Chapter 4: Standards and Guidelines for the Preservation Process

The Existing Management Plan

The *Golden Gate National Recreation Area/Point Reyes National Seashore General Management Plan/Environmental Analysis* of 1980 conceptualized a series of natural resource and historic resource management zones. Within the category of historic resource zones, the *General Management Plan* placed all the fortifications in the "preservation zone," along with the historic ships, lighthouses, and the historic buildings on Alcatraz. (Today historic ships are treated as a separate national park.)

The *General Management Plan* describes the preservation zone for the Golden Gate National Recreation Area as follows:

> Spaces and objects placed in this category are managed and used primarily for the purpose of facilitating public enjoyment, understanding, and appreciation of their historic values. Management activities will include the protection of structures from influences and uses that could cause deterioration and the presentation of tours, exhibits, or other appropriate interpretive efforts.
>
> Because of the unusually large number of historic structures in the parks, many that are suitable for adaptive use have been placed in this category simply because a use has not yet been specifically identified for them. Undoubtedly some of these will be adapted for management or visitor uses in the future, but in the meantime they will be simply protected from damage and deterioration.

The National Park Service has treated most of the batteries, base-end stations, and other related ancillaries in a preservation mode as funding and personnel resources permitted. The few exceptions have been handled as adaptive reuse, and include a small museum of coast defense at Battery Chamberlin; stables for the Park Police at Battery Livingston-Springer; and, an environmental education camping facility at Battery Alexander. In 1994, the *Final General Management Plan Amendment Environmental Impact Statement, Presidio of San Francisco* essentially reaffirmed the *General Management Plan* of 1980 when it prescribed a continued preservation treatment for the fortifications at the Presidio: "Historic structures along this stretch of the coast will be stabilized and preserved." Intent across the National Park Service management documentation is to encourage preservation.

Historic Preservation Guidelines

Guidelines directly pertinent to the seacoast fortifications under the jurisdiction of the National Park Service management include those listed below, and can be grouped as references for general stewardship and as ones offering technical advice.

Stewardship

1. Kay D. Weeks and Anne E. Grimmer, *Secretary of the Interior's Standards for the Treatment of Historic Properties with Illustrated Guidelines for Preserving, Rehabilitating, Restoring & Reconstructing Historic Buildings*, Washington, D.C.: National Park Service, 1996. (Unillustrated version, 1995.)
2. Charles Birnbaum, with Chris Capella-Peters, editors, *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*, Washington, D.C.: National Park Service, 1996.
3. *Guide to Sustainable Earthworks Management* [90% Draft], Washington, D.C.: National Park Service in association with the Georgia Trust for Historic Preservation, 1998.

4. Robert Page, Cathy A. Gilbert, and Susan A. Dolan, *A Guide to Cultural Landscape Reports: Contents, Process, and Techniques*, Washington, D.C.: National Park Service, 1998.
5. Margaret Coffin, Olmsted Center for Landscape Preservation, *Guide to Developing a Preservation Maintenance Plan for a Historic Landscape*, Washington, D.C.: National Park Service, 1995.
6. *Cultural Resource Management Guideline,* National Park Service Bulletin No.28, Release No. 5, Washington, D.C.: National Park Service, 1997. [NOTE: National Park Service *Director's Order No. 28: Cultural Resource Management* states that Bulletin No. 28, Release No. 5, will provide interim guidance for cultural resource management until issuance of a cultural resource management handbook. The National Park Service anticipates that the handbook will be published by 31 December 1999.]
7. Charles A. Birnbaum, *Protecting Cultural Landscapes: Planning, Treatment and Management of Historic Landscapes*, Preservation Briefs, No. 36, Washington, D.C.: National Park Service, 1994.
8. Andropogon Associates, Ltd., *Earthworks Landscape Management Manual*, Washington, D.C.: National Park Service, 1989.

Technical Advice

1. Thomas C. Jester (ed.), *Twentieth-Century Building Materials: History and Conservation*, New York: National Park Service / McGraw-Hill.
2. Sharon C. Park, *The Use of Substitute Materials on Historic Building Exteriors*, Preservation Briefs, No.16, Washington, D.C.: National Park Service, 1988.
3. Margot Gayle, David W. Look, and John G. Waite, *Metals in America's Historic Buildings*, Washington, D.C.: Government Printing Office, 1982.
4. William B. Coney, *Preservation of Historic Concrete: Problems and General Approaches*, Preservation Briefs, No.15, Washington, D.C.: National Park Service, 1987.
5. Anne E. Grimmer, *A Glossary of Historic Masonry Deterioration Problems and Preservation Treatments*, Washington, D.C.: National Park Service, 1984.
6. Baird M. Smith, *Moisture Problems in Historic Masonry Walls, Diagnosis and Treatment*, Washington, D.C.: National Park Service, 1986.
7. Sharon C. Park, *Holding the Line: Controlling Unwanted Moisture in Historic Buildings*, Preservation Briefs, No.39, Washington, D.C.: National Park Service, 1996.
8. Robert C. Mack, *The Cleaning and Waterproof Coating of Masonry Buildings*, Preservation Briefs, No.1, Washington, D.C.: National Park Service, 1975.
9. Anne E. Grimmer, *Dangers of Abrasive Cleaning to Historic Buildings*, Preservation Briefs, No.6, Washington, D.C.: National Park Service, 1979.
10. Anne E. Grimmer, *Keeping It Clean: Removing Exterior Dirt, Paint, Stains and Graffiti from Historic Masonry Buildings*, Washington, D.C.: National Park Service, 1988.
11. Martin E. Weaver, *Removing Graffiti from Historic Masonry*, Preservation Briefs, No.38, Washington, D.C.: National Park Service, 1995.
12. Kay D. Weeks and David W. Look, *Exterior Paint Problems on Historic Woodwork*, Preservation Briefs, No.10, Washington, D.C.: National Park Service, 1982.
13. Sharon C. Park, *Proper Painting and Surface Preparation*, Preservation Tech Notes, Exterior Woodwork No.1, Washington, D.C.: National Park Service, 1986.
14. Robert C. Mack and John P. Speweik, *Repointing Mortar Joints in Historic Masonry Buildings*, Preservation Briefs, No.2, Washington, D.C.: National Park Service, 1998. [Revision of 1977 Brief.]
15. *Window Rehabilitation Guide for Historic Buildings*, Washington, D.C.: Historic Preservation Education Foundation / National Park Service, 1997.
16. Charles Fisher (ed.), *The Window Handbook: Successful Strategies for Rehabilitating Windows in Historic Buildings,* Washington, D.C.: National Park Service. [Includes

seventeen Preservation Tech Notes from 1984-1991 focused on the treatment of windows; individual authors for the Notes.]

17. John H. Myers, *The Repair Historic Wooden Windows*, Preservation Briefs, No.9, Washington, D.C.: National Park Service, 1981.
18. Sharon C. Park, *The Repair and Thermal Upgrading of Historic Steel Windows*, Preservation Briefs, No.13, Washington, D.C.: National Park Service, 1984.
19. H. Ward Jandl, *Rehabilitating Interiors in Historic Buildings—Identifying Character-Defining Elements*, Preservation Briefs, No.18, Washington, D.C.: National Park Service, 1988.
20. Sara B. Chase, *Painting Historic Interiors*, Preservation Briefs, No.28, Washington, D.C.: National Park Service, 1992.
21. Marylee MacDonald, *Repairing Historic Flat Plaster—Walls and Ceilings*, Preservation Briefs, No.21, Washington, D.C.: National Park Service, 1989.
22. Sharon C. Park, *Mothballing Historic Buildings*, Preservation Briefs, No.31, Washington, D.C.: National Park Service, 1993.

Additional publications exist which discuss management of related types of resources, but are not included here. As specific challenges arise, the Golden Gate National Recreation Area staff are advised to contact the appropriate technical professionals within the National Park Service for updated guidance. Especially useful is the internet web site: www2.cr.nps.gov/tps/tpscat_1.htm.

Levels of Treatment

The *Secretary of the Interior's Standards for the Treatment of Historic Properties* have been alive and well in the preservation community since they were first published in 1979. Revised in 1992 and most recently published in 1995 and 1996 with inclusion of guidelines for the treatment of historic buildings (1995/1996) and for the treatment of cultural landscapes (1996), the *Standards* have become the test most often applied to the work proposed for an historic property to gauge the appropriateness of what is contemplated and to consider the possible impact of individual project elements on character-defining features. The *Standards* of 1995 consider four types of possible treatments for all types of historic properties: preservation, rehabilitation, restoration, and reconstruction. Subsumed within preservation, and pertinent to the coast defense fortifications, is stabilization. (See also, chapter 9—treatment plans—for more detailed discussion of stabilization, preservation, repair, and restoration, focused on the subtopics of sitework; concrete; masonry; metals; carpentry; moisture protection; doors and windows; finishes; and, special items.)

Rehabilitation

Rehabilitation has been the treatment most often used in our communities because its purpose is to give guidance to the active reuse of historic buildings. The return to purposeful function has been a central theme in the national historic preservation movement for more than thirty years. The success of rehabilitation is revealed by the popular use of the term, and it is language that is not restricted to a narrow band of preservation professionals. The *Standards for Rehabilitation* continue to have utility in the management of historic fortifications due to their broad acceptance within the architectural community as appropriate guiding principles, and as evocative of a philosophy of treatment for historic structures. While not candidates for true rehabilitation, fortifications will still benefit from the listed "recommended" / "not recommended" guidance provided by the National Park Service within this section. Yet fortification structures are by their nature specialized, and the particular requirements of their original purpose, as well as difficulties related to some shortcomings of their design and construction, do limit their potential for modern, adaptive reuse. There are individual examples of new uses being found for former defenses, but the examples are unique and indicate a response to local needs rather than a reproducible pattern. For many years, a small public library was located in a battery at Fort Moultrie, South Carolina, and the state of Delaware occupied a portion of the mortar battery at Fort

DuPont for archives. In Washington state, a county sheriff used the capacious interior of BC 131 as a secure impound lot. The most architecturally successful rehabilitation of a coast defense structure is at Fort McKinley, Maine, where a private residence has been built into a mine casemate.

Restoration and Reconstruction

Restoration and reconstruction are also fitting treatments, but they carry severe limitations when applied to fortifications. In any but the most simple defense, restoration is made difficult because it suggests the return of absent equipment, from objects as large as a seacoast gun and carriage to as small as the knurled brass screw terminal on electrical equipment. Much of the specialized inventory that outfitted the defenses no longer exists, and without it, any restoration will ring hollow. The compelling contribution of hardware to a military structure needs no greater demonstration than that present at the Fort Barry Nike installation. The recovered and operating technology is impressive in its own right, but the sights, sounds, and even smells are distinguished elements of the exemplary restoration.

Reconstruction may be called for in those instances where structures have been removed, but whose form and function are important to a complete understanding of the fortifications as an historic resource. At Fort Scott, for example, a complete interpretive plan might call for the reconstruction of the fire control stations that once occupied Rob Hill. The expense of such a reconstruction compared with the expenditures required to address the significant needs of numerous and genuine historic structures will most certainly mean that reconstruction will be a treatment that is seldom used.

Preservation

For the great majority of fortifications of all periods, preservation is the most fitting as well as the most affordable treatment. The public ownership of most former coastal fortifications implies that some kind of interpretive use is in the future, and the protection and stabilization treatments that form a large part of the preservation standard will yield results that are satisfactory for interpretive purposes. Some types of preservation treatments are also within the capabilities of maintenance staff as well as trained volunteers; the careful pairing of projects and workers can be an effective and happy combination.

Historical Research and Evaluation

Determining what is historically important about any fortification can be challenging, and perhaps those built in the years following the Civil War even more so. Earlier works such as Fort Point or Fort Adams or Fort Knox are distinct, well-defined structures, wholly contained by their form. Later works cover extensive amounts of ground, and some related components of the World War II defenses are separated by miles. Any assessment of historical significance has to take into account such dispersal. Under those circumstances, it is too easy to consider the large and close at hand to be more important and thus more valuable than the compact and distant. Ultimately, management decisions will determine which resources receive treatment, and those decisions must consider the historical value of individual as well as collective elements of the defense.

The Archives and Documentation

The primary and secondary sources of research material for the study of fortifications are rich. The basic source is Record Group 77, the records of the Office of the Chief of Engineers maintained by the National Archives and Records Administration. Consisting of years of correspondence between district engineer offices and the Chief of Engineers in Washington, D.C., it is a voluminous record set that details the construction and maintenance of the fortifications of all periods. Much of it is held in the National Archives central collection in the nation's capitol, although locally significant elements have been sent to regional archives near the defended harbors. Few scholars have done justice to this daunting assembly, although working with the materials will reveal not only the techniques but also the reasoning of the designers and builders of the fortifications.

Related to the written record is the cartographic collection. These materials are also maintained by the National Archives, but have not been distributed to regional archives. This too is a complex holding. It contains site plans and topographical maps as well as thousands of drawings of individual structures; the gamut runs from pencil tracings of contemplated but never built features to the exquisite drafting that is part of the ink-on-vellum transfer drawings. Most are associated with written records that are contained in the textual collection, but it is often difficult to place the two elements together. Despite that difficulty, the cartographic materials are exceptionally valuable, and certainly the record most useful for the preservation of fortifications is the transfer drawing. It is the equivalent of an as-built, and depicts in great detail the nature and function of each structure as well as any equipment that had been installed at the time the work was completed by the U.S. Army Corps of Engineers and transferred to the Army's artillery force.

The Golden Gate National Recreation Area is fortunate in that it has its own extensive and professionally administered archive. Since the materials there incorporate the holdings of the post engineer at the time the property was transferred to the National Park Service, the collection contains some elements that are not included in the National Archives.

The most common form of record associated with structures built in the 1890s through the 1940s is a numbered set of forms called *Reports of Completed Works*. Created in 1919 and consolidating information that had been collected since 1896, the *Reports of Completed Works* covered gun batteries, searchlights, electrical plants, plotting rooms, and other important elements of the defenses. Form 7 of this set was a small plan of each structure, and examples of the Forms 7 for the San Francisco defenses are reproduced in Appendix B. Their page-size format and comprehensive nature have given Form 7s a reputation for desirability that exceeds their actual value as a source of information. The details they contain bear little on questions of historical significance, they can carry errors, and the scale of the Form 7 drawings is so small that they cannot be used for off-sets or construction estimates. Despite those limitations, the *Reports of Completed Works* are affirmation that all parts of the defense were considered sufficiently important to be the subject of a comprehensive record-keeping system.[1]

A final important primary source is one that is also readily available. The *Annual Reports of the Chief of Engineers* are part of the Congressional serial set, and they often contain details of fortification construction. The reports are condensations or excerpts from the reports of the district engineers, and depict the contemporary interest in construction methods as well as cost control. The reasons behind any single design decision are typically not part of the text.

By far the most useful secondary source, especially for its portrayal of the antique technology and practices of coast defense, is the *Coast Defense Study Group Journal*. The articles tend toward detail and chronology rather than analysis and exposition, but they can be excellent sources of information. The Coast Defense Study Group has also supported the publication of long out of print volumes important in the history of U.S. coast defense.

Conducting the Research

There are several challenges for those undertaking fortification research. The first need, as it is in any research effort, is to pose the right questions, and knowledge of the right questions usually comes from familiarity with what others have done in the same field. In fortifications, this task is more difficult because the literature that considers their historical attributes is very slim, and almost anyone attempting a serious examination of the origin and contributions of the structures is a pioneer. An additional hurdle is the size of the record itself; to thoroughly investigate even the most accessible sources requires considerable time and organization. An additional demand is to consider the significance of what actually remains of the fortifications themselves, and not to become distracted by what is gone. The most common effect of this unbalanced perspective is to interpret and evaluate fortifications on the basis of the

armament they once contained, rather than the attributes that survive today. Seeing fortifications as valid historic structures is often unaccomplished, and there is a temptation to revert to chronology and detail, and trust that the volume of dates and data will somehow intersect with historical significance.

Fortifications and systems of fortifications reveal their significance through historical and architectural themes. Historical themes are associated with unique events in the development of the defenses (Battery Dynamite and the importance of the mine defense) or patterns of change (the shift from individual designs to standard plans). Closely related are architectural themes associated with the contributions of particular engineers (Henry Abbott and the configuration of early mortar batteries such as Howe-Wagner) and influences from other sources (Cavallo Battery and the experiences of the Franco-Prussian War). These themes of significance are not self-revealing, and they must be constructed from the raw material contained in the primary and secondary sources.

Documentation of Existing Conditions

As suggested by the brief reference to the *Reports of Completed Works*, the documentation of resources was a time-honored practice when the defenses were active. Our current need for documentation springs from a different source. To manage historic properties effectively, we need a fixed point to measure our success as well as to evaluate actions that did not go as we had hoped. The documentation of existing conditions fulfills that requirement.

The Coast Defense Resource Checklist included in Appendix C is the first step in documentation. An adequate record of existing conditions would include the elements below and would be compiled by a field team of a photographer and recorder. As park personnel maintain the batteries over time, they can support continuous documentation and future efforts through use of an Action Log (also in Appendix C).

Coast Defense Resource Checklist

The checklist has several uses. It is a general indication of what features are present in an historic resource as well as indicating what deficiencies are apparent. It is a basic component of the record of existing conditions because it can serve as the document preface and summary overview.

Photographs

In either black and white or color print, 35mm views of the interior and exterior provide an image of details large and small. The photographer should take pictures of each elevation of the interior rooms and exterior elevations as well. Special attention should be taken to photograph small character-defining features such as door closures, decorative concrete or masonry, lighting fixtures, and architectural millwork.

Photograph Plan

The photograph plan is a sketch of the resource indicating the camera direction and coverage for each view. Depending on the complexity of the resource, more than one photograph plan may be required for clarity.

Photograph Annotations

Annotations accompany the photographs to identify the view, direct attention to particular elements, and otherwise indicate the presence of character-defining features. These comments can also address colors and markings. The annotations convey the impressions of the recording team as it examines the resource.

While the four measures of the documentation are basic and should not be abbreviated, the record can be enhanced and made more useful by the addition of other steps.

Historic Photographs

Views of the resources when they were in active military use are particularly valuable supplements because they portray the defenses as they were actually maintained at different periods. They can confirm changes as well as identify the origins of paint shadows or equipment fastenings that are observable today.

Cartographic Resources

Reproductions of historic plans should be part of the documentation because of the range of detail they contain. Because many drawings of fortifications are large and may not be suitable for or available as reductions, the identification and provenance of those materials could be included as a substitute.

Feature Mapping

Feature mapping records observable elements on the horizontal and vertical surfaces of an historic resource. These elements include cracks and spalls, exposed reinforcing or other metal work, markings, and craft or construction details. At a gun battery, the feature map treats each area of surface as a separate component of the structure, and begins with the preparation of vertical and horizontal base maps for each emplacement. The vertical base map depicts in true scale each adjacent vertical surface, so that the map appears as a set of contiguous rectangles. Horizontal base maps outline the superior slope, loading platform, and if necessary, the parade. Separate base maps cover the first and second levels of two-story batteries, and encompass interior spaces as well, including the ceiling.

Feature mapping is labor intensive, but it produces documentation that is highly accurate and comprehensive. It is also an undertaking that can be conducted by trained volunteers. No other technique provides such a thorough foundation of information, and the result is invaluable as a resource in preparing scopes of work or estimating the cost of repairs.

Action Log

The action log records continuing maintenance, providing a record of actions taken and products used. It specifically references individual battery locations with visit dates and pertinent additional comments.

Recommended and Not Recommended: A Summation

The *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring & Reconstructing Historic Buildings* (1995) recommend a number of general practices for effective preservation of historic structures. As applied to coast defense fortifications they are broadly summarized in Table 2 following, and draw upon published National Park Service standards for each treatment category.

Standards for each category summarized through Table 2 are drawn from the Secretary of the Interior's standards for preserving, rehabilitating, restoring and reconstructing historic buildings.

Standards for Preservation

> A property will be used as it was historically, or be given a new use that maximizes the retention of distinctive materials, features, spaces, and spatial relationships. Where a treatment and use have not been identified, a property will be protected and, if necessary, stabilized until additional work may be undertaken.

The historic character of a property will be retained and preserved. The replacement of intact or repairable historic materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.

Each property will be recognized as a physical record of its time, place, and use. Work needed to stabilize, consolidate, and conserve existing historic materials and features will be physically and visually compatible, identifiable upon close inspection, and properly documented for future research.

Changes to a property that have acquired historic significance in their own right will be retained and preserved.

Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.

The existing condition of historic features will be evaluated to determine the appropriate level of intervention needed. Where the severity of deterioration requires repair of limited replacement of a distinctive feature, the new material will match the old in composition, design, color, and texture.

Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.

Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.

Standards for Rehabilitation

A property will be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces, and spatial relationships.

The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.

Each property will be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, will not be undertaken.

Changes to a property that have acquired historic significance in their own right will be retained and preserved.

Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.

Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.

Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.

Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.

New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work shall be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.

New additions and adjacent or related new construction will 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.

Standards for Restoration

A property will be used as it was historically or be given a new use which reflects the property's restoration period.

Materials and features from the restoration period will be retained and preserved. The removal of materials or alteration of features from the restoration period will be retained and preserved. The removal of materials or alteration of features, spaces, and spatial relationships that characterize the period will not be undertaken.

Each property will be recognized as a physical record of its time, place, and use. Work needed to stabilize, consolidate and conserve materials and features from the restoration period will be physically and visually compatible, identifiable upon close inspection, and properly documented for future research.

Materials, features, spaces, and finishes that characterize other historical periods will be documented prior to their alteration or removal.

Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize the restoration period will be preserved.

Deteriorated features from the restoration period will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials.

Replacement of missing features from the restoration period will be substantiated by documentary and physical evidence. A false sense of history will not be created by adding conjectural features, features from other properties, or by combining features that never existed together historically.

Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.

Archeological resources affected by a project will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.

Designs that were never executed historically will not be constructed.

Standards for Reconstruction

Reconstruction will be used to depict vanished or non-surviving portions of a property when documentary and physical evidence is available to permit accurate reconstruction with minimal conjecture, and such reconstruction is essential to the public understanding of the property.

Reconstruction of a landscape, building, structure, or object in its historic location will be preceded by a thorough archeological investigation to identify and evaluate those features and artifacts which are essential to an accurate reconstruction. If such resources must be disturbed, mitigation measures will be undertaken.

Reconstruction will include measures to preserve any remaining historic material, features, and spatial relationships.

Reconstruction will be based on the accurate duplication of historic features and elements substantiated by documentary of physical evidence rather than on conjectural designs or the availability of different features from other historic properties. A reconstructed property will re-create the appearance of the non-surviving historic property in materials, design, color, and texture.

A reconstruction will be clearly identified as a contemporary re-creation.

Designs that were never executed historically will not be constructed.

With these guidelines, then, we can begin to stabilize, preserve, protect, and, with time perhaps, restore, the coast defense fortifications within the Golden Gate National Recreation Area. The National Park Service may also choose to make the information in this manual available over the internet, inclusive of any subsequent revisions or updates, to facilitate public education and wider preservation use.

Table 2
General Guidance Practices for the Treatment of Coastal Fortifications

Recommended	Not Recommended
Temporarily stabilize when needed to prevent further deterioration.	Stabilization that detracts from historic appearance or promotes continued deterioration.
Correct for unsafe conditions.	Safety corrections that compromise the general historic appearance or alter individual character-defining features.
Begin evaluations at the level of protection and maintenance.	Immediate, extensive work.
Identify the character-defining features for the fortifications and for their sites.	Undertaking preservation, rehabilitation, restoration, or reconstruction without an understanding of those features that define a resource's historicity.
Assess the historic materials and technologies pertinent to individual batteries and their ancillaries in order to analyze causes and processes of deterioration.	Undertaking more than rudimentary protection and maintenance without first carefully assessing historic materials and technologies. Materials may be further damaged or even lost altogether without such an assessment. Opportunities for understanding historic techniques may be foregone.
Test selected sample areas of the feature needing treatment where pertinent. Allow sufficient time for test results to be useful.	Complex repair or restoration without testing and evaluation. Especially not recommended where chemical reactions over time have affected the basic materials of the historic structure.
Repair where possible.	Replacement where unwarranted.
Retain existing materials and features to the greatest extent possible.	Introduction of substantial new materials or replacement of undamaged features.
Replace in kind.	Replacement not in kind.
Limit activities to parts of features, where possible.	Removal of entire features rather than selective removal of the isolated damage.
Clean surfaces of historic structures only as needed.	Overzealous cleaning that introduces chemicals or moisture, or that is physically harsh to building fabrics.
Maintain historic paint and texturing schemes.	Changing paint and/or texturing schemes, inclusive of color, type, and character of the known original materials.
Identify and document all introduced new materials. Site files, with field notes and working photographs, are recommended.	Lack of documentation for the introduction of new materials.

[1] Matthew L. Adams, "A Brief History of Reports of Completed Batteries and Reports of Completed Works," *Coast Defense Study Group Journal* 12 (May 1998), 64.

PART II

ENGINEERING, DESIGN, CONSTRUCTION AND MAINTENANCE ISSUES