when most of the leaves have already fallen, in order to reduce cankerworm numbers the following year. Cankerworms have a preference for maples, oaks and elms, and trees taller than 20 feet. Trees less likely to need banding are pines, yellow poplar, and Carolina poplar.

### How to Band a Tree:

Remember, the objective of tree banding is to prevent the flightless female moths from ascending the tree to lay their eggs. To a small degree they can help prevent hatched larvae that have fallen to the ground from re-ascending the tree to feed on the leaves. But the majority of the hatched larvae travel on the wind, riding their silken threads.

There are three main components needed in a banding set up.

- 1) Cotton batting or fiberglass insulation placed on the trunk to prevent the moths from crawling behind the barrier. If a tree has large crevices in the bark you should gently push the batting into the crevices as much as possible. Do not chip away at the bark to create a smoother surface.
- 2) Tar paper or similar material, at least 6" in height, placed over the batting and secured with staples or waterproof tape on the upper and lower edges. Do not use nails. Be mindful that the use of a plastic wrap in this component will hold moisture against the trunk and could cause decay issues if left on too long; especially on thin barked trees.

- 3) A sticky insect barrier such as “Tangle Foot” available at garden supply stores. Apply this with a putty knife around the entire band of tar paper on the lower 3” to 4”. These materials apply easier when they warmed above 75 to 80 degrees. Over time this first band may become coated with insects, leaves, and debris which will lessen its effectiveness. Another coat of insect barrier can then be applied to the tar paper above the first application.

Monitor the bands regularly for needed repairs of reapplication of the insect barrier glue. Do not leave the barriers on the trees beyond the end of April.

## **Source of Information**

Appendix B, Tree Care and Maintenance was adopted from Tree City USA Bulletin 8 (“Don’t Top Trees!”) and 19 (“How to Select and Plant a Tree”) and was published by:

The National Arbor Day Foundation, 100 Arbor Avenue, Nebraska City, NE 68410.

## **Appendix C: SUGGESTED REFERENCES**

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