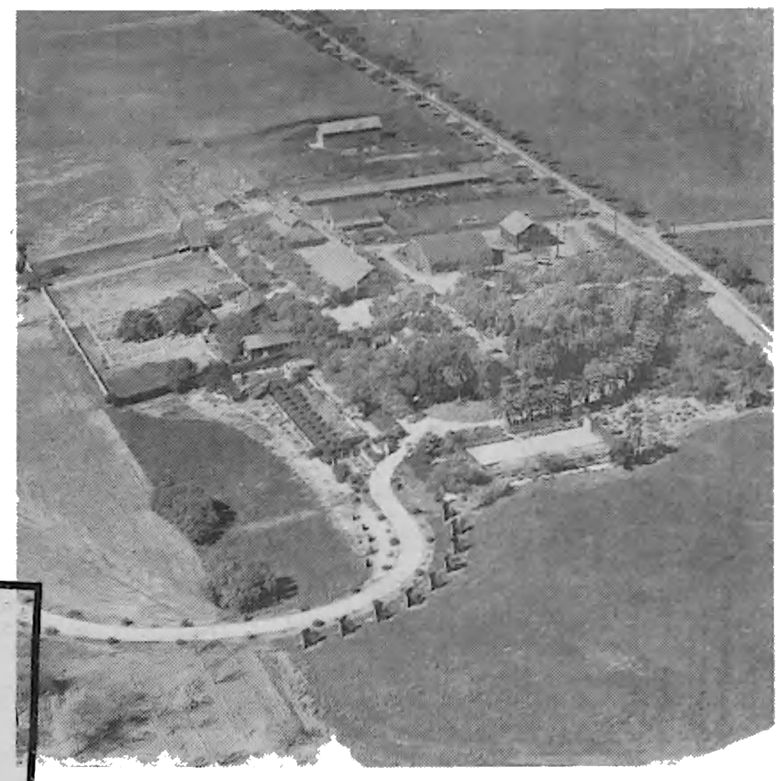
36 PRESERVATION BRIEFS

Protecting Cultural Landscapes:
Planning, Treatment and Management of Historic Landscapes



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National Park Service
Cultural Resources

Preservation Assistance

Cultural landscapes can range from thousands of acres of rural tracts of land to a small homestead with a front yard of less than one acre. Like historic buildings and districts, these special places reveal aspects of our country's origins and development through their form and features and the ways they were used. Cultural landscapes also reveal much about our evolving relationship with the natural world.

A ***cultural landscape*** is defined as "a geographic area, including both cultural and natural resources and the wildlife or domestic animals therein, associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values." There are four general types of cultural landscapes, not mutually exclusive: *historic sites, historic designed landscapes, historic vernacular landscapes, and ethnographic landscapes.* These are defined on the Table on page 2.[1]

Historic landscapes include residential gardens and community parks, scenic highways, rural communities, institutional grounds, cemeteries, battlefields and zoological gardens. They are composed of a number of character-defining features which individually or collectively contribute to the landscape's physical appearance as they have evolved over time. In addition to vegetation and topography, cultural landscapes may include water features such as ponds, streams, and fountains; circulation features such as roads, paths, steps, and walls; buildings; and furnishings, including fences, benches, lights and sculptural objects.

Figure 1: The New York Peace Monument atop Lookout Mountain in the 8,100 acre Chickamauga and Chattanooga National Military Park, Chattanooga, Tennessee, commemorates the reconciliation of the Civil War between the North and South. The strategic high point provides panoramic views to the City of Chattanooga and the Moccasin Bend. Today, it is recognized for its cultural and natural resource value. The memorial, which was added in 1910 is part of this landscape's historic continuum. (courtesy Sam Abell and National Geographic).

DEFINITIONS

Historic Designed Landscape - a landscape that was consciously designed or laid out by a landscape architect, master gardener, architect, or horticulturist according to design principles, or an amateur gardener working in a recognized style or tradition. The landscape may be associated with a significant person(s), trend, or event in landscape architecture; or illustrate an important development in the theory and practice of landscape architecture. Aesthetic values play a significant role in designed landscapes. Examples include parks, campuses, and estates.

Historic Vernacular Landscape - a landscape that evolved through use by the people whose activities or occupancy shaped that landscape. Through social or cultural attitudes of an individual, family or a community, the landscape reflects the physical, biological, and cultural character of those everyday lives. Function plays a significant role in vernacular landscapes. They can be a single property such as a farm or a collection of properties such as a district of historic farms along a river valley. Examples include rural villages, industrial complexes, and agricultural landscapes.

Historic Site - a landscape significant for its association with a historic event, activity, or person. Examples include battlefields and president's house properties.

Ethnographic Landscape - a landscape containing a variety of natural and cultural resources that associated people define as heritage resources. Examples are contemporary settlements, religious sacred sites and massive geological structures. Small plant communities, animals, subsistence and ceremonial grounds are often components.

Most historic properties have a cultural landscape component that is integral to the significance of the resource. Imagine a residential district without sidewalks, lawns and trees or a plantation with buildings but no adjacent lands. A historic property consists of all its cultural resources — landscapes, buildings, archeological sites and collections. In some cultural landscapes, there may be a total absence of buildings.

This Preservation Brief provides preservation professionals, cultural resource managers, and historic property owners a step-by-step process for preserving historic designed and vernacular landscapes, two types of cultural landscapes. While this process is ideally applied to an entire landscape, it can address a single feature such as a perennial garden, family burial plot, or a sentinel oak in an open meadow. This Brief provides a framework and guidance for undertaking projects to ensure a successful balance between historic preservation and change.

Developing a Strategy and Seeking Assistance

Nearly all designed and vernacular landscapes evolve from, or are often dependent on, natural resources. It is these interconnected systems of land, air and water,

Figures 2-4: Character-defining landscape features (top to bottom): "Boot Fence" near D. H. Lawrence Ranch, Questa, New Mexico, 1991 (courtesy Cheryl Wagner); paving detail at Ernest Hemingway House National Historic Site, Key West, Florida, 1994 (courtesy author); and, tree planting detail for Jefferson Memorial Park, St. Louis, Missouri (courtesy Office of Dan Kiley)

vegetation and wildlife which have dynamic qualities that differentiate cultural landscapes from other cultural resources, such as historic structures. Thus, their documentation, treatment, and ongoing management require a comprehensive, multi-disciplinary approach.

Today, those involved in preservation planning and management for cultural landscapes represent a broad array of academic backgrounds, training, and related

project experience. Professionals may have expertise in landscape architecture, history, landscape archeology, forestry, agriculture, horticulture, pomology, pollen analysis, planning, architecture, engineering (civil, structural, mechanical, traffic), cultural geography, wildlife, ecology, ethnography, interpretation, material and object conservation, landscape maintenance and management. Historians and historic preservation professionals can bring expertise in the history of the landscape, architecture, art, industry, agriculture, society and other subjects. Landscape preservation teams, including on-site management teams and independent consultants, are often directed by a landscape architect with specific expertise in landscape preservation. It is highly recommended that disciplines relevant to the landscapes' inherent features be represented as well.

Additional guidance may be obtained from State Historic Preservation Offices, local preservation commissions, the National Park Service, local and state park agencies, national and state chapters of the American Society of Landscape Architects, the Alliance for Historic Landscape Preservation, the National Association of Olmsted Parks, and the Catalog of Landscape Records in the United States at Wave Hill among others.[2]

A range of issues may need to be addressed when considering how a particular cultural landscape should be treated. This may include the in-kind replacement of declining vegetation, reproduction of furnishings, rehabilitation of structures, accessibility provisions for people with disabilities, or the treatment of industrial properties that are rehabilitated for new uses.

Preservation Planning for Cultural Landscapes

Careful planning prior to undertaking work can help prevent irrevocable damage to a cultural landscape. Professional techniques for identifying, documenting, evaluating and preserving cultural landscapes have advanced during the past 25 years and are continually being refined. Preservation planning generally involves the following steps: historical research; inventory and documentation of existing conditions; site analysis and evaluation of integrity and significance; development of a cultural landscape preservation approach and treatment plan; development of a cultural landscape management plan and management philosophy; the development of a strategy for ongoing maintenance; and preparation of a record of treatment and future research recommendations.

The steps in this process are not independent of each other, nor are they always sequential. In fact, information gathered in one step may lead to a re-examination or refinement of previous steps. For example, field inventory and historical research are likely to occur simultaneously, and may reveal unnoticed cultural resources that should be protected.

The treatment and management of cultural landscape should also be considered in concert with the management of an entire historic property. As a result, many other studies may be relevant. They include management plans, interpretive plans, exhibit design, historic structures reports, and other.

CULTURAL LANDSCAPE REPORTS

A Cultural Landscape Report (CLR) is the primary report that documents the history, significance and treatment of a cultural landscape. A CLR evaluates the history and integrity of the landscape including any changes to its geographical context, features, materials, and use.

CLR's are often prepared when a change (e.g. a new visitor's center or parking area to a landscape) is proposed. In such instances, a CLR can be a useful tool to protect the landscape's character-defining features from undue wear, alteration or loss. A CLR can provide managers, curators and others with information needed to make management decisions.

> A CLR will often yield new information about a landscape's historic significance and integrity, even for those already listed on the National Register. Where appropriate, National Register files should be amended to reflect the new findings.

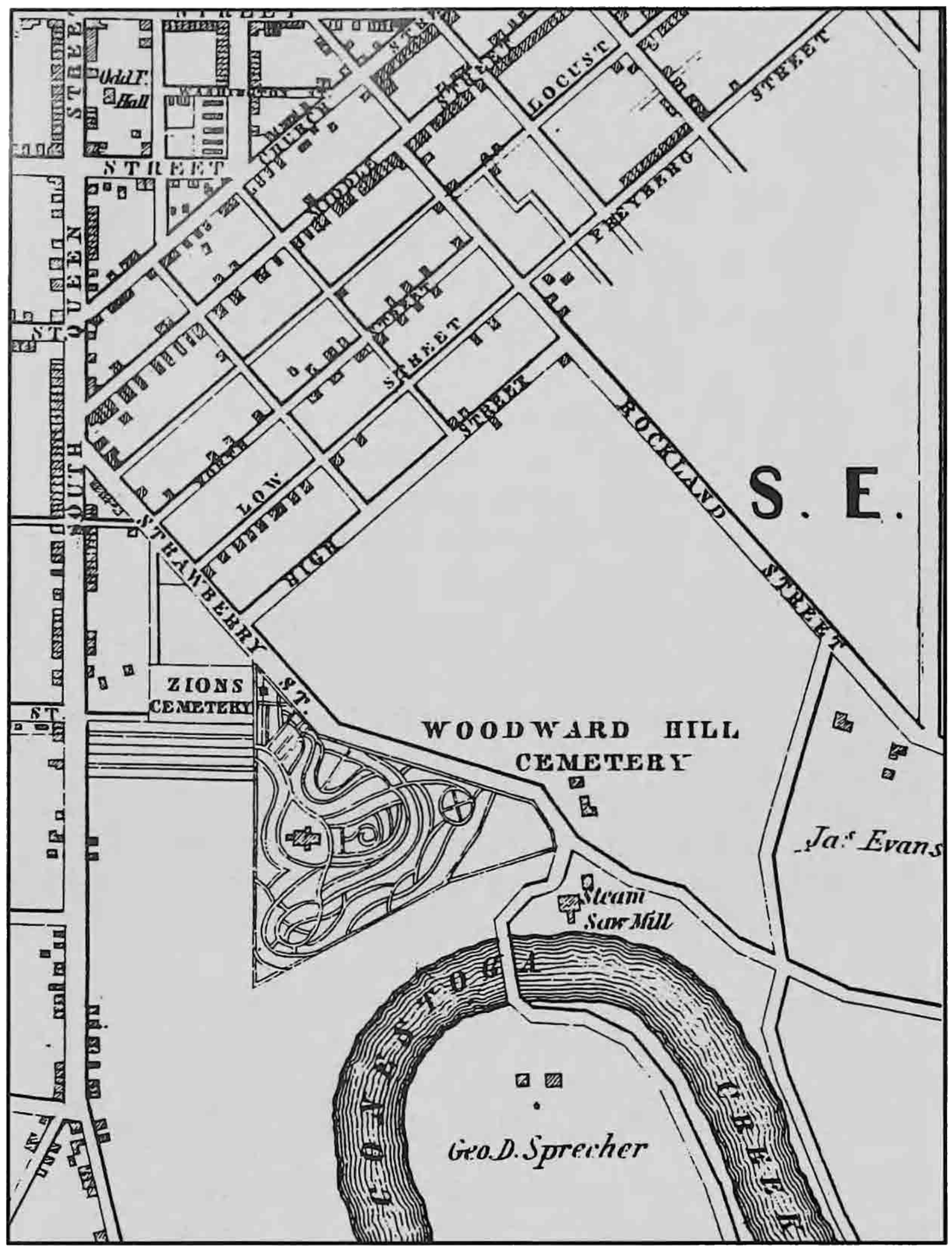
These steps can result in several products including a Cultural Landscape Report (also known as a Historic Landscape Report), statements for management, interpretive guide, maintenance guide and maintenance records.

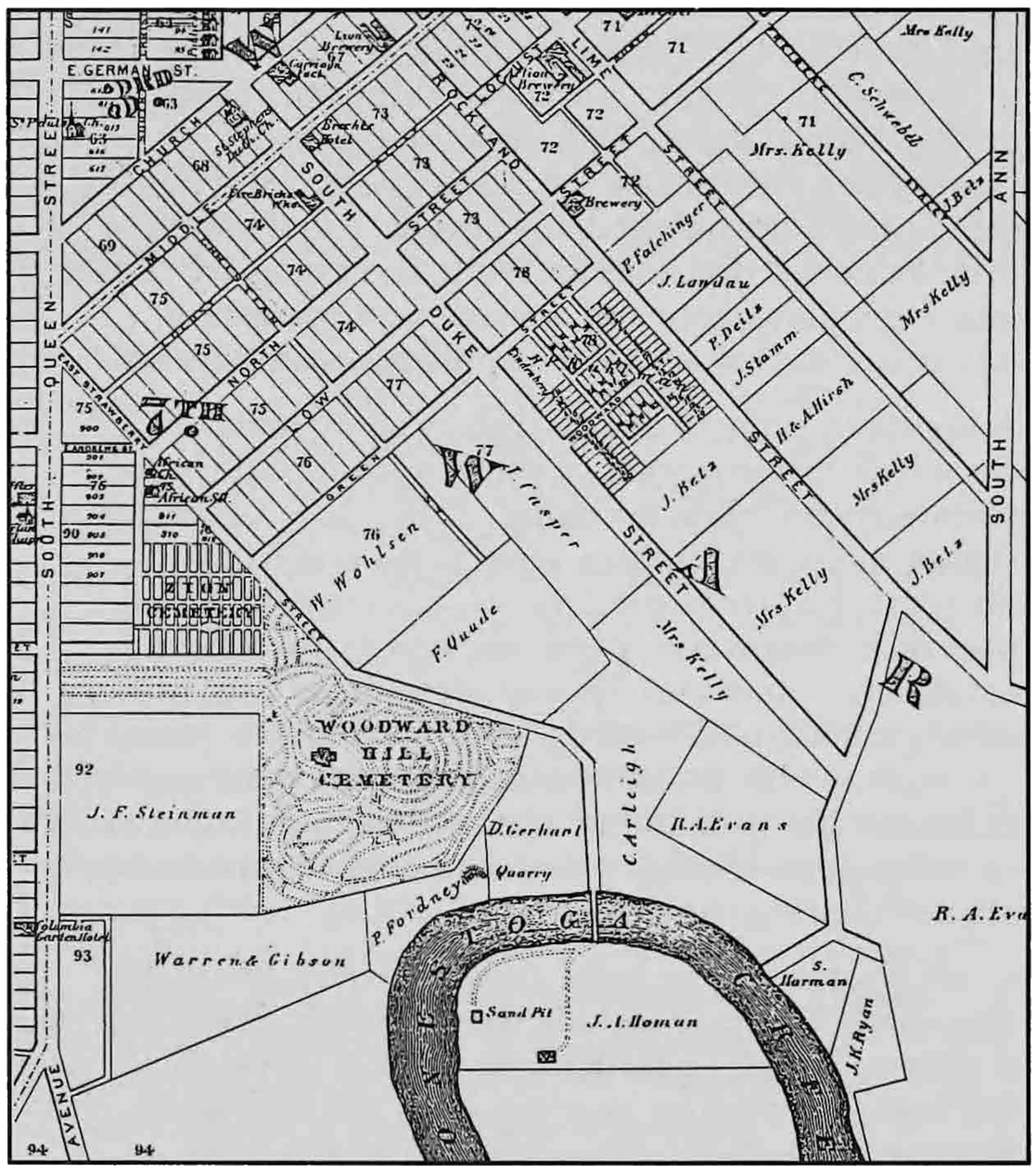
Historical Research

Research is essential before undertaking any treatment. Findings will help identify a landscape's historic period(s) of ownership, occupancy and development, and bring greater understanding of the associations and characteristics that make the landscape or history significant. Research findings provide a foundation to make educated decisions for work, and can also facilitate ongoing maintenance and management operations, interpretation and eventual compliance requirements.

A variety of primary and secondary sources may be consulted. Primary archival sources can include historic plans, surveys, plats, tax maps, atlases, U. S. Geological Survey maps, soil profiles, aerial photographs, photographs, stereoscopic views, glass lantern slides, postcards, engravings, paintings, newspapers, journals, construction drawings, specifications, plant lists, nursery catalogs, household records, account books and personal correspondence. Secondary sources include monographs, published histories, theses, National Register forms, survey data, local preservation plans, state contexts and scholarly articles. (See Figures 5–7, page 4.)

Contemporary documentary resources should also be consulted. This may include recent studies, plans, surveys, aerial and infrared photographs, Soil Conservation Service soil maps, inventories, investigations and interviews. Oral histories of residents, managers, and maintenance personnel with a long tenure or historical association can be valuable sources of information about changes to a landscape over many years. (Figures 8–9, page 4) For properties listed in the National Register, nomination forms should be consulted.





Figures 5-7: Atlases and aerial photographs were useful for understanding the evolution of burial grounds in Lancaster County, Pennsylvania. Comparing the plans from the 1864 and 1875 atlases (courtesy Lancaster County Historical Society) with a 1980 aerial photograph (courtesy Lancaster County Planning Commission) revealed the growth and development of Woodward Hill Cemetery and its geographic context for over a century.

Figures 8, 9: Mary Smith Nelson spent her childhood at the Zane Grey family compound in Lackawaxen, Pennsylvania. Recently, her recollections of nearly eighty years ago helped landscape architects to document the evolution of this cultural landscape. These oral memoirs have since been confirmed by archeological and archival findings. (courtesy National Park Service, Zane Grey House Archives and LANDSCAPES)

Figure 10: Traditional land uses are often the key to long term preservation. Therefore, a knowledge of prior landscape management practices is essential as part of the research phase. Land use patterns were often the result of traditional activities such as agriculture, fishing or mining. In Hanalei, Hawaii for example, taro fields are important because they reflect the continuity of use of the land over time. (courtesy Land and Community Associates)

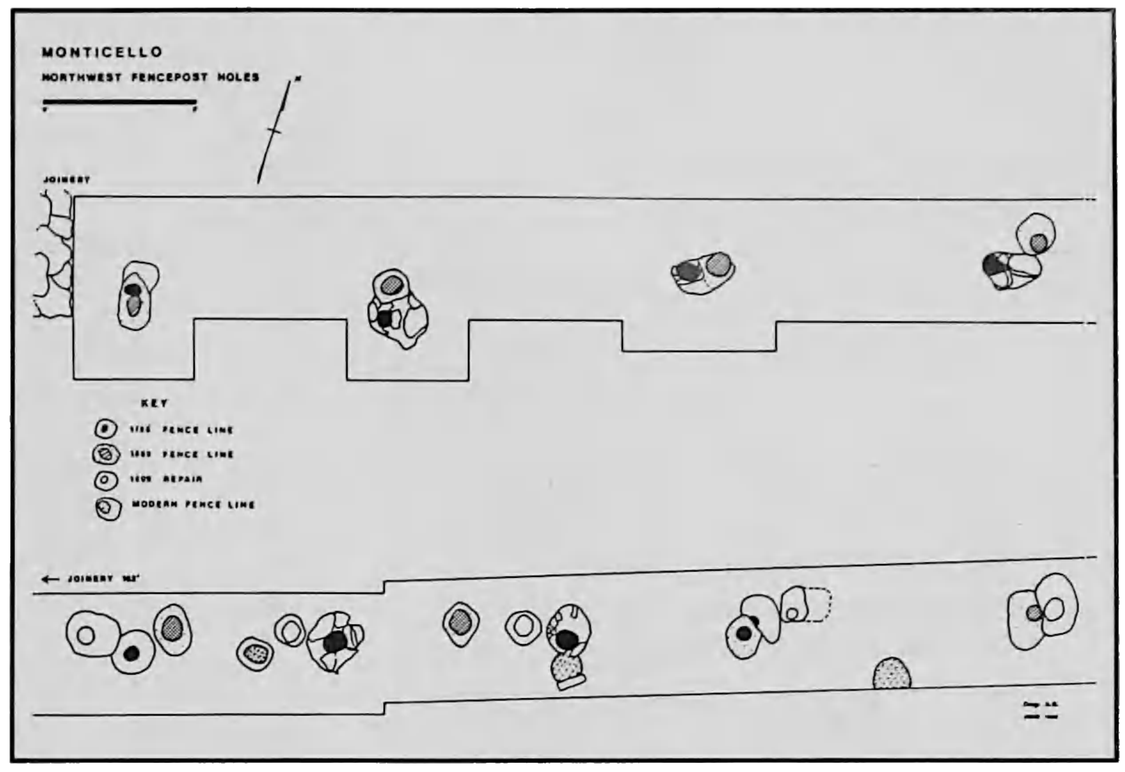


Figure 11: Landscape archeology is an important research tool that can provide location, dating and detail verification for landscape features. At Monticello, the estate of Thomas Jefferson in Charlottesville, Virginia, archeological research has employed both excavational and non-invasive methods. This has included aerial photography, soil resistivity, transect and stratified sampling and photogrammetric recording. As illustrated in the plan above, fence post spacing and alignment can be confirmed with a transect trenching technique.[3] (courtesy Thomas Jefferson Memorial Foundation)

Preparing Period Plans

In the case of designed landscapes, even though a historic design plan exists, it does not necessarily mean that it was realized fully, or even in part. Based on a review of the archival resources outlined above, and the extant landscape today, an *as-built period plan* may be delineated. For all successive tenures of ownership, occupancy and landscape change, *period plans* should be generated (see Figure 13, page 6). Period plans can document to the greatest extent possible the historic appearance during a particular period of ownership, occupancy, or development. Period plans should be based on primary archival sources and should avoid conjecture. Features that are based on secondary or less accurate sources should be graphically differentiated. Ideally, all referenced archival sources should be annotated and footnoted directly on *period plans*.

Where historical data is missing, period plans should reflect any gaps in the CLR narrative text and these limitations considered in future treatment decisions (See Treatments for Cultural Landscapes on page 13.)

Inventorying and Documenting Existing Conditions

Both physical evidence in the landscape and historic documentation guide the historic preservation plan and treatments. To document existing conditions, intensive field investigation and reconnaissance should be conducted at the same time that documentary research is being gathered. Information should be exchanged among preservation professionals, historians, technicians, local residents, managers and visitors.

To assist in the survey process, National Register Bulletins have been published by the National Park Service to aid in identifying, nominating and evaluating designed and rural historic landscapes. Additionally, Bulletins are available for specific landscape types such as battlefields, mining sites, and cemeteries.[6]

Although there are several ways to inventory and document a landscape, the goal is to create a baseline from a detailed record of the landscape and its features as they exist at the present (considering seasonal variations).[7] Each landscape inventory should address issues of boundary delineation, documentation methodologies and techniques, the limitations of the inventory, and the scope of inventory efforts. These are most often influenced by the timetable, budget, project scope, and the purpose of the inventory and, depending on the physical qualities of the property, its scale, detail, and the interrelationship between natural and cultural resources. For example, inventory objectives to develop a treatment plan may differ considerably compared to those needed to develop an ongoing maintenance plan. Once the criteria for a landscape inventory are developed and tested, the methodology should be explained.

Preparing Existing Condition Plans

Inventory and documentation may be recorded in plans, sections, photographs, aerial photographs, axonometric perspectives, narratives, video—or any combination of techniques. Existing conditions should generally be documented to scale, drawn by hand or generated by computer. The scale of the drawings is often determined by the size and complexity of the landscape. Some landscapes may require documentation at more than one scale. For example, a large estate may be documented at a small scale to depict its spatial and visual relationships, while the discrete area around an estate mansion may require a larger scale to illustrate individual plant materials, pavement patterns and other details. The same may apply to an entire rural historic district and a fenced vegetable garden contained within. (See Figures 14-15, page 8).

When landscapes are documented in photographs, *registration points* can be set to indicate the precise location and orientation of features. Registration points should correspond to significant forms, features and spatial relationships within the landscape and its surrounds (see

HISTORIC LANDSCAPE FEATURES	DEGREE OF DOCUMENTATION					
	SITE EVIDENCE	MANNING PLAN	HISTORIC PHOTOS	LETTERS 1914-1946	1955-1993 RECORDS	SECONDARY SOURCES
NATURAL SYSTEMS/TOPOGRAPHY	▲	▲	▲	▲	▲	?
Bedrock (Quarry)	●	●	●	●		
Land Contour	●	●	●	●	●	
Rockwork	●	●	●	●	●	
WATER FEATURES	▲	▲	▲	▲	▲	?
Alignment—Cascade	●		●	●	●	
Alignment—Pools & Streams	●	●	●	●	●	
Materials—Cascade	●		●	●	●	
Materials—Pools & Streams	●		●	●	●	
CIRCULATION	▲	▲	▲	▲	▲	?
Alignment—Upland Area		●	●		●	
Alignment—Perimeter Paths	●	●	●	●	●	
Alignment—Internal Paths		●	●		●	
Materials—Upland Area		●	●		●	
Materials—Perimeter Paths	●	●	●	●		
Materials—Internal Paths		●	●	●	●	
SPATIAL RELATIONSHIPS	▲	▲	▲	▲	▲	?
Garden Site (Quarry)	●	●	●	●		
Viewshed (Cuyahoga Valley)	●		●	●		
Vista over Garden from Terrace			●	●		
Views within Garden		●	●	●	●	
Views within Upland		●	●	●		
Views from Croquet Lawn		●	●			
VEGETATION	▲	▲	▲	▲	▲	?
Native Forest Trees	●	●	●	●	●	
Ornamental Shrubs in Garden	●		●	●	●	
Groundcovers in Garden	●		●	●	●	
Herbaceous Plants in Garden			●	●	●	
SITE FURNISHINGS	▲	▲	▲	▲	▲	?
Lanterns	●		●	●	●	
Seats	●		●	●		
STRUCTURES	▲	▲	▲	▲	▲	?
Torii Gate	●		●		●	
Cistern	●	●		●	●	
Stone Wall Concealing Cistern	●		●	●	●	
Lagon Bridges			●	●	●	
Umbrella House			●	●		
Trellis/Lattice			●	●		

Figure 12: This chart measures available documentation for character-defining features in the Japanese Garden at Stan Hywet Hall, Akron, Ohio designed by Warren Manning. Areas with little or no historic documentation are noted, thus identifying areas where future treatment options may be restricted. As illustrated, restoration or reconstruction are viable alternatives based on the rich research findings. (courtesy Stan Hywet Hall Foundation, Inc. and Doell and Doell)

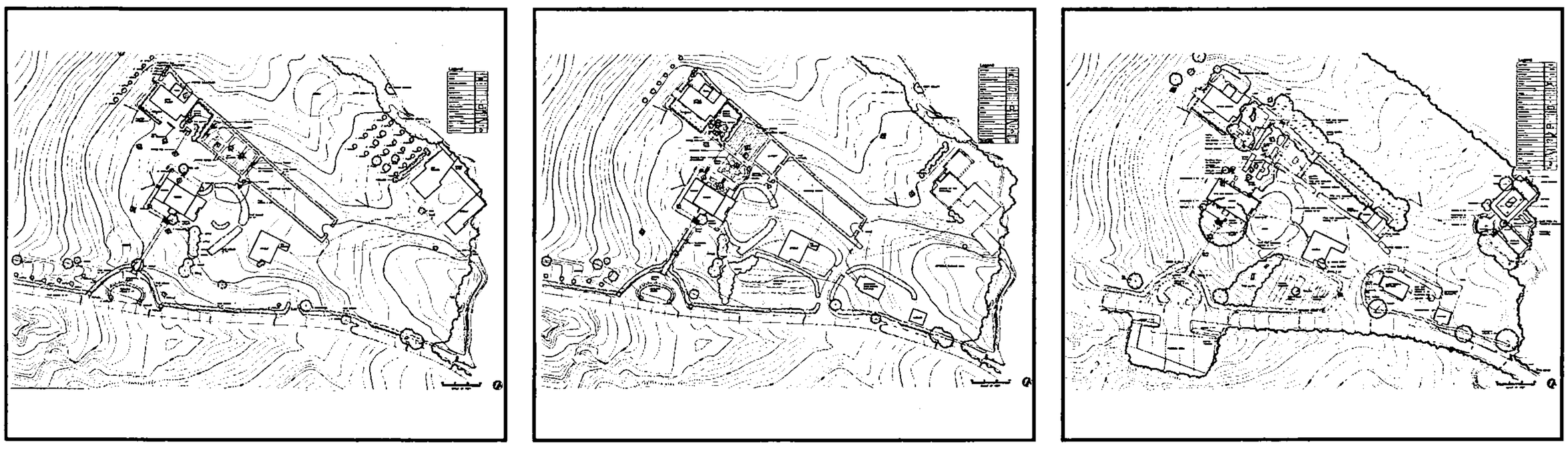


Figure 13: Period plans show the evolution of Aspet, the home of Augustus St. Gaudens, Cornish, New Hampshire. Plans were developed at two scales: first for the entire estate's development, and second for the core area around the house, studio and gardens. For both, plans were generated for five time periods: 1885-1903, 1903-1907, 1907-1926, 1926-1965 and 1965-1992. Illustrated above are the 1885-1903, 1907-1926, and the 1926-1965 plans for the core area. (courtesy National Park Service, North Atlantic Region and Pressley Associates)

READING THE LANDSCAPE

A noted geographer stated, "The attempt to derive meaning from landscapes possesses overwhelming virtue. It keeps us constantly alert to the world around us, demanding that we pay attention not just to some of the things around us but to all of them—the whole visible world in all of its rich, glorious, messy, confusing, ugly, and beautiful complexity."[4]

Landscapes can be read on many levels—landscape as nature, habitat, artifact, system, problem, wealth, ideology, history, place and aesthetic.[5] When developing a strategy to document a cultural landscape, it is important to attempt to read the landscape in its context of place and time. (See Figures 16-17, page 8)

Reading the landscape, like engaging in archival research, requires a knowledge of the resource and subject area as well as a willingness to be skeptical. As with archival research, it may involve serendipitous discoveries. Evidence gained from reading the landscape may confirm or contradict other findings and may encourage the observer and the historian to revisit both primary and secondary sources with a fresh outlook. Landscape investigation may also stimulate other forms of research and survey, such as oral histories or archeological investigations, to supplement what appeared on-site.

There are many ways to read a landscape—whatever approach is taken should provide a broad overview. This may be achieved by combining on-the-ground observations with a bird's-eye perspective.To begin this process, aerial photographs should be reviewed to gain an orientation to the landscape and its setting. Aerial photographs come in different sizes and scales, and can thus portray different levels of detail in the landscape. Aerial photographs taken at a high altitude, for example, may help to reveal remnant field patterns or traces of an abandoned circulation system; or, portions of axial relationships that were part of the original design, since obscured by encroaching woodland areas. Low altitude aerial photographs can point out individual features such as the arrangement of shrub and herbaceous borders, and the exact locations of furnishings, lighting, and fence alignments. This knowledge can prove beneficial before an on-site visit.

Aerial photographs provide clues that can help orient the viewer to the landscape. The next step may be to view the landscape from a high point such as a knoll or an upper floor window. Such a vantage point may provide an excellent transition before physically entering the cultural landscape.

On ground, evidence should then be studied, including character-defining features, visual and spatial relationships. By reviewing supporting materials from historic research, individual features can be understood in a systematic fashion that show the continuum that exists on the ground today. By classifying these features and relationships, the landscape can be understood as an artifact, possessing evidence of evolving natural systems and human interventions over time.

For example, the on-site investigation of an abandoned turn-of-the-century farm complex reveals the remnant of a native oak and pine forest which was cut and burned in the mid-nineteenth century. This previous use is confirmed by a small stand of mature oaks and the presence of these plants in the emerging secondary woodland growth that is overtaking this farm complex in decline. A ring count of the trees can establish a more accurate age. By *reading* other character-defining features—such as the traces of old roads, remnant hedgerows, ornamental trees along boundary roads, foundation plantings, the terracing of grades and remnant fences —the visual, spatial and contextual relationships of the property as it existed a century ago may be understood and its present condition and integrity evaluated.

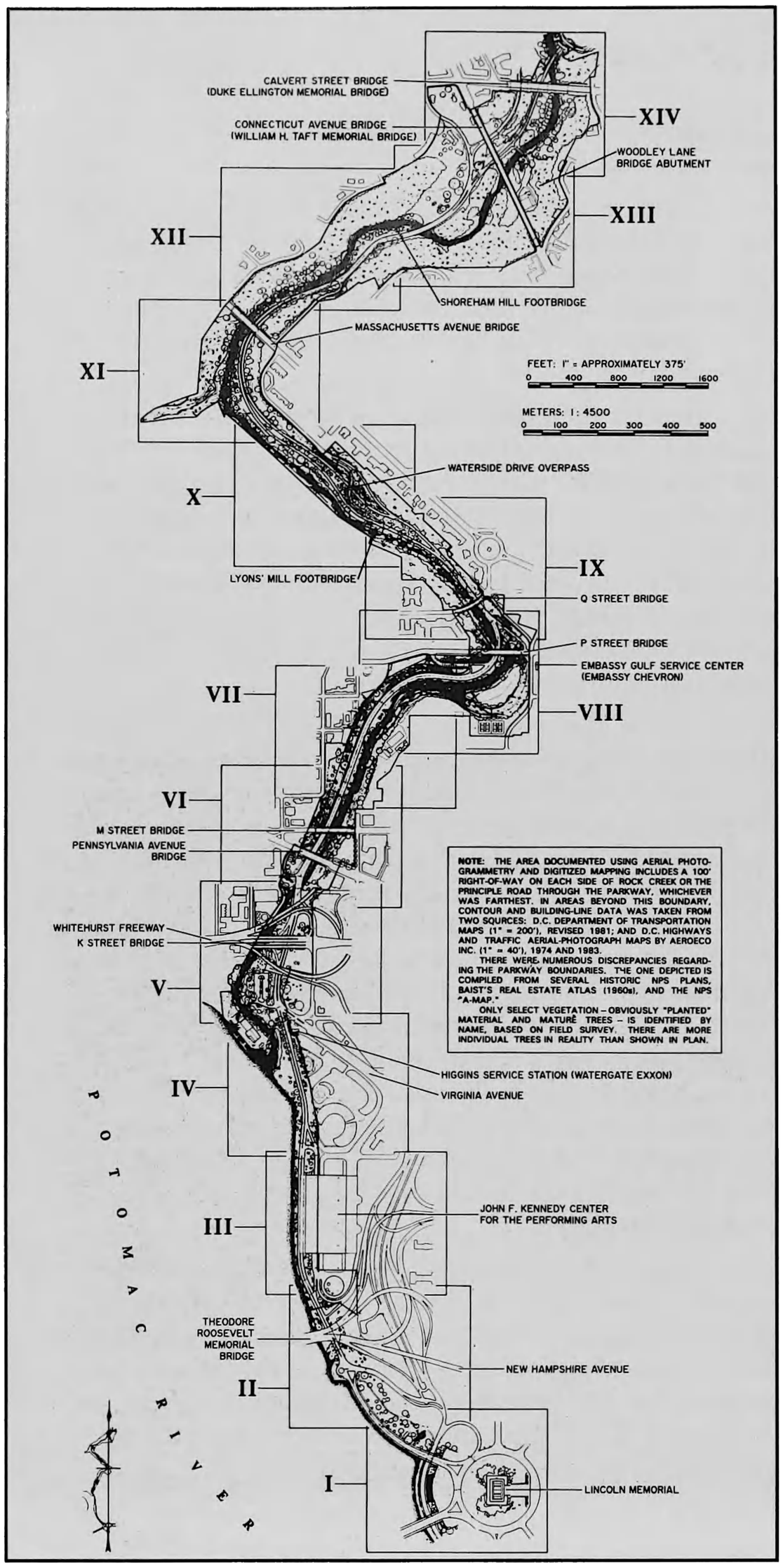
The findings of on-site reconnaissance, such as materials uncovered during archival research, may be considered primary data. These findings make it possible to inventory and evaluate the landscape's features in the context of the property's current condition. Character-defining features are located in situ, in relationship to each other and the greater cultural and geographic contexts.

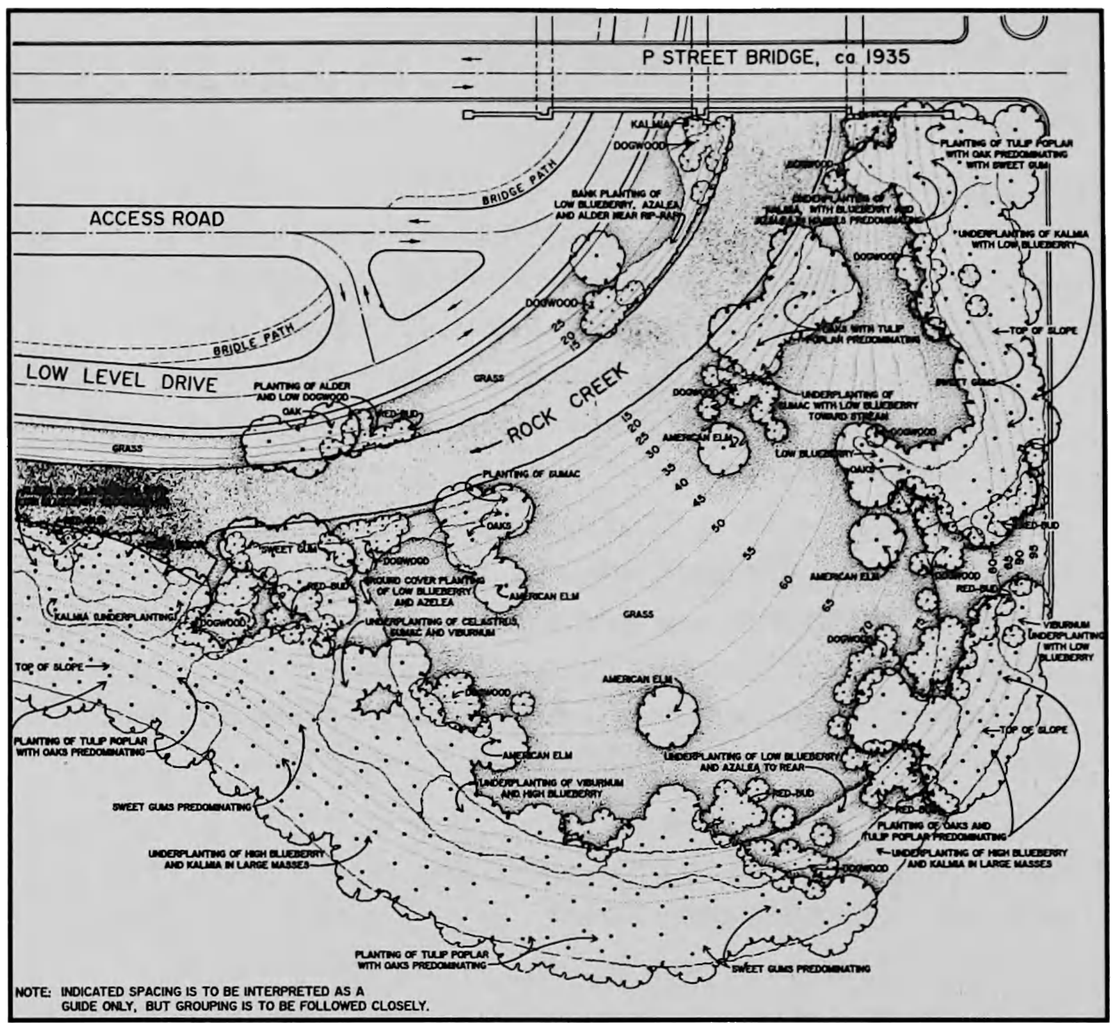
Figure 22, page 11 for an example.) The points may also correspond to historic views to illustrate the change in the landscape to date. These locations may also be used as a management tool to document the landscape's evolution, and to ensure that its character-defining features are preserved over time through informed maintenance operations and later treatment and management decisions.

All features that contribute to the landscape's historic character should be recorded. These include the physical features described on page 1 (e.g. topography, circulation), and the visual and spatial relationships that are character-defining. The identification of existing plants, should be specific, including genus, species, common name, age (if known) and size. The woody, and if appropriate, herbaceous plant material should be accurately located on the existing conditions map. To ensure full representation of successional herbaceous plants, care should be taken to document the landscape in different seasons, if possible.

Treating living plant materials as a curatorial collection has also been undertaken at some cultural landscapes. This process, either done manually or by computer, can track the condition and maintenance operations on individual plants. Some sites, such as the Frederick Law Olmsted National Historic Site, in Brookline, Massachusetts have developed a field investigation numbering system to track all woody plants. (See Table, page 9) Due to concern for the preservation of genetic diversity and the need to replace significant plant materials, a number of properties are beginning to propagate historically important rare plants that are no longer commercially available, unique, or possess significant historic associations. Such herbarium collections become a part of a site's natural history collection.

Once the research and the documentation of existing conditions have been completed, a foundation is in place to analyze the landscape's continuity and change, determine its significance, assess its integrity, and place it within the historic context of similar landscapes.





Figures 14 and 15: Existing conditions plans for large corridor landscapes can employ a variety of documentation methodologies. For the 2 -1/2 mile Rock Creek and Potomac Parkway, Washington, D.C., the Historic American Buildings Survey (HABS) used aerial photogrammetric photographs as the basis for digitized mapping and delineated drawings. Overall documentation was done at a scale of 1" = 40' with a 100' either side geographic context. Contours were shown at 2' intervals, tree canopy with trunk placement for specimen species, bridges (also drawn in detail), roads, and the creek itself. In all, there are 36 drawings measuring 34" x 44" for the project. These two sample drawings include the index to plans (above) and an area of existing conditions documentation (opposite top). (courtesy Historic American Buildings Survey)

Figures 16 and 17: Landscapes cannot be inventoried in a vacuum. Therefore, an understanding of its geographic context or setting should be part of inventory process. At Rancho Los Alamitos, Long Beach, California (middle and bottom opposite), a comparison between the 1936 aerial view with a present day aerial photograph illustrates the encroachments and adjacent developments that will affect the future treatment of visual and spatial relationships. (courtesy Rancho Los Alamitos Foundation)

HISTORIC PLANT INVENTORY

Within cultural landscapes, plants may have historical or botanical significance. A plant may have been associated with a historic figure or event or be part of a notable landscape design. A plant may be an uncommon cultivar, exceptional in size, age, rare and commercially/ unavailable. If such plants are lost, there would be a loss of historic integrity and biological diversity of the cultural landscape.To ensure that significant plants are preserved, an inventory of historic plants is being conducted at the North Atlantic Region of the National Park Service.[8] Historical landscape architects work with landscape managers and historians to gather oral and documented history on the plant's origin and potential significance. Each plant is then examined in the field by an expert horticulturist who records its name, condition, age, size, distribution, and, any notable botanic characteristics.

Plants that are difficult to identify or are of potential historical significance are further examined in the laboratory by a plant taxonomist who compares leaf, fruit, and flower characteristics with herbarium specimens for named species, cultivars and varieties. For plants species with many cultivars, such as apples, roses, and grapes, specimens may be sent to specialists for identification.

If a plant cannot be identified, is dying or in decline, and unavailable from commercial nurseries, it may be propagated. Propagation ensures that when rare and significant plants decline, they can be replaced with genetically-identical plants. Cuttings are propagated and grown to replacement size in a North Atlantic Region Historic Plant Nursery.

1. The Arnold Arboretum's preservation technician, lilac specialist, and horticulturist compare lilacs from the Vanderbilt Mansion National Historic Site in Hyde Park, New York with lilac specimens in the Arboretum's living collection. (courtesy Olmsted Center)

3. The Arnold Arboretum's horticulturist, landscape historian, and preservation technician examine shrubs at the Longfellow National Historic Site in Cambridge, MA. (courtesy Olmsted Center)

2. The Arnold Arboretum's horticulturist and preservation technician examine an enormous black locust tree at the Home of F.D. Roosevelt National Historic Site in Hyde Park, NY. (courtesy Olmsted Center)

Site Analysis: Evaluating Integrity and Significance

By analyzing the landscape, its change over time can be understood. This may be accomplished by overlaying the various period plans with the existing conditions plan. Based on these findings, individual features may be attributed to the particular period when they were introduced, and the various periods when they were present.

It is during this step that the *historic significance* of the landscape component of a historic property and its integrity are determined. Historic significance is the recognized importance a property displays when it has been evaluated, including when it has been found to meet National Register Criteria.[9] A landscape may have several areas of historical significance. An understanding of the landscape as a continuum through history is critical in assessing its cultural and historic value. In order for the landscape to have integrity, these character-defining features or qualities that contribute to its significance must be present.

While National Register nominations document the significance and integrity of historic properties, in general, they may not acknowledge the significance of the landscape's design or historic land uses, and may not contain an inventory of landscape features or characteristics. Additional research is often necessary to provide the detailed information about a landscape's evolution and significance useful in making decision for the treatment and maintenance of a historic landscape. Existing National Register forms may be amended to recognize additional areas of significance and to include more complete descriptions of historic properties that have significant land areas and landscape features.

Integrity is a property's historic identity evidenced by the survival of physical characteristics from the property's historic or prehistoric period. The seven qualities of integrity are location, setting, feeling, association, design, workmanship and materials.[10] When evaluating these qualities, care should be taken to consider change itself. For example, when a second-generation woodland overtakes an open pasture in a battlefield landscape, or a woodland edge encloses a scenic vista. For situations such as these, the reversibility and/or compatibility of those features should be considered, both individually, and in the context of the overall landscape. Together, evaluations of significance and integrity, when combined with historic research, documentation of existing conditions, and analysis findings, influence later treatment and interpretation decisions. (See Figure 21-23)

Developing a Historic Preservation Approach and Treatment Plan

Treatment may be defined as work carried out to achieve a historic preservation goal—it cannot be considered in a vacuum. There are many practical and philosophical factors that may influence the selection of a treatment for a landscape. These include the relative historic value of the property, the level of historic documentation, existing physical conditions, its historic significance and integrity, historic and proposed use (e.g. educational, interpretive, passive, active public, institutional or private), long- and short-term objectives, operational and code requirements (e.g. accessibility, fire, security) and costs for anticipated capital improvement, staffing and maintenance. The value of any significant archeological and natural resources

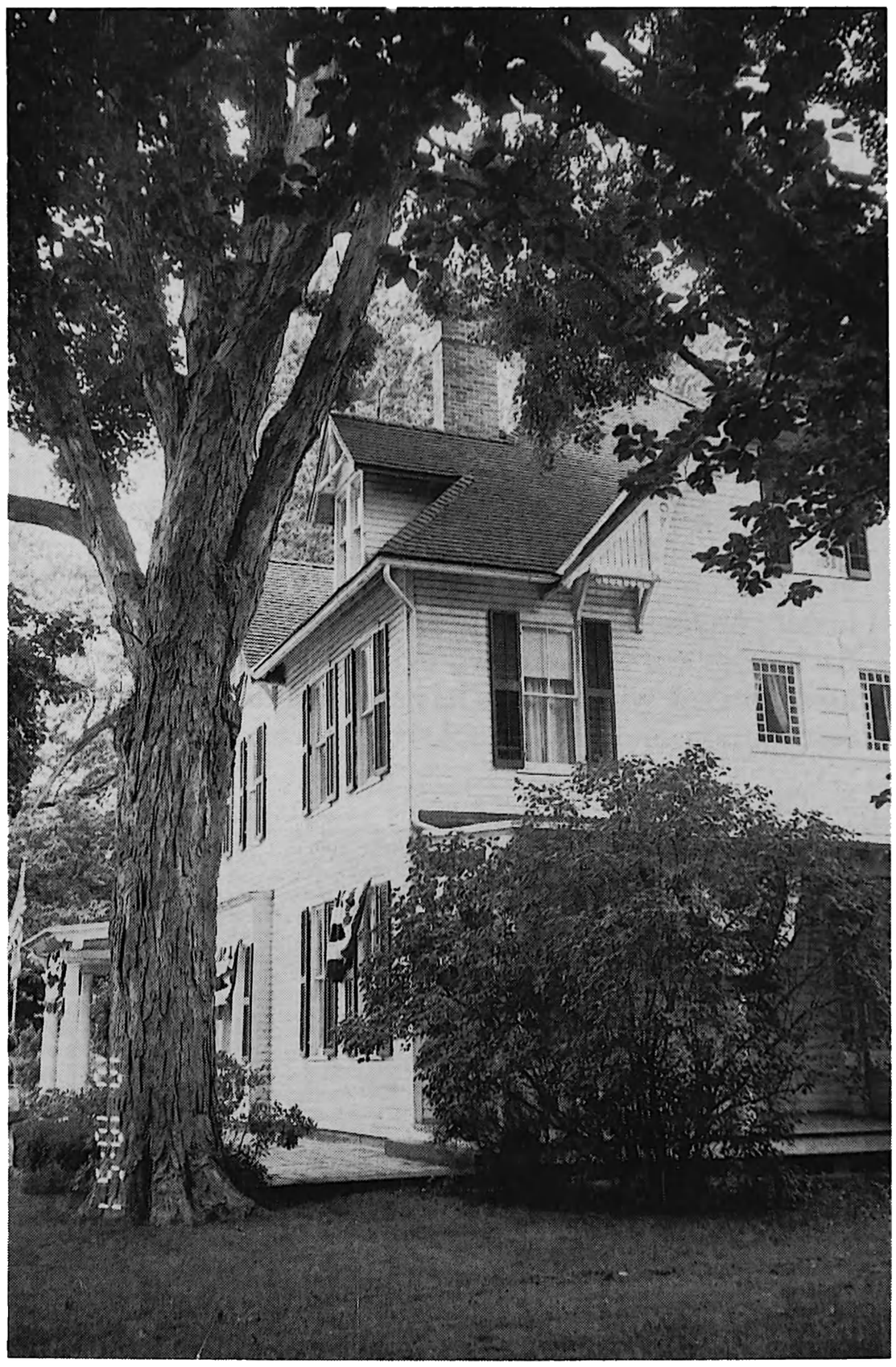


Figure 18: At Lawnfield, the home of President James A. Garfield near Cleveland, Ohio, the Sugar Maple that shadowed the porch during Garfield's 1880 "Front Porch Campaign" is in decline. Cuttings were taken from the historically significant tree by the Holden Arboretum and the National Park Service for eventual in-kind replacement. (courtesy NPS, Midwest Region)

Figure 19: The landscape of Lyndhurst, Tarrytown, New York is significant in American culture and meets Criterion C of the National Register because it embodies the distinctive character of a type and period in American landscape architecture, known as early Picturesque; it possesses high artistic value; and it is the work of a recognized master gardener, Ferdinand Mangold. (courtesy National Trust for Historic Preservation)

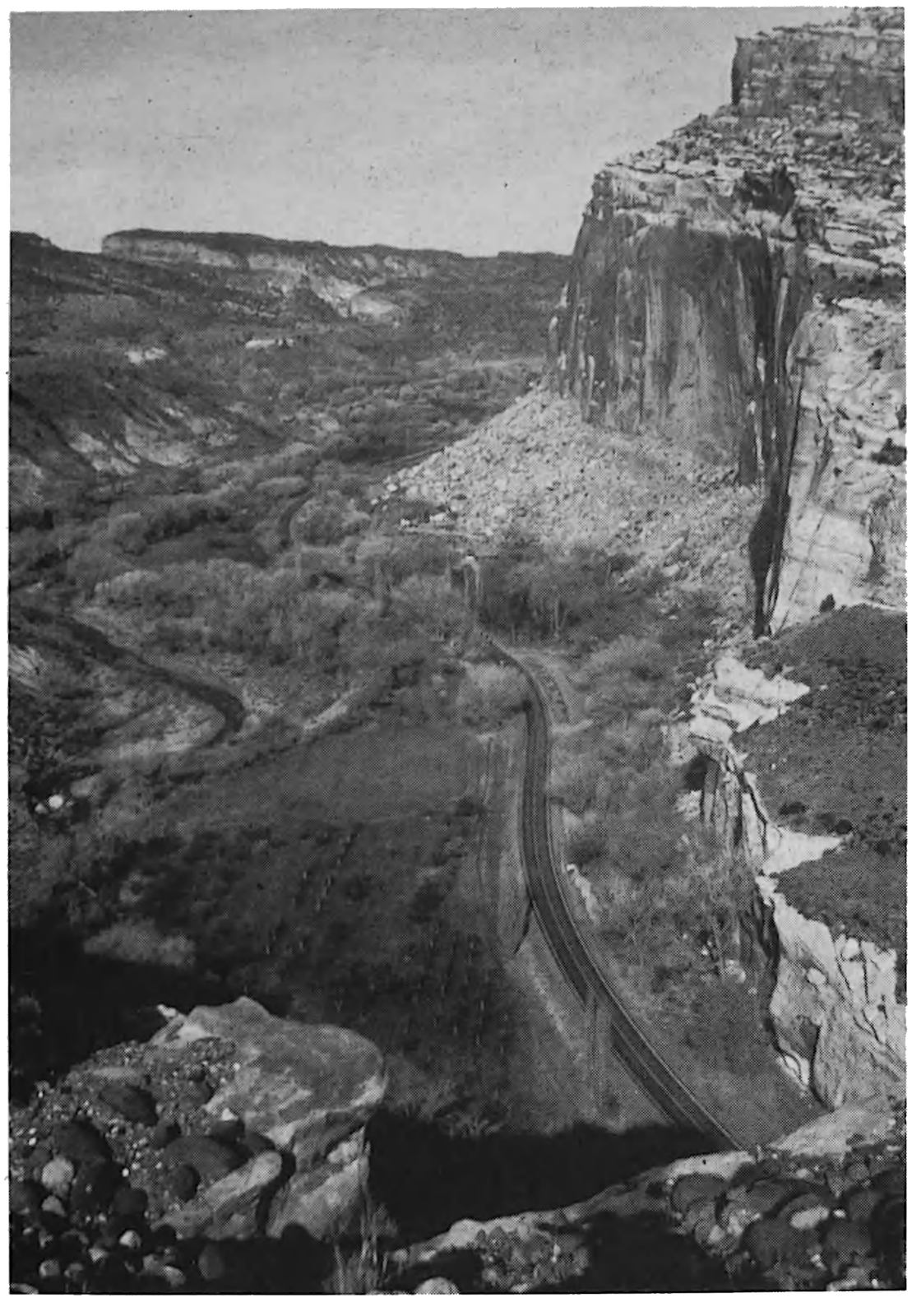
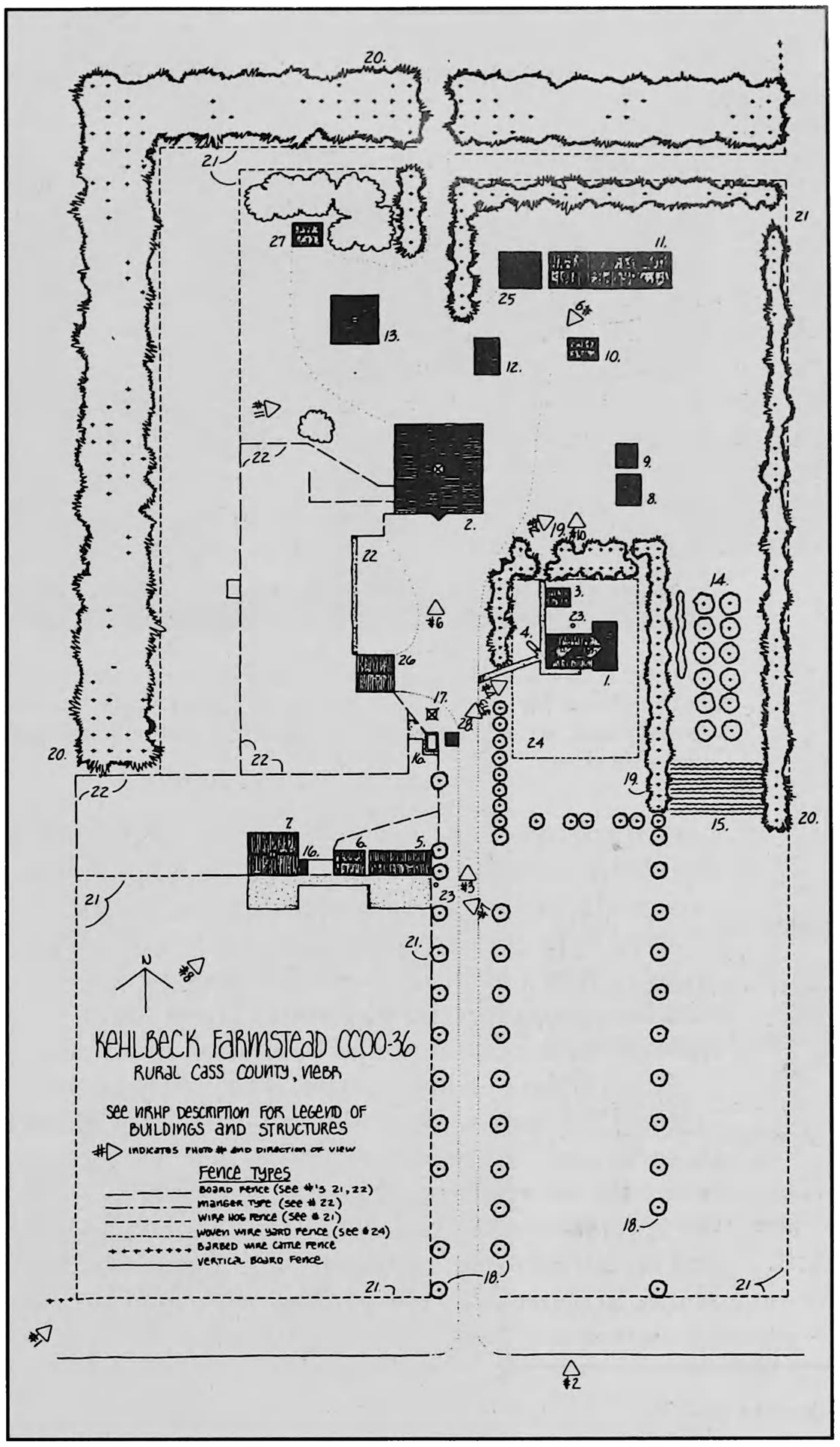


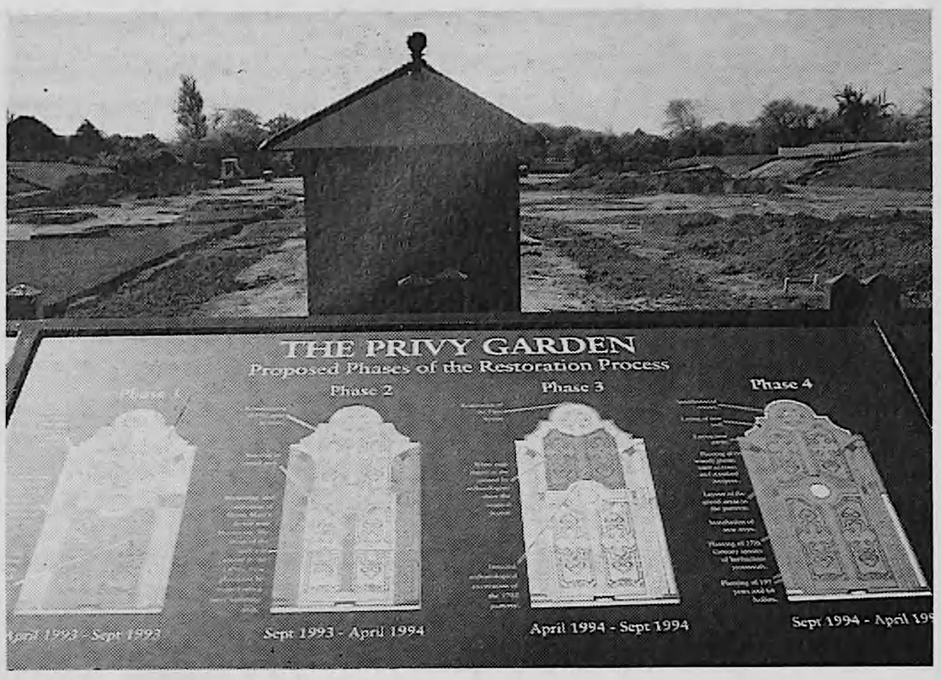
Figure 20: Cultural landscapes often contain plant communities such as orchards or meadows—both of which may or may not require a management intervention. When analyzing a landscape, it is important to recognize the present-day biodiversity of these resources—for example at the Fruita Rural Historic District in Capitol Reef National Park in Utah, the landscape contains 2,500 fruit trees associated with settlement and agriculture on the Colorado Plateau (courtesy D. White).

Figure 21: Integrity can involve both continuity and change. This can be evidenced by a detailed review of materials. Although the surface material has changed on some roads through the Port Oneida (near Empire, Michigan) community, the character-defining alignment, width and rows of Sugar Maple trees remain intact. (courtesy NPS, Midwest Region).



Figures 22 and 23: The plan for the Kehlbeck Farmstead, located in Cass County in Southeastern Nebraska, illustrates a well-planned, and aesthetically arranged general farm complex of the twentieth century. The farmstead is composed of 23 contributing and 5 non-contributing resources. Integrity was judged uniformly high because many character-defining resources were present and the visual and spatial relationships intact. Note the varied graphic techniques used to document a variety of fence types, and, the key to photographs illustrating the various landscape features and spatial relationships. The photograph above, labeled #3 on the farmstead, is looking north along the farm lane allee. (courtesy National Register Files)

LANDSCAPE INTERPRETATION



Figures A and B: Archeology and restoration of the Privy Garden at Hampton Court Palace gardens, England. The project is being interpreted to the public in the garden, an indoor exhibition and a multimedia show. The outdoor interpretive display, (above left) includes period plans, aerial photographs and historic images that detail the history of the garden and current work, 1994. (courtesy the author)

Landscape interpretation is the process of providing the visitor with tools to experience the landscape as it existed during its period of significance, or as it evolved to its present state. These tools may vary widely, from a focus on existing features to the addition of interpretive elements. These could include exhibits, self-guided brochures, or a new representation of a lost feature. The nature of the cultural landscape, especially its level of significance, integrity, and the type of visitation anticipated may frame the interpretive approach. Landscape interpretation may be closely linked to the integrity and condition of the landscape, and therefore, its ability to convey the historic character and character-defining features of the past. If a landscape has high integrity, the interpretive approach may be to direct visitors to surviving historic features without introducing obtrusive interpretive devices such as free-standing signs. For landscapes with a diminished integrity, where limited or no fabric remains, the interpretive emphasis may be on using extant features and visual aids (e.g. markers, photographs, etc.) to help visitors visualize the resource as it existed in the past. The primary goal in these situations is to educate the visitor about the landscape's historic themes, associations and lost character-defining features or broader historical, social and physical landscape contexts.

should also be considered in the decision-making process. Therefore, a cultural landscape's preservation plan and the treatment selected will consider a broad array of dynamic and interrelated considerations. It will often take the form of a plan with detailed guidelines or specifications.

Adopting such a plan, in concert with a preservation maintenance plan (page 18-19), acknowledges a cultural landscape's ever-changing existence and the interrelationship of treatment and ongoing maintenance. Performance standards, scheduling and record keeping of maintenance activities on a day-to-day or month-to-month basis, may then be planned for. Treatment, management, and maintenance proposals can be developed by a broad range of professionals and with expertise in such fields as landscape preservation, horticulture, ecology, and landscape maintenance.

The selection of a primary treatment for the landscape, utilizing the Secretary of the Interior's Standards for the Treatment of Historic Properties, establishes an overall historic preservation approach, as well as a philosophical framework from which to operate. Selecting a treatment is based on many factors. They include management and interpretation objectives for the property as a whole, the period(s) of significance, integrity, and condition of individual landscape features.

For all treatments, the landscape's existing conditions and its ability to convey historic significance should be carefully considered. For example, the life work, design philosophy and extant legacy of an individual designer should all be understood for a designed landscape such as an estate, prior to treatment selection. For a vernacular landscape, such as a battlefield containing a largely intact mid-nineteenth century family farm, the uniqueness of that agrarian complex within a local, regional, state, and national context should be considered in selecting a treatment.

The overall historic preservation approach and treatment approach can ensure the proper retention, care, and repair of landscapes and their inherent features.[11] In short, the Standards act as a preservation and management tool for cultural landscapes. The four potential treatments are described in the box opposite.

Landscape treatments can range from simple, inexpensive preservation actions, to complex major restoration or reconstruction projects. The progressive framework is inverse in proportion to the retention of historic features and materials. Generally, preservation involves the least change, and is the most respectful of historic materials. It maintains the form and material of the existing landscape. Rehabilitation usually accommodates contemporary

Figure 24: On some occasions, especially larger landscapes, it is possible to have a primary treatment, with discrete, or secondary areas of another treatment. This is most common for an individual feature in a larger landscape. At the Eugene and Carlotta O'Neill Historic Site, Danville, California the primary treatment selected for the courtyard was restoration. When accommodating universal accessibility requirements, the introduction of a grass paver walk was installed which warranted the removal of a few historic shrubs. This discrete project would be considered a rehabilitation treatment. (courtesy Patricia M. O'Donnell)

TREATMENTS FOR CULTURAL LANDSCAPES

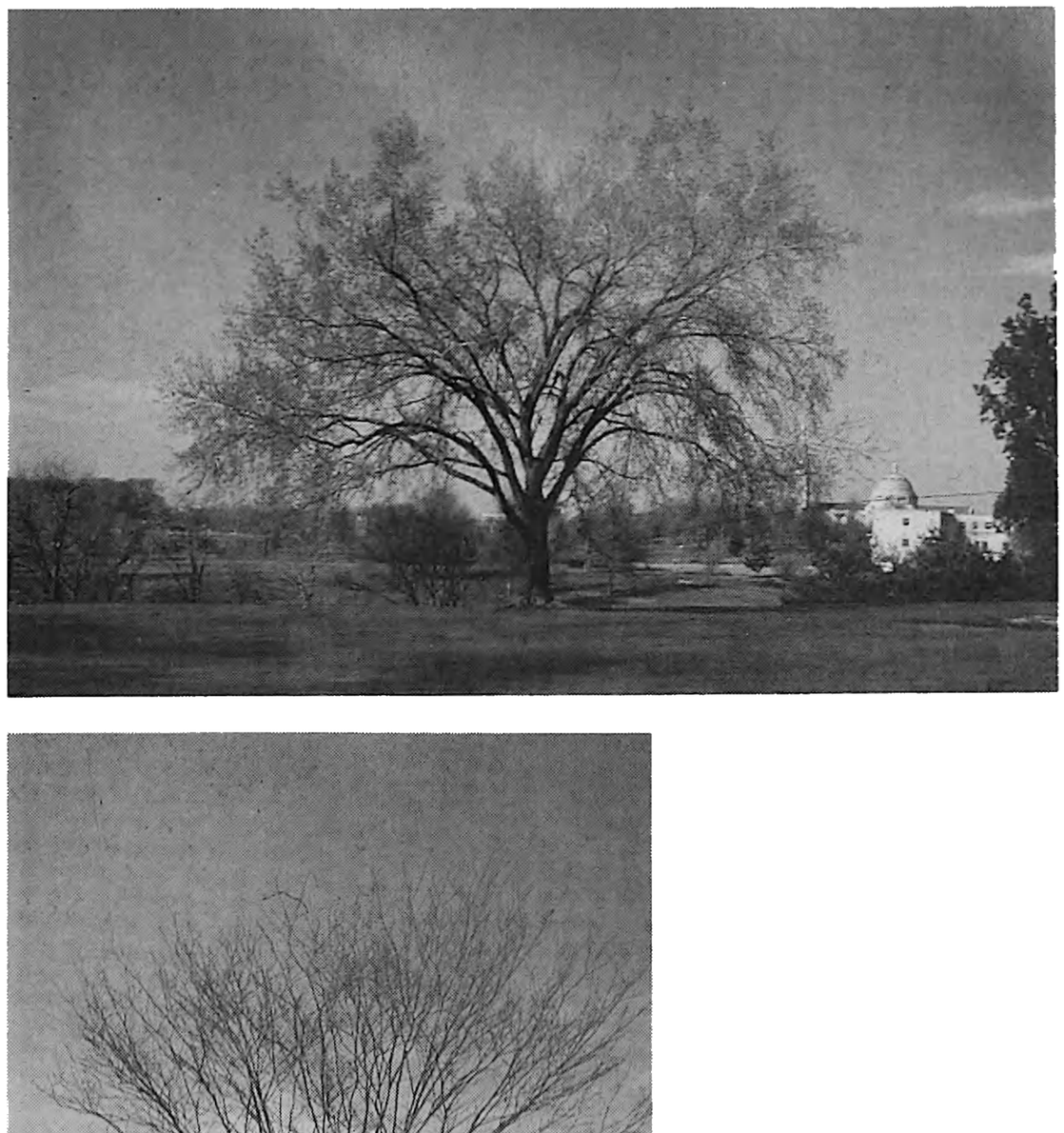
Prior to undertaking work on a landscape, a treatment plan or similar document should be developed. The four primary treatments identified in the Secretary of the Interior's Standards for the Treatment of Historic Properties[12]*, are :*

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

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

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

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



Figures 25 and 26: When the American Elm (Ulmus americana) was plagued with Dutch Elm Disease many historic properties relied on the Japanese Zelkova (Zelkova serrata) as a substitute plant. As illustrated, the overall form and scale of these trees is really quite different, and would therefore not be an appropriate substitute plant material under a restoration or reconstruction treatment.

alterations or additions without altering significant historic features or materials, with successful projects involving minor to major change. Restoration or reconstruction attempts to recapture the appearance of a property, or an individual feature at a particular point in time, as confirmed by detailed historic documentation. These last two treatments most often require the greatest degree of intervention and thus, the highest level of documentation.

In all cases, treatment should be executed at the appropriate level reflecting the condition of the landscape, with repair work identifiable upon close inspection and/or indicated in supplemental interpretative information. When repairing or replacing a feature, every effort should be made to achieve visual and physical compatibility. Historic materials should be matched in design, scale, color and texture.

A landscape with a high level of integrity and authenticity may suggest preservation as the primary treatment. Such a treatment may emphasize protection, stabilization, cyclical maintenance, and repair of character-defining landscape features. Changes over time that are part of the landscape's continuum and are significant in their own right may be

Figure 27: The historic birch allee at Stan Hywet Hall, Akron, Ohio was suffering from borer infestation and leaf miner. Dying trees were topped and basal sprout growth encouraged. Next, trees were selectively thinned, and ultimately, when the new growth matured, older trunks were removed. Original rootstock and genetic material were preserved. As illustrated, this preservation treatment took fifteen years to realize. (courtesy Child Associates)

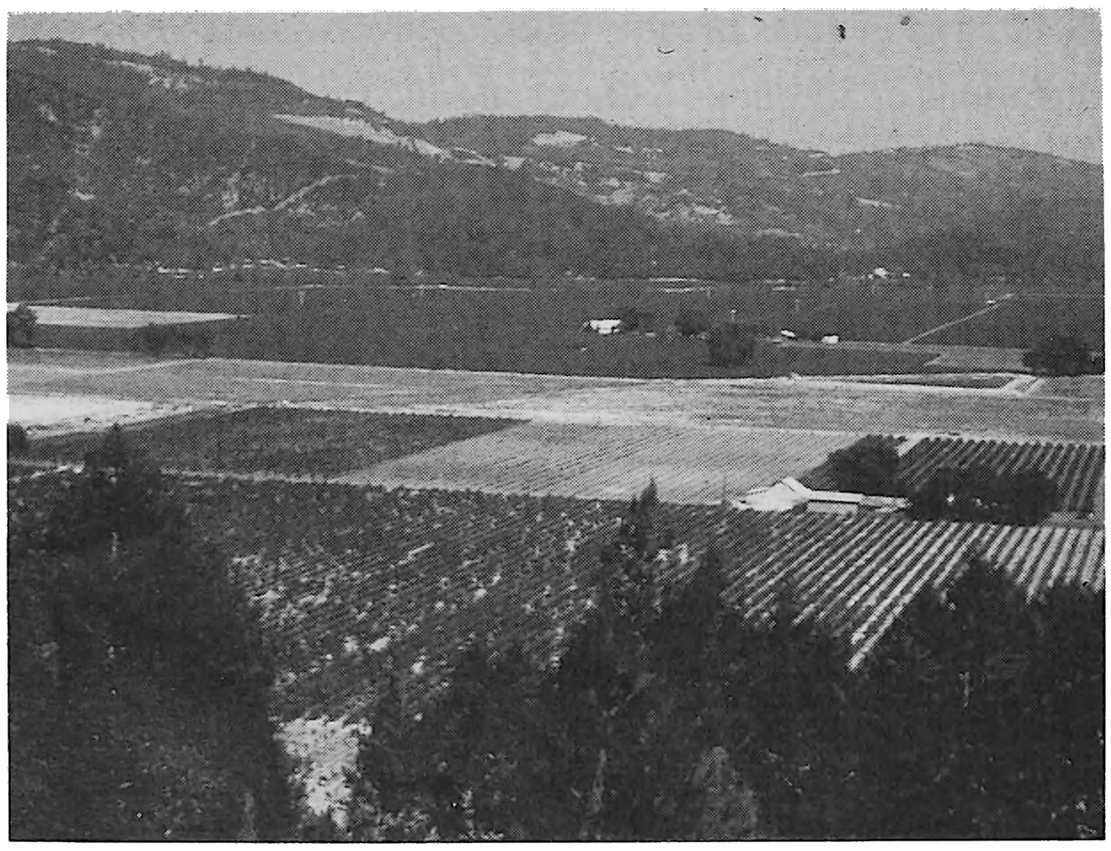


Figure 28: Patterns on the land have been preserved through the continuation of traditional uses such as the grape fields at the Sterling Vineyards in Calistoga, California. (courtesy author)

Figures 29: Rehabilitation was selected as the primary treatment for Columbus Park, Chicago, Illinois. Originally designed and executed between 1917 and 1920 by Jens Jensen, the waterfall, cascades, rocky brook and associated landscape, are well documented and possesses a high level of integrity. (courtesy author)

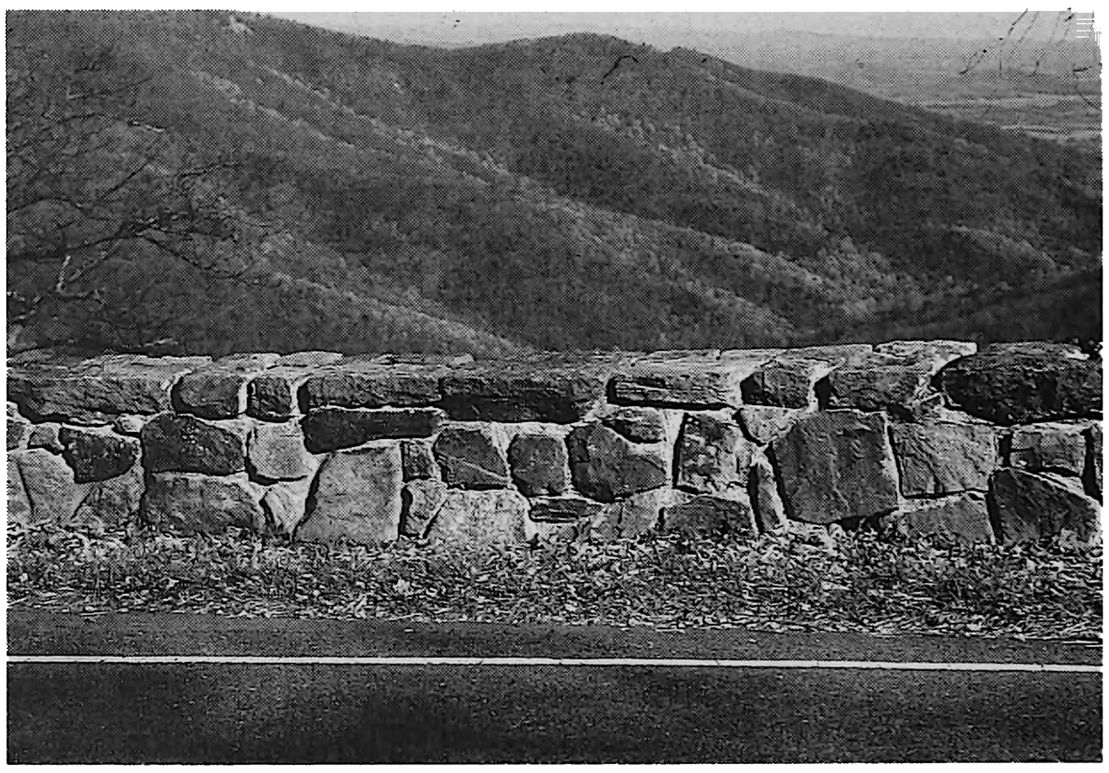
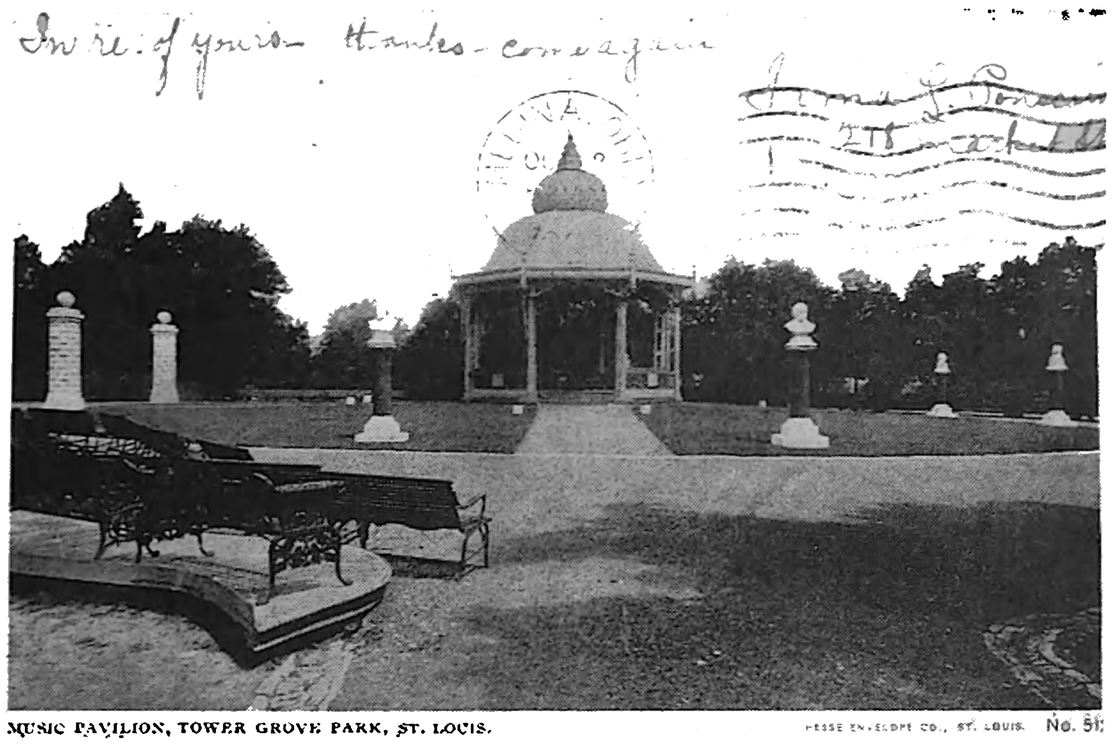
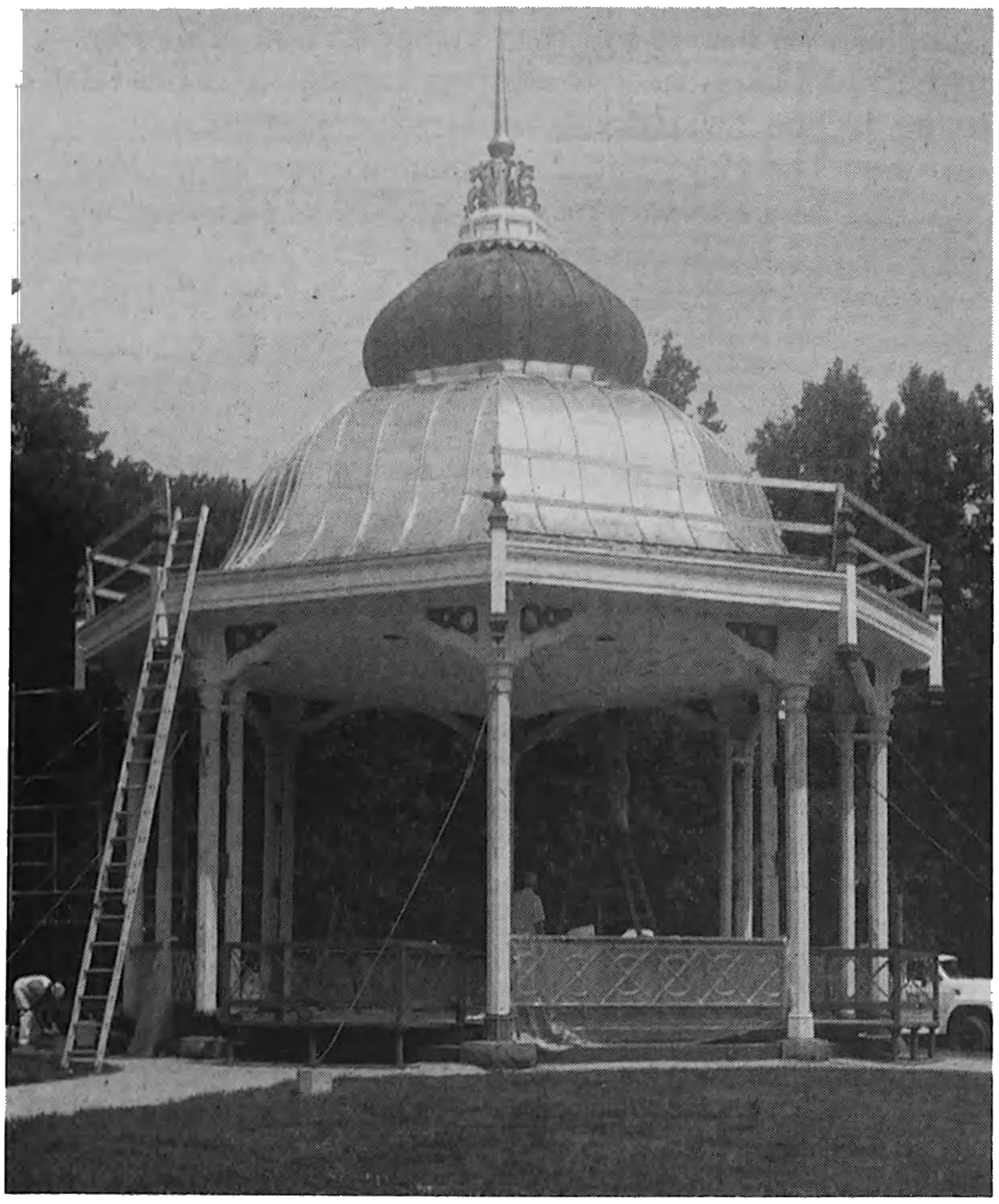


Figure 30, 31: A 75-mile portion of Skyline Drive at Shenandoah National Park overlooking the Blue Ridge Mountains of Virginia required the rehabilitation of a 22"-high, dry-laid stone wall. The new wall was built to a height of 27" – code normally requires a height of 36". The wall was constructed of percast concrete, clad with split stone and mortar joints. To achieve visual compatibility recessed mortar joints were arranged in a random pattern (courtesy Robert R. Page)





retained, while changes that are not significant, yet do not encroach upon or erode character may also be maintained. Preservation entails the essential operations to safeguard existing resources. (Figures 27-28)

Rehabilitation is often selected in response to a contemporary use or need—ideally such an approach is compatible with the landscape's historic character and historic use. Rehabilitation may preserve existing fabric along with introducing some compatible changes, new additions and alterations. Rehabilitation may be desirable at a private residence in a historic district where the homeowner's goal is to develop an appropriate landscape treatment for a front yard, or in a public park where a support area is needed for its maintenance operations. (Figures 29-31)

When the most important goal is to portray a landscape and its character-defining features at an exact period of time, restoration is selected as the primary treatment. Unlike preservation and rehabilitation, interpreting the landscape's continuum or evolution is not the objective. Restoration may include the removal of features from other periods and/or the construction of missing or lost features and materials from the reconstruction period. In all cases, treatment should be substantiated by the historic research findings and existing conditions documentation. Restoration and reconstruction treatment work should avoid the creation of a landscape whose features did not exist historically. For example, if features from an earlier period did not co-exist with extant features from a later period that are being retained, their restoration would not be appropriate. (Figures 32-34)

In rare cases, when evidence is sufficient to avoid conjecture, and no other property exists that can adequately explain a certain period of history, reconstruction may be utilized to depict a vanished landscape. The accuracy of this work is critical. In cases where topography and the subsurface of soil have not been disturbed, research and existing conditions findings may be confirmed by thorough archeological investigations. Here too, those features that are intact should be repaired as necessary, retaining the original historic features to the greatest extent possible. The greatest danger in reconstruction is creating a false picture of history.

False historicism in every treatment should be avoided. This applies to individual features as well as the entire landscape. Examples of inappropriate work include the introduction of historic-looking benches that are actually a new design, a fanciful gazebo placed in what was once an open meadow, executing an unrealized historic design, or designing a historic-looking landscape for a relocated historic structure within "restoration."

Figure 32-34: Tower Grove Park in St. Louis, Missouri, is a National Historic Landmark. The music pavilion, just north of the main drive is a circular lawn area with radiating walks, white marble busts of eminent composers, walks, and curb. The area was in general decline, especially the marble busts which were suffering from acid rain damage. Based on the excellent documentation in nineteenth century annual reports, postcards and photographic images, this area was recently restored. Illustrated above are a sample historic view, work in progress and the completed restoration project. (courtesy Tower Grove Park)

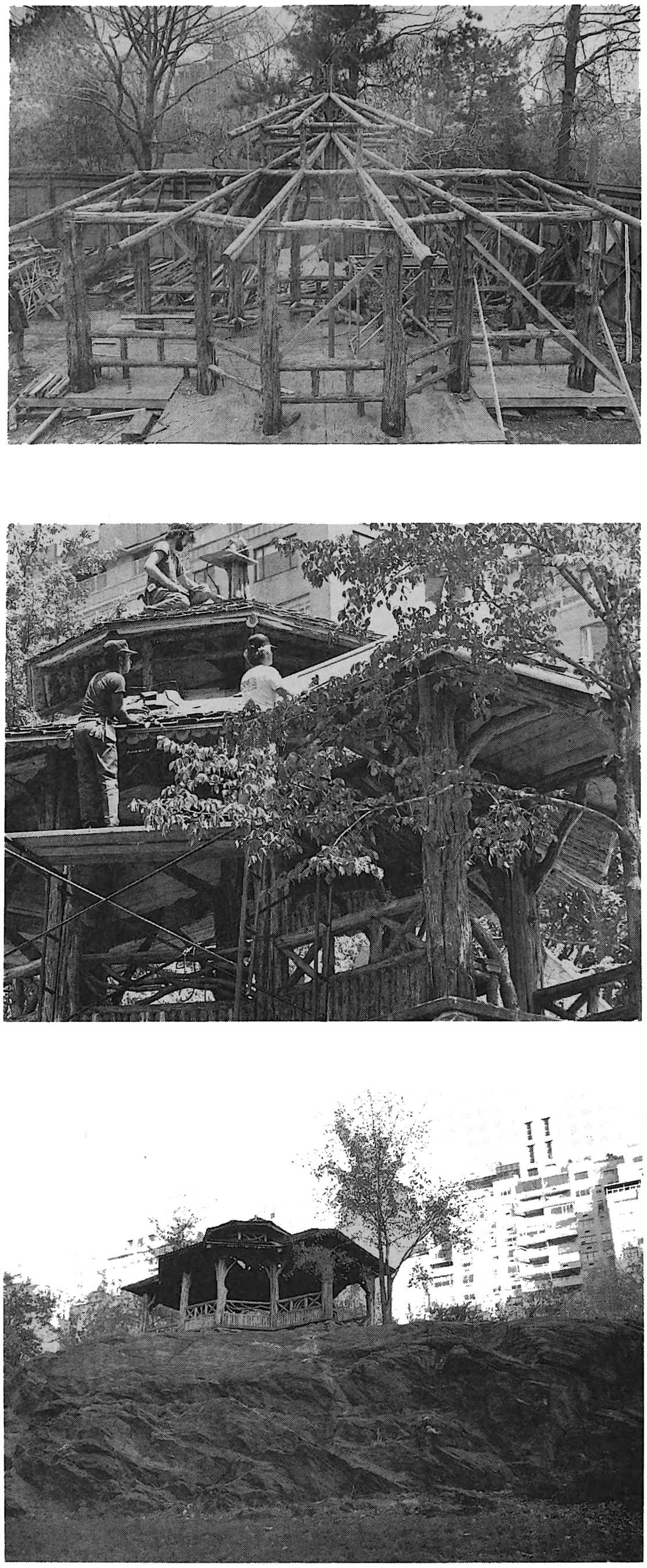


Figure 35-37: Central Park has developed an in-house historic preservation crew to undertake small projects. A specialized crew has been trained to specifically repair and rebuild rustic furnishings. As illustrated, the restoration of the Dene rustic shelter was achieved by constructing it in the Ramble compound, moving in-place opposite 67th street and completed. (courtesy Central Park Conservancy)

Developing a Preservation Maintenance Plan and Implementation Strategy

Throughout the preservation planning process, it is important to ensure that existing landscape features are retained. Preservation maintenance is the practice of monitoring and controlling change in the landscape to ensure that its historic integrity is not altered and features are not lost. This is particularly important during the research and long-term treatment planning process. To be effective, the maintenance program must have a guiding philosophy, approach or strategy; an understanding of preservation maintenance techniques; and a system for documenting changes in the landscape.

The philosophical approach to maintenance should coincide with the landscape's current stage in the preservation planning process. A Cultural Landscape Report and Treatment Plan can take several years to complete, yet during this time managers and property owners will likely need to address immediate issues related to the decline, wear, decay, or damage of landscape features. Therefore, initial maintenance operations may focus on the stabilization and protection of all landscape features to provide temporary, often emergency measures to prevent deterioration, failure, or loss, without altering the site's existing character.

After a Treatment Plan is implemented, the approach to preservation maintenance may be modified to reflect the objectives defined by this plan. The detailed specifications prepared in the Treatment Plan relating to the retention, repair, removal, or replacement of features in the landscape should guide and inform a comprehensive preservation maintenance program. This would include schedules for monitoring and routine maintenance, appropriate preservation maintenance procedures, as well as ongoing record keeping of work performed. For vegetation, the preservation maintenance program would also include thresholds for growth or change in character, appropriate pruning methods, propagation and replacement procedures.

To facilitate operations, a property may be divided into discrete management zones (Figure 41). These zones are sometimes defined during the Cultural Landscape Report process and are typically based on historically defined areas. Alternatively, zones created for maintenance practices and priorities could be used. Examples of maintenance zones would include woodlands, lawns, meadow, specimen trees, and hedges.

Training of maintenance staff in preservation maintenance skills is essential. Preservation maintenance practices differ from standard maintenance practices because of the focus on perpetuating the historic character or use of the landscape rather than beautification. For example, introducing new varieties of turf, roses or trees is likely to be inappropriate. Substantial earth moving (or movement of soil) may be inappropriate where there are potential archeological resources. An old hedge or shrub should be rejuvenated, or propagated, rather than removed and replaced. A mature specimen tree may require cabling and careful monitoring to ensure that it is not a threat to visitor safety. Through training programs and with the assistance of preservation maintenance specialists, each property could develop maintenance specifications for the care of landscape features.

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DEVELOPING A PRESERVATION MAINTENANCE GUIDE

In the past, there was rarely adequate record-keeping to fully understand the ways a landscape was maintained. This creates gaps in our research findings. Today, we recognize that planning for ongoing maintenance and on-site applications should be documented—both routinely and comprehensively. An annual work program or calendar records the frequency of maintenance work on built or natural landscape features. It can also monitor the age, health and vigor of vegetation. For example, on-site assessments may document the presence of weeds, pests, dead leaves, pale color, wilting, soil compaction—all of which signal particular maintenance needs. For built elements, the deterioration of paving or drainage systems may be noted and the need for repair or replacement indicated before hazards develop. An overall maintenance program can assist in routine and cyclic maintenance of the landscape and can also guide long term treatment projects.

To help structure a comprehensive maintenance operation that is responsive to staff, budget, and maintenance priorities, the National Park Service has developed two computer-driven programs for its own landscape resources. A Maintenance Management Program (MM) is designed to assist maintenance managers in their efforts to plan, organize, and direct the park maintenance system. An Inventory and Condition Assessment Program (ICAP) is designed to complement MM by providing a system for inventorying, assessing conditions, and for providing corrective work recommendations for all site features.

Another approach to documenting maintenance and recording changes over time is to develop a manual or computerized graphic information system. Such a system should have the capability to include plans and photographs that would record a site's living collection of plant materials. (Also see discussion of the use of photography under Preparing Existing Conditions Plans, page 5.) This may be achieved using a computer-aided drafting program along with an integrated database management system.

To guide immediate and ongoing maintenance, a systematic and flexible approach has been developed by the Olmsted Center for Landscape Preservation. Working with National Park Service landscape managers and maintenance specialists, staff assemble information and make recommendations for the care of individual landscape features.

Each landscape feature is inspected in the field to document existing conditions and identify field work needed. Recommendations include maintenance procedures that are sensitive to the integrity of the landscape.

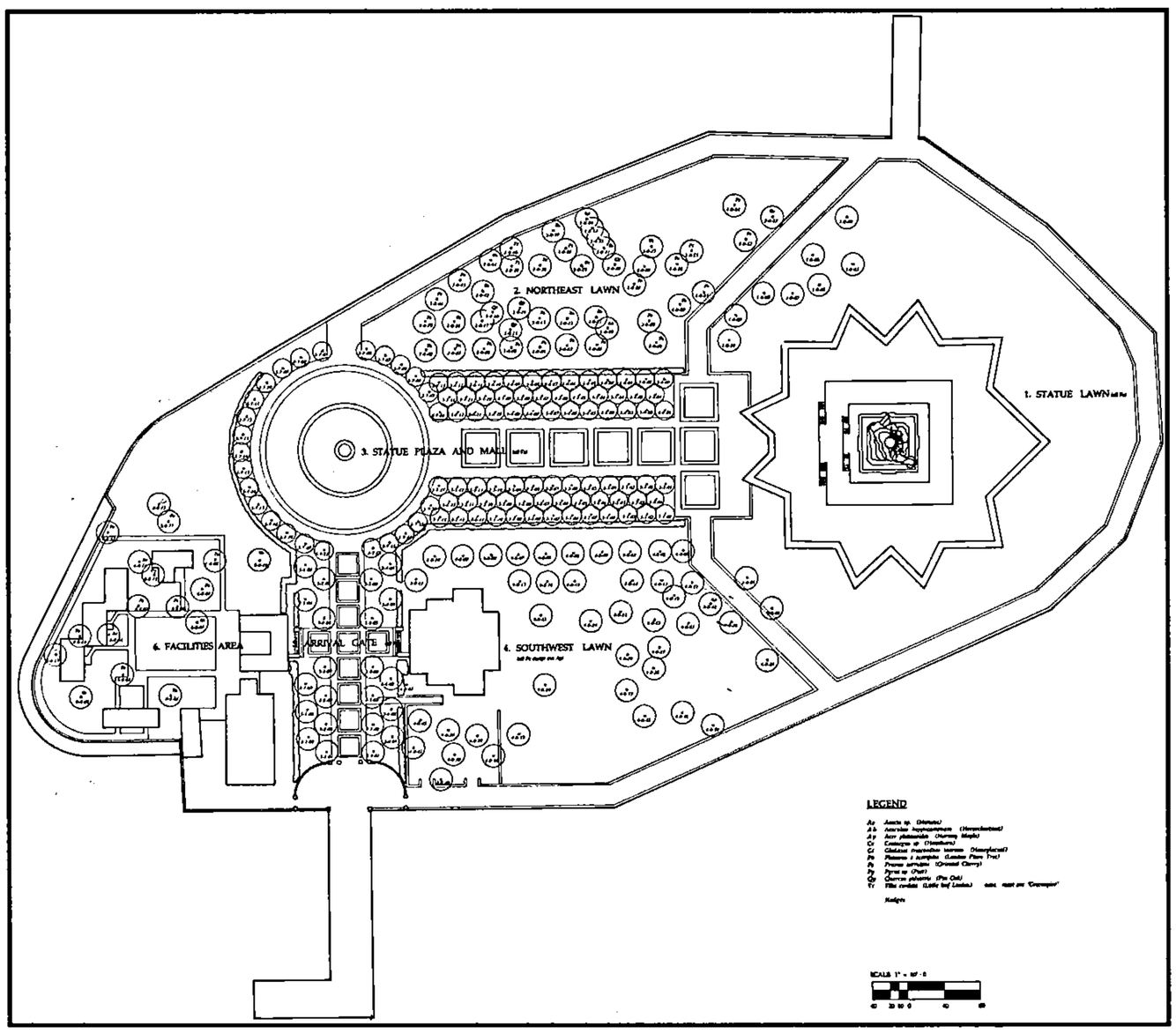

Figure A- Existing Conditions: A map of the existing trees at the Statue of Liberty National Monument is used to indicate necessary preservation maintenance work (Drawn by Margaret Coffin, 1992)

Statue of Liberty National Monument

FIELD INVENTORY, INSPECTION, AND WORK NEEDED

Category: Specimen Trees Areas: 4 - South Lawn Feature Name and Field ID#:	Overall Form	Leaf, Shoots	Branches	Caliber	Trunk	Roots, Soil	Flower, Fruit	Pests, Diseases	Dog Present (y/n)	Comment on size, age, condition, field diagnosis and work needed:	Further Diagnosis Needed (y/n)	Work Needed (X=)	Critical Work (*=)	Replace Immed (I) Plan for Repl (P)	Action Completed (date)
London Plane Tree 4-0-26	2	2	-	-	2	-	-	2	n	Large scar from branch split, structurally weak tree, remove branches with decay at base, plan for replacement	yes	x		P	
London Plane Tree 4-0-27	3	-	-	-	2	-	-	2	n	leaner, crowded by larger adjacent tree, remove dead branches	no		*		
London Plane Tree 4-0-28	3	-	-	-	3	-	-	3	n	internal decay, remove large dead branches	yes		*		
London Plane Tree 4-0-29	2	-	-	-	2	-	-	2	n	fair condition, remove dead watersprouts from trunk and dead branches	no		*		
London Plane Tree 4-0-30	1	-	2	-	2	-	-	2	n	good condition, remove watersprouts from trunk	no	x			
London Plane Tree 4-0-31	2	-	3	-	1	-	-	2	n	fair condition, needs structural pruning at top of crown, remove three dead broken branches	no		*		
London Plane Tree 4-0-32	1	-	3	-	2	-	-	2	n	good overall condition, remove one dead branch	no		*		
London Plane Tree 4-0-33	3	-	2	-	1	-	-	1	n	leaner, remove two of five lower branches	no	x			
London Plane Tree 4-0-34	1	-	2	-	2	-	-	2	n	remove watersprouts from trunk, re-cut dead branch spur	no	x			
London Plane Tree 4-0-35	2	-	2	-	2	-	-	2	n	remove watersprouts from trunk, needs structural pruning throughout	no	x			
London Plane Tree 4-0-36	3	3	3	-	3	-	-	3	n	in decline, dieback throughout, safety hazard, remove all deadwood, plan for replacement	yes	*		P	

Codes: 0= not present, 1= satisfactory condition, 2= less severe work needed, 3= severe work needed, n= none present

Recommended Equipment for Inspection: binoculars, sounder, pen

Inspected by: M Coffin, A Farrugio, C. Pepper

Date: July 15, 1992

Figure B - Field Inventory, Inspection, and work needed: Within areas of the landscape, each feature is assigned a field identification number. An inspection is conducted to assess the condition, potential problems, such as deadwood or integral decay, and specify work needed. A map (above) is used to locate features that require attention)

Statue of Liberty National Monument
FEATURE DATA - LONDON PLANE TREE

CATEGORY: Deciduous Tree

AREAS: 4- South Lawn

FEATURE NAME: London Plane tree (Platanus x acerifolia)

SOURCE OF IDENTIFICATION: Al Farrugio, STLI Horticulturist, 1992

DESCRIPTIVE CHARACTERISTICS:
The fruit of London Plane Tree is typically in clusters of 2, leaves are large, 5 -10" width whereas the fruit of American Sycamore is singular, and leaves are slightly smaller.

HISTORIC SIGNIFICANCE:/ APPEARANCE/ INTENT:
London Plane trees were specified in the General Development Plan by Norman Newton in 1937 (Newton, N. T. Design on the Land, Harvard University Press, 1971, p. 543).

PRESERVATION PRACTICES AND WORK PROCEDURES:

Winter -
Prune out dead, damaged wood and watersprouts as needed. Inspect for interior decay and pest damage. Disinfect tools between cuts to prevent spread of cankerstain disease.
Spring -
Trunk protection. Take preventative actions to protect the base of each tree from string trimmer damage. Train all equipment operators.
Monitor and treat anthracnose. Prolonged periods of cool, moist, damp spring weather will increase anthracnose. The best times to control anthracnose are before bud break, at bud break, and when leaves have expanded.
Transplant. Spring is the best time to transplant trees.
Summer -
Water newly transplanted trees so that they receive one inch of water every 10 days. To water, set up water bags around the base of the tree at the end of the day. Remove empty bags in the morning. Do not overwater.
Fall -
Rake up London Plane tree leaves and dispose off site to remove anthracnose inoculum.

PESTS, DISEASES AND CULTURAL PROBLEMS:
Pests - Plum Borer, Lecanium Scale, Sycamore Lace Bug, Aphids, Fall Webworm
Diseases - Anthracnose, Cankerstain, Wetwood, Powdery Mildew
Cultural Problems - Susceptible to drought stress, frequently produces watersprouts, often vandalized by carving in bark.

RECOMMENDED METHOD AND SOURCE OF REPLACEMENT: Replace in-kind with nursery stock. Consider anthracnose resistant cultivars that are similiar in size and character to the straight species.

PROPAGATION METHOD: Take root cuttings in July or August. Treat with IBA.

ADDITIONAL SOURCES OF INFORMATION:
Shigo, Alex L. A New Tree Biology. Durham NH: Shigo & Trees, Assoc., 1986.
Sinclair, Lyon & Johnson. Diseases of Trees & Shrubs. Ithaca NY: Cornell U. Press, 1987.

Figure C - Feature Data: For each feature that requires special care, a detailed sheet is developed. This contains notes on when to monitor and carry out work, specific procedures, cite potential problems, and perform repair or replacement.

Statue of Liberty National Monument
CALENDAR - SPRING

FOR ALL TREES -

Transplant. Spring is the best time to transplant trees.

If soil or leaf analysis indicates that fertilizer is needed, late fall is the best time to fertilize trees. However, fertilizer may also be applied in early Spring, before bud break. Use an organic fertilizer with the micronutrients needed, such as manganese. If the lawn area below the trees is receiving fertilizer, additional fertilizer is not necessary. Light annual pruning throughout the tree tends to reduce the amount of fertilizer needed.

LONDON PLANE TREES -

Trunk protection. Take preventative actions to protect the base of each tree from string trimmer damage. Train all equipment operators.

Monitor and treat anthracnose. Prolonged periods of cool, moist, damp spring weather will increase anthracnose. The best times to control anthracnose are before bud break, at bud break, and when leaves have expanded.

LINDENS -

Prune out crossing branches on young trees.

LAWN -

Rake lawn areas in the early spring to remove matted grass and accumulated debris. De-thatch lawn areas where thatch accumulation exceeds 3/4 of an inch.

Aerate with a core aerator, lawn areas that are heavily compacted. However, do not aerate around the trees because of shallow roots.

Begin mowing and trimming operations. Instruct all equipment operators on how to prevent damage to tree trunks.

Check soil pH. Send soil samples to Cooperative Extension Service for analysis of pH, phosphorus and potassium levels. Apply lime and fertilizer as necessary to adjust the soil condition.

Fertilize in late May or early June with an organic fertilizer with an analysis of 5-4-3 or equivalent. Apply at a rate of one pound of nitrogen per 1000 square feet. This is the first of three annual applications.

Inspect lawn areas for pests (grubs) and disease (leaf spot, leaf smut) damage.

Figure D - Calendar for Monitoring and for Work: All feature-specific monitoring and work recommendations are combined into one seasonal calendar for all areas of the landscape to ensure that important work activities are not overlooked.

ON PLANE TREE

Record notes on measurements, conditions, work performed, reason for removal, replacement or installation, propagation method and growing location, status of feature, or reference to a related report, etc.	Maintenance Guidance Problem Major Work Cleanup	Removal	Replacement	Propagation Pruning Other	Date and Initials Use see reference to any additional information
All deadwood and watersprouts removed by Arboriculture class from University of Massachusetts.		X			AF 8/92
Replaced tree #4-0-26 with London Plane Tree, anthracnose -resistant Cultivar 'Columbia'. Installed through Gardener Intake Project			X		AF 4/93
#4-0-26 damaged by vandalism, re-set and restaked		X			AF 5/93
Removed and replaced #4-0-37 with London Plane Tree, anthracnose resistant cultivar 'Liberty' in order to compare with 'Columbia'.		X			AF 5/93
#4-0-26 'Columbia' and #4-0-37 'Liberty' both in fairly good condition. Both received water by gator bag 1 x a week during July and August.		X			XAF 8/93

Figure E - Record Keeping: A record sheet is created for each type of feature. Maintenance staff may record information relating to changes in condition, major work performed, removal, replacement, propagation and any other events. As records are added too through the years, they become a valuable source of documentation of the landscape's history.

Because landscapes change through the seasons, specifications for ongoing preservation maintenance should be organized in a calendar format. During each season or month, the calendar can be referenced to determine when, where, and how preservation maintenance is needed. For example, for some trees structural pruning is best done in the late winter while other trees are best pruned in the late summer. Serious pests are monitored at specific times of the year, in certain stages of their life cycle. This detailed calendar will in turn identify staff needs and work priorities.

Depending on the level of sophistication desired, one approach to documenting maintenance data and recording change over time is to use a computerized geographical or visual information system.[13] Such a system would have the capability to include plans and photographs that would focus on a site's landscape features.

If a computer is not available, a manual or notebook can be developed to organize and store important information. This approach allows managers to start at any level of detail and to begin to collect and organize information about landscape features (see Box opposite and above). The value of these maintenance records cannot be overstated. These records will be used in the future by historians to understand how the landscape has evolved with the ongoing care of the maintenance staff.

Recording Treatment Work and Future Research Recommendations

The last and ongoing step in the preservation planning process records the treatment work as carried out. It may include a series of as-built drawings, supporting photographic materials, specifications and a summary assessment. New technologies that have been successfully used should be highlighted. Ideally, this information should be shared with interested national organizations for further dissemination and evaluation.

The need for further research or additional activities should also be documented. This may include site-specific or contextual historical research, archeological investigations, pollen analysis, search for rare or unusual plant materials, or, material testing for future applications.

Finally, in consultation with a conservator or archivist—to maximize the benefit of project work and to minimize the potential of data loss—all primary documents should be organized and preserved as archival materials. This may include field notes, maps, drawings, photographs, material samples, oral histories and other relative information.

Summary

The planning, treatment, and maintenance of cultural landscapes requires a multi-disciplinary approach. In landscapes, such as parks and playgrounds, battlefields, cemeteries, village greens, and agricultural land preserves—more than any other type of historic resource—communities rightly presume a sense of stewardship. It is often this grass roots commitment that has been a catalyst for current research and planning initiatives. Individual residential properties often do not require the same level of public outreach, yet a systematic planning process will assist in making educated treatment, management and maintenance decisions.

Wise stewardship protects the character, and or spirit of a place by recognizing history as change over time. Often, this also involves our own respectful changes through treatment. The potential benefits from the preservation of cultural landscapes are enormous. Landscapes provide

scenic, economic, ecological, social, recreational and educational opportunities that help us understand ourselves as individuals, communities and as a nation. Their ongoing preservation can yield an improved quality of life for all, and, above all, a sense of place or identity for future generations.

Selected Reading

Birnbaum, Charles A, guest editor. *Preservation Forum.* "Focus on Landscape Preservation". Washington, D.C.: National Trust for Historic Preservation, Volume 7, No. 3, May/June 1992.

Buggey Susan, guest editor. *APT Bulletin. Special Issue: Conserving Historic Landscapes.* Fredericksburg, VA: Association for Preservation Technology International, Volume XXIV, No. 3-4, 1992.

Burns, John A, and the Staff of HABS/HAER. *Recording Historic Structures.* American Institute of Architects Press, 1989. (Includes chapter on the documentation of Meridian Hill Park, pp. 206-219.)

Diehl, Janet and Thomas S. Barrett, et al. *The Conservation Easement Handbook. Managing Land Conservation and Historic Preservation Easement Programs,* The Land Trust Exchange (now Alliance) and the Trust for Public Land, 1988.

International Committee of Historic Gardens and Sites, ICOMOS-IFLA. *Jardins et Sites Historiques,* Scientific Journal. ICOMOS 1993. Compilation of papers on the subject, in both english and french.

Kelso, William M., and Rachel Most. *Earth Patterns: Essays in Landscape Archaeology.* Charlottesville, VA: University Press of Virginia, 1990.

Stokes, Samuel, N., et al. *Saving America's Countryside: A Guide to Rural Conservation.* Baltimore and London: John Hopkins University Press, 1989.

Tishler, William, editor. American Landscape *Architecture, Designers and Places.* Washington, DC: The Preservation Press, 1989.

Several publications available from the National Park Service deal directly with the preservation of historic landscapes. These include:

America's Landscape Legacy, Brochure, Preservation Assistance Division, 1992.

Guidelines for the Treatment of Historic Landscapes, Preservation Assistance Division, 1992 (Draft).

Case Studies in Landscape Preservation, Preservation Assistance Division in cooperation with the Alliance for Landscape Preservation, 1995.

Cultural Landscapes Bibliography: An Annotated Bibliography of Resources in the National Park System, Park Historic Architecture Division, 1992.

Historic Landscape Directory; A Source Book of Agencies, Organizations, and Institutions Providing Information on Historic Landscape Preservation, Preservation Assistance Division, 1991.

CRM, Cultural Resource Management, Thematic Issues: *The Preservation of Cultural Landscapes,* Volume 14, No.6, 1991; *A Reality Check for Our Nation's Parks,* Volume 16, No. 4, 1993; *Historic Transportation Corridors,* Volume 16, No. 11, 1993; and, *The Interpretation of Cultural Landscapes,* Volume 17, No. 8, 1994.

Pioneers of American Landscape Design: An Annotated Bibliography, Preservation Assistance Division, 1993 (ISBN:0-16-041974-3).

Making Educated Decisions: A Landscape Preservation Bibliography, Preservation Assistance Division, 1994 (ISBN:0-16-045145-0)

National Register Bulletin 18: How to Evaluate and Nominate Designed Historic Landscapes; National Register Bulletin 30: Guidelines for Evaluating and Documenting Rural Historic Landscapes; National Register Bulletin 40: Guidelines for Evaluating and Registering Battlefields; and, National Register Bulletin 41: Guidelines for Evaluating and Registering Cemeteries, Interagency Resources Division.

Endnotes

[1] The cultural landscape definitions are contained in *NPS-28, Cultural Resource Management Guideline,* Release No. 4, 1994, National Park Service.

[2] For an expanded list of offices to contact, see *America's Landscape Legacy* brochure. Free from the National Park Service Preservation Assistance Division.

[3] From Kelso, William, *A Report on the Archeological Excavation at Monticello, Charlottesville, VA, 1979-1981,* Thomas Jefferson Memorial Foundation, 1982.

[4] Lewis, Pierce, "Common Landscapes as Historic Documents," Lubar, Steven and Kingery, W. David (eds.), *Essays on Material Culture,* Smithsonian Institution Press, Washington, DC, 1993, p. 138.

[5] Meinig, D. W. "The Beholding Eye: Ten Versions of the Same Scene," *The Interpretation of Ordinary Landscapes,* Oxford University Press, New York, 1979, pp. 33-48.

[6] See National Park Service *National Register Bulletins* under Selected Reading (opposite).

[7] The Historic American Buildings Survey, HABS, has generated standards for landscape documentation that they now utilize on a number of projects. Specifically, a case study on recording historic landscapes is included in *Recording Historic Structures,* pp. 206-219. See Selected Reading (opposite).

[8] This is being undertaken with technical assistance from the Olmsted Center for Landscape Preservation a partnership between the National Park Service and the Arnold Arboretum of Harvard University that provides cultural landscape technical assistance, technology development and training.

[9] See *National Register Bulletin 16A: How to Complete the National Register Registration Form.* Washington, D.C.: U.S. Department of the Interior, National Park Service, Interagency Resources Division, 1991.

[10] Ibid.

[11] The standards are general principles for the treatment of buildings, structures, sites, objects, districts and landscapes. The treatment standards are one set of standards included in the broader group known as the *Secretary of the Interior's Standards for Archaeology and Historic Preservation.*

[12] The Secretary of the Interior is responsible for establishing professional standards and providing advice on the preservation and protection of all cultural resources listed on or eligible for the National Register of Historic Places. For a copy of the brochure, *The Secretary of the Interior's Standards for the Treatment of Historic Properties,* 1992 contact the National Park Service Preservation Assistance Division (424) Box 37127 Washington, DC 20013-7127.

[13] A visual information system, a computer-aided mapping program with a linked database, has been developed for the historic landscape at the Frederick Olmsted National Historic Site. Data can be accessed directly from a digitized map such as information on each plant including identification, age, location, size, condition, and maintenance history.

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