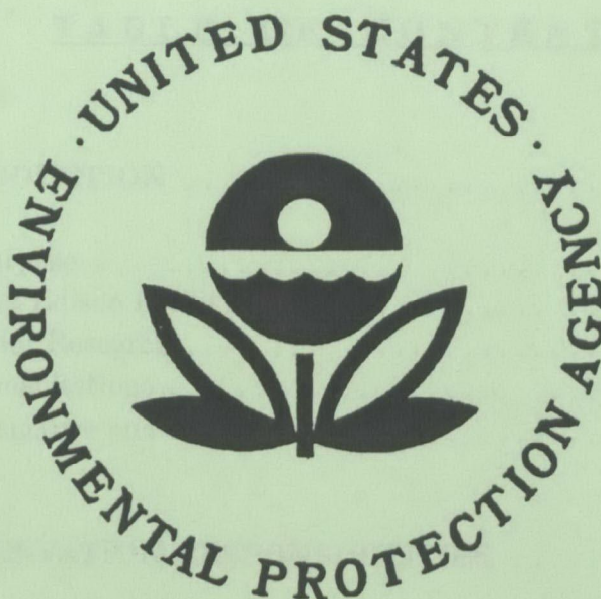


**HISTORIC RESOURCES MANAGEMENT PLAN
FOR THE
U.S. ENVIRONMENTAL PROTECTION AGENCY'S
EDISON FACILITY**



JULY 1992

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**HISTORIC RESOURCES MANAGEMENT PLAN
FOR THE
U. S. ENVIRONMENTAL PROTECTION AGENCY'S EDISON FACILITY

FORMER RARITAN ARSENAL
EDISON TOWNSHIP
MIDDLESEX COUNTY, NEW JERSEY**

TABLE OF CONTENTS

I.	INTRODUCTION	1
	A. Purpose	1
	B. The Edison Facility	2
	C. Prior Research	2
	D. Consultations	3
	E. Structure and Content	4
II.	PRESERVATION RESPONSIBILITIES	5
	A. Regulatory Summary	5
	B. General Responsibilities	5
	C. Historic Resources Identification Program	6
	D. The Management Inventory	7
	E. Early Planning	7
	F. Utilization of Historic Resources	7
	G. Cooperative Efforts	8
	H. Recommendations	9
III.	THE NATIONAL REGISTER AND HISTORIC RESOURCES ..	10
	A. The National Register of Historic Places	10
	B. Criteria of Eligibility	10
	C. Initial Statement of Significance	11

IV. HISTORIC RESOURCES MANAGEMENT INVENTORY	15
A. Overview	15
B. Inventory of Documentary Sources	15
1. Summary of Sources	15
2. Recommendation	16
C. Inventory of Historic Resources	17
1. General	17
2. Archaeological Zones	18
a. Possible Prehistoric Site - Zone 3	18
b. Historical Sites - Zones 1-3	18
3. Zones of Buildings and Structures	21
a. Arsenal Core - Zone 4	22
b. Fire Station - Zone 5	27
c. 1950's Warehouses - Zone 6	27
d. 1950's Warehouses - Zone 7	27
e. Firing Ranges - Zone 8	27
4. Elsewhere	27
5. Historic District	28
a. Principal Elements	28
b. Contributing Elements	31
c. Non-Contributing Elements	31
6. Recommendations	31
V. MANAGEMENT PRACTICES	32
A. Overview	32
B. Standard Practices	33
C. Activity-Specific Practices	34
D. Mitigating Unavoidable Adverse Impacts	38
1. Mitigating Impacts to Archaeological Sites	38
2. Mitigating Impacts to Buildings and Structures	40
VI. CONCLUSION	43
BIBLIOGRAPHY	44
APPENDICES	46

LIST OF FIGURES

Figure 1,	Historic Resources Zones	page 19
Figure 2,	Detailed Map of Zone 4	page 24
Figure 3,	Historic District	page 29
Figure 4,	Management Practices - Archaeology	page 36
Figure 5,	Management Practices - Buildings and Structures ..	page 39

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I. INTRODUCTION

A. Purpose

This document is a Historic Resources Management Plan (HRMP) for the United States Environmental Protection Agency's (EPA) Edison Facility at the former Raritan Arsenal in Edison Township, Middlesex County, New Jersey. The plan was prepared as part of a program undertaken by EPA - Region II to ensure compliance with federal legislation mandating responsibility for the management and preservation of historic resources.

Section 110 of the National Historic Preservation Act (NHPA) requires federal agencies to assume responsibility for identifying, evaluating, registering, and protecting historic resources on properties they own or control. Historic resources are sites, buildings, structures, objects, and districts of historic, archaeological, architectural, engineering, or cultural significance. Under Section 106 of the NHPA, federal agencies are required to take into account the effect of any proposed federal undertaking "on any district, site, building, structure, or object that is included in or eligible for inclusion in" the National Register of Historic Places (National Register).

The purpose of this management plan is to establish goals and objectives relating to the protection of historic resources at the EPA's Edison Facility and to specify courses of action to avoid adverse impacts on those resources. The development of this management plan, and the cultural resource surveys incorporated in it, will enable EPA to satisfy the requirements of both Section 110 and Section 106.

Four interrelated subjects are addressed in this plan. They are, in order:

1. The EPA's responsibility under Sections 106 and 110 of the NHPA;
2. The criteria for identifying historic resources;
3. Known and possible historic resources at the Edison Facility; and
4. Management goals and procedures necessary to fulfill the responsibilities of Sections 106 and 110 of the NHPA.

B. The Edison Facility

The EPA Edison Facility is a 205-acre irregularly shaped parcel within the former Raritan Arsenal. It is situated on Woodbridge Avenue, near the intersection with the Old Post Road, and extends south and east away from those streets. It contains both visible and buried vestiges of human activities.

The EPA property is a small portion of a larger military installation commissioned in 1917 and closed in 1964. The size and configuration of the Arsenal changed over time, but at its closure the base occupied approximately 3,200 acres. Military land outside the EPA tract has since been transferred or sold to other governmental agencies, private individuals or groups, and institutions.

Nine resource zones have been established for evaluating the EPA property. Eight of these zones contain known or possible historic resources. A prehistoric site may be present; archaeological sites dating to the nineteenth century may exist; and buildings and structures from the Raritan Arsenal are present. Most of these resources have been combined into a historic district.

C. Prior Research

Two studies were initiated and funded by EPA as part of the requirements of Section 110 of the NHPA. Documentary research on prehistoric and historic patterns of land use, a preliminary architectural assessment of buildings and structures, and archaeological investigations have been completed (Kardas and Larrabee, 1989; Kardas and Larrabee, 1990). A technical report on findings was prepared for each study. These reports are the background for, and an integral part of, this management plan. They are referred to throughout the plan, and they are essential information for those who are implementing the plan.

The first study, in 1989, was of a 110-acre portion of the EPA facility on which construction of an Environmental Technology and Engineering Center (E-TEC) was proposed. The purpose of the study was to determine whether any historic resources would be impacted by constructing E-TEC, and to determine whether any historic resources are located outside the construction area. The report reviews literature pertinent to prehistoric occupation, discusses land use prior to establishment of the Raritan Arsenal, and summarizes the Arsenal's history. Cartographic records, documents, aerial photographs, and surface reconnaissance guided the archaeological testing for selected areas (Kardas and Larrabee, 1989).

The second study, in 1990, focused on the 95 acres of the EPA facility outside the E-TEC site, but also included more primary research on the entire tract. Its purpose was to facilitate long-range land use planning and to provide information for this historic resources management plan. The study provides a history of Arsenal activities, land use, and standing buildings and structures. There is a historical narrative, a photographic and cartographic record, a list of repositories of information, an architectural assessment of buildings, and Office of New Jersey Heritage Individual Structure Survey Forms. An archaeological investigation also was completed (Kardas and Larrabee, 1990). All of the information is important to implementation of the HRMP for the EPA facility.

D. Consultations

During the research program, and in the preparation of this document, preservation professionals in New Jersey were consulted. Review comments and consultation on procedural matters and statements of historical significance were provided by the New Jersey State Historic Preservation Officer (NJSHPO) through the Office of New Jersey Heritage. An archaeological site inventory was prepared by the staff in the archaeology section of the New Jersey State Museum.

Consultation with the Office of New Jersey Heritage ensured an effort consistent with historic resources standards in the state. Their architectural reporting forms were used for the same reason. The New Jersey State Museum was consulted concerning additional information about the project area.

Future historic resources preservation efforts will be carried out in conjunction with these offices. Among other things, they will be asked to serve as repositories of historic preservation information.

E. Structure and Content

This management plan is divided into six sections. The Introduction and Conclusion sections are self-explanatory. The second and third sections summarize the responsibilities of federal agencies under the NHPA. The fourth and fifth sections contain the information necessary to fulfill those responsibilities.

The second section states the responsibilities of EPA for management and preservation of historic resources as defined by the Guidelines for Federal Agency Responsibilities Under Section 110 of the NHPA (The Section 110 Guidelines; 53 Federal Register 4728), and discusses the manner in which EPA's responsibilities under Section 106 will be discharged by the development of this management plan. The third section sets forth the criteria of eligibility for inclusion in the National Register. It provides the rationale for findings of eligibility and sets the stage for preparing formal nominations. The fourth section is the Management Inventory. It contains information on documentary sources and a description of known and possible historic resources. Findings of eligibility are presented. The fifth section outlines practices for decision-making in accordance with the resource management and preservation requirements of this HRMP.

II. PRESERVATION RESPONSIBILITIES

A. Regulatory Summary

The NHPA and its amendments establish standards and guidelines for historic preservation in the United States. As noted earlier, Section 110 of the NHPA requires that federal agencies assume responsibility for managing and preserving historic resources under their control, while Section 106 requires agencies to take into account the effects of their undertakings on historic resources. Compliance with Section 106 requirements is achieved through use of 36 CFR Part 800, the implementing regulations of the Advisory Council on Historic Preservation (Advisory Council).

The term "historic resource" is applied to any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register. The National Register is a listing of all historic resources significant in American history, architecture, archaeology, engineering, and culture maintained by the Secretary of the Interior. A historic resource can be significant at a local or state level as well as at the national level. Criteria of eligibility for inclusion in the National Register are defined in the NHPA (see Section III).

B. General Responsibilities

Both Sections 106 and 110 of the NHPA deal with federal agency responsibilities, and have overlapping requirements. Section 110 requires federal agencies to assume responsibility for the preservation of historic resources that are owned or controlled by them. Guidelines to Section 110 implementation set forth general requirements for a preservation management plan (The Section 110 Guidelines, 53 FR 4728). A preservation management plan requires the following:

1. A Historic Resources Identification Program;
2. A Management Inventory;
3. Early planning;
4. Utilization of historic resources; and
5. Cooperative efforts.

By fulfilling the Section 110 requirements for its property, a federal agency can also develop the information and formulate the action that will help it to meet its responsibilities under Section 106. These activities include identifying all historic resources on its property, evaluating their significance, and determining the effects of the proposed activities on the property. All these tasks are being carried out in accordance with 36 CFR Part 800. This historic resources management plan thus provides a mechanism for protecting historic resources as far as possible, while carrying out the program associated with the property.

C. Historic Resources Identification Program

The Section 110 Guidelines require that a federal agency identify and evaluate historic resources under its jurisdiction or control. Identification may require research in historical documents, interviews with people familiar with a property, architectural assessments, archaeological studies, and consultation with the State Historic Preservation Officer's (SHPO) representatives. Evaluation according to National Register criteria is carried out by a person qualified in one of the fields of historic preservation.

The two studies completed for the EPA Edison Facility identified and evaluated several types of historic resources and possible historic resources, as follows:

1. A possible prehistoric archaeological site
2. A possible historical archaeological site unrelated to the Raritan Arsenal
3. Historical archaeological sites related to the Raritan Arsenal
4. Buildings and structures from the Arsenal period

Identification of historic resources is a process that continues as an agency engages in the activities required to fulfill its mission. The initial background studies provide some information relating to the historic resources at the Edison Facility, but there are many questions that remain. For example, the dates of construction of several buildings have not been determined, and the survival of both prehistoric and historical archaeological sites remains to be ascertained. Ongoing activity to identify and evaluate resources is a part of the historic resources preservation process.

D. The Management Inventory

The Section 110 Guidelines require the creation and maintenance of a Management Inventory. The Inventory has two parts; one is a listing of documents relating to the historic resources, and the other is a listing of the historic resources identified or possibly present. Maintenance of the Management Inventory is an ongoing process and a major preservation responsibility. The initial Management Inventory, current to October 1990, is contained in Section IV.

E. Early Planning

Early planning is essential to a historic resources management plan. The Section 110 Guidelines require integration of a historic resources management inventory with systems for overall property management, land use planning, and project planning. The Management Inventory (Section IV) and the Management Practices (Section V) are key tools to be used with these systems of property management, and they are most effectively applied when land use projects are first contemplated.

Early planning is required to ensure use and preservation of historic resources, to identify conflicts between preservation and agency goals, and to determine where information is insufficient and further study is required. Clearly, early planning is dependent upon a well-maintained management inventory and the ongoing process of information gathering.

Failure to consider historic resources early in the planning process can lead to delays and extra costs in carrying out activities essential to an agency's mission. For example, when plans for land use in an area containing known or potential historic resources are developed without regard for these resources, lengthy delays in approval for the plans may result due to the need for historic resources evaluation or preservation planning, or total re-design of a project may be necessary to protect a resource.

F. Utilization of Historic Resources

One of the best ways to preserve historic resources, especially buildings, is to use them. For that reason, the Section 110 Guidelines require federal agencies to

give thorough consideration to using historic resources instead of demolishing them. Where historic resources are in active use, good management will ensure that the activities continue, but without harm to the resource. Activities which do not presently make use of historic resources should be evaluated to see if they can be adapted to such uses. When new activities are planned, historic resources must be considered as locations for them. The requirement to use historic resources must be given consideration early in the planning process. Often, re-use of historic buildings is cost-effective, and can be a preferred alternative to demolition or the erection of new buildings.

G. Cooperative Efforts

The final general requirement under the Section 110 Guidelines is to seek opportunities for cooperative efforts with other federal agencies, state and local agencies, and the private sector in the preservation and use of historic resources.

Naturally, cooperation and consultation with the Advisory Council in the development of the HRMP to meet the requirements of the NHPA has been essential. Of equal importance is continuing consultation with, and guidance from, the NJSHPO. The Office of New Jersey Heritage can provide guidance to insure that preservation efforts are consistent with goals in the state, provide assistance in matters of evaluation, and provide lists of professionals experienced in preservation matters. A Memorandum of Agreement (MOA) that incorporates this HRMP will provide the basis for ensuring that the Advisory Council's NHPA concerns are met through consultation between EPA and the NJSHPO.

Consistent with the requirement to use historic resources, it may be feasible and desirable to lease buildings to other agencies, under strict conditions of active use and preservation. Allowing vacant buildings to deteriorate at a time when other agencies may need space is contrary to the preservation mandate.

It also is feasible to meet the goals of preservation by involving local organizations with an interest in historic resources. Publications on historic resources, interpretive programs, and community involvement can result through cooperation with colleges and universities, museums, and civic organizations. For example, photographic recording of buildings might be accomplished in conjunction with a local college photography program. As another example,

interpretive programs designed to demonstrate the agency's concern for preservation can be designed for veterans' organizations, thereby showing that preservation is aimed at the lives and experiences of ordinary citizens while perhaps eliciting important oral history that can become part of the Management Inventory.

H. Recommendations

The following recommendations are related to the general regulatory requirements described above. They are a part of Section 110 compliance.

1. Designate a Facility Preservation Specialist and continue, as appropriate, the process of information gathering.
2. Integrate research findings into the management plan as soon as they are received.
3. Use the management plan early in the planning process.
4. Evaluate EPA's mission and activities to determine if historic resources can be used in fulfilling the mission.
5. Evaluate vacant historic buildings and plan preservation efforts through active use by EPA, or by leasing.
6. Coordinate preservation efforts with the NJSHPO.
7. Involve local groups and organizations and professional societies.

III. THE NATIONAL REGISTER AND HISTORIC RESOURCES

A. The National Register of Historic Places

The identified historic resources and potential historic resources inventoried in this management plan have been identified by preservation professionals in the fields of history, anthropology, architectural history, and cultural geography. The information developed in this inventory will be used to assist in determining if these resources are eligible for inclusion in the National Register. Findings of eligibility are based on the National Register's Criteria for Evaluation (36 CFR 60.4) and its Bulletin Number 15, "Guidelines for Applying the National Register Criteria for Evaluation."

Three archaeological zones, five zones of historic buildings and structures, and one zone where resources are not known to exist, have been identified. Six of the nine zones have been combined into a single non-contiguous historic district. Formal requests for a Determination of Eligibility for the historic resources, or formal submittal of a National Register nomination, will be made in the future. These requests and submittals will be directed to the Keeper of the National Register, National Park Service, U.S. Department of Interior, Washington, D.C.

B. Criteria of Eligibility

To be eligible for inclusion in the National Register, the quality of significance in American history, architecture, and the like must be present in buildings, districts, sites, and objects that possess integrity of design, location, materials, workmanship, feeling and association, and:

1. that are associated with events that have made a significant contribution to the broad patterns of our history; or
2. that are associated with the lives of persons significant in our past; or
3. that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

4. that have yielded, or may be likely to yield, information important in prehistory or history.

A building, structure, object, site, or district must be at least fifty years old to be eligible. However, Section 110 guidelines specify that resources not meeting the age criterion be identified and inventoried for future consideration if it appears likely that they would otherwise be eligible.

C. Initial Statement of Significance

The narrative history of the EPA Edison Facility is included in the Stage I historic resources survey, and contains information about pre-Raritan Arsenal activities and about the Arsenal's construction, buildings, and missions. The narrative is supplemented by an architectural assessment of buildings, examples of available original design drawings of buildings, and a list of buildings and their functions (Kardas and Larrabee 1989: Chapter II; 1990: 8-33, 40-42, Appendices C, E, and I).

The historic resources identified from this information are a possible prehistoric archaeological site, a possible historic archaeological site unrelated to the Arsenal, two historic archaeological sites related to the Arsenal, thirty-two intact buildings from the Arsenal, and remnants of other Arsenal buildings and structures.

A preliminary statement about the significance of the cultural resources can be made using the background information and the Criteria of Eligibility. Criteria a, c, and d are applicable, as follows:

- Criterion a: The Raritan Arsenal is associated with events that have made a significant contribution to the broad patterns of our history.
- Criterion c: Buildings and structures of the Raritan Arsenal embody the distinctive characteristics of a type, period, or method of construction that represent a significant and distinguishable entity whose components may lack individual distinction.
- Criterion d: Known and possible archaeological sites may be likely to yield information important in prehistory and history.

Remnants of the Raritan Arsenal represent the growth of the United States as a world power. The buildings are strictly functional, utilitarian military industrial buildings. Some, such as the Post Headquarters, present a typical institutional style to accompany function, but most are work places in both substance and scale. The buildings were erected between 1917 and 1953. Peak construction occurred during World Wars I and II. The buildings constructed during this time period were physically linked or intermixed to meet the demands of wartime production.

The administrative and working core of the Arsenal, still mostly present on the Edison Facility, was a dynamic, vital place when it was operating under wartime conditions. When the missions carried out here were transferred elsewhere and the Arsenal was closed, the noise and activity that characterized the place stopped, leaving an industrial landscape that some might consider mostly abandoned, drab, quiet, and uninteresting.

Raritan Arsenal was authorized in 1917, shortly after the United States entered World War I. It was built by Italian contract labors managed under a padrone system. A construction camp composed of forty-five buildings housed, fed, and maintained 1,570 workers. Troops were deployed to the Arsenal as quickly as construction allowed. Administration buildings were erected to house the command element, and the Commandant established residence in a renovated nineteenth century farmhouse.

Large ammunition handling warehouses and vehicle assembly buildings were constructed. Linked by rail to ammunition-producing facilities and vehicle manufacturing plants in New Jersey, and by rail and the Raritan River to New York Harbor, the Arsenal began to receive, assemble, store, and ship war material. It became a busy, noisy, gritty, and dangerous military base. Trainloads of ammunition and vehicles arriving and departing moved through the Arsenal daily. Trucks, touring cars, and possibly tanks, were brought in convoys for inspection, repair, painting, and shipment to Europe. Munitions arrived in bulk for crating, storage, and shipment to the front.

When World War I ended, the Arsenal received shipments of material from both domestic sources and Europe, and the mission changed to repair and stockpiling. By 1922, however, only a token civilian and military work force was required. Between World War I and World War II, there was little activity at the Arsenal.

Temporary buildings, such as the construction camp, were demolished. There was little new construction; it consisted mostly of landscaping and the installation of water and sewer systems, carried out by a reduced work force.

Conditions changed in 1939, when World War II began in Europe. The civilian labor force was increased, and several new administration buildings were constructed in 1941. Once the United States entered the war, the Arsenal was expanded and became the scene of increased activity devoted to the war effort. The civilian labor force, working in shifts, reached 9,500 persons in 1942. At times, it included such diverse groups as Italian prisoners of war and a Jamaican labor battalion. Civilians and military personnel had to be kept on record, fed, paid and transported, and health and sanitary conditions had to be maintained continually for nearly five years. With space at a premium, new buildings were connected to existing ones and fitted in where possible, with no regard for visual harmony. The Arsenal was a workplace where thousands of workers toiled in support of a national effort.

The handling and transport of ordnance and explosives was again the chief function. The assembly plant was used for assembling, modifying, and testing vehicles, small arms, and heavy guns. Range finders and other optical equipment were tested and calibrated in a special shop. A Publication Section produced technical manuals, consuming seventy tons of paper a week in the process. Eighty-two miles of railroads and sixty miles of paved roads existed within the Arsenal, bringing materials from outside and taking finished goods to docks for shipment overseas. The variety and volume of goods moved became so great that after 1943 it was not possible to maintain inventories.

When World War II ended, the mission of the Arsenal was completed. The labor force was reduced, and only a few specialized ordnance units were assigned to the base. Four large warehouses were built during the Korean War, but the Raritan Arsenal was poorly located for an active role in a Pacific Ocean conflict. Missions and units gradually were transferred to other military facilities, and the Arsenal was phased out as an active installation. It was closed in 1964.

The remaining buildings, including munitions warehouses, the assembly plant, and the post headquarters, represent the efforts of a nation and its people in times of war. They also recall New Jersey's industrial history. Archaeological sites on the property contain or may contain information important to understanding prehistory, people who occupied the land before the Raritan Arsenal, and the history of the Raritan Arsenal.

IV. HISTORIC RESOURCES MANAGEMENT INVENTORY

A. Overview

This section contains an initial Historic Resources Management Inventory, current to October 1990, for the EPA Edison Facility. The information contained here is selected and organized to comply with Section 110 requirements.

The Management Inventory is divided into two parts; documentary sources and historic resources. The inventory of documentary sources is a summary of the Kardas and Larrabee reports; recommendations for use of the inventory are made. The inventory of historic resources is more detailed. The property is divided into eight zones of known or possible historic resources. For each zone, there is a description of the resources present and a discussion of the information available about the resources. Next, seven of the zones are combined into a historic district. *Three maps display the resources, the zones, and the district.* Finally, recommendations for using and maintaining the inventory are made.

B. Inventory of Documentary Sources

1. Summary of Sources

There are two principal documents essential to this HRMP. Together, these two documents provide background information for the plan. Each was prepared for EPA-Region II. They are:

- Kardas, S, and E. Larrabee, "Stage IA Cultural Resources Survey, Environmental Technology and Engineering Center Site, Office of Research and Development, U.S. Environmental Protection Agency at Raritan Arsenal, Edison Township, Middlesex County, N.J." *Technical document prepared for U.S. EPA, Region II, October 1989;*
- Kardas, S, and E. Larrabee, "Stage I Cultural Resources Survey, U.S. Environmental Protection Agency Property at Raritan Arsenal, Edison Township, Middlesex County, N.J." *Technical document prepared for U.S. EPA, Region II, October 1990.*

The 1989 report was prepared as part of the environmental impact statement for the proposed Environmental Technology and Engineering Center (E-TEC) Site. It contains the results of documentary research on prehistoric and historic period land use for approximately 110 acres of the current EPA property, and includes an overview history of the entire Raritan Arsenal. In addition, archaeological testing was undertaken in one area.

The 1990 report was background research required for compliance with Section 110. The information in the 1989 report is here expanded both in scope and detail. Particular attention is paid to known and possible cultural resources. A preliminary architectural evaluation of buildings on the property was undertaken, using Office of New Jersey Heritage Individual Structure Survey Forms. The results of archaeological testing are also presented.

The 1990 report also lists and describes sources of information concerning the Raritan Arsenal in document repositories. These documents were used in compiling the report because they provide direct information on cultural resources. Others were examined, but not used because they are concerned with subjects not relevant to the investigation. The documentary sources listed and described (Kardas and Larrabee 1990) are as follows:

- a. List of record centers and archives (Appendix A);
- b. Sources for Raritan Arsenal History (pages 12-16);
- c. Description of Raritan Arsenal records at selected record centers and archives (Appendix A);
- d. Samples of selected documents (Appendix C); and
- e. Summary of sources used, by type (Bibliography).

2. Recommendation

It is recommended that the information contained in the documentary sources listed above be entered into computerized data base files where it can be referenced, retrieved, and updated as new sources are located.

C. Inventory of Historic Resources

A total of nine zones have been identified. Eight of these zones contain known or possible historic resources representing three eras. There is a possible prehistoric site, a historic site predating the Raritan Arsenal, and buildings, structures, and sites from the Arsenal.

1. General

The various zones are delineated on Figure 1. The portion of the property outside the eight resource zones is shown as Zone 9 on the figure. That is to indicate that all areas outside the historic resources zones have been thoroughly investigated and found to contain no historic resources. The zones are described briefly below. A discussion of each, by category, follows:

Zone 1: *An archaeological zone containing the Commandant's Residence, a farmhouse built in the nineteenth century or earlier.*

Zone 2: *A historic period archaeological zone possibly containing the remains of a nineteenth century house and associated remains and deposits.*

Zone 3: *A historic period archaeological zone encompassing the Raritan Arsenal construction camp. There may also be a prehistoric site somewhere in this zone.*

Zone 4: *The working core of the Raritan Arsenal from 1918 to 1964.*

Zone 5: *Raritan Arsenal fire station, ca. 1941.*

Zone 6: *Warehouses constructed for the Arsenal in 1953.*

Zone 7: *Warehouses constructed for the Arsenal in 1953.*

Zone 8: *Firing range remnants, post-Korean War.*

Zone 9: *No historic resources.*

2. Archaeological Zones

a. Possible Prehistoric Site - Zone 3

There is no recorded prehistoric site on this property. However, one bifurcate base projectile point was discovered mixed with rubble, in a shovel test near the Commandant's Residence, Zone 1. Whether it had been found and brought into the house, or came from a Native American site, is unknown. Furthermore, the base of a sandstone stemmed broadspear, a broken quartzite end scraper, and an unmodified chert primary flake were also discovered on the surface in Zone 3. It is possible that these artifacts come from a prehistoric site in this zone.

Whether the artifacts were deposited here in fill or were in place at this location is a matter of conjecture. In any case, the zone has to be 0-managed because remains of the Arsenal construction camp are present. If any prehistoric materials are present, they would be protected as well.

b. Historic Sites - Zones 1-3

Zone 1: Commandant's Residence

Zone 1 is next to Woodbridge Avenue and adjacent to the Parade Ground. It is the site of the Commandant's Residence. The building originally was a farmhouse dating at least to 1876, and possibly earlier. On an 1876 map of the area, the owner is shown as E.H. Tappan. It was renovated and used as the Commandant's Residence from about 1919 until the closing of the Arsenal in 1964. The building was demolished in 1979.

Archaeological testing was undertaken in this area in 1990 (Kardas and Larrabee, 1990: 43-62). Shovel-excavated test pits were placed at 25 foot intervals, and 326 artifacts were recovered, most of them structural remnants from the demolition of the house. The remainder were domestic artifacts. They have been catalogued by type and number, but are not dated. No military artifacts were recovered. Artifacts were distributed over an area larger than the Commandant's Residence, showing that the site had been leveled and graded. Subtle surface

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contours reveal the size and shape of the building. Tests within the building site proper encountered impenetrable rubble at 24 to 30 inches below existing grade. Deeper excavation was not possible by shovel. This indicates that most of what remains of the building is within the foundation. Assuming a foundation originally extending six feet below grade, it is possible that only the upper portion of the building's base was demolished and graded. If this is the case, there may be artifacts relating to the building's occupants and builders in the basement and in builder's trenches around the foundation.

The name, "Tappan", appears in this location on an 1850 map, and the E.H. Tappan residence is shown on the 1876 map (Kardas and Larrabee, 1990: 11, 14). If cultural deposits are present, it may be possible to date the original building and to gain information important to understanding the history of the property before the Arsenal. Archaeological evidence may be the major avenue for furthering understanding of this historic resource. In the course of background research, no photographs of the building were discovered, and no information on the Tappan family was obtained.

Zone 2: W. Compton House

Zone 2, a possible historic resource, is located on the north side of Bonhamtown Road, at the intersection with Pershing Avenue. It is the site of the W. Compton house. The Compton house first appears on the 1876 map (Kardas and Larrabee, 1990: 14). It may still have been standing in 1939 (Kardas and Larrabee, 1989: 34).

The zone is covered with striped asphalt pavement, having served as a vehicle parking area during later Arsenal operations. Some parts of this zone have been disturbed. A five-inch gas and oil line, an eight-inch water line, and both a 24- and a 36-inch storm drainage line are buried in corridors within the zone (Kardas and Larrabee, 1990; Appendix D). Damage to, or destruction of, portions of the Compton historic site is likely. Whether deeply buried foundation remnants and associated cultural materials are present is unknown. Until evidence is presented to

the contrary, this zone is considered to have historic archaeological potential.

Zone 3: Construction Camp

This is the site of the Raritan Arsenal construction camp. Archaeological testing in 1990 verified the presence of buried deposits and features associated with this camp. The following documents relating to the camp are presented in the Kardas and Larrabee 1990 report:

1. Construction map of 1919 (Figure 9, page 22)
2. *Table of construction camp buildings (Figure 10, page 23)*
3. Floor plan of construction camp office building (Figure 11, page 24)
4. Four photographs of buildings in the construction camp (Plate 1, Appendix H)

No other details of the construction camp are known. No plans were discovered, although the table of buildings indicates a substantial compound for 1570 men. It was present in 1919 and demolished before 1939, quite possibly as early as 1922, when 71 buildings and structures were demolished. The only subsequent use determined for the area was warehousing and open storage. Two trenches across the site were excavated in 1990. Two builder's trenches, two utility trenches, and a roadbed were recorded during the testing. Artifacts relating to the Arsenal were a machine gun brass cartridge, a construction chain, a calibrated photographer's arrow, and bricks. Three prehistoric stone tools were discovered on the surface in this area. Also within this zone is Building 242, a small, mostly buried, valve house from 1943. Thus, there also is a minor World War II component present.

3. Zones of Buildings and Structures

The remaining zones on Figure 1 contain buildings and structures relating to the Raritan Arsenal. These features span the history of the Arsenal from World War I to the closing of the facility in 1964. They are grouped into zones for convenience of discussion, given the large number of features in some areas, and because the different zones may require different

management practices. However, the interrelationship among the zones is apparent and is addressed in Subsection 4 (Historic District). The content of each zone is described, background information available for the zone is indicated, and the basis for evaluations is presented.

a. Arsenal Core - Zone 4

The significance of this zone derives from buildings and structures only, because, based on the disturbance from construction in Zone 4, it is likely that nothing other than random buried cultural materials is present. In this, the largest of the historic resources zones, there are eight buildings from World War I, three buildings from the between-wars period, thirteen buildings from World War II, one post-World War II building, and seven buildings of unknown dates from this period. Three other classes of structures are also present in the zone.

Information on the buildings and structures comes from the 1990 Kardas and Larrabee report. The historical narrative, maps, and photographs provide background information. A preliminary architectural survey of buildings and structures contained in that report provides additional information (Kardas and Larrabee, 1990: 40-42, Appendix I).

Figure 2 is a detailed view of the zone. The color coding categorizes the buildings by age. Building numbers are official numbers assigned after World War II.

The following information on buildings is from a General Services Administration (GSA) inventory list prepared in 1964 (Kardas and Larrabee, 1990: Appendix E). There are omissions and possible dating errors on the GSA list, so it has been supplemented by information from other sources where possible.

World War I

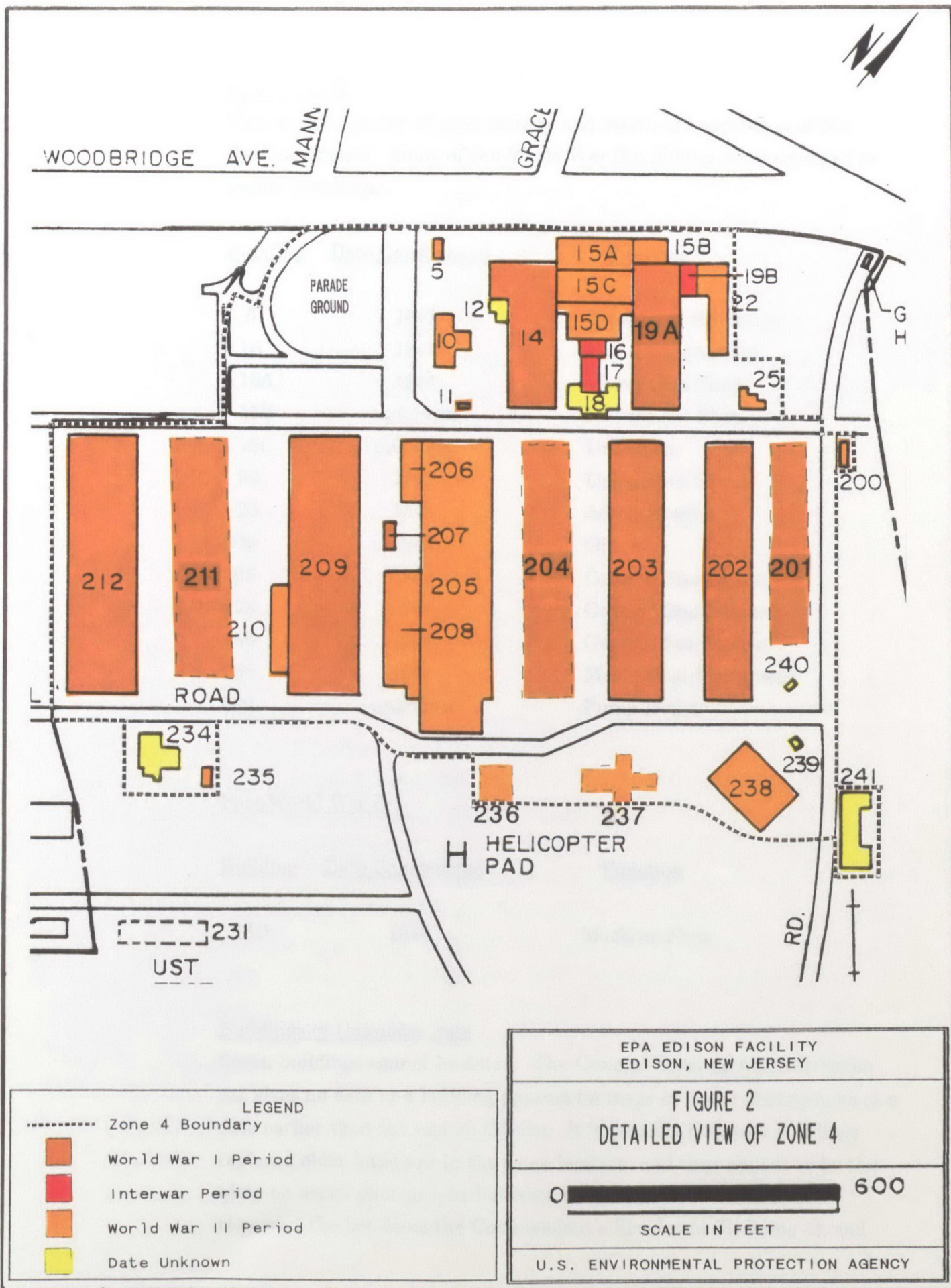
Eight World War I buildings remain.

<u>Building</u>	<u>Date Constructed</u>	<u>Function</u>
11	1918	Switching Station
14	1918	Assembly Plant
19A	1918	Assembly Plant
202	1918	Controlled Humidity Warehouse
203	1918	Controlled Humidity Warehouse
207	1918	Office
209	1918	Warehouse
212	1918	Controlled Humidity Warehouse

The Interwar Years

Three buildings were constructed in this period; while seventy-one were demolished.

<u>Building</u>	<u>Date Constructed</u>	<u>Function</u>
16	1938	Latrine
17	1921	Administration
19B	1934	Lunch Room



World War II

This was the period of peak activity and maximum expansion of the Raritan Arsenal. Many of the World War II buildings were attached to earlier buildings.

<u>Building</u>	<u>Date Constructed</u>	<u>Function</u>
5	1941	Telephone Exchange
10	1941	Post Headquarters
15A	1944	Heavy Gun Shop
15B	unknown	Instrument Shop
15C	unknown	Unknown
22	1941	Upholstery Shop
25	1941	Administration
200	1942	Office
206	1943	General Storehouse
208	1944	General Storehouse
210	1944	General Storehouse
238	1941	Mechanical Equipment
239	unknown	Pump Island

Post-World War II

<u>Building</u>	<u>Date Constructed</u>	<u>Function</u>
15D	1946	Machine Shop

Buildings of Unknown Date

Seven buildings cannot be dated. The General Services Administration list gives no date or a building appears on maps or aerial photographs at a date earlier than the one on the list. It is possible that new buildings replaced older buildings in the same location, and thus appear to be the same on aerial photographs but were in fact constructed as dated. However, the list dates the Commandant's Residence (Building 1), and

standing in 1964, as having been constructed in 1945, which does not match the facts. This is a subject needing further research.

<u>Building</u>	<u>Listed Date</u>	<u>Earliest Date Known</u>	<u>Function</u>
12	1951	1947 aerial photo	General Storehouse
18	none	1939 aerial photo	Optical Tower
205	1942	1939 aerial photo	Warehouse
234	1941	1939 aerial photo	Heating Plant
235	1941	1961 aerial photo	General Storehouse
240	none	1939 aerial photo	Weigh Station
241	1953	1947 aerial photo	Motor Repair Shop

Other Structures

Three other classes of structures exist within Zone 4. These are (1) remnants of demolished buildings, (2) remnants of transportation systems, and (3) the Parade Ground. Remnants of demolished buildings include Building 23, a 1942 general storehouse; Building 26, a sentry station listed as built in 1942 but appearing on a 1939 aerial photograph; Building 201, a general storehouse listed as built in 1943, but shown on a 1923 map and a 1939 aerial photograph; Building 204, a 1918 warehouse; Building 211, a 1918 controlled humidity warehouse; Building 231, a 1941 chemistry lab; Building 236, a 1943 office; and Building 237, a 1943 mess hall (Figure 2). Two types of remnants from the Arsenal's internal transportation system are present: the roads, and the railroad tracks and loading bays. The Parade Ground retains some of the contours of the driveway associated with the Commandant's Residence, as well as a flagpole that was part of a large V-shaped formation of flagpoles. Portions of a brick walkway to the Commandant's Residence and remainders of cannon mounts also are present.

b. Fire Station - Zone 5

The fire station (Building 228) is in a small parcel owned by EPA but separated from the main property. It is a two-story brick structure with gable roof and a bell and siren tower.

c. 1950s Warehouses - Zone 6

Buildings 255 and 256 are 1220 foot long by 200 foot wide warehouses built around 1953. Along with Buildings 245 and 246, these are the newest and largest Arsenal-era buildings on the property.

d. 1950s Warehouses - Zone 7

Buildings 245 and 246 are controlled-humidity warehouses built around 1953. They are comparable in scale to Buildings 255 and 256. Along with Buildings 255 and 256, these are the newest and largest Arsenal-era buildings on the property. Also in this zone is a structure, Building 227, a water storage tank from 1941.

e. Firing Ranges - Zone 8

There are two firing ranges. Near Building 246 is a pistol firing range with a thirty-six foot long covered firing platform with elbow bench, a target building, iron range marker frames, and wires for supporting targets. It was constructed after 1951. There is a small arms range that has the remains of a firing shelter, a wood chip pathway, a scoring tower, and a sunken iron box with lifting handles. It is southeast of the pistol range, and was constructed after 1961. Both ranges are located in a pre-Arsenal sand or clay pit.

4. Elsewhere

The portions of the EPA property outside Zones 1-8, collectively referred to as Zone 9, contain no identifiable historic resources. This conclusion is based on documentary research, surface inspection, and archaeological testing.

5. Historic District

Because most of the historic resources at the Edison Facility are from the Raritan Arsenal, seven of the zones have been combined into the Raritan Arsenal Historic District (Figure 3). This District has been characterized and listed by the New Jersey State Museum as No. 28-MI-162. The Raritan Arsenal Historic District contains all of the historic zones except Zone 2, which may contain archaeological resources unrelated to the Raritan Arsenal.

A historic district is a geographically defined area with a significant concentration of sites, buildings, and structures united by past events (a district can be made up of non-contiguous areas). Elements within a district do not have to be of equal significance. Some may be individually eligible for the National Register, while others may derive their importance only through association with the district.

Elements can be divided into the three following categories: Principal, Contributing, and Non-contributing.

a. Principal Elements

Most of the historic resources identified are considered principal elements of the historic district. They are the resources considered likely to be accepted as part of a National Register of Historic Places district. Preservation planning requires that these elements be protected. At this time not all of the resources listed here meet the 50-year age guidelines. Not all of the buildings are structurally sound and suitable for re-use. Some may be contaminated. Additional information concerning these resources will be developed. The following are the principal elements of the district:

- Archaeological Zones (Zones 1 and 3)
- Parade Ground
- Railroad Bays between Warehouses
- Foundations of Buildings 201, 204, and 211

**PAGE NOT
AVAILABLE
DIGITALLY**

- World War I Buildings:
 - 11 Switching Station
 - 14 Assembly Plant
 - 19A Assembly Plant
 - 202 Controlled Humidity Warehouse
 - 203 Controlled Humidity Warehouse
 - 207 Office
 - 209 Warehouse
 - 212 Controlled Humidity Warehouse
- Buildings through World War II:
 - 5 Telephone Exchange
 - 10 Post Headquarters
 - 15A Heavy Gun Shop
 - 15B Instrument Shop
 - 15C Unknown
 - 15D Machine Shop
 - 16 Latrine
 - 17 Administration
 - 19B Lunch Room
 - 22 Upholstery Shop
 - 25 Administration
 - 200 Office
 - 206 General Storehouse
 - 208 General Storehouse
 - 210 General Storehouse
 - 238 Mechanical Equipment
 - 239 Pump Island
- Buildings of Unknown Date:
 - 12 General Storehouse
 - 18 Optical Tower
 - 205 Warehouse
 - 234 Heating Plant
 - 235 General Storehouse
 - 240 Weigh Station
 - 241 Motor Repair Shop

b. Contributing Elements - The following are considered contributing historic resources:

- Firing Ranges
- Korean War Buildings:
 - 245 Controlled Humidity Warehouse
 - 246 Controlled Humidity Warehouse
 - 255 General Storehouse
 - 256 General Warehouse

c. Non-Contributing Elements - These elements lack individual distinction, make no visual contribution to the district, and are unlikely to be sources of information concerning significant past events:

- Concrete pad foundations of Buildings 24, 231, 236, and 237
- Roadways other than those in the parade ground
- Railbeds beyond the warehouse bays

6. Recommendations

To make best use of the material in the historic resources inventory, it is recommended that separate files be established for each of the zones, and that subfiles be created for the many resources within Zone 4. Each file should contain the name(s) of the resource(s), type of resource (site, building, structure), information available from the document inventory, level of research effort completed, an area for structural assessment of buildings, an area for data on contamination, and a section for further research required. All files should be cross-referenced to the historic district with a notation that identifies it as a principal, contributing, or non-contributing element.

V. MANAGEMENT PRACTICES

A. Overview

This section outlines management practices to satisfy the requirements for preservation of historic resources. These practices are derived from the regulatory requirements discussed in Section II and the needs and recommendations contained in the Management Inventory, and are discussed in the three subsections which follow.

The first subsection pertains to Standard Practices that are ongoing whether or not an activity involving historic resources is contemplated, while the second subsection pertains to Activity-Specific Practices necessary when specific actions are proposed by an agency on its property. The third subsection provides an overview of the process of developing mitigation plans for the various types of resources. In all situations, implementation of these management practices will be overseen by the Regional Preservation Officer (RPO). Decisions regarding specific activities at the facility will be the result of coordination between the facility managers and the RPO and his staff, as well as consultation between the RPO and the NJSHPO. The authority to determine the effects of proposed activities on historic resources at the facility will remain with the RPO, subject to all requirements of the MOA.

The overall development and maintenance of the physical plant of the Edison Facility is the subject of a master plan currently being prepared by EPA. This historic resources management plan will be incorporated into the master plan for the facility by references in key sections, and by meetings between the facility managers and the RPO's staff to provide a step-by-step interpretation of the practices discussed below. These meetings will also include discussions of the need for consulting with the NJSHPO and the process of nominating the site for inclusion in the National Register.

Consultation with the NJSHPO will be carried out by the RPO's staff in regard to both Standard Practices and Activity-Specific Practices, as discussed in the following subsections. All consultation will be carried out as provided for in the MOA.

B. Standard Practices

Because the management of historic resources is a continuing process of information gathering and decision making, some management practices are aimed at ensuring that the activity continues smoothly. Listed below are a number of standard practices associated with the implementation and ongoing refinement of this HRMP.

1. Develop a large base map that accurately depicts and locates the historic resources, zones, and district.
2. Establish and maintain files on documentary sources. Develop a cross-reference system to facilitate easy access to types of documents such as photographs, maps, drawings, and official records.
3. Establish and maintain files on the historic resources that have been inventoried. The best system will include separate files for each of the zones, and subfiles for the resources within Zone 4. Each file should contain the name(s) of the resource(s), type of resource (site, building, structure), information available from the document inventory, level of research effort completed, an area for structural assessment of buildings, an area for data on contamination, and a section for further research required. All files should be cross-referenced to the historic district with a notation that identifies it as a principal, contributing, or non-contributing element.
4. Upgrade all files as new material is received.
5. Prepare a nomination to the National Register.
6. Use the HRMP as a guide to requirements and the files as a working tool at the start of any plan involving historic resources.
7. Continually evaluate agency mission activities and the possibility of siting them in historic buildings. Re-use of historic buildings is the best preservation.

8. Consider alternative uses for vacant historic buildings, including lease arrangements with other public agencies or with private parties.
9. Seek assistance from the NJSHPO for guidance concerning modifications and uses of historic buildings. EPA will apply the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings (Appendix A) to historic building modifications proposed at the facility.
10. Make available to the public the results of any additional research on the historic resources and encourage public participation in their preservation.

C. Activity-Specific Practices

Specific actions proposed by the agency are not always detrimental to historic resources. Use maintains and preserves buildings. On the other hand, some resources, particularly archaeological sites, are fragile and easily destroyed.

The key to selecting the appropriate management practice is adherence to the standard practice of re-using historic resources and to avoiding adverse impacts. When an agency action is contemplated, one of the first planning steps is review of the historic resources inventory and maps, as follows:

1. Evaluate the location of the proposed activity:
 - a. If the activity is outside the zones of historic resources and requires no new construction, there will be no impact;
 - b. If the activity is outside the zones of historic resources and requires new construction, determine if an existing historic resource can be re-used and meet agency mission requirements. If the new activity can be located in historic resource, request guidance from the NJSHPO on modifications;
 - c. If the proposed activity is within a zone of historic resources and involves excavation in an archaeological zone, demolition of a building or

structure, or substantial alterations to a building, refer to the management inventory and select a course of action appropriate to the type of resource.

2. Refer to the Management Inventory. Determine if sufficient information concerning the resource that will be affected exists. This includes not only historical data, but data on current condition, contamination levels, and other factors which may encourage or preclude re-use. If sufficient information is not available, initiate research and enter the results in the Management Inventory.
3. Continue the evaluation by type of resource.

As shown in Figures 4 and 5, respectively, the management practices for archaeological sites and for buildings and structures differ somewhat. They are outlined below.

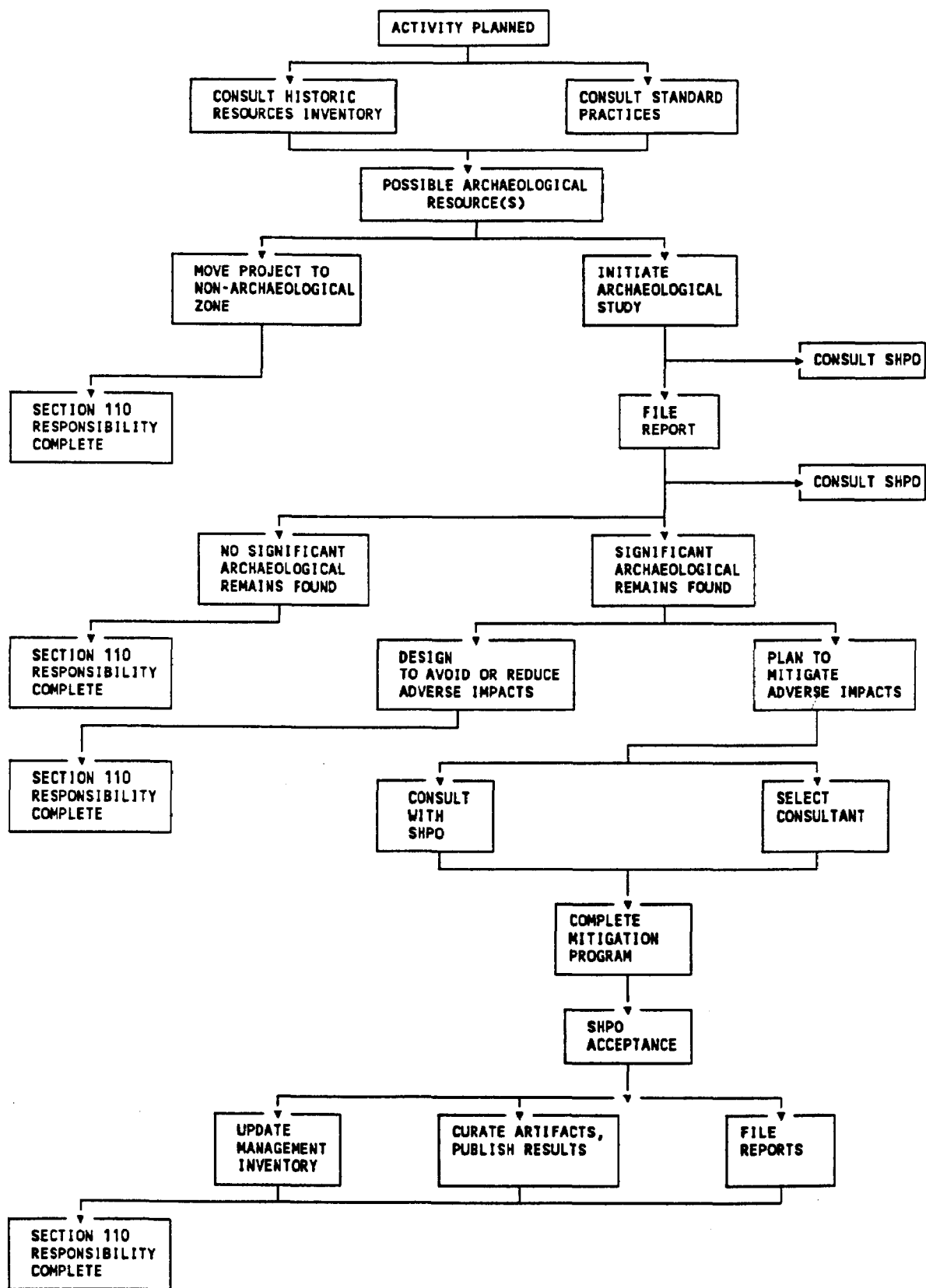
Management Practices for Archaeological Sites

Archaeological sites are fragile, non-renewable resources that are important as sources of information about past people and their culture that are not available in the written historical record. Management practices are listed in order of preference.

1. If an activity is proposed for a known or possible archaeological site, another location should be selected.
2. If the site area is demonstrably the only feasible location, after a thorough review of alternatives, and consultation with and concurrence from the NJSHPO:
 - Initiate an archaeological study to determine the extent, composition, cultural affiliation, and research value of the site. Enter the results in the Management Inventory and consult with the NJSHPO;

FIGURE 4

Management Practices - Archaeology



- Attempt to minimize or reduce the extent of impact. If possible, limit disturbance to those portions of the site zone shown to be free of buried cultural materials;
- For unavoidable adverse impacts, develop and execute a mitigation program. This must be done through coordination with the NJSHPO and, for a National Register site, the Advisory Council.

Management Practices for Buildings and Structures

On this property, most activities are likely to involve buildings and structures.

1. If new construction is contemplated outside a historic resources zone:
 - Determine if Agency requirements could be met by using an existing historic building;
 - If use of a historic building is feasible, follow requirements for re-use of a historic building.
2. If an activity is planned for a historic building or structure:
 - Consult with preservation officials;
 - Preserve the character-giving features of the building or structure to the greatest extent practical;
 - If modifications to a building or structure are required, reduce impacts by using appropriate materials and architectural elements;
 - Enter changes in the Management Inventory.

3. If demolition is proposed in order to construct a new building:

- Determine if plans can be adapted to the existing building;
- Determine if requirements could be met by using an existing historic building. If a building of appropriate size, with proper access and security, is available, refer to the Management Inventory. Gather new information as required, enter it into the Inventory, and consider the building as an alternative. Consult with the NJSHPO for standards on building modifications;
- If no existing building is an alternative to the proposed activity, move the activity to a location having no historic resources;
- If there is no alternative to demolition or substantial alteration, determine the level of significance from the Management Inventory and develop a mitigation plan in conjunction with the NJSHPO and the Advisory Council.

D. Mitigating Unavoidable Adverse Impacts

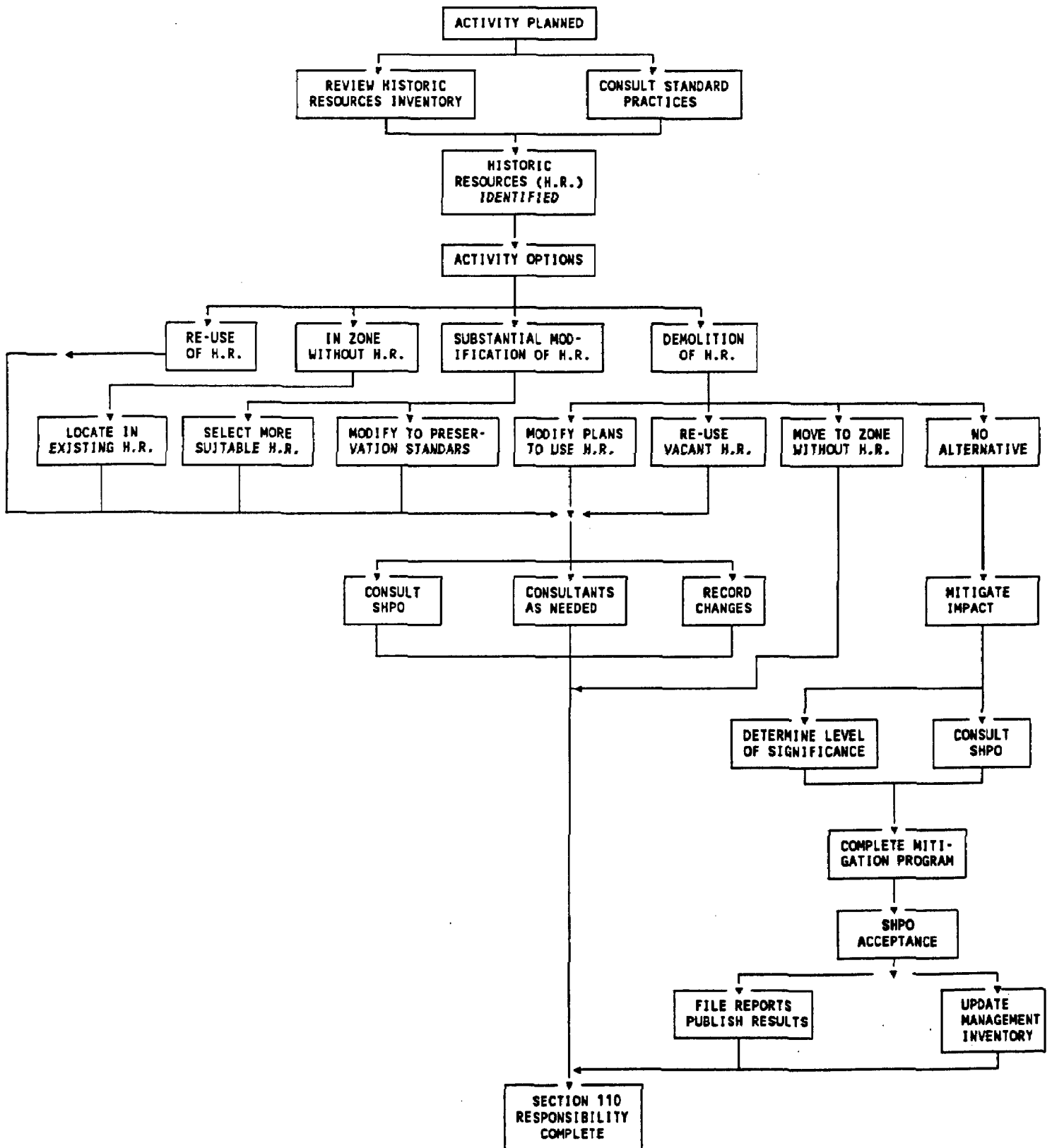
There are several methods of mitigating unavoidable adverse impacts on historic resources. Some are simple and inexpensive, such as ensuring that replacement windows or doors are compatible with a building's style. Others are complex and costly. A mitigation plan begins in consultation with the NJSHPO and preservation professionals. An approval process, which includes consultation with the Advisory Council, must be followed when developing a mitigation plan involving a National Register resource.

1. Mitigating Impacts to Archaeological Sites

Mitigation of unavoidable adverse impacts to an archaeological site usually involves excavation, which destroys the site scientifically in order to extract the information it contains. Mitigation may range from sampling to complete excavation. When an archaeological mitigation plan is approved, the following practices are required:

FIGURE 5

Management Practices - Buildings and Structures



- a. Select a consultant specializing in the type of archaeological site present, and ensure that the consultant meets the minimum professional standards established by the Secretary of the Interior. The NJSHPO can provide lists of qualified consultants and guidance in the selection process;
- b. Make arrangements, as part of the work contract, for analysis and curation of artifacts;
- c. Provide copies of all professional reports to the NJSHPO for their comment, and to other repositories as directed by the NJSHPO, and add reports to the Management Inventory;
- d. Implement publication and public programs, when possible, to interpret and display the results of the agency's preservation program.

2. Mitigating Impacts to Buildings and Structures

Mitigation of adverse impacts on buildings and structures may range from use of architectural elements compatible with the building through simple photographic recording to total recording. EPA will apply the Secretary of the Interior's Standards and Guidelines for Architectural and Engineering Documentation. These are also known as the Historic American Buildings Survey (HABS) and the Historic American Engineering Record (HAER) standards, (Appendix B).

- a. Alterations in such elements as windows, doors, roofing, porches, and the like must be consistent with the style, age, and materials of the building. The NJSHPO should be consulted for standards.
- b. When alterations that will change the integrity, character, and style of a building cannot be avoided, measured drawings, photographs, or some combination of recording methods may be satisfactory. Requirements and standards are available from the NJSHPO. All records created go into the management inventory.

- For simple recording programs, consider using students in architecture or photography programs, providing they are professionally supervised, and the results are reviewed by, and acceptable to, the NJSHPO before alterations occur;
 - If professional consultants are retained, ensure they meet the standards set by the Secretary of the Interior for architectural historians, and that recording skills are demonstrated.
- c. If demolition of a building or structure must occur, its level of significance can be determined from the Management Inventory, and the correct actions can be taken:

For a Principal Historic Resource:

- Consult with the NJSHPO to determine the appropriate level of recording;
- Ensure that the professional preservation consultant is qualified to prepare documentation in conformance with the HABS/HAER standards;
- Distribute all documentation to appropriate repositories as directed by the NJSHPO, and add the records to the Management Inventory.

For a Contributing Historic Resource:

- Consult with the NJSHPO to determine the appropriate level of recording;
- Select a consultant with proper credentials. For many measured drawings and photographs, it may be possible to coordinate with local college or university programs;
- Submit documentation to necessary repositories and add the information to the Management Inventory.

For a Non-Contributing Resource:

- **Locate and map the resource, using professional surveyors;**
- **Make a photographic record and add all of the information to the Management Inventory.**

VI. CONCLUSION

The EPA Edison Facility contains historic resources. There are three known or possible archaeological sites and thirty-one buildings that have been identified. Some of the buildings present are in active use; many are vacant. Of those that are vacant, *some are in poor condition, and others may be chemically contaminated. Many appear to be in good condition and suitable for re-use.*

Management of those resources by federal agencies in a manner consistent with the requirements for preservation is a complex task. Accordingly, this HRMP provides regulatory requirements relating to EPA's responsibilities for historic preservation, a synopsis of the research conducted to date on the property, an inventory of resources, and management practices necessary for a preservation program.

This document should be viewed as the beginning of a management process. Working files for the inventories need to be set up, and a large base map should be prepared. Using the management plan as a guide, the files and the map will become elements for preservation. They will contain the data base and incorporate new information as it is received.

The information in the files and on the map will form the basis for the selection of correct management practices in the future. The background documents, the management plan, and the working files are a tool for fulfilling responsibilities required under federal law. In cooperation with preservation professionals, these responsibilities can be met if the tools are used early and often in the planning process as EPA continues to fulfill its mission on this property.

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- Kardas, S, and E. Larrabee, "Stage I Cultural Resources Survey, U.S. Environmental Protection Agency Property at Raritan Arsenal, Edison Township, Middlesex County, N.J." Technical document prepared for EPA-Region II, October 1990.

Federal Preservation Manuals and Publications

The following Federal manuals and publications provide detailed information on regulatory requirements and preservation practices. A reference library of these documents should be established by EPA. The name of the document is given first, with a brief description if appropriate. A source for the document is given last.

Much of the information has been published in the Federal Register (FR); when listings are available in this source, a standard citation is provided. If a listing is not known to be published in the Federal Register, a source is given, if available.

○ Preservation Standards

Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation. These standards and guidelines are the basis for management activities. The entire set of standards and guidelines is published at 48 FR 44716.

The following are pertinent subsections of the above:

- The Secretary of the Interior's Standards and Guidelines for Historical Documentation (48 FR 44728);
- The Secretary of the Interior's Standards and Guidelines for Architectural and Engineering Documentation (48 FR 44730);
- The Secretary of the Interior's Standards and Guidelines for Archaeological Documentation (48 FR 44734);
- The Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation, Professional Qualifications Standards (48 FR 44738).
- The Section 110 Guidelines: Guidelines for Federal Agency Responsibility Under Section 110 of the NHPA (53 FR 4728).

○ Technical Guidance

- Curation of Federally Owned and Administered Archaeological Collections (52 FR 32740).
- Manual of Mitigation Measures. Available from Advisory Council on Historic Preservation, Old Post Office Building, 1100 Pennsylvania Avenue NW, Suite 809, Washington, D.C. 20004.
- National Register Bulletin Number 15, "Guidelines for Applying the National Register Criteria for Evaluation." Available from Interagency Resources Division, National Park Service, United States Department of the Interior, PO Box 37127, Washington, DC 20013-7127.
- National Register Bulletin Number 16, "Guidelines for Completing National Register Forms." Available from Interagency Resources Division, National Park Service, United States Department of the Interior, PO Box 37127, Washington, DC 20013-7127.
- National Register Bulletin Number 24, "Guidelines for Local Surveys." Available from Interagency Resources Division, National Park Service, United States Department of the Interior, PO Box 37127, Washington, DC 20013-7127.
- National Register Bulletin Number 25, "Directory of Technical Assistance." Available from Interagency Resources Division, National Park Service, United States Department of the Interior, PO Box 37127, Washington, DC 20013-7127.
- Preparing Agreement Documents. Suggested mitigation measures. Available from Advisory Council on Historic Preservation, Old Post Office Building, 1100 Pennsylvania Avenue NW, Suite 809, Washington, DC 20004.
- Preservation Briefs. A series of publications explaining recommended methods and approaches for rehabilitating historic buildings. Included are "Technical Reports," "Preservation Case Studies," and "Preservation Tech Notes." A catalog listing Briefs and Government Printing Office stock numbers is available from the Preservation Assistance Division of the National Park Service.
- Protection of Historic Properties, 36 CFR Part 800. Available from Advisory Council on Historic Preservation, Old Post Office Building, 1100 Pennsylvania Avenue NW, Suite 809, Washington, DC 20004.
- Section 106 Step by Step. Available from Advisory Council on Historic Preservation, Old Post Office Building, 1100 Pennsylvania Avenue NW, Suite 809, Washington, DC 20004.
- Treatment of Archaeological Properties. Available from Advisory Council on Historic Preservation, Old Post Office Building, 1100 Pennsylvania Avenue N.W., Suite 809, Washington, DC 20004.

APPENDICES

APPENDIX A

SECRETARY OF THE INTERIOR'S STANDARDS FOR REHABILITATION AND GUIDELINES FOR REHABILITATING HISTORIC BUILDINGS

The Secretary of the Interior's
**Standards for
Rehabilitation**
and Guidelines for
Rehabilitating Historic Buildings

U.S. Department of the Interior
National Park Service
Preservation Assistance Division
Washington, D.C.

The Secretary of the Interior's Standards for Historic Preservation Projects with Guidelines for Applying the Standards were initially written in 1976 by W. Brown Morton III and Gary L. Hume. The Guidelines for Rehabilitating Historic Buildings were revised and expanded in 1983 by Gary L. Hume and Kay D. Weeks. The Standards for Rehabilitation were revised in 1990 following a public commenting period. It should be noted that the minor revisions to the Standards for Rehabilitation will not affect their application so that a project which was previously acceptable would continue to be acceptable.

Contents

Introduction to the Standards and Guidelines	5
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BUILDING EXTERIOR

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

Preservation of Historic Features (maintenance, repair, replacement)	12
Design for Missing Historic Features	15

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

Preservation of Historic Features (maintenance, repair, replacement)	16
Design for Missing Historic Features	18

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

Preservation of Historic Features (maintenance, repair, replacement)	19
Design for Missing Historic Features	21

Roofs

Preservation of Historic Features (maintenance, repair, replacement)	22
Design for Missing Historic Features	23
Additions/Alterations for the New Use	24

Windows

Preservation of Historic Features (maintenance, repair, replacement)	25
Design for Missing Historic Features	26
Additions/Alterations for the New Use	27

Entrances and Porches

Preservation of Historic Features (maintenance, repair, replacement)	28
Design for Missing Historic Features	29
Additions/Alterations for the New Use	29

Storefronts

Preservation of Historic Features (maintenance, repair, replacement)	31
Design for Missing Historic Features	33

BUILDING INTERIOR

Structural Systems

Preservation of Historic Features (maintenance, repair, replacement)	34
Alterations/Additions for the New Use	36

Interior Spaces, Features, and Finishes

Preservation of Historic Spaces, Features, and Finishes (maintenance, repair, replacement)	37
Design for Missing Historic Features and Finishes	40
Alterations/Additions for the New Use	41

Mechanical Systems

Preservation of Historic Features (maintenance, repair, replacement)	43
Alterations/Additions for the New Use	44

BUILDING SITE

Preservation of Historic Features (maintenance, repair, replacement)	45
Design for Missing Historic Features	48
Alterations/Additions for the New Use	48

DISTRICT/NEIGHBORHOOD

Preservation of Historic Features (maintenance, repair, replacement)	49
Design for Missing Historic Features	51
Alterations/Additions for the New Use	51

HEALTH AND SAFETY CODE REQUIREMENTS	53
ENERGY RETROFITTING	55
NEW ADDITIONS TO HISTORIC BUILDINGS	58

INTRODUCTION

The Secretary of the Interior is responsible for establishing standards for all program under Departmental authority and for advising Federal agencies on 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 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'S STANDARDS FOR REHABILITATION

The following Standards are to be applied to specific rehabilitation projects in a reasonable manner, taking into consideration economic and technical feasibility.

- (1) A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.**
- (2) The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.**
- (3) Each property shall be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.**
- (4) Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.**
- (5) Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a historic property shall be preserved.**
- (6) Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.**
- (7) Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.**
- (8) Significant archeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.**
- (9) New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.**
- (10) New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.**

As stated in the definition, the treatment “rehabilitation” assumes that at least some repair or alteration of the historic building will be needed in order to provide for an efficient contemporary use; however, these repairs and alteration must not damage or destroy materials, features or finishes that are important in defining the building’s historic character. For example, certain treatments—if improperly applied—may cause or accelerate physical deterioration of historic building. This can include using improper repointing or exterior masonry cleaning techniques, or introducing insulation that damages historic fabric. In almost all of these situations, use of these materials and treatments will result in a project that does not meet the Standards. Similarly, exterior additions that duplicate the form, material, and detailing of the structure to the extent that they compromise the historic character of the structure will fail to meet the Standards.

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.

A Catalog of Historic Preservation Publications with stock numbers, prices, and ordering information may be obtained by writing: Preservation Assistance Division, Technical Preservation Services, P.O. Box 37127, Washington, D.C. 20013-7127.

GUIDELINES FOR REHABILITATING HISTORIC BUILDINGS

The Guidelines were initially developed in 1977 to help 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 Standards, 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 own 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 decisionmaking 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 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 historic buildings—**identifying, retaining, and preserving** the form and detailing of those architectural materials and features that are important in *defining the historic character*—is always listed first 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 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 extensively 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 character-defining feature with new material because the level of deterioration or damage of materials precludes 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 approach 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 proc-

ess 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 is 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 alterations to the historic building are generally needed to assure its continued 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 the 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.*

Specific information on rehabilitation and preservation technology may be obtained by writing to the National Park Service, at the addresses listed below:

Preservation Assistance Division
National Park Service
P.O. Box 37127
Washington, D.C. 20013-7127

National Historic Preservation
Programs
Western Regional Office
National Park Service
450 Golden Gate Ave.
Box 36063
San Francisco, CA 94102

Division of Cultural Resources
Rocky Mountain Regional Office
National Park Service
655 Parfet St.
P.O. Box 25287
Denver, CO 80225

Preservation Services Division
Southeast Regional Office
National Park Service
75 Spring St. SW., Room 1140
Atlanta, GA 30303

Office of Cultural Programs
Mid-Atlantic Regional Office
National Park Service
Second and Chestnut Streets
Philadelphia, PA 19106

Cultural Resources Division
Alaska Regional Office
National Park Service
2525 Gambell St.
Anchorage, AK 99503

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 (modelling, tooling, bonding patterns, joint size, and color) may be important in defining the historic character of the building. It should be noted that while masonry is among the most durable of historic building materials, it is also 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.

Recommended

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.

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

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

Not Recommended

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.

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

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

Removing paint from historically painted masonry.

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

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

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

Masonry (continued)

Recommended

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.

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

Inspecting painted masonry surfaces to determine whether repainting is necessary.

Removing damaged or deteriorated paint only to the next sound layer using the gentlest method possible (e.g., handscraping) prior to repainting.

Applying compatible paint coating systems following proper surface preparation.

Repainting with colors that are historically appropriate to the building and district.

Not Recommended

Cleaning masonry surfaces without testing or without sufficient time for the testing results to be of value.

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.

Using a cleaning method that involves water or liquid chemical solutions when there is any possibility of freezing temperatures.

Cleaning with chemical products that will damage masonry, such as using acid on limestone or marble, or leaving chemicals on masonry surfaces.

Applying high pressure water cleaning methods that will damage historic masonry and the mortar joints.

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

Using methods of removing paint which are destructive to masonry, such as sandblasting, application of caustic solutions, or high pressure waterblasting.

Failing to follow manufacturers' product and application instructions when repainting masonry.

Using new paint colors that are inappropriate to the historic building and district.

Recommended

Evaluating the overall condition of the masonry to determine whether more than protection and maintenance are required, that is, if repairs to the masonry features will be necessary.

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

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

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

Duplicating old mortar joints in width and in joint profile.

Repairing stucco by removing the damaged material and patching with new stucco that duplicates the old in strength, composition, color, and texture.

Using mud plaster as a surface coating over unfired, unstabilized adobe because the mud plaster will bond to the adobe.

Not Recommended

Failing to undertake adequate measures to assure the preservation of masonry features.

Removing nondeteriorated mortar from sound joints, then repointing the entire building to achieve a uniform appearance.

Using electric saws and hammers rather than hand tools to remove deteriorated mortar from joints prior to repointing.

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.

Repointing with a synthetic caulking compound.

Using a "scrub" coating technique to repoint instead of traditional repointing methods.

Changing the width or joint profile when repointing.

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

Applying cement stucco to unfired, unstabilized adobe. Because the cement stucco will not bond properly, moisture can become entrapped between materials, resulting in accelerated deterioration of the adobe.

Recommended

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.

Applying new or non-historic surface treatments such as water-repellent coatings to masonry only after repointing and only if masonry repairs have failed to arrest water penetration problems.

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.

Not Recommended

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.

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

Applying waterproof, water-repellent, 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 accelerate its deterioration.

Removing a masonry feature that is unrepairable and not replacing it; or replacing it with a new feature that does not convey the same visual appearance.

The following work is highlighted 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.

Design for Missing Historic Features

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.

Creating a false historical appearance because the replaced masonry feature is based on insufficient historical, pictorial, and physical documentation.

Introducing a new masonry feature that is incompatible in size, scale, material and color.

Wood: Clapboard, weather-board, shingles, and other wooden siding and decorative elements

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.

Recommended

Identifying, retaining, and preserving 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.

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

Not Recommended

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

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

Radically changing the type of finish or its color or accent scheme so that the historic character of the exterior is diminished.

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

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

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.

Wood (continued)

Recommended

Applying chemical preservatives to wood features such as beam ends or outriggers that are exposed to decay hazards and are traditionally unpainted.

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.

Inspecting painted wood surfaces to determine whether repainting is necessary or if cleaning is all that is required.

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

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

Using chemical strippers primarily to supplement other methods such as handscraping, handsanding and the above-recommended thermal devices. Detachable wooden elements such as shutters, doors, and columns may—with the proper safeguards—be chemically dip-stripped.

Applying compatible paint coating systems following proper surface preparation.

Repainting with colors that are appropriate to the historic building and district.

Not Recommended

Using chemical preservatives such as creosote which can change the appearance of wood features unless they were used historically.

Stripping paint or other coatings to reveal bare wood, thus exposing historically coated surfaces to the effects of accelerated weathering.

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

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

Using thermal devices improperly so that the historic woodwork is scorched.

Failing to neutralize the wood thoroughly after using chemicals so that new paint does not adhere.

Allowing detachable wood features to soak too long in a caustic solution so that the wood grain is raised and the surface roughened.

Failing to follow manufacturers' product and application instructions when repainting exterior woodwork.

Using new colors that are inappropriate to the historic building or district.

Recommended

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.

Repairing 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.

Replacing 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. Examples 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.

Not Recommended

Failing to undertake adequate measures to assure the preservation of wood features.

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.

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.

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.

The following work is highlighted because 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.

Design for Missing Historic Features

Designing and installing a new wood feature such as a cornice or 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.

Creating a false historic appearance because the replaced wood feature is based on insufficient historical, pictorial, and physical documentation.

Introducing a new wood feature that is incompatible in size, scale, material, and color.

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.

Recommended

Identifying, retaining, and preserving 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.

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

Cleaning architectural metals, when necessary, to remove corrosion prior to repainting or applying other appropriate protective coatings.

Not Recommended

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

Removing a major portion of the historic architectural metal from a facade instead of repairing or replacing only the deteriorated metal, then reconstructing the facade with new material in order to create a uniform, or “improved” appearance.

Radically changing the type of finish or its historical color or accent scheme.

Failing to identify, evaluate, and treat the causes of corrosion, such as moisture from leaking roofs or gutters.

Placing incompatible metals together without providing a reliable separation material. Such incompatibility can result in galvanic corrosion of the less noble metal, e.g., copper will corrode cast iron, steel, tin, and aluminum.

Exposing metals which were intended to be protected from the environment.

Applying paint or other coatings to metals such as copper, bronze, or stainless steel that were meant to be exposed.

Recommended

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.

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.

Using the gentlest cleaning methods for cast iron, wrought iron, and steel—hard metals—in order to remove paint buildup 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.

Applying appropriate paint or other coating systems after cleaning in order to decrease the corrosion rate of metals or alloys.

Repainting with colors that are appropriate to the historic building or district.

Applying an appropriate protective coating such as lacquer to an architectural metal feature such as a bronze door which is subject to heavy pedestrian use.

Evaluating the overall condition of the architectural metals to determine whether more than protection and maintenance are required, that is, if repairs to features will be necessary.

Not Recommended

Using cleaning methods which alter or damage the historic color, texture, and finish of the metal; or cleaning when it is inappropriate for the metal.

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.

Cleaning soft metals such as lead, tin, copper, terneplate, and zinc with grit blasting which will abrade the surface of the metal.

Failing to employ gentler methods prior to abrasively cleaning cast iron, wrought iron or steel; or using high pressure grit blasting.

Failing to re-apply protective coating systems to metals or alloys that require them after cleaning so that accelerated corrosion occurs.

Using new colors that are inappropriate to the historic building or district.

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.

Failing to undertake adequate measures to assure the preservation of architectural metal features.

Recommended

Repairing architectural metal features by patching, splicing, or otherwise reinforcing the metal following recognized preservation methods. Repairs may also include the limited replacement in kind—or with a compatible substitute material—of those extensively deteriorated or missing parts of features when there are surviving prototypes such as porch balusters, column capitals or bases; or porch cresting.

Replacing 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.

The following work is highlighted 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.

Not Recommended

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.

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.

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.

Design for Missing Historic Features

Designing and installing a new architectural metal feature such as a sheet metal cornice or 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.

Creating a false historic appearance because the replaced architectural metal feature is based on insufficient historical, pictorial, and physical documentation.

Introducing a new architectural metal feature that is incompatible in size, scale, material, and color.

Roofs

The roof—with its shape; features 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 weathertight 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.

Recommended

Identifying, retaining, and preserving roofs—and their functional and decorative features—that are important in defining the overall historic character of the building. This includes the roof's shape, 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 size, color, and patterning.

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

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

Not Recommended

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

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.

Changing the configuration of a roof by adding new features such as dormer windows, vents, or skylights so that the historic character is diminished.

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

Applying paint or other coatings to roofing material which has been historically uncoated.

Failing to clean and maintain gutters and downspouts properly so that water and debris collect and cause damage to roof fasteners, sheathing, and the underlying structure.

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

Recommended

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

Repairing 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.

Replacing in kind an entire feature of the roof that is too deteriorated to repair—if the overall form and detailing are still evidence—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.

Not Recommended

Permitting a leaking roof to remain unprotected so that accelerated deterioration of historic building materials—masonry, wood, plaster, paint and structural members—occurs.

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.

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.

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.

The following work is highlighted 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.

Design for Missing Historic Features

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 historic building.

Creating a false historical appearance because the replaced feature is based on insufficient historical, pictorial, and physical documentation.

Introducing a new roof feature that is incompatible in size, scale, material, and color.

Recommended

Alterations/Additions for the New Use

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.

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.

Not Recommended

Installing mechanical or service equipment so that it damages or obscures character-defining features; or is conspicuous from the public right-of-way.

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.

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 undertaken.

Recommended

Identifying, retaining, and preserving 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.

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

Not Recommended

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.

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.

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.

Obscuring historic window trim with metal or other material.

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

Failing to provide adequate protection of materials on a cyclical basis so that deterioration of the windows results.

Recommended

Making windows weathertight by recaulking and replacing or installing weatherstripping. These actions also improve thermal efficiency.

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.

Repairing 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 are missing when there are surviving prototypes such as architraves, hoodmolds, sash, sills, and interior or exterior shutters and blinds.

Replacing 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.

The following work is highlighted 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.

Design for Missing Historic Features

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 window openings and the historic character of the building.

Not Recommended

Retrofitting or replacing windows rather than maintaining the sash, frame, and glazing.

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

Replacing an entire window when repair of materials and limited replacement of deteriorated or missing parts are appropriate.

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

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.

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.

Creating a false historical appearance because the replaced window is based on insufficient historical, pictorial, and physical documentation.

Introducing a new design that is incompatible with the historic character of the building.

Recommended

Alterations/Additions for the New Use

Designing and installing additional windows on rear or 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.

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.

Not Recommended

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.

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.

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.

Recommended

Identifying, retaining, and preserving 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.

Protecting and maintaining 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.

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.

Not Recommended

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

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 re-oriented to accommodate a new use.

Cutting new entrances on a primary elevation.

Altering utilitarian or service entrances so they appear to be formal entrances by adding panelled doors, fanlights, and sidelights.

Failing to provide adequate protection to materials on a cyclical basis so that deterioration of entrances and porches results.

Failing to undertake adequate measures to assure the preservation of historic entrances and porches.

Recommended

Repairing 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.

Replacing in kind an entire entrance or porch that is too deteriorated to repair—if the 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.

Not Recommended

Replacing an entire entrance or porch when the repair of materials and limited replacement of parts are appropriate.

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.

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.

The following work is highlighted 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.

Design for Missing Historic Features

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.

Creating a false historical appearance because the replaced entrance or porch is based on insufficient historical, pictorial, and physical documentation.

Introducing a new entrance or porch that is incompatible in size, scale, material, and color.

Alterations/Additions for the New Use

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.

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.

Recommended

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.

Not Recommended

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.

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 are often altered to meet the needs of 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.

Recommended

Identifying, retaining, and preserving 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.

Protecting and maintaining 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.

Not Recommended

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.

Changing the storefront so that it appears residential rather than commercial in character.

Removing historic material from the storefront to create a recessed arcade.

Introducing coach lanterns, mansard overhangings, wood shakes, nonoperable shutters, and small-paned windows if they cannot be documented historically.

Changing the location of a storefront's main entrance.

Failing to provide adequate protection to materials on a cyclical basis so that deterioration of storefront features results.

Recommended

Protecting storefronts against arson and vandalism before work begins by boarding up windows and installing alarm systems that are keyed into local protection agencies.

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.

Repairing storefronts by reinforcing the historic materials. Repairs will also generally include the limited replacement in kind—or with compatible substitute material—of those extensively deteriorated or missing parts of storefronts where there are surviving prototypes such as transoms, kick plates, pilasters, or signs.

Replacing 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.

Not Recommended

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.

Stripping storefronts of historic material such as wood, cast iron, terra cotta, carrara glass, and brick.

Failing to undertake adequate measures to assure the preservation of the historic storefront.

Replacing an entire storefront when repair of materials and limited replacement of its parts are appropriate.

Using substitute material for the replacement parts that does not convey the same visual appearance as the surviving parts of the storefront or that is physically or chemically incompatible.

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.

The following work is highlighted 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.

Recommended

Not Recommended

Design for Missing Historic Features

Designing and constructing a new storefront when the historic storefront 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. 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.

Creating a false historical appearance because the replaced storefront is based on insufficient historical, pictorial, and physical documentation.

Introducing a new design that is incompatible in size, scale, material, and color.

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.

BUILDING INTERIOR

Structural System

If features of the structural system are exposed such as loadbearing brick walls, cast iron columns, roof trusses, posts and beams, vigas, or stone foundation walls, they may be important in defining the building's overall historic character. Unexposed structural features that are not character-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.

Recommended

Identifying, retaining, and preserving 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.

Not Recommended

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.

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.

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.

Leaving known structural problems untreated such as deflection of beams, cracking and bowing of walls, or racking of structural members.

Utilizing treatments or products that accelerate the deterioration of structural material such as introducing urea-formaldehyde foam insulation into frame walls.

STRUCTURAL SYSTEM (continued)

Recommended

Protecting and maintaining 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.

Examining and evaluating the physical condition of the structural system and its individual features using non-destructive techniques such as X-ray photography.

Repairing the structural system 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.

Replacing 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 feature; and, at a minimum, be equal to its loadbearing capabilities.

Not Recommended

Failing to provide proper building maintenance on a cyclical basis so that deterioration of the structural system results.

Utilizing destructive probing techniques that will damage or destroy structural material.

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.

Replacing a structural member or other feature of the structural system when it could be augmented and retained.

Installing a replacement feature that does not convey the same visual appearance, e.g., replacing an exposed wood summer beam with a steel beam.

Using substitute material that does not equal the loadbearing capabilities of the historic material and design or is otherwise physically or chemically incompatible.

The following work is highlighted 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.

Recommended

Not Recommended

Alterations/Additions for the New Use

Limiting any new excavations adjacent to historic foundations to avoid undermining the structural stability of the building or adjacent historic buildings.

Correcting structural deficiencies in preparation for the new use in a manner that preserves the structural system and individual character-defining features.

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.

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.

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.

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.

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.

Installing new mechanical and electrical systems or equipment in a manner which results in numerous cuts, splices, or alterations to the structural members.

Inserting a new floor when such a radical change damages a structural system or obscures or destroys interior spaces, features, or finishes.

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.

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.

**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.

Recommended**Interior Spaces**

Identifying, retaining, and preserving 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.

Not Recommended

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.

Altering the floor plan by demolishing principal walls and partitions to create a new appearance.

Altering or destroying interior spaces by inserting floors, cutting through floors, lowering ceilings, or adding or removing walls.

Relocating an interior feature such as a staircase so that the historic relationship between features and spaces is altered.

Recommended

Interior Features and Finishes

Identifying, retaining, and preserving interior features and finishes that are important in defining the overall historic character of the building, including columns, cornices, baseboards, fireplaces and 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.

Protecting and maintaining 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 coatings systems.

Not Recommended

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

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

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

Applying paint, plaster, or other finishes to surfaces that have been historically unfinished to create a new appearance.

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

Stripping paint to bare wood rather than repairing or reapplying grained or marbled finishes to features such as doors and paneling.

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

Failing to provide adequate protection to materials on a cyclical basis so that deterioration of interior features results.

Interior Features and Finishes (continued)

Recommended

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.

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.

Installing protective coverings in areas of heavy pedestrian traffic to protect historic features such as wall coverings, parquet flooring and panelling.

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.

Repainting with colors that are appropriate to the historic building.

Limiting abrasive cleaning methods to certain industrial or warehouse buildings where the interior masonry or plaster features do not have distinguishing design, detailing, 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.

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.

Not Recommended

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.

Stripping interiors of features such as woodwork, doors, windows, light fixtures, copper piping, radiators; or of decorative materials.

Failing to provide proper protection of interior features and finishes during work so that they are gouged, scratched, dented, or otherwise damaged.

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

Using destructive methods such as propane or butane torches or sandblasting to remove paint or other coatings. These methods can irreversibly damage the historic materials that comprise interior features.

Using new paint colors that are inappropriate to the historic building.

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

Failing to undertake adequate measures to assure the preservation of interior features and finishes.

Recommended

Repairing 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 paneling, columns; or decorative wall coverings or ornamental tin or plaster ceilings.

Replacing 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.

The following work is highlighted 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.

Design for Missing Historic Features

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.

Not Recommended

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.

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.

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.

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.

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.

Recommended

Alterations/Additions for the New Use

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.

Reusing decorative material 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.

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.

Enclosing an interior stairway where required by code so that its character is retained. In many cases, glazed fire-rated walls may be used.

Placing new code-required stairways or elevators in secondary and service areas of the historic building.

Not Recommended

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.

Discarding historic material when it can be reused within the rehabilitation project or relocating it in historically inappropriate areas.

Installing permanent partitions that damage or obscure character-defining spaces, features, or finishes.

Enclosing an interior stairway with fire-rated construction so that the stairwell space or any character-defining features are destroyed.

Radically changing, damaging, or destroying character-defining spaces, features, or finishes when adding new code-required stairways and elevators.

Recommended

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 system.

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.

Not Recommended

Destroying character-defining interior spaces, features, or finishes; or damaging the structural system in order to create an atrium or light well.

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.

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

The visible features 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.

Recommended

Identifying, retaining, and preserving 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.

Protecting and maintaining mechanical, plumbing, and electrical systems and their features through cyclical cleaning and other appropriate measures.

Preventing accelerated deterioration of mechanical systems by providing adequate ventilation of attics, crawlspaces, and cellars so that moisture problems are avoided.

Repairing mechanical systems by augmenting or upgrading system parts, such as installing new pipes and ducts; rewiring; or adding new compressors or boilers.

Replacing 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.

Not Recommended

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.

Failing to provide adequate protection of materials on a cyclical basis so that deterioration of mechanical systems and their visible features results.

Enclosing mechanical systems in areas that are not adequately ventilated so that deterioration of the systems results.

Replacing a mechanical system or its functional parts when it could be upgraded and retained.

Installing a replacement feature that does not convey the same visual appearance.

The following work is highlighted 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.

Recommended

Alterations/Additions for the New Use

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.

Installing the vertical runs of ducts, pipes, and cables in closets, service rooms, and wall cavities.

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.

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 viable heating/cooling systems would result in significant damage to historic materials.

Not Recommended

Installing a new mechanical system so that character-defining structural or interior features are radically changed, damaged, or destroyed.

Installing vertical runs of ducts, pipes, and cables in places where they will obscure character-defining features.

Concealing mechanical equipment in walls or ceilings in a manner that requires the removal of historic building material.

Installing "dropped" acoustical ceilings to hide mechanical equipment when this destroys the proportions of character-defining interior spaces.

Cutting through features such as masonry walls in order to install air conditioning units.

Radically changing the appearance of the historic building or damaging or destroying windows by installing heating/air conditioning units in historic window frames.

BUILDING SITE

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

Recommended

Identifying, retaining, and preserving 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.

Retaining the historic relationship between buildings, landscape features, and open space.

Protecting and maintaining 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.

Not Recommended

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.

Removing or relocating historic buildings or landscape features, thus destroying the historic relationship between buildings, landscape features, and open space.

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.

Moving buildings onto the site, thus creating a false historical appearance.

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.

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.

Recommended

Minimizing disturbance of terrain around buildings or elsewhere on the site, thus reducing the possibility of destroying unknown archeological materials.

Surveying areas where major terrain alteration is likely to impact important archeological sites.

Protecting, e.g. preserving in place known archeological material whenever possible.

Planning and carrying out any necessary investigation using professional archeologists and modern archeological methods when preservation in place is not feasible.

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.

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.

Not Recommended

Introducing heavy machinery or equipment into areas where their presence may disturb archeological materials.

Failing to survey the building site prior to the beginning of rehabilitation project work so that, as a result, important archeological material is destroyed.

Leaving known archeological material unprotected and subject to vandalism, looting, and destruction by natural elements such as erosion.

Permitting unqualified project personnel to perform data recovery so that improper methodology results in the loss of important archeological material.

Permitting buildings and site features to remain unprotected so that plant materials, fencing, walkways, archeological features, etc. are damaged or destroyed.

Stripping features from buildings and the site such as wood siding, iron fencing, masonry balustrades; or removing or destroying landscape features, including plant material.

Failing to provide adequate protection of materials on a cyclical basis so that deterioration of building and site features results.

BUILDING SITE (continued)

Recommended

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.

Repairing 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.

Replacing 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.

Not Recommended

Failing to undertake adequate measures to assure the preservation of building and site features.

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.

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.

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.

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

Recommended

Design for Missing Historic Features

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.

Alterations/Additions for the New Use

Designing new onsite 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.

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.

Removing nonsignificant buildings, additions, or site features which detract from the historic character of the site.

Not Recommended

Creating a false historical appearance because the replaced feature is based on insufficient historical, pictorial, and physical documentation.

Introducing a new building or site feature that is out of scale or otherwise inappropriate.

Introducing a new landscape feature or plant material that is visually incompatible with the site or that destroys site patterns or vistas.

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.

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.

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.

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.

Recommended

Identifying, retaining, and preserving 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, street lights, signs, benches, parks and gardens, and trees.

Retaining the historic relationship between buildings, and streetscape and landscape features such as a town square comprised of row houses and stores surrounding a communal park or open space.

Protecting and maintaining 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.

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.

Not Recommended

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.

Destroying streetscape and landscape features by widening existing streets, changing paving material, or introducing inappropriately located new streets or parking lots.

Removing or relocating historic buildings, or features of the streetscape and landscape, thus destroying the historic relationship between buildings, features and open space.

Failing to provide adequate protection of materials on a cyclical basis so that deterioration of building, streetscape, and landscape features results.

Permitting buildings to remain unprotected so that windows are broken; and interior features are damaged.

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.

Recommended

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.

Repairing 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 of features when there are surviving prototypes such as porch balustrades, paving materials, or streetlight standards.

Replacing 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.

Not Recommended

Failing to undertake adequate measures to assure the preservation of building, streetscape, and landscape features.

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.

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.

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.

The following work is highlighted because 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.

Recommended

Design for Missing Historic Features

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.

Alterations/Additions for the New Use

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 business can utilize one parking area as opposed to introducing random, multiple lots.

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.

Removing nonsignificant buildings, additions, or streetscape and landscape features which detract from the historic character of the district or the neighborhood.

Not Recommended

Creating a false historical appearance because the replaced feature is based on insufficient historical, pictorial and physical documentation.

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.

Placing parking facilities directly adjacent to historic buildings which cause the removal of historic plantings, relocation of paths and walkways, or blocking of alleys.

Introducing new construction into historic districts that is visually incompatible or that destroys historic relationships within the district or neighborhood.

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.

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.

Recommended

Identifying the historic building's character-defining spaces, features, and finishes so that code-required work will not result in their damage or loss.

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.

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.

Providing barrier-free access through removable or portable, rather than permanent, ramps.

Providing seismic reinforcement to a historic building in a manner that avoids damaging the structural system and character-defining features.

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.

Installing sensitively designed fire suppression systems, such as a sprinkler system for wood frame mill buildings, instead of applying fire-resistant sheathing to character-defining features.

Not Recommended

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.

Altering, damaging, or destroying character-defining spaces, features, and finishes while making modifications to a building or site to comply with safety codes.

Making changes to historic buildings without first seeking alternatives to code requirements.

Installing permanent ramps that damage or diminish character-defining features.

Reinforcing a historic building using measures that damage or destroy character-defining structural and other features.

Damaging or obscuring historic stairways and elevators or altering adjacent spaces in the process of doing work to meet code requirements.

Covering character-defining wood features with fire-resistant sheathing which results in altering their visual appearance.

Recommended

Applying fire-retardant coatings, such as intumescent paints, which expand during fire to add thermal protection to steel.

Adding a new stairway or elevator to meet health and safety codes in a manner that preserves adjacent character-defining features and spaces.

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 on an inconspicuous side; and its size and scale limited in relationship to the historic building.

Not Recommended

Using fire-retardant coatings if they damage or obscure character-defining features.

Radically changing, damaging, or destroying character-defining spaces, features, or finishes when adding a new code-required stairway or elevator.

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.

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.

Recommended

Not Recommended

District/Neighborhood

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.

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.

Building Site

Retaining plant materials, trees, and landscape features, especially those which perform passive solar energy functions such as sun shading and wind breaks.

Removing plant materials, trees, and landscape features, so that they no longer perform passive solar energy functions.

Installing freestanding solar collectors in a manner that preserves the historic property's character-defining features.

Installing freestanding solar collectors that obscure, damage, or destroy historic landscape or archeological features.

Designing attached solar collectors, including solar greenhouses, so that the character-defining features of the property are preserved.

Locating solar collectors where they radically change the property's appearance; or damage or destroy character-defining features.

Masonry/Wood/Architectural Metals

Installing thermal insulation in attics and in unheated cellars and crawlspaces to increase the efficiency of the existing mechanical systems.

Applying urea of formaldehyde foam or any other thermal insulation with a water content into wall cavities in an attempt to reduce energy consumption.

Recommended

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.

Installing passive solar devices such as a glazed "trombe" wall on a rear or inconspicuous side of all the historic building.

Roofs

Placing solar collectors on noncharacter-defining roofs or roofs of nonhistoric adjacent buildings.

Windows

Utilizing the inherent energy conserving features of a building by maintaining windows and louvered blinds in good operable condition for natural ventilation.

Improving thermal efficiency with weatherstripping, storm windows, caulking, interior shades, and, if historically appropriate, blinds and awnings.

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.

Not Recommended

Resurfacing historic building materials with more energy efficient but incompatible materials, such as covering historic masonry with exterior insulation.

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.

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.

Removing historic shading devices rather than keeping them in an operable condition.

Replacing historic multi-paned sash with new thermal sash utilizing false muntins.

Installing interior storm windows that allow moisture to accumulate and damage the window.

HEALTH AND SAFETY CODE REQUIREMENTS (continued)

Recommended

Installing exterior storm windows which do not damage or obscure the windows and frames.

Considering the use of lightly tinted glazing on non-character-defining elevations if other energy retrofitting alternatives are not possible.

Entrances and Porches

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.

Interior Features

Retaining historic interior shutters and transoms for their inherent energy conserving features.

New Additions to Historic Buildings

Placing new additions that have an energy conserving function such as a solar greenhouse on non-character-defining elevations.

Mechanical Systems

Installing thermal insulation in attics and in unheated cellars and crawlspaces to conserve energy.

Not Recommended

Installing new exterior storm windows which are inappropriate in size or color, which are inoperable.

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.

Using tinted or reflective glazing on character-defining or other conspicuous elevations.

Enclosing porches located on character defining elevations to create passive solar collectors or airlock vestibules. Such enclosures can destroy the historic appearance of the building.

Removing historic interior features which play a secondary energy conserving role.

Installing new additions such as multistory solar greenhouse additions which obscure, damage, destroy character-defining features.

Apply urea formaldehyde foam or any other thermal insulation with a water content or that may collect moisture into wall cavities.

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 capability 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 met in 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.

Recommended

Placing functions and services required for the new use in non-character-defining interior spaces rather than installing a new addition.

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.

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.

Designing new additions in a manner that makes clear what is historic and what is new.

Not Recommended

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.

Attaching a new addition so that the character-defining features of the historic building are obscured, damaged, or destroyed.

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.

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.

Imitating a historic style or period of architecture in new additions, especially for contemporary uses such as drive-in banks or garages.

NEW ADDITIONS TO HISTORIC BUILDINGS (continued)

Recommended

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.

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.

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.

Not Recommended

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.

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.

Designing new additions such as multistory greenhouse additions that obscure, damage, or destroy character-defining features of the historic building.

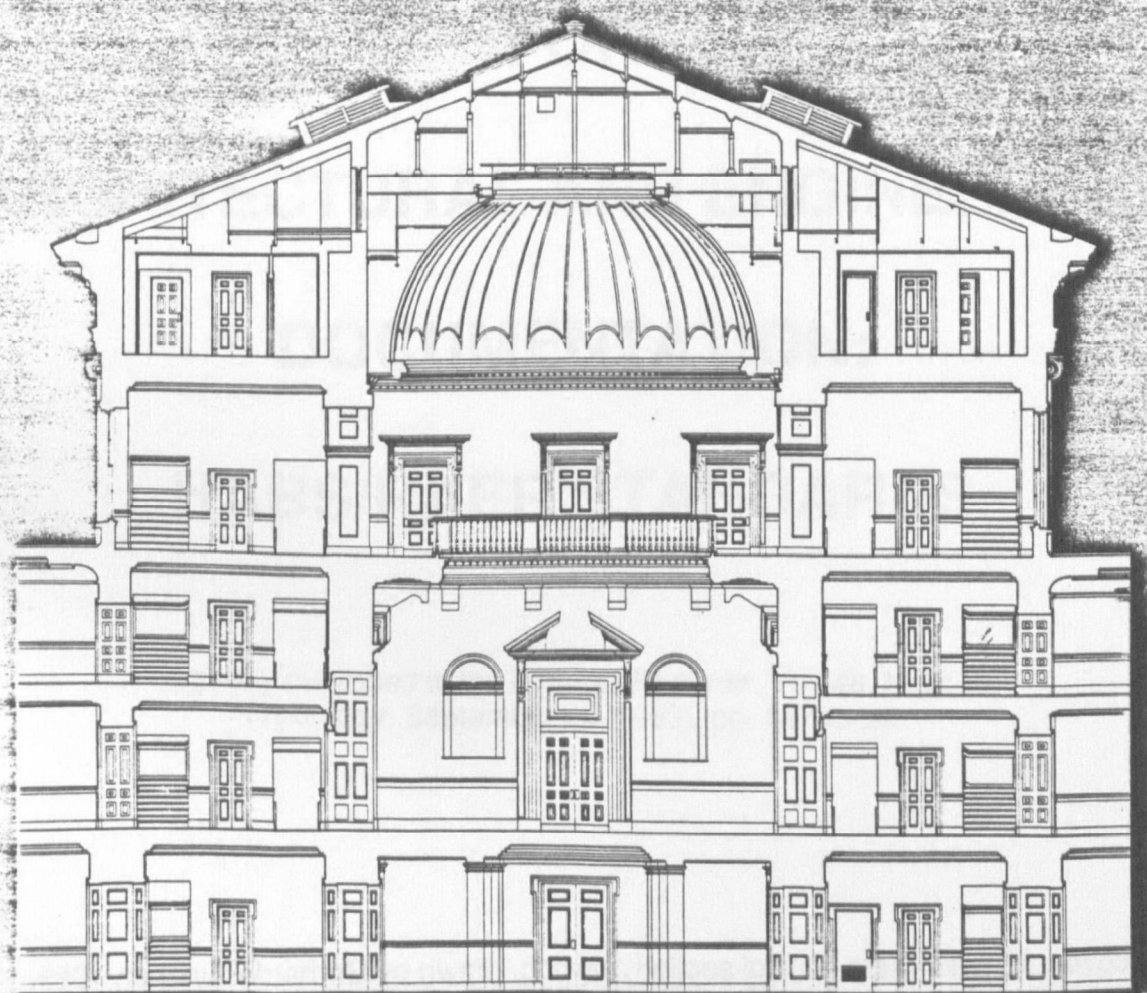
Constructing additional stories so that the historic appearance of the building is radically changed.

APPENDIX B

SECRETARY OF THE INTERIOR'S STANDARDS AND GUIDELINES FOR ARCHITECTURAL AND ENGINEERING DOCUMENTATION

Secretary of the Interior's Standards and Guidelines for Architectural and Engineering Documentation

HABS/HAER STANDARDS



Historic American Buildings Survey/
Historic American Engineering Record

Cultural Resources Program

U.S. Department of the Interior

National Park Service

Washington, D.C. 20013-7127



On the cover: Virginia State Capitol section drawing, drawn by Gerhard Pfundner, 1989.
Back Cover: Troy Gas Light Co. Gasholder House, in Troy, New York, drawn by Eric DeLony.

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**SECRETARY OF THE INTERIOR'S
STANDARDS AND GUIDELINES
FOR
ARCHITECTURAL AND ENGINEERING
DOCUMENTATION:
HABS/HAER STANDARDS**

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Historic American Buildings Survey/
Historic American Engineering Record
Cultural Resources Program
U.S. Department of the Interior
National Park Service
Washington, D.C. 20013-7127

1990

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The Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER) a division of the National Park Service is responsible for documenting the historic buildings, sites, structures, and objects of this country by producing measured drawings, large format photographs, and written histories. The Library of Congress, Prints and Photographs Division is the repository for these documents. The American Institute of Architects, the American Society of Civil Engineers, and the other founding engineering societies provide technical guidance. The regional offices of the National Park Service in Philadelphia, Atlanta, Denver, San Francisco, and Anchorage administer the mitigation documentation program.

Preface

This booklet contains the Secretary of the Interior's Standards for Architectural and Engineering Documentation as published in the *Federal Register* on September 29, 1983 - commonly known as the HABS/HAER Standards for the Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER) program of the National Park Service.

These performance standards are intended to define the products acceptable for inclusion in the HABS/HAER collections within the Library of Congress.

Those products include:

- Measured Drawings
- Large Format Photographs
- Written Data

These standards are as originally published in the *Federal Register* on September 29, 1983 except that the Recommended Sources of Technical Information and Annotated Bibliography contained in the notice of 1983 have been updated to reflect current availability of publications and other printed materials. These standards are not intended to be used alone but in conjunction with guidelines and other publications listed in the bibliography included here.

These standards will be used to produce for the following reasons, documentation that meets HABS/HAER standards:

- In preparing mitigation documentation in accordance with the National Historic Preservation Act of 1966, as amended (16 U.S.C. 470 et seq.).
- In preparing documentation to be donated to the HABS/HAER collection.
- In preparing documentation as part of a HABS/HAER recording project.

Additional information concerning the HABS/HAER program is available by writing the Chief, HABS/HAER Division, National Park Service, P.O. Box 37127, Washington, D.C. 20013-7127.

Robert J. Kapsch
Chief
Historic American Buildings Survey/
Historic American Engineering Record
National Park Service

SECRETARY OF THE INTERIOR'S STANDARDS for ARCHITECTURAL AND ENGINEERING DOCUMENTATION¹

These standards concern the development of documentation for historic buildings, sites, structures, and objects. This documentation, which usually consists of measured drawings, photographs, and written data, provides important information on a property's significance for use by scholars, researchers, preservationists, architects, engineers, and *others interested in preserving and understanding historic properties*. Documentation permits accurate repair or reconstruction of parts of a property, records existing conditions for easements, or may preserve information about a property that is to be demolished.

These standards are intended for use in developing documentation to be included in the Historic American Building Survey (HABS) and the Historic American Engineering Record (HAER) Collections in the Library of Congress. HABS/HAER in the National Park Service, have defined specific requirements for meeting these Standards for their collections. The HABS/HAER requirements include information important to development of documentation for other purposes such as State or local archives.

Standard I. Documentation Shall Adequately Explicate and Illustrate What Is Significant or Valuable About the Historic Building, Site, Structure or Object Being Documented.

The historic significance of the building, site, structure or object identified in the evaluation process should be conveyed by the drawings, photographs and other materials that comprise documentation. The historical, architectural, engineering or cultural values of the property together with the purpose of the documentation activity determine the level and methods of documentation. Documentation prepared for submission to the Library of Congress must meet the HABS/HAER Guidelines.

Standard II. Documentation Shall be Prepared Accurately From Reliable Sources With Limitations Clearly Stated to Permit Independent Verification of the Information.

The purpose of documentation is to preserve an accurate record of historic properties that can be used in research and other preservation activities. To serve these purposes, the documentation must include information that permits assessment of its reliability.

Standard III. Documentation Shall be Prepared on Materials That are Readily Reproducible, Durable and in Standard Sizes.

The size and quality of documentation materials are important factors in the preservation of information for future use. Selection of materials should be based on the length of time expected for storage, the anticipated frequency of use and a size convenient for storage.

Standard IV. Documentation Shall be Clearly and Concisely Produced.

In order for documentation to be useful for future research, written materials must be legible and understandable, and graphic materials must contain scale information and location references.

¹ *Federal Register*, Vol. 48, No. 190, Thursday, September 29, 1983, pp. 44730-44731.

SECRETARY OF THE INTERIOR'S GUIDELINES for ARCHITECTURAL AND ENGINEERING DOCUMENTATION²

Introduction

These Guidelines link the Standards for Architectural and Engineering Documentation with more specific guidance and technical information. They describe one approach to meeting the Standards for Architectural Engineering Documentation. Agencies, organizations or individuals proposing to approach documentation differently may wish to review their approaches with the National Park Service.

The Guidelines are organized as follows:

- Definitions
- Goal of Documentation
- The HABS/HAER Collections
- Standard I: Content
- Standard II: Quality
- Standard III: Materials
- Standard IV: Presentation
- Architectural and Engineering Documentation
- Prepared for Other Purposes
- Recommended Sources of Technical Information
- and Annotated Bibliography

Definitions

These definitions are used in conjunction with these Guidelines:

- Architectural Data Form-a one page HABS form intended to provide identifying information for accompanying HABS documentation.
- Documentation-measured drawings, photographs, histories, inventory cards or other media that depict historic buildings, sites, structures or objects.
- Field Photography-photography other than large-format photography, intended for the purpose of producing documentation, usually 35mm.
- Field Records-notes of measurements taken, field photographs and other recorded information intended for the purpose of producing documentation.

² *Federal Register*, Vol. 48, No. 190, Thursday, September 29, 1983, pp. 44731-34.

- **Inventory Card**-a one page form which includes written data, a sketched site plan and a 35mm contact print drymounted on the form. The negative with a separate contact sheet and index should be included with the inventory card.
- **Large Format Photographs**-photographs taken of historic buildings, sites, structures or objects where the negative is a 4 X 5", 5 X 7" or 8 X 10" size and where the photograph is taken with appropriate means to correct perspective distortion.
- **Measured Drawings**-drawings produced on HABS or HAER formats depicting existing conditions or other relevant features of historic buildings, sites, structures or objects. Measured drawings are usually produced in ink on archivally stable material, such as mylar.
- **Photocopy**-a photograph, with large-format negative, of a photograph or drawing.
- **Select Existing Drawings**-drawings of historic buildings, sites, structures or objects, whether original construction or later alteration drawings that portray or depict the historic value or significance.
- **Sketch Plan**-a floor plan, generally not to exact scale although often drawn from measurements, where the features are shown in proper relation and proportion to one another.

Goal of Documentation

The Historic American Buildings Survey (HABS) and Historic American Engineering Record (HAER) are the national historical architectural and engineering documentation programs of the National Park Service that promote documentation incorporated into the HABS/HAER collections in the Library of Congress. The goal of the collections is to provide architects, engineers, scholars, and interested members of the public with comprehensive documentation of buildings, sites, structures and objects significant in American history and the growth and development of the built environment.

The HABS/HAER Collections: HABS/HAER documentation usually consists of measured drawings, photographs and written data that provide a detailed record which reflects a property's significance. Measured drawings and properly executed photographs act as a form of insurance against fires and natural disasters by permitting the repair and, if necessary, reconstruction of historic structures damaged by such disasters. Documentation is used to provide the basis for enforcing preservation easement. In addition, documentation is often the last means of preservation of a property; when a property is to be demolished, its documentation provides future researchers access to valuable information that otherwise would be lost.

HABS/HAER documentation is developed in a number of ways. First and most usually, the National Park Service employs summer teams of student architects, engineers, historians, and architectural historians to develop HABS/HAER documentation, under the supervision of National Park Service professionals. Second, the National Park Service produces HABS/HAER documentation in conjunction with restoration or other preservation treatment, of historic buildings managed by the National Park Service. Third, Federal agencies, pursuant to Section 110(b) of the National Historic Preservation Act, as amended, record those historic

properties to be demolished or substantially altered as a result of agency action or assisted action (referred to as mitigation projects). Fourth, individuals and organizations prepare documentation to HABS/HAER standards and donate that documentation to the HABS/HAER collections. For each of these programs, different Documentation Levels will be set.

The standards describe the fundamental principals of HABS/HAER documentation. They are supplemented by other material describing more specific guidelines, such as line weights for drawings, preferred techniques for architectural photography, and formats for written data. This technical information is found in the HABS/HAER Procedures Manual.

These guidelines include important information about developing documentation for State or local archives. The State Historic Preservation Officer or the State library should be consulted regarding archival requirements if the documentation will become part of their collections. In establishing archives, the important questions of durability and reproducibility should be considered in relation to the purposes of the collection.

Documentation prepared for the purpose of inclusion in the HABS/HAER collections must meet the requirements below. The HABS/HAER office of the National Park Service retains the right to refuse to accept documentation for inclusion in the HABS/HAER collections when that documentation does not meet HABS/HAER requirements, as specified below.

Standard I: Content

1. Requirement: *Documentation shall adequately explicate and illustrate what is significant or valuable about the historic building, site, structure or object being documented.*

2. Criteria: Documentation shall meet one of the following documentation levels to be considered adequate for inclusion in the HABS/HAER collections.

a. Documentation Level I;

(1) Drawings: a full set of measured drawings depicting existing or historic conditions.

(2) Photographs: photographs with large-format negatives of exterior and interior views; photocopies with large-format negatives of select existing drawings or historic views where available.

(3) Written data: history and description.

b. Documentation Level II;

(1) Drawings: select existing drawings, where available, should be photographed with large-format negatives or photographically reproduced on mylar.

(2) Photographs: photographs with large-format negatives of exterior and interior views, or historic views, where available.

(3) Written data: history and description.

c. Documentation Level III;

(1) Drawings: sketch plan.

(2) Photographs: photographs with large-format negatives of exterior and interior views.

(3) Written data: architectural data form.

d. Documentation Level IV: HABS/HAER inventory card.

3. Test: Inspection of the documentation by HABS/HAER staff.

4. Commentary: The HABS/HAER office retains the right to refuse to accept any documentation on buildings, sites, structures or objects lacking historical significance. Generally, buildings, sites, structures or objects must be listed in, or eligible for listing in the National Register of Historic Places to be considered for inclusion in the HABS/HAER collections.

The kind and amount of documentation should be appropriate to the nature and significance of the buildings, site, structure or object being documented. For example, Documentation Level I would be inappropriate for a building that is a minor element of a historic district, notable only for streetscape context and scale. A full set of measured drawings for such a minor building would be expensive and would add little, if any, information to the HABS/HAER collections. Large format photography [Documentation Level III] would usually be adequate to record the significance of this type of building.

Similarly, the aspect of the property that is being documented should reflect the nature and significance of the building, site, structure or object being documented. For example, measured drawings of Dankmar Adler and Louis Sullivan's Auditorium Building in Chicago should indicate not only facades, floor plans and sections, but also the innovative structural and mechanical systems that were incorporated in that building. Large format photography of Gunston Hall in Fairfax County, Virginia, to take another example, should clearly show William Buckland's hand-carved moldings in the Palladian Room, as well as other views.

HABS/HAER documentation is usually in the form of measured drawings, photographs, written data. While the criteria in this section have addressed only these media, documentation need not be limited to them. Other media, such as films of industrial processes, can and have been used to document historic buildings, sites, structures or objects. If other media are to be used, the HABS/HAER office should be contacted before recording.

The actual selection of the appropriate documentation level will vary, as discussed above. For mitigation documentation projects, this level will be selected by the National Park Service Regional Office and communicated to the agency responsible for completing the documentation. Generally, Level I documentation is required for nationally significant buildings and structures, defined as National Historic Landmarks and the primary historic units of the National Park Service.

On occasion, factors other than significance will dictate the selection of another level of documentation. For example, if a rehabilitation of a property is planned, the owner may wish to have a full set of as-built drawings, even though the significance may indicate Level II documentation.

HABS Level I measured drawings usually depict existing conditions through the use of a site plan, floor plans, elevations, sections and construction details. HAER Level I measured drawings will frequently depict original conditions where adequate historical material exists, so as to illustrate manufacturing or engineering processes.

Level II documentation differs from Level I by substituting copies of existing drawings, either original or alteration drawings, for recently executed measured drawings. If this is done, the drawings must meet HABS/HAER requirements outlined below. While existing drawings are rarely as suitable as-built drawings, they are adequate in many cases for documentation purposes. Only when the desirability of having as-built drawings is clear are Level I measured drawings required in addition to existing drawings. If existing drawings are housed in an accessible collection and cared for archivally, their reproduction for HABS/HAER may not be necessary. In other cases, Level I measured drawings are required in the absence of existing drawings.

Level III documentation requires a sketch plan if it helps to explain the structure. The architectural data form should supplement the photographs by explaining what is not readily visible.

Level IV documentation consists of completed HABS/HAER inventory cards. This level of documentation, unlike the other three levels, is rarely considered adequate documentation for the HABS/HAER collections but is undertaken to identify historic resources in a given area prior to additional, more comprehensive documentation.

Standard II: Quality

1. Requirement: *HABS and HAER documentation shall be prepared accurately from reliable sources with limitations clearly stated to permit independent verification of information.*

2. Criteria: For all levels of documentation, the following quality standards shall be met:

a. Measured drawings: Measured drawings shall be produced from recorded, accurate measurements. Portions of the building that were not accessible for measurement should not be drawn on the measured drawings but clearly labeled as not accessible or drawn from available construction drawings and other sources and so identified. No part of the measured drawings shall be produced from hypothesis or non-measurement related activities. Documentation Level I measured drawings shall be accompanied by a set of field notebooks in which the measurements were first recorded. Other drawings prepared for Documentation Levels II and III, shall include a statement describing where the original drawings are located.

b. Large format photographs: Large format photographs shall clearly depict the appearance of the property and areas of significance of the recorded building, site, structure or object. Each view shall be perspective-corrected and fully captioned.

c. Written history: Written history and description for Documentation Levels I and II shall be based on primary sources to the greatest extent possible. For Levels III and IV, secondary sources may provide adequate information; if not, primary research will be necessary. A frank assessment of the reliability and limitations of sources shall be included. Within the written history, statements shall be footnoted as to their sources, where appropriate. The written data shall include a methodology section specifying name of researcher, date of research, sources searched, and limitations of the project.

3. Test: Inspection of the documentation by HABS/HAER staff.

4. Commentary: The reliability of the HABS/HAER collections depends on documentation of high quality. Quality is not something that can be easily prescribed or quantified, but it derives from a process in which thoroughness and accuracy play a large part. The principle of independent verification of HABS/HAER documentation is critical to the HABS/HAER collections.

Standard III: Materials

1. Requirement: *HABS and HAER documentation shall be prepared on materials that are readily reproducible for ease of access; durable for long storage; and in standard sizes for ease of handling.*

2. Criteria: For all levels of documentation, the following material standards shall be met:

a. Measured Drawings:

Readily Reproducible: Ink on translucent material.

Durable: Ink on archivally stable materials.

Standard Sizes: Two sizes: 19 X 24" or 24 X 36".

b. Large Format Photographs:

Readily Reproducible: Prints shall accompany all negatives.

Durable: Photography must be archivally processed and stored. Negatives are required on safety film only. Resin-coated paper is not accepted. Color photography is not acceptable.

Standard Sizes: Three sizes: 4 X 5", 5 X 7", 8 X 10".

c. Written History and Description:

Readily Reproducible: Clean copy for xeroxing.

Durable: Archival bond required.

Standard Sizes: 8½ X 11".

d. Field Records:

Readily Reproducible: Field notebooks may be xeroxed. Photo identification sheet will accompany 35 mm negatives and contact sheets.

Durable: No requirement

Standard Sizes: Only requirement is that they can be made to fit into a 9½ X 12" archival folding file.

3. Test: Inspection of the documentation by HABS/HAER staff.

4. Commentary: All HABS/HAER records are intended for reproduction; some 20,000 HABS/HAER records are reproduced each year by the Library of Congress. Although field records are not intended for quality reproduction, it is intended that they be used to supplement the formal documentation. The basic durability performance standard for HABS/HAER records is 500 years. Ink on mylar is believed to meet this standard, while color photography, for example, does not. Field records do not meet this archival standard, but are maintained in the HABS/HAER collections as a courtesy to the collection user.

Standard IV: Preservation

1. Requirement: *HABS and HAER documentation shall be clearly and concisely produced.*

2. Criteria: For levels of documentation as indicated below, the following standards for presentation will be used:

a. Measured Drawings: Level I measured drawings will be lettered mechanically (i.e., Leroy or similar) or in a handprinted equivalent style. Adequate dimensions shall be included on all sheets. Level III sketch plans should be neat and orderly.

b. Large format photographs: Level I photographs shall include duplicate photographs that include a scale. Level II and III photographs shall include, at a minimum, at least one photograph with a scale, usually of the principal facade.

c. Written history and description: Data shall be typewritten on bond, following accepted rules of grammar.

3. Test: Inspection of the documentation by HABS/HAER staff.

Architectural and Engineering Documentation Prepared for Other Purposes

Where a preservation planning process is in use, architectural and engineering documentation, like other treatment activities, are undertaken to achieve the goals identified by the preservation planning process. Documentation is deliberately selected as a treatment for properties evaluated as a significant, and the development of the documentation program for a property follows from the planning objectives.

Documentation efforts focus on the significant characteristics of the property, as defined in the previously completed evaluation. The selection of a level of documentation and the documentation techniques (measured drawings, photography, etc.) is based on the significance of the property and the management needs for which the documentation is being performed. For example, the kind and level of documentation required to record a historic property for easement purposes may be less detailed than that required as mitigation prior to destruction of the property. In the former case, essential documentation might be limited to the portions of the property controlled by the easement, for example, exterior facades; while in the latter case, significant interior architectural features and non-visible structural details would also be documented.

The principles and content of the HABS/HAER criteria may be used for guidance in creating documentation requirements for other archives. Levels of documentation and the durability and sizes of documentation may vary depending on the intended use and the repository. Accuracy of documentation should be controlled by assessing the reliability of all sources and making that assessment available in the archival record; by describing the limitations of the information available from research and physical examination of the property and by retaining the primary data (field measurements and notebooks) from which the archival record was produced. Usefulness of the documentation products depends on preparing the documentation on durable materials that are able to withstand handling and reproduction, and in sizes that can be stored and reproduced without damage.

Recommended Sources of Technical Information and Annotated Bibliography³

Recording Historic Structures is available through AIA Press, request publication #ISBN 1-55835-018-7 (hardcover - \$26.95) or #ISBN 1-55835-021-7 (softcover - \$19.95), plus \$3.00 shipping charge, and D.C. or Maryland sales tax, if applicable. AIA Order Department, 9 Jay Gould Court, P.O. Box 753, Waldorf, Maryland 20601.

Recording Historic Structures. John A. Burns, editor. Washington, D.C.: The AIA Press, 1989.

With over 200 photographs, drawings, illustrations, a bibliography, and an index, this handbook discusses each aspect of the documentation of historic structures, using examples from the HABS/HAER collection.

The following printed materials are available by writing to: HABS/HAER - National Park Service, P.O. Box 37127, Washington, D.C. 20013-7127. Please send check or money order made out to the U.S. Treasury, to cover the cost of reproduction and handling. Availability and price accurate as of June 1, 1990.

Guidelines for Recording Historic Ships. Richard K. Anderson, Jr. Washington, D.C.: Historic American Buildings Survey/Historic American Engineering Record, National Park Service, 1988. Free, limited quantity.

This document marks the revival of the 1930's Historic American Merchant Marine Survey and provides the definitive guide to maritime recording.

HABS Field Instructions for Measured Drawings. Washington, D.C.: Historic American Buildings Survey/Historic American Engineering Record, National Park Service, 1981. \$5.46
Gives procedures for producing measured drawings of historic buildings to HABS/HAER standards.

HABS Historian's Procedures Manual. Washington, D.C.: Historic American Buildings Survey/Historic American Engineering Record, National Park Service, 1983. \$6.63
Provides guidelines for producing written data on historic buildings to HABS/HAER standards.

HAER Field Instructions. Washington, D.C.: Historic American Buildings Survey/ Historic American Engineering Record, National Park Service, 1981. \$21.17
Provides guidelines for documenting to HABS/HAER standards, historic engineering and industrial sites and structures with measured drawings and written data.

³ The original recommended sources of technical information contained in the *Federal Register* notice of September 29, 1983 have been omitted since most are out of print and/or superseded. The above recommended sources of technical information represent information available and current as of 1990.

Specifications for the Production of Photographs. Washington, D.C.: Historic American Buildings Survey/Historic American Engineering Record, National Park Service, 1984. \$1.17
Provides criteria for the production of large format photographs for acceptance to the HABS/HAER collection.

Transmitting Documentation to HABS/HAER WASO. Washington, D.C.: Historic American Buildings Survey/Historic American Engineering Record, National Park Service, 1985. \$3.64

Provides transmittal procedures and archival requirements of documentation for acceptance to the HABS/HAER collection.

Industrial Eye is available from (request publication #ISBN 0-89133-124-7): Decatur House Museum Shop, 1600 H Street, NW, Washington, D.C. 20006. Please enclose a check or money order made out to the National Trust for \$34.95 plus \$3.00 for postage and handling.

Industrial Eye. Photographs by Jet Lowe from the Historic American Engineering Record. Washington, D.C.: National Trust for Historic Preservation, 1987.

Photographs of the county's engineering and industrial landmarks, illustrating the use of large format photography to document historic engineering works and interpret industrial processes. All photographs meet HABS/HAER standards.

A Record in Detail is available for \$34.95 plus \$2.50 postage and handling from:
University of Missouri Press, 200 Lewis Hall, Columbia, Missouri 65211.

A Record in Detail: The Architectural Photographs of Jack E. Boucher. Columbia: University of Missouri Press, 1988.

A selection of the works of HABS photographer Jack E. Boucher, demonstrating the effective use of large format photography to record historic buildings. All photographs meet HABS/HAER standards.

Architectural Graphic Standards, Eighth Edition. American Institute of Architects. New York: John Wiley & Sons, Inc., 1988.

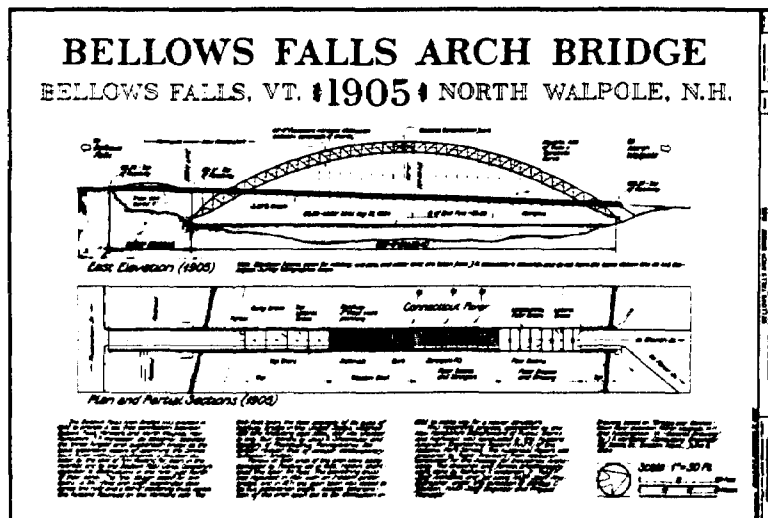
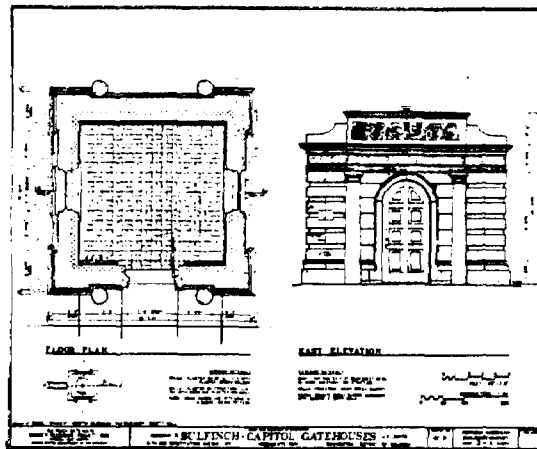
The standard reference for architectural information, this edition is the first to have a chapter on historic preservation, including four pages on HABS.

For further information about HABS/HAER contact:

Historic American Buildings Survey/
Historic American Engineering Record
National Park Service
P.O. Box 37127
Washington, D.C. 20013-7127

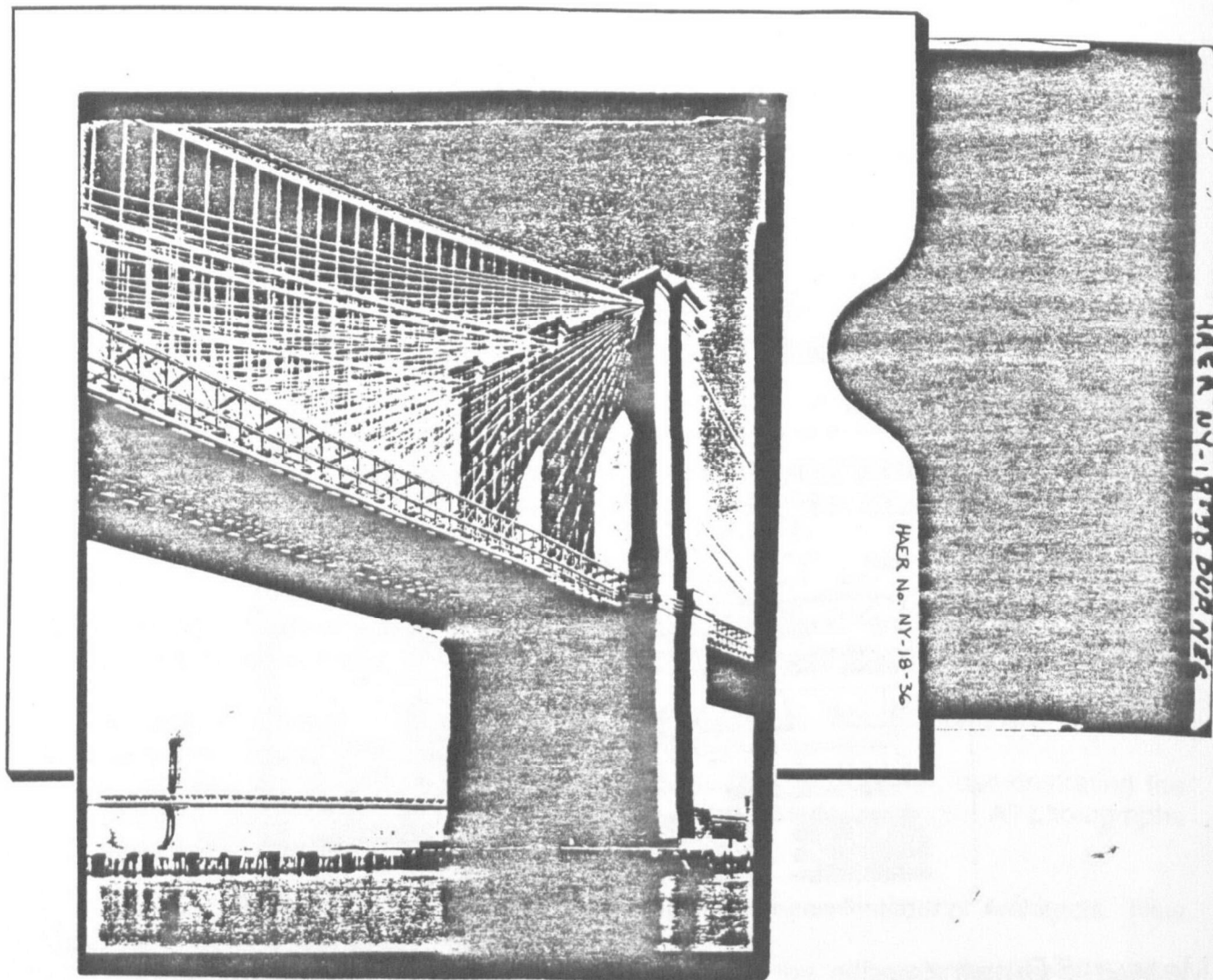
Appendices

Appendix A



Measured Drawings:

Measured drawings shall be produced from recorded, accurate measurements. Portions of the building that were not accessible for measurement should not be drawn on the measured drawing but clearly labeled as not accessible or drawn from available construction drawings and other sources and so identified. Since measured drawings must be readily reproducible and durable, HABS/HAER standards call for ink on translucent and archivally stable materials, such as mylar. As illustrated in the reductions above, drawings are produced in two standard sizes, 19 X 24" and 24 X 36".



Large Format Photographs:

HABS/HAER standards require that large format (cameras that produce 4 X 5", 5 X 7", or 8 X 10" negatives) photographic documentation be done with black and white film. A print must accompany each negative. The negatives and contact prints are archivally treated and the contact paper is fiber-based instead of resin-coated (RC). The paper and negatives must have had sufficiently long washings in water in order to remove all processing chemicals.

HISTORIC AMERICAN BUILDINGS SURVEY

JIMMY CARTER BOYHOOD HOME (J.F. Plexico House)

HABS No. GA-245

Location: North side of Old Plains Highway (Lebanon Cemetery Road), 2.3 miles west of Interstate 280 in the outskirts of a community called Archery, Sumter County, Georgia.

USGS Plains Georgia Quadrant, Universal Transverse Mercator
Coordinates: Zone 16, N 3548000 E 742375.

Present Owner: Mrs. T. R. Downer.

Present Use: The home is unoccupied but is listed on the Plains tour and can be seen by passing motorists.

Significance: This was Jimmy Carter's childhood home from age 3 until he left Plains to attend college. The farm included a bungalow, commissary (see HABS No. GA-245-A), tenant houses (see HABS No. GA-245-B), a barn, several sheds, fields, and animal pens.

PART I. HISTORICAL INFORMATION

A. Physical History:

1. Date of erection: 1922 is the year that Perry Plexico, son of J.F. Plexico, said that his father purchased the property and built the house. Although the property was never actually sold to the senior Plexico, it was deeded to him in 1921 by a J.S. Plexico of Barnwell, South Carolina, as a security. The debt was not paid off until eleven days after the house was sold to the Carters. This suggests that J.S. Plexico did not live on the property and supports Perry Plexico's recollection that his father, J.F., gained possession of the property in the early 1920s.
2. Original and subsequent owners: The following is a chain of title to the land on which the building stands. Records are from the Clerk's Office, Sumter County Courthouse, Americus, Georgia.
1911 Deed December 1, 1911, recorded December 11, 1911.
Deed Book KK, page 22: J. Passmore to J.S. Plexico for

red Book WW, page
collateral for a loan.
1928.

January 17, 1928.
J.E. Carter, land
res in the east half
east corner of lot

ember 15, 1949,
T.R. Downer.

n located.

Electricity were
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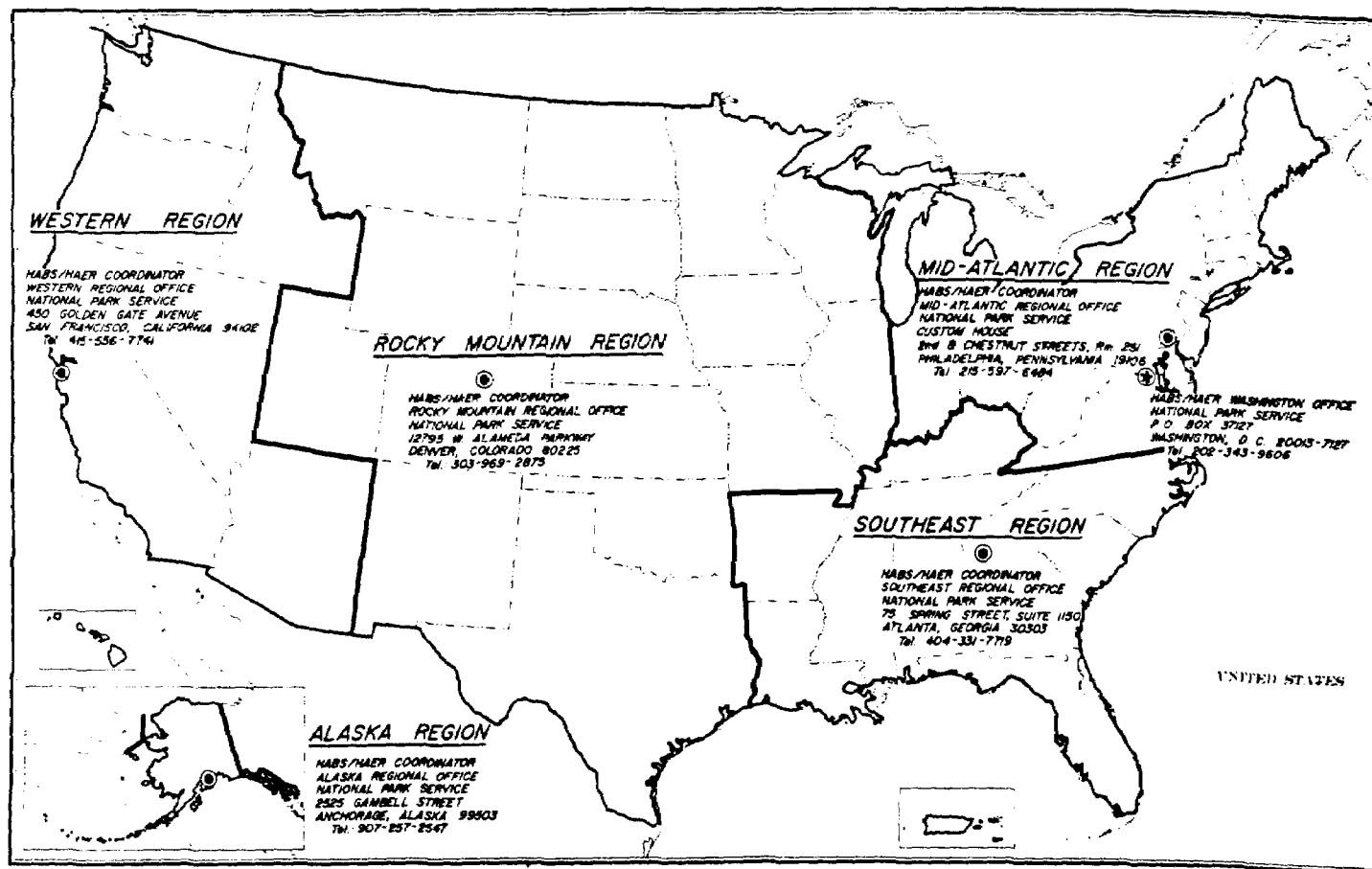
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Written History and Description:

Written history and description are based on primary sources to the greatest extent possible and should include an assessment of the reliability and limitations of the sources. Within the written history, statements shall be footnoted as to their sources, where appropriate. The written data shall include a methodology section specifying the name of the researcher, date of research, sources researched, and limitations of the project. The histories will be submitted on 8 X 11" archival bond.

MITIGATIVE DOCUMENTATION PROGRAM

Under the provisions of the amended National Historic Preservation Act, Federal agencies are required to produce documentation to HABS/HAER standards on buildings, structures, sites, and objects that are listed in or eligible for listing in the National Register of Historic Places and that are threatened with demolition or substantial alteration by projects with Federal involvement. The five National Park Service regional offices charged with external historic preservation responsibilities administer the HABS/HAER mitigative documentation program. The actual work is usually conducted by contractors and supervised by the responsible Federal agency. The documentation produced is reviewed by the regional coordinator and transmitted to the HABS/HAER Washington office for inclusion in the HABS/HAER collections at the Library of Congress.



SUMMARY																	
PERFORMANCE STANDARDS OF THE HISTORIC AMERICAN BUILDINGS SURVEY/HISTORIC AMERICAN ENGINEERING RECORD (HABS/HAER) (SECRETARY OF THE INTERIOR'S STANDARDS FOR ARCHITECTURAL AND ENGINEERING DOCUMENTATION, FEDERAL REGISTER, SEPTEMBER 29, 1983, PP. 44730-44734)																	
STANDARDS	I. CONTENT				II. QUALITY				III. MATERIALS				IV. PRESENTATION				
REQUIREMENTS	"DOCUMENTATION SHALL ADEQUATELY EXPLICATE AND ILLUSTRATE WHAT IS SIGNIFICANT OR VALUABLE ABOUT THE HISTORIC BUILDING, SITE STRUCTURE OR OBJECT BEING DOCUMENTED."				"HABS AND HAER DOCUMENTATION SHALL BE PREPARED ACCURATELY, FROM RELIABLE SOURCES WITH LIMITATIONS CLEARLY STATED TO PERMIT INDEPENDENT VERIFICATION OF INFORMATION."				"HABS AND HAER DOCUMENTATION SHALL BE PREPARED ON MATERIALS THAT ARE READILY REPRODUCIBLE FOR EASE OF ACCESS; DURABLE FOR LONG STORAGE; AND IN STANDARD SIZES FOR EASE OF HANDLING."				"HABS AND HAER DOCUMENTATION SHALL BE CLEARLY AND CONCISELY PRODUCED."				
CRITERIA	LEVEL	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
	A. MEASURED DRAWING	FULL SET OF MEAS. DWGS.	SEE PHOTOS BELOW	SKETCH PLAN	INVENTORY CARD	MEASURED DRAWINGS ARE TO BE PRODUCED FROM RECORDED, ACCURATE MEASUREMENTS. THOSE PORTIONS DRAWN FROM EXISTING DRAWINGS OR OTHER SOURCES SHOULD BE SO IDENTIFIED AND SOURCES LISTED.				INK ON TRANS- LUCENT MATERIAL	8x10" PHOTO- COPY	INK ON BOND PAPER	INK ON INVENTORY CARD	ADEQUATE DIMENSIONS ON ALL SHEETS			
B. PHOTOGRAPHS	LARGE FORMAT PHOTOGRAPHS EXTERIOR & INTERIOR	LARGE FORMAT PHOTOCOPIES: - SELECT EXISTING DWGS - SELECT HISTORIC VIEWS	35mm B&W	PHOTOGRAPHS SHALL CLEARLY DEPICT THE APPEARANCE OF THE PROPERTY AND AREAS OF SIGNIFICANCE. ALL VIEWS ARE TO BE PERSPECTIVE- CORRECTED AND FULLY CAPTIONED.				PRINTS SHALL ACCOMPANY ALL NEGATIVES				MECH. LETTER- ING OR EQUIVA- LENT	MIN. OF ONE PHOTO WITH A SCALE (PRINCIPAL FACADE)	SKETCH PLANS SHALL BE NEAT AND ORDERLY			
				MUST BE ARCHIVALLY PROCESSED, NO R/C PAPER													
C. WRITTEN DATA	HISTORY AND DESCRIPTION IN NARRATIVE OR OUTLINE FORMAT	ONE PAGE SUMMARY	INVENTORY CARD	BASED ON PRIMARY SOURCES		SECONDARY SOURCES MAY PROVIDE ADEQUATE INFORMATION		CLEAN COPY FOR XEROXING				DUPLICATE PHOTOS WITH A SCALE STICK					
	INCLUDE: - METHODOLOGY - NAME OF RESEARCH & DATE OF RESEARCH - SOURCES - FRANK ASSESSMENT OF SOURCES AND THEIR LIMITATIONS				ARCHIVAL BOND REQUIRED				TYPEWRITTEN ON BOND								
D. OTHER	OTHER MEDIA CAN AND HAVE BEEN USED. CONTACT HABS/HAER OFFICE BEFORE EMPLOYING A MEDIA OTHER THAN THOSE SPECIFIED ABOVE.																
TESTS	INSPECTION BY HABS/HAER OFFICE STAFF. DOCUMENTATION NOT MEETING HABS/HAER STANDARDS WILL BE REFUSED.																
COMMENTARIES	KIND AND AMOUNT OF DOCUMENTATION SHOULD BE APPROPRIATE TO THE NATURE AND SIGNIFICANCE OF THE BUILDING, SITE, STRUCTURE OR OBJECT BEING DOCUMENTED.				THE PRINCIPLE OF INDEPENDENT VERIFICATION IS CRITICAL IN ASSURING HIGH QUALITY OF HABS/HAER MATERIALS.				BASIC DURABILITY PERFORMANCE STANDARD IS 500 YEARS.				HABS/HAER ARE MOST WIDELY USED OF SPECIAL COLLECTIONS AT THE LIBRARY OF CONGRESS.				