HISTORIC PRESERVATION MAINTENANCE

> Historic preservation is among other things the avoidance of waste. Waste of beauty, time, energy, materials.
>
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> Historic Preservation
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The real preservation responsibility for any historic property is appropriate and continued maintenance. Proper maintenance requires skill and sound judgement backed by financial and managerial support to assure that the resource being maintained can be protected from attacks of climate, chemical and biological agents, normal use and intentional abuse. Maintenance can be defined as the day to day activities necessary to prolong the life of an historic property. The end product of preservation maintenance is to make the historic resource last as long as possible.

Buildings, by nature, are dynamic structures. They are moving, breathing--if you will, all the time, responding to the climatic forces around them. All objects, organic and inorganic are in a constant process of change. Organic construction materials like wood, paint and asphalt deteriorate, returning to the earth to nourish the currently growing crop of organic materials. So too, many inorganic building materials

try to change from their refined state back to the original oxide, like rust; other materials, like the stone employed in the construction of the Stewart Indian School, are already oxides, and wear away as the result of abrasian and through the process of expansion and contraction brought on by the freeze thaw cycle. The purpose of preservation maintenance is to slow down the process of change. Although preservation maintenance holds back deterioration, it cannot eliminate it. Stopping deterioration is impossible, but first quality maintenance will retard it.

MANAGEMENT AND SUPERVISION

Any preservation maintenance program is only as good as its management and supervision. The normal maintenance employee must be trained and instructed to know exactly what is expected of him/her. Regular inspection and review of work completed must be reinforced with appropriate records and reports. Maintenance manuals should be prepared to include a time budget, a materials budget, and a materials and equipment inventory showing the stock on hand and sources for the material. They should outline the daily cleaning routines, job procedures and the cleaning schedules by area and job. The building cleaning schedule, the log of maintenance work done and the list of maintenance work to be done should be included, as well as records of any new materials being tested.

In general it can be said that any maintenance work which is to be done more frequently than every two years is an item for the normal maintenance staff. If the interval

exceeds two years the item should be individually evaluated for possible contract service. Included in the contract category for the Stewart Indian School would be: termite and insect control; major replacement or repair of roads and sidewalks; repointing of stone masonry walls; exterior masonry cleaning; reroofing (but not individual shingle replacement); new gutters and downspouts (but not cleaning and inspection of same); window and door replacement; replastering; major mechanical systems replacement; replacement or up-grading of utility systems; replanting and maintenance of landscaping. With the development of a vocational technological facility as proposed for the school complex some of the above categories might be addressed, at appropriate skill levels, through curricula training.

EMERGENCY REPAIRS AND STABILIZATION

As noted in earlier sections of this report one reappearing pattern in the history of the Stewart Indian School has been that of deferred maintenance. It was, perhaps with this problem in mind that Superintendent Frederick Snyder instituted his stone building construction program in the early 1920's. In his own words, "they look so much better and last so much longer than frame buildings, and there is no great problem of upkeep." It is surprising in 1982 to see the truth of his statement in the general quality and condition of the stone building stock.

In spite of a continued pattern of deferred maintenance, these stone buildings, because of the quality of their initial

construction and climatic conditions that seem to inhibit organic infestation, are in remarkably good condition, with a number of them in active use as office space and residential housing. Limited structural problems appear to exist in a few of the buildings, but for the most part, deterioration has been a product of inadequate weather protection. Structural considerations must be addressed by the adaptive use development team engineer and architect. However, this report will respond in general to emergency repairs and stabilization.

Weather Protection

The first priority in weather protection is to stop penetration. Temporary measures may include cleaning and repair of rain gutters and the direction of downspout discharge away from the building foundation. Roof maintenance is very important. Accumulated trash should be removed from the surface, especially valleys and gutters. Missing shingles should be replaced especially those along the ridglines. All flashing should be inspected and repaired or replaced where necessary. At Stewart, plywood sheets have been placed over the windows of the closed buildings, some nailed directly into the window trim. No venting holes have been drilled in them to allow for air circulation to keep down the moisture content and inhibit the development of biological agents. In many instances, when the utility systems were turned off the water was drained directly into the basements where it still stands causing further deterioration of the structures. It is imperative that this condition be rectified as soon as possible.

Broken or missing windows on some of the campus buildings should be replaced to keep moisture and small animals and birds out. In some of the empty residential buildings buckling floors evidence burst or leaking water pipes, the result of winter freezing.

It should be noted that those measures taken to repair and retard deterioration must be executed in such a way that they are reversible and will not hinder future, permanent repairs.

Exterior Woodwork

Other areas for weather penetration include exterior woodwork. Proper care of this important element of architectural character is to keep it dry. Most of the windows in both campus and residential structures are metal casement type, but those that are of wood should be properly caulked with latex or butyl caulks, the wood surface cleaned, prepared for painting, and an appropriate paint selected. The following is an extract from the Department of the Interior's Rehab Tech Notes, concerning a new water-repellent treatment for exterior woodwork that provides excellent long-term decay resistance.

> The water-repellent treatment is easily done before or after construction and before painting. A simple formula, easily prepared is:
>
> | | |
> |---|---|
> | Exterior varnish | 3 cups |
> | Paraffin wax | 1 ounce |
> | Mineral spirits or paint thinner or turpentine | Add to make 1 gallon |

> Treatment is best done by dipping the wood for 1 to 3 minutes in the solution. If dipping is inconvenient, liberal brush application can be made - paying particular attention to heavy treatment of all board ends and joints. The treated surface can be painted after 2 or 3 days of warm weather. In fact, paint should last longer over the treated surface than over untreated wood.

Because of the limited exterior wood surfaces found in the construction of the Stewart complex/this treatment, except where the staining of wood shingles would be more appropriate, should be universally employed.

In this regard, research of the existing plans and drawings for buildings at the school held by the Stewart Agency staff contain the following specific information on the original color scheme for employees' Cottage # 65.

> Exterior doors and shutters to be painted Light Green. Other exterior woodwork to be painted Oyster Gray. Shingles (rigid asbestos was used instead of the wood called for) to be stained a Dark Grayish Green. Porch ceiling to be painted a Light Bluish-Green. All interior woodwork to be painted Light Ivory. Interior steps to be painted Medium Gray. Pipe rail and basement sash (and coal chute) to be painted Medium Gray. Footscraper to be painted Black. All paint to have a semi-gloss finish.

Early stone buildings in Snyder's "rustic" style had Dark Brown stained shingles, and should be returned to that color during rehabilitation.

The roof perimeters at Stewart consist almost entirely of two types, Boxed cornices and exposed rafter tails. Most appear to be in good condition but in need of paint. However, because access to attic spaces has been limited, it is possible that small, circular venting units might be called for in the

soffits and along the roof perimeters where specific inspection detects rot or fungus growth associated with excess humidity.

Masonry

Moisture causes nearly all problems associated with older masonry buildings. Once saturated, stone and brick deteriorate, either through frost damage or through salt crystallization. Adequate protection from the damaging effects of moisture should be the highest priority of the preservation maintenance program once emergency repairs and structural stabilization have been addressed.

There are three main areas of consideration in the maintenance of stone. Repointing, the process of raking out deteriorated mortar by hand and replacing it with new mortar, is a standard form of maintenance for stone buildings.

According to former Stewart stonemason Joe Buckhart, the formula for making mortar at the school during the construction phase from 1932 to the early 1940's was as follows:

> The sand for the mortar mix came from deposits along old Highway 50. One square ended shovel of Portland cement was added to four of sand mixed with lime, (one sack of commercial lime to forty shovels of sand). The walls were built up about four feet, then pointed with lampblack. A space one inch deep was left in the wall to allow for the pointing mixture.

Despite this kind of specific information, when repointing a building, the mortar mixture should be analyzed to assure its compatibility with the existing materials of the wall construction. Replacement and repair, the second area of consideration,

should be done with trained craftsmen contracted for the job. The third, cleaning, should also be contracted. A variety of cleaning methods and techniques for stone exist. The oldest and still most versatile process for cleaning stone is with water and bristle brushes. Remembering the preservation maintenance rule that everything you do must be reversible, never sandblast any masonry surface.

Metal Building Components

At Stewart many metal railings are set into both stone walls and concrete steps or landings. Moisture entering openings around the point of contact causes the metal to oxidize and expand its volume resulting in the splitting of the stone or concrete. This allows for the entrance of even more moisture and generally causes the failure of the component over time. To alleviate this condition the metal parts must be removed and cleaned or replaced, and reset in a lead or hydraulic cement casing. This kind of damage is much in evidence around the campus.

Exterior metal components should be properly painted to protect the metal from moisture and its consequence. Once cleaned with a motorized or manual rotary wire brush, the element should be degreased with alcohol then immediately painted with a rust retardant primer, followed by a generous coat of exterior enamel paint in an appropriate color.

One of the most interesting exterior metal components found on the Stewart campus is the series of varied shield-

design pressed-metal roofs. If it is determined to maintain these historically significant and aesthetically pleasing roof coverings they should be inspected for condition and painted with "tinner's red" paint on a scheduled basis. Whereas this treatment will insulate and protect the metal from the elements, bituminous or asphaltic coatings, because of their specific chemical composition, will accelerate the deterioration of the material.

Mechanical Systems

As noted earlier, mechanical systems should be the province of contracted professionals. However, there are many instances when aesthetic decisions must be made concerning the proper placement of new mechanical systems. Careful planning with a view toward architectural integrity must be the rule here, especially when certification is desired for tax incentives available through historic preservation.

Landscape

One of the most important features of the Stewart Indian School is its parklike landscape setting. This element of the campus is as historically important as the collection of stone buildings that make up the school's physical plant. In this regard it should be restored as authentically as possible to its appearance when it was considered the garden spot of Nevada in the early 1930's. This action would probably make the school grounds the largest more or less formal public

gardens in the state and become a significant tourist attraction for Nevada and the Western United States.

Funding for such a program could be included in the lease agreements with potential tax advantages for contribution if a garden group formed and created a 501 (c) (3) non-profit corporation. This action would allow anybody interested in the gardens to support their development, operation and maintenance. Consider the annual horticultural events that could be staged on the campus, drawing visiters to the Western Nevada and Carson City economies.

It would be requisite in such a program that the replacement of and addition to the existing flora be done with strict attention to the historic record. Site plans photographs and recorded data about the appearance of the campus in the 1930's are available for research. As the adaptive re-use program progresses, above ground utility systems should be undergrounded to open the landscaped garden setting visually. By enhancing the landscape in this way other benefits accrue. As noted in the Cultural Resources Inventory Project for Carson City in 1980.

> The energy conservation, ecological and aesthetic aspects of street trees should also be considered. Deciduous trees that shade, cool and cleanse the air during the summer months, can cut down on air conditioning and cooling needs. For instance shade trees properly scaled and planted can reduce summer temperatures from ten to twenty degrees. Trees also shade and cool large heat-absorbing areas such as asphalt and concrete parking areas. Conversely, in the winter time, these deciduous trees will permit needed sunlight to warm structures. In a collective sense, trees and landscaping can act as screening for visually unattractive areas, control and prevent

> erosion, act as wind barriers, muffle street traffic noises, provide shade to enhance pedestrian activity and assist in dust abatement.

The landscaping of new parking lots at Stewart will be another requirement that will have to be addressed. The model developed in the Carson City Inventory should be employed as a guide when meeting the zoning specifications of Carson City.

> Parking lot landscaping should include not only the lot's exterior edges but also the interior areas. A minimum of ten percent of the parking lot area should be devoted to landscaping. Along the perimeter, plant materials that screen and buffer the lot are desired and shade trees and low shrubs in the interior portion of the lot are desirable. Such planting will screen cars, guide traffic, provide shade and buffer traffic noises.

Carson City's Zoning Ordinance (Sections 18.05.026 and 18.05.027) states:

> Parking areas shall include landscaping as part of their design as shown on a plan submitted to the Planning Department and shall include living tree and shrub plantings within the parking area. Existing trees and shrubs shall be preserved to the fullest extent possible. At least five percent of the total area used for parking and related activities shall be established in permanent living landscaping. Desert landscaping and artificial turf are permitted. Landscaping adjacent to the parking area on public property, planted and maintained by the parking lot owner, will be considered as part of the landscaping required.
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> Shrubs and trees in the landscaping and screening areas shall be maintained in a healthy growing condition. Dead or dying trees or shrubs shall be replaced immediately and the planting area shall be maintained free of weeds and trash on public as well as private property.

Maintenance Program

A preservation maintenance program at the Stewart Indian School might be approached in two ways, under a single management, depending upon the selection of adaptive use programs. If there is a combination of uses like education/research and housing, it would be reasonable that the ITCN contract out maintenance responsibilities for the education/research portion of the campus with those funds identified in the cost per square foot rental of the facility.

Housing should be approached from the perspective of the neighborhood association with maintenance requirements identified in the lease, and with a portion of the rent earmarked for the program. That money could be used, in part, to develop self-help maintenance courses in the neighborhood and produce a publication like Oakland, California's excellent publication Rehab Right, addressing the specific maintenance problems at Stewart. Supervision and review of both programs would rest with the ITCN Stewart management.

Professional Assistance

There are excellent short courses available in historic preservation maintenance through the Association for Preservation Technology aimed at the layman and administrator. Potential technical assistance grants from the National Trust or the American Association for State and Local History are available to draw the expertise necessary to assist in developing a complete maintenance program for the resource

with, perhaps some sound advice about its operation. Again, a good preservation maintenance program is key to successful long range investment in the cultural resources at Stewart.

There exist many excellent publications on the technical aspects of historic preservation and maintenance. Skilled professionals can be found through the Nevada Division of Historic Preservation and Archaeology, the National Trust for Historic Preservation and the Association for Preservation Technology. When in doubt seek professional help. Perhaps the most useful publication available to the layman and professional alike when approaching the rehabilitation of a historic property is the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings. This document is the tool employed by the Department of the Interior to certify qualified rehabilitation for federal tax incentive programs. Its use should become an integral element and guiding principle for any contract entered into by the ITCN and leasees or contract technicians involved with rehabilitation work on the Stewart Indian School. A copy is included at the end of this section.

Design Review

Design review will be necessary in the management of the Stewart complex. The school's historic nature requires special attention and consideration in dealing with any new construction that might be considered in time on the campus.

An architectural review body should be appointed from the public, private and professional communities.

> The principal objectives of this body would be to maintain the distinctive character of the district and the architectural integrity of the particular notable structures within it and to prevent intrusions into the district that would be incompatible with this established character. To accomplish these objectives the group would be given the authority to review all proposals to alter or add to existing buildings or to construct new facilities in the district. Before a building permit can be issued, the board must review the exterior appearance of the proposal in terms of its compatibility with the character of the district and issue a certificate of appropriateness. If the proposal is not acceptable, it would withhold the certificate, indicating its reasons and perhaps offering suggestions. The applicant must revise his plans to satisfy the review body.

The following guidelines for architectural review should be refined to apply to the Stewart Indian School, as a historic district.

Framework for Architectural Review

The architectural review framework outlined here is comprised of several premises:

1. Guidelines for determining appropriateness must be as objective as possible so as not to favor one particular architectural style over another. A well-designed contemporary structure should have just as much chance to "pass the test" as, for example, an equally well-designed Georgian structure.

2. The existing structures in any historic district have certain basic-visual elements and relationships in common which can be considered as the unique "design vocabulary" of that district.

3. This essential design vocabulary can be identified for any district and can be abstracted and documented as a basis for judging the appropriateness of new construction proposals without reference to architectural style.

4. The question of whether a new proposal will be compatible can be viewed in terms of a fit or misfit with the basic design vocabulary of the district. A proposal incorporating the same essential vocabulary, regardless of style, will fit and should be judged appropriate. On the other hand, a proposal reflecting a different design vocabulary (even if it offers some stylistic similarities to other structures in the district) would be considered a misfit which would not be appropriate within the district.

The discussion here is oriented toward the case of a separate new structure being judged in terms of its appropriateness for construction in the historic district. Similar focus could be placed on alterations or additions to existing structures.

Guidelines

The design of the new structure can be tested against the established design vocabulary of the district on at least three levels (though there are some overlapping concerns). Failure of the design to fit reasonably well at any one level could provide the basis for denying the certificate of appropriateness.

The first level incorporates many of the basic regulations in the zoning ordinance which affect appearance either directly or indirectly. (Misfit here would automatically mean denial because of conflict with established legal provisions.) If the proposal passes this first test, considerable design latitude would remain to be tested at the other levels. Here the guidelines would ask:

Does the new design fit with respect to:

building spacing?
lot coverage?
yard limits?
setbacks?
density of use?
bulk?
height?

At this and the other levels the specific list would be developed by the local architectural review board to reflect the existing regulations and the perceived design vocabulary of the particular district.

The second level reflects specific elements in the district's design vocabulary related to detailed architectural design. The guidelines would ask:

Does the new design fit with respect to:

- materials?
- surface textures?
- colors?
- fenestration pattern?
- utilization of characteristic local forms (such as stoops and front porches)?
- roof form and pitch?
- simplicity?
- elements of composition?
- symmetrical or asymmetrical appearance?
- basic shape or form?
- expression of detailing?

The third level draws upon elements in the district's design vocabulary related to environmental relationships. The guidlines would ask:

Does the new design fit with respect to:

- scale?
- rhythm of the block face?
- orientation?
- proportion?
- general spirit of the area?

This framework and set of guidelines attempts to provide a more objective method of evaluating the appropriateness of new construction proposals in historic areas. It is preliminary and suggestive only. Details of the guidelines at each level must be drawn from the perceived design vocabulary of the particular historic district in which the approach is to be tested.

(This design review section was excerped from Ralph W. Miner's excellent publication, Conservation of Historic and Cultural Resources, Chicago, American Society of Planning Officials, 1969.)

DRAFT PRESERVATION MAINTENANCE SCHEDULE
STEWART INDIAN SCHOOL, CARSON CITY, NV.

This draft schedule includes a summary of building elements requiring regular attention together with an indication of the minimum frequency of inspection. Urgent defects should be dealt with as soon as discovered.

From this Summary Maintenance Charts should be prepared showing the incidence of each element in each building. Copies of these charts should be kept showing:

a. Date of inspection of each item at the appropriate minimum frequency.

b. Any items requiring attention clearly "noted".

Four minimum inspection frequencies are recommended:

A. = Six monthly, a check by the maintenance staff.

B. = Annually, including Contract inspections by specialist services.

C. = Five yearly, including also an architect's report.

AA. = Continuous, checks by the maintenance staff.

Building Element	Inspection Frequency
1. GENERAL AREAS	
General cleanliness, grounds (litter free), authenticity of landscaping, parking (litter free))	AA

Building Element	Inspection Frequency
2. ROOFS	
Main flats and slopes, ridges, hips, flashings and intermediate valleys, covering to dormers and other features (e.g., porches)	A
3. RAINWATER DISPOSAL	
Gutters (including splash blocks), downspouts, fastenings	A
(Gutters should be visually checked at least once a month from November to March and cleaned if necessary.)	
4. EXTERNAL SURFACES (other than roofs)	
Walls, including cornices and vents	C
Chimneys	B
Pavings and steps	B
5. EXTERNAL components (other than rainwater disposal)	
Access steps and ladders	B
Aerials (TV, radio, etc.)	C
Ironwork and railings	C
6. INTERNAL SURFACES	
Floors, and stairs, walls, including components (e.g., cupboards and mirrors) and wall hangings, ceilings, fireplaces	C
Structural (joists, beams, plates, rafters, etc.)	B
7. WINDOWS AND DOORS	
Frames and trim	C
Sash cord and catches	A
Glazing	B
Weatherproofing	B

	Building Element		Inspection Frequency
8.	FLOOR, WALL AND ROOF STRUCTURE		
	(Defects usually revealed through elements 1-7 should always be referred to an architect.)		
9.	COLD WATER SYSTEM		
	Pressure mains	)	A
	Tanks and cisterns	)	B
	Components including overflows	)	AA
10.	HOT WATER SYSTEM		
	Boiler and fuel systems, pipework, steam heating registers	)	B
	Fittings	)	AA
11.	SANITARY COMPONENTS		
	Soil, waste and vent pipes	)	A
12.	SEWERS		
	Storm	)	C
	Foul	)	C
13.	FIRE FIGHTING EQUIPMENT		AA
	(As required by local statutes and ordinances.)		
14.	GAS SYSTEM		
	Pipework and fittings	)	B
15.	ELECTRICAL SYSTEM		
	Lighting circuits, including fittings and power circuits, including fittings	)	B
	Full testing and certification	)	C
16.	TELECOMMUNICATIONS		
	Internal	)	C (?)
	External	)	C (?)

U.S. Department
of the Interior

Heritage Conservation
and Recreation Service

The Secretary of the Interior's Standards for Rehabilitation

and Guidelines for Rehabilitating Historic Buildings

"Rehabilitation means the process of 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."

The following "Standards for Rehabilitation" shall be used by the Secretary of the Interior when determining if a rehabilitation project qualifies as "certified rehabilitation" pursuant to the Tax Reform Act of 1976 and the Revenue Act of 1978. These standards are a section of the Secretary's "Standards for Historic Preservation Projects" and appear in Title 36 of the Code of Federal Regulations, Part 1208 (formerly 36 CFR Part 67).

1. Every reasonable effort shall be made to provide a compatible use for a property which requires minimal alteration of the building, structure, or site and its environment, or to use a property for its originally intended purpose.

2. The distinguishing original qualities or character of a building, structure, or site and its environment shall not be destroyed. The removal or alteration of any historic material or distinctive architectural features should be avoided when possible.

3. 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.

4. 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.

5. Distinctive stylistic features or examples of skilled craftsmanship which characterize a building, structure, or site shall be treated with sensitivity.

6. Deteriorated architectural features shall be repaired rather than replaced, wherever 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 on conjectural designs or the availability of different architectural elements from other buildings or structures.

7. The surface cleaning of structures shall be undertaken with the gentlest means possible. Sandblasting and other cleaning methods that will damage the historic building materials shall not be undertaken.

8. Every reasonable effort shall be made to protect and preserve archeological resources affected by, or adjacent to any project.

9. Contemporary design for alterations and additions to existing properties shall not be discouraged 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.

10. Wherever possible, new additions or alterations to structures shall be done in such a manner that if such additions or alterations were to be removed in the future, the essential form and integrity of the structure would be unimpaired.

GUIDELINES FOR APPLYING THE SECRETARY OF THE INTERIOR'S STANDARDS FOR REHABILITATION

The following guidelines are designed to help individual property owners formulate plans for the rehabilitation, preservation, and continued use of historic buildings consistent with the intent of the Secretary of the Interior's "Standards for Rehabilitation." The guidelines pertain to buildings of all occupancy and construction types, sizes, and materials. They apply to permanent and temporary construction on the exterior and interior of historic buildings as well as new attached or adjacent construction.

Techniques, treatments, and methods consistent with the Secretary's "Standards for Rehabilitation" are listed in the "recommended" column on the left. Not all recommendations listed under a treatment will apply to each project proposal. Rehabilitation approaches, materials, and methods which may adversely affect a building's architectural and historic qualities are listed in the "not recommended" column on the right. Every effort will be made to update and expand the guidelines as additional techniques and treatments become known.

Specific information on rehabilitation and preservation technology may be obtained by writing to the Technical Preservation Services Division, Heritage Conservation and Recreation Service, U.S. Department of the Interior, Washington, D.C. 20243, or the appropriate State Historic Preservation Officer. Advice should also be sought from qualified professionals, including architects, architectural historians, and archeologists skilled in the preservation, restoration, and rehabilitation of old buildings.

THE ENVIRONMENT

Recommended	*Not Recommended*
Retaining distinctive features such as the size, scale, mass, color, and materials of buildings, including roofs, porches, and stairways that give a neighborhood its distinguishing character.	Introducing new construction into neighborhoods that is incompatible with the character of the district because of size, scale, color, and materials.
Retaining landscape features such as parks, gardens, street lights, signs, benches, walkways, streets, alleys and building setbacks that have traditionally linked buildings to their environment.	Destroying the relationship of buildings and their environment by widening existing streets, changing paving material, or by introducing inappropriately located new streets and parking lots that are incompatible with the character of the neighborhood.
Using new plant materials, fencing, walkways, street lights, signs, and benches that are compatible with the character of the neighborhood in size, scale, material and color.	Introducing signs, street lighting, benches, new plant materials, fencing, walkways and paving materials that are out of scale or are inappropriate to the neighborhood.

BUILDING SITE

Recommended	*Not Recommended*
Identifying plants, trees, fencing, walkways, outbuildings, and other elements that might be an important part of the property's history and development.	
Retaining plants, trees, fencing, walkways, street lights, signs, and benches that reflect the property's history and development.	Making changes to the appearance of the site by removing old plants, trees, fencing, walkways, outbuildings, and other elements before evaluating their importance in the property's history and development.
Basing decisions for new site work on actual knowledge of the past appearance of the property found in photographs, drawings, newspapers, and tax records. If changes are made they should be carefully evaluated in light of the past appearance of the site.	Leaving plant materials and trees in close proximity to the building that may be causing deterioration of the historic fabric.

BUILDING SITE--continued

Recommended	*Not Recommended*
Providing proper site and roof drainage to assure that water does not splash against building or foundation walls, nor drain toward the building.	

Archeological features

Recommended	*Not Recommended*
Leaving known archeological resources intact.	Installing inderground utilities, pavements, and other modern features that disturb archeological resources.
Minimizing disturbance of terrain around the structure, thus reducing the possibility of destroying unknown archeological resources.	Introducing heavy machinery or equipment into areas where their presence may disturb archeological resources.
Arranging for an archeological survey of all terrain that must be disturbed during the rehabilitation program. The survey should be conducted by a professional archeologist.	

BUILDING: STRUCTURAL SYSTEMS

Recommended	*Not Recommended*
Recognizing the special problems inherent in the structural systems of historic buildings, especially where there are visible signs of cracking, deflection, or failure.	Disturbing existing foundations with new excavations that undermine the structural stability of the building.
Undertaking stabilization and repair of weakened structural members and systems.	Leaving known structural problems untreated that will cause continuing deterioration and will shorten the life of the structure.
Replacing historically important structural members only when necessary. Supplementing existing structural systems when damaged or inadequate.	

BUILDING: EXTERIOR FEATURES--continued

Masonry: Adobe, brick, stone, terra cotta, concrete, stucco and mortar

Recommended *	*Not Recommended*
Retaining original masonry and mortar, whenever possible, without the application of any surface treatment.	Applying waterproof or water repellent coatings or surface consolidation treatments unless required to solve a specific technical problem that has been studied and identified. Coatings are frequently unnecessary, expensive, and can accelerate deterioration of the masonry.
Repointing only those mortar joints where there is evidence of moisture problems or when sufficient mortar is missing to allow water to stand in the mortar joint.	Repointing mortar joints that do not need repointing. Using electric saws and hammers to remove mortar can seriously damage the adjacent brick.
Duplicating old mortar in composition, color, and texture.	Repointing with mortar of high Portland cement content can often create a bond that is stronger than the building material. This can cause deterioration as a result of the differing coefficient of expansion and the differing porosity of the material and the mortar.
Duplicating old mortar in joint size, method of application, and joint profile.	Repointing with mortar joints of a differing size or joint profile, texture or color.
Repairing stucco with a stucco mixture that duplicates the original as closely as possible in appearance and texture.	
Cleaning masonry only when necessary to halt deterioration or to remove graffiti and stains and always with the gentlest method possible, such as low pressure water and soft natural bristle brushes.	Sandblasting, including dry and wet grit and other abrasives, brick or stone surfaces; this method of cleaning erodes the surface of the material and accelerates deterioration. Using chemical cleaning products that would have an adverse chemical reaction with the masonry materials, i.e., acid on limestone or marble.

* For more information consult Preservation Briefs: 1: "The Cleaning and Waterproof Coating of Masonry Buildings" and Preservation Briefs: 2: "Repointing Mortar Joints in Historic Brick Buildings" (Washington, D.C.: Heritage Conservation and Recreation Service, 1975 and 1976). Both are available from the Government Printing Office or State Historic Preservation Officers.

BUILDING: EXTERIOR FEATURES--continued

Masonry: Adobe, brick, stone, terra cotta, concrete, stucco and mortar

Recommended	*Not Recommended*
Repairing or replacing, where necessary, deteriorated material with new material that duplicates the old as closely as possible.	Applying new material which is inappropriate or was unavailable when the building was constructed, such as artificial brick siding, artificial cast stone or brick veneer.
Replacing missing significant architectural features, such as cornices, brackets, railings, and shutters.	Removing architectural features such as cornices, brackets, railings, shutters, window architraves, and doorway pediments.
Retaining the original or early color and texture of masonry surfaces, including early signage wherever possible. Brick or stone surfaces may have been painted or whitewashed for practical and aesthetic reasons.	Removing paint from masonry surfaces indiscriminately. This may subject the building to damage and change its appearance.

Wood: Clapboard, weatherboard, shingles and other wooden siding

Recommended	*Not Recommended*
Retaining and preserving significant architectural features, wherever possible.	Removing architectural features such as siding, cornices, brackets, window architraves, and doorway pediments. These are, in most cases, an essential part of a building's character and appearance that illustrate the continuity of growth and change.
Repairing or replacing, where necessary, deteriorated material that duplicates in size, shape, and texture the old as closely as possible.	Resurfacing frame buildings with new material that is inappropriate or was unavailable when the building was constructed such as artificial stone, brick veneer, asbestos or asphalt shingles, and plastic or aluminum siding. Such material can also contribute to the deterioration of the structure from moisture and insects.

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

Recommended	*Not Recommended*
Retaining original material, whenever possible.	Removing architectural features that are an essential part of a building's character and appearance, illustrating the continuity of growth and change.

BUILDING: EXTERIOR FEATURES--continued

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

Recommended	*Not Recommended*
Cleaning when necessary with the appropriate method. Metals should be cleaned by methods that do not abrade the surface.	Exposing metals which were intended to be protected from the environment. Do not use cleaning methods which alter the color, texture, and tone of the metal.

Roofs and Roofing

Recommended	*Not Recommended*
Preserving the original roof shape.	Changing the essential character of the roof by adding inappropriate features such as dormer windows, vents, or skylights.
Retaining the original roofing material, whenever possible.	Applying new roofing material that is inappropriate to the style and period of the building and neighborhood.
Providing adequate roof drainage and insuring that the roofing materials provide a weathertight covering for the structure.	
Replacing deteriorated roof coverings with new material that matches the old in composition, size, shape, color, and texture.	Replacing deteriorated roof coverings with new materials that differ to such an extent from the old in composition, size, shape, color, and texture that the appearance of the building is altered.
Preserving or replacing where necessary, all architectural features that give the roof its essential character, such as dormer windows, cupolas, cornices, brackets, chimneys, cresting, and weather vanes.	Stripping the roof of architectural features important to its character.

Windows and Doors

Recommended *	*Not Recommended*
Retaining amd repairing window and door openings, frames, sash, glass, doors, lintels, sills, pediments, architraves, hardware, awnings and shutters where they contribute to the architectural and historic character of the building.	Introducing or changing the location or size of windows, doors, and other openings that alter the architectural and historic character of the building.

BUILDING: EXTERIOR FEATURES--continued

Windows and Doors

*Recommended**	*Not Recommended*
	Replacing window and door features on significant facades with historically and architecturally incompatible materials such as anodized aluminum, mirrored or tinted glass.
	Removing window and door features that can be repaired where such features contribute to the historic and architectural character of the building.
	Changing the size or arrangement of window panes, muntins, and rails where they contribute to the architectural and historic character of the building.
Improving the thermal performance of existing windows and doors through adding or replacing weatherstripping and adding storm windows and doors which are compatible with the character of the building and which do not damage window or door frames.	Installing on significant facades shutters, screens, blinds, security grills, and awnings which are historically inappropriate and which detract from the character of the building.
	Installing new exterior storm windows and doors which are inappropriate in size or color, which are inoperable, or which require removal of original windows and doors.
	Installing interior storm windows that allow moisture to accumulate and damage the window.
Replacing missing or irreparable windows on significant facades with new windows that match the original in material, size, general muntin and mullion proportion and configuration, and reflective qualities of the glass.	Replacing sash which contribute to the character of a building with those that are incompatible in size, configuration, and reflective qualities or which alter the setback relationship between window and wall.

*For more information consult Preservation Briefs: 3: "Conserving Energy in Historic Buildings" (Washington, D.C. Heritage Conservation and Recreation Service, 1978). It is available from the Government Printing Office or State Historic Preservation Officers.

BUILDING: EXTERIOR FEATURES--continued

Windows and Doors

Recommended	*Not Recommended*
	Installing heating/air conditioning units in the window frames when the sash and frames may be damaged. Window installations should be considered only when all other viable heating/cooling systems would result in significant damage to historic materials.

Storefronts

Recommended	*Not Recommended*
Retaining and repairing existing storefronts including windows, sash, doors, transoms, signage, and decorative features where such features contribute to the architectural and historic character of the building.	
Where original or early storefronts no longer exist or are too deteriorated to save, retaining the commercial character of the building through 1) contemporary design which is compatible with the scale, design, materials, color, and texture of the historic buildings; or 2) an accurate restoration of the storefront based on historical research and physical evidence.	Introducing a storefront or new design element on the ground floor, such as an arcade, which alters the architectural and historic character of the building and its relationship with the street or its setting or which causes destruction of significant historic fabric.
	Using materials which detract from the historic or architectural character of the building, such as mirrored glass.
	Altering the entrance through a significant storefront.

Entrances, porches, and steps

Recommended	*Not Recommended*
Retaining porches and steps that are appropriate to the building and its development. Porches or additions reflecting later architectural styles are often important to the building's historical integrity and, wherever possible, should be retained.	Removing or altering porches and steps that are appropriate to the building's development and style.

BUILDING: EXTERIOR FEATURES--continued

Entrances, porches, and steps

Recommended	*Not Recommended*
Repairing or replacing, where necessary, deteriorated architectural features of wood, iron, cast iron, terra cotta, tile, and brick.	Stripping porches and steps or original material and architectural features, such as hand rails, balusters, columns, brackets, and roof decoration of wood, iron, cast iron, terra cotta, tile and brick. Enclosing porches and steps in a manner that destroys their intended appearance.

Exterior Finishes

Recommended	*Not Recommended*
Discovering the historic paint colors and finishes of the structure and repainting with those colors to illustrate the distinctive character of the property.	Removing paint and finishes down to the bare surface; strong paint strippers whether chemical or mechanical can permantently damage the surface. Also, stripping obliterates evidence of the historical paint finishes. Repainting with colors that cannot be documented through research and investigation to be appropriate to the building and neighborhood.

BUILDING: INTERIOR FEATURES

Recommended	*Not Recommended*
Retaining original material, architectural features, and hardware, whenever possible, such as stairs, elevators, hand rails, balusters, ornamental columns, cornices, baseboards, doors, doorways, windows, mantel pieces, paneling, lighting fixtures, parquet or mosaic flooring.	Removing original material, architectural features, and hardware, except where essential for safety or efficiency. Replacing interior doors and transoms without investigating alternative fire protection measures or possible code variances.
Repairing or replacing, where necessary, deteriorated material with new material that duplicates the old as closely as possible.	Installing new decorative material and paneling which destroys significant architectural features or was unavailable when the building was constructed, such as vinyl plastic or imitation wood wall and floor coverings, except in utility areas such as bathrooms and kitchens.

BUILDING: INTERIOR FEATURES--continued

Recommended	*Not Recommended*
Retaining original plaster, whenever possible.	Removing plaster to expose brick to give the wall an appearance it never had.
Discovering and retaining original paint colors, wallpapers and other decorative motifs or, where necessary, replacing them with colors, wallpapers or decorative motifs based on the original.	Changing the texture and patina of exposed wooden architectural features (including structural members) and masonry surfaces through sandblasting or use of other abrasive techniques to remove paint, discoloration and plaster, except in certain industrial or warehouse buildings where the interior masonry or plaster surfaces do not have significant design, detailing, tooling, or finish; and where wooden architectural features are not finished, molded, beaded, or worked by hand.
Where required by code, enclosing an important interior stairway in such a way as to retain its character. In many cases glazed fire rated walls may be used.	Enclosing important stairways with ordinary fire rated construction which destroys the architectural character of the stair and the space.
Retaining the basic plan of a building, the relationship and size of rooms, corridors, and other spaces.	Altering the basic plan of a building by demolishing principal walls, partitions, and stairways.

NEW CONSTRUCTION

Recommended	*Not Recommended*
Keeping new additions and adjacent new construction to a minimum, making them compatible in scale, building materials, and texture.	
Designing new work to be compatible in materials, size, color, and texture with the earlier building and the neighborhood.	Designing new work which is incompatible with the earlier building and the neighborhood in materials, size, scale, and texture.

NEW CONSTRUCTION--continued

Recommended	*Not Recommended*
Using contemporary designs compatible with the character and mood of the building or the neighborhood.	Imitating an earlier style or period of architecture in new additions, except in rare cases where a contemporary design would detract from the architectural unity of an ensemble or group. Especially avoid imitating an earlier style of architecture in new additions that have a completely contemporary function such as a drive-in bank or garage.
	Adding new height to the building that changes the scale and character of the building. Additions in height should not be visible when viewing the principal facades.
	Adding new floors or removing existing floors that destroy important architectural details, features and spaces of the building.
Protecting architectural details and features that contribute to the character of the building.	
Placing television antennae and mechanical equipment, such as air conditioners, in an inconspicuous location.	Placing television antennae and mechanical equipment, such as air conditioners, where they can be seen from the street.

MECHANICAL SYSTEMS: HEATING, AIR CONDITIONING, ELECTRICAL, PLUMBING, FIRE PROTECTION

Recommended	*Not Recommended*
Installing necessary mechanical systems in areas and spaces that will require the least possible alteration to the structural integrity and physical appearance of the building.	Causing unnecessary damage to the plan, materials, and appearance of the building when installing mechanical systems.
Utilizing early mechanical systems, including plumbing and early lighting fixtures, where possible.	Attaching exterior electrical and telephone cables to the principal elevations of the building.

MECHANICAL SYSTEMS: HEATING, AIR CONDITIONING, ELECTRICAL, PLUMBING, FIRE PROTECTION--continued

Recommended	*Not Recommended*
Installing the vertical runs of ducts, pipes, and cables in closets, service rooms, and wall cavities.	Installing vertical runs of ducts, pipes, and cables in places where they will be a visual intrusion. Concealing or "making invisible" mechanical equipment in historic walls or ceilings. Frequently this concealment requires the removal of historic fabric. Installing "dropped" acoustical ceilings to hide mechanical equipment. This destroys the proportions and character of the rooms.
Insuring adequate ventilation of attics, crawlspaces, and cellars to prevent moisture problems.	
Installing thermal insulation in attics and in unheated cellars and crawlspaces to conserve energy.	Installing foam, glass fiber, or cellulose insulation into wall cavities of either wooden or masonry construction. This has been found to cause moisture problems when there is no adequate moisture barrier.

SAFETY AND CODE REQUIREMENTS

Recommended	*Not Recommended*
Complying with code requirements in such a manner that the essential character of a building is preserved intact. Working with local code officials to investigate alternative life safety measures that preserve the architectural integrity of the building. Investigating variances for historic properties allowed under some local codes.	

SAFETY AND CODE REQUIREMENTS--continued

Recommended	*Not Recommended*
Installing adequate fire prevention equipment in a manner that does minimal damage to the appearance or fabric of a property.	
Adding new stairways and elevators that do not alter existing exit facilities or other important architectural features and spaces of the building.	Adding new stairways and elevators that alter existing exit facilities or important architectural features and spaces of the building.

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