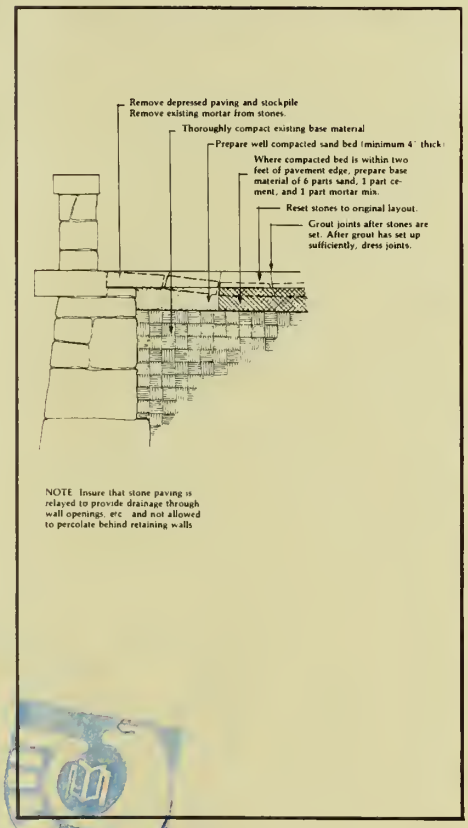
Preservation Case Studies

Maymont Park— The Italian Garden

Richmond, Virginia

Using HCRS Grant-in-Aid Funds for Landscape Restoration



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Using HCRS Grant-in-Aid Funds for Landscape Restoration

By Barry W. Starke, ASLA
Earth Design Associates

Technical Preservation Services
Heritage Conservation and Recreation Service

U.S. Department of the Interior
Washington, D.C.
1980

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As the nation's principal conservation agency, the Department of the Interior has basic responsibilities to protect and conserve our land and water, energy, and minerals, fish and wildlife, parks and recreation areas and to insure the wise use of all these resources. The department also has the major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

U.S. Department of the Interior
Cecil D. Andrus, Secretary
Robert L. Herbst, Assistant Secretary

The Heritage Conservation and Recreation Service, a nonland managing agency within the department, is responsible for assuring the identification, protection, and beneficial use of our important cultural, natural, and recreational resources. The service offers grant assistance, technical information, and guidance to those in the public and private sectors involved in conservation or recreation projects.

Heritage Conservation and Recreation Service
Chris Therral Delaporte, Director

HCRS publication no. 42

Contents

Foreword

The Heritage Conservation and Recreation Service firmly believes that parks, recreation, and historic preservation are for people. The 400,000 people who visit and enjoy Maymont Park, Richmond, Virginia, each year must agree with us, whether they are initially attracted by the park's natural setting, its formal gardens, its exhibits, its animal habitats, or by the entire experience.

It is most fitting, therefore, that the service—whose task it is to identify, evaluate, and protect our nation's cultural and natural resources and to assure our people adequate recreational opportunities—is participating in a restoration project within a 100-acre park that is open year-round, free to the public.

Chris Therral Delaporte
Director
Heritage Conservation and
Recreation Service

Preface

The Heritage Conservation and Recreation Service (HCRS) Historic Preservation Fund Grant-in-Aid Program is jointly administered with the states and territories, the District of Columbia, and the National Trust for Historic Preservation for survey and planning activities and for the acquisition, protection, stabilization, preservation, rehabilitation, restoration, and reconstruction of properties listed in the National Register of Historic Places.

Matching grants of up to 50 percent are provided by HCRS for the preparation of comprehensive statewide surveys and for the acquisition and development of registered properties. Administration of individual grant projects and the supervision of project work are the responsibilities of the State Historic Preservation Officer (SHPO) who is appointed by the governor. The SHPO may transfer funds to local governments, private organizations, and individuals. When grant funds are transferred, the public interest must be protected—through provisions for continued maintenance of the property and public access—for a limited period of time. In addition, project completion reports are required of all grant recipients to show how federal funds have been used, from the planning component to the recording of each area of project work.

Technical Preservation Services, a division of HCRS, reviews and evaluates all grant-assisted acquisition and development projects and project completion reports submitted by the SHPOs to assure conformance with the Secretary of the Interior's Standards for Historic Preservation Projects (see appendix B). The division also provides technical assistance to the states and territories through on-site monitoring of proposed, ongoing, and completed project work, and through participation in publicly and privately sponsored seminars and workshops.

As part of the jointly administered program, Technical Preservation Services publishes and distributes the historical, technical, and planning information contained in representative completion reports as "preservation case studies." These document each of seven eligible project work treatments defined by the Secretary's standards—acquisition, protection, stabilization, preservation, rehabilitation, restoration, and reconstruction.

In general we find that there is a similarity between successful projects of varying complexity and that is the thoroughness of planning for actual work. A well-thought out plan establishes a reasonable scope of work to best use limited grant funds, and it creates a responsible approach to the project work based upon historical, architectural, and archeological documentation. The excerpted historic structure report on Maymont Park's Italian garden that constitutes the focus of this case study represents precisely such a well-organized plan for project work and it is this responsible planning process that we wish to emphasize.

Prepared by Barry W. Starke, ASLA, of Earth Design Associates, Casanova, Virginia, the historic structure report was submitted through the Virginia Historic Landmarks Commission to Technical Preservation Services as part of the Maymont Foundation's application for historic preservation grant-in-aid funds. The report, together with Mr. Starke's drawings and specifications, were reviewed and approved by the division prior to the commencement of project work.

The Maymont Park case study duplicates the landscape architect's three-

part historic structure report format:
1) The Italian garden's original configuration is first described, based on historical research. Examples of the original drawings as well as the only known historic photographs of the garden are included;
2) The garden's present condition is next described after a thorough physical examination has been conducted. A series of excellent photographs point out stabilization and restoration problems; and finally
3) Priorities are established and specific recommendations for stabilization/restoration project work are made. Both the drawings and specifications for the main areas of project work are included (the specifications appear as appendix A).

It should be noted that the photographs included throughout the case study are a good example of the way illustrations should function generally as an integral part of "reporting" on project work and how they may be used to visually reinforce and clarify details of written text. Most of the photographs were taken by the author and by Gail E. Hammerquist, Historical Architect and Manager of Grants-in-Aid, Virginia Historic Landmarks Commission.

Technical Preservation Services staff members Kay D. Weeks, Technical Writer-Editor, and James A. Caufield, Historical Architect, under the direction of Gary L. Hume, Chief, State Preservation Projects Branch, made substantial contributions to the development of original materials into this preservation case study.

Lee H. Nelson, AIA
Chief, Technical Preservation Services Division

Maymont Park—Background

Maymont, a 100-acre site on Virginia's James River that includes a 3-story residence of broken course sandstone (see figure 1), several outbuildings, and a terraced "Italian garden" complete with pergola, was built in 1890 by Major James H. Dooley. Major Dooley's will specified that, upon his wife's death, Maymont be given to the city of Richmond for use as a public park and museum, free of admission to all citizens. Major Dooley died in 1922; Sarah O. May Dooley in 1925.

In 1945, a group of interested citizens formed the Thalhimer-Virginia Wildlife Exhibit, a nonprofit corporation dedicated to promoting the development of wildlife habitats—Maymont was selected as the site. Five habitats were completed in 1958 and the Demonstration Farm was also begun that year. In 1959 the corporate name was changed to Maymont Virginia Wildlife Exhibit. Additional habitats have been added periodically since then: the Aviary and Bison Habitat in 1970 and 1971 and the Bear/Otter Habitat in 1977 (see figures 2 and 3). The Small Animal Habitat was completed in 1979.

Of particular historic preservation interest is the adaptive reuse of Maymont's outbuildings (see figures 4 and 5). The carriage house, initially used for the Dooley's horses and carriages on the first level—feed on the second—is now a 19th-century carriage museum, a gift shop and park offices. The Mews, used by the Dooleys as a garage, has been rehabilitated into a gallery and a theater. Finally, a 1913 hay barn used for livestock grain, and hay is now a nature center that features a permanent exhibit on Virginia wildlife (see figure 6).

From 1926 until 1975 the city continued to operate Maymont under the terms of the Dooley will, but the

Figure 1. *Partial view of Dooley Mansion and grounds, 1980. Photo: Gail E. Hammerquist.*

Figure 2. *Granite quarry now used as one of the park's many habitats, 1980. Photo: Gail E. Hammerquist.*

Figure 3. *Bear/Otter habitat, 1975. Photo: Barry W. Starke.*

costs of administrating the extensive property had escalated from the initial $4,000 a year stated in the will to over $170,000 in 1974. In 1972 the Maymont Foundation was formed, an outgrowth of the Maymont Virginia Wildlife Exhibit. Interested in having a more direct involvement in the development of the park, the foundation proposed an agreement with the city of Richmond, stipulating that the foundation would "manage, promote, and improve Maymont as a public park and museum for recreational and educational purposes and seek funds to accomplish these purposes." This technique had been found to be successful in similar situations where municipalities were unable to adequately fund specialized facilities such as zoological parks. The agreement between the city of Richmond and the Maymont Foundation was signed on January 1, 1975.

For over 50 years, then, Maymont Park's streams, boulders, trees, meadows, gardens, and, more recently, its wildlife and nature exhibits, have soothed, entertained, and captured the imagination of many visitors (see figure 7). The sensitive blending of man-made features and a spectacular natural environment makes the park unique to the Richmond area (the entire 100 acres was listed in the National Register in December 1977).

With increased urbanization, the role of Maymont Park in the community has become one of unlimited importance as an education center. For many of Richmond's disadvantaged children, the park is a vital, or, in some instances, the only link to the world of nature.

Open to the public during all seasons of the year, a variety of programs and services are currently offered for both children and adults, including 10 different school programs; special events for the 4th of July and Christmas; a nature day camp; weekend movies at the nature center; revolving gallery exhibits; Sunday carriage rides; and daily tours of the park in the summer months. Approximately 400,000 people visit and enjoy the park annually (see figures 8 and 9). The foundation is committed to expanding its programs for the general public to include development of the park as an arboretum and botanical garden and as an ecological, environmental, and science learning center.

Concerned about the future of the property—its protection as well as its potential for development—the Maymont Foundation established a number of goals and objectives in 1977, one of which was to "preserve and enhance the natural and man-made features of the park."

In support of this important goal, $31,250 in HCRS grant-in-aid funds was awarded in September 1979 by the Virginia SHPO, Tucker Hill, to assure the physical and historical integrity of the terraced "Italian garden," including its paths and its architectural and sculptural elements. HCRS funds were matched by $77,910 from the city of Richmond for a total project budget of $109,160. Combined funds are being used to plan for and ultimately to accomplish stabilization project work to correct certain hazardous conditions of the public walkways and return the garden's retaining walls to a sound condition. In addition, the garden's pergola and dome will be restored and the marble garden urns re-assembled and reinstalled in their original locations.

Project work is slated to begin in the summer of 1980 and, according to the HCRS grant project agreement, must be completed by September 1981.

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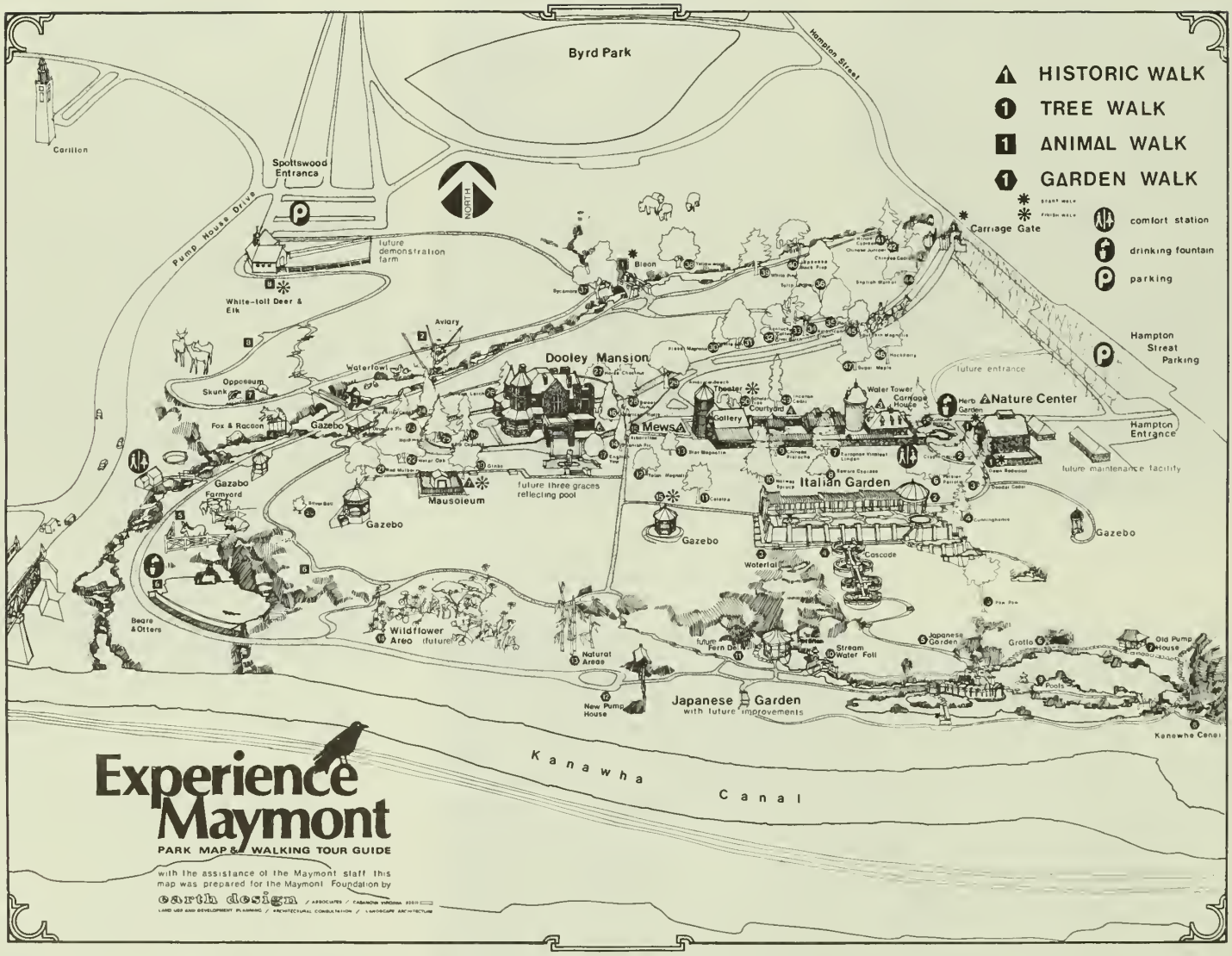

Figure 4. *Map and walking tour guide of 100 acre park site. Enlargement shows mansion, Italian garden, and adaptively reused outbuildings, 1977. Credit: Earth Design Associates.*

Figure 5. *Mews/Carriage House complex, looking northwest, 1980. Photo: Gail E. Hammerquist.*

Figure 6. *Nature Center, looking southeast, 1980. Photo: Gail E. Hammerquist.*

Figure 7. *Partial view of park grounds, 1980. Photo: Gail E. Hammerquist.*

Figure 9. *Schoolchild in one of the park's Gazebos, 1975. Photo: Barry W. Starke.*

Figure 8. *Schoolchildren preparing to tour the park, 1980. Photo: Gail E. Hammerquist.*

Original Configuration

In 1886 Major James Henry Dooley purchased a 24-acre dairy farm in Henrico County, Virginia, from Dr. O. C. Crenshaw. Naming the property "Maymont" after his wife, the former Sarah O. May, he proceeded to construct an elaborate estate at an estimated cost of $1 million. The mansion and two outbuildings, designed by Richmond architect, Edgerton S. Rogers, utilized sandstone and pink granite quarried on the property (see figure 2).

In 1907 Major Dooley hired another Richmond firm, Noland and Baskervill, to design an Italian garden using local stone and Petersburg granite (the firm was also requested to design a Japanese garden, hay barn, and carriage house). As may be expected, construction of the Italian garden's architectural elements, landscaping, and placement of garden sculpture and furniture took several years to complete.

The Italian garden's design is basically a rectangle with long east-west and narrow north-south sides and is sited on the sunny southern slope of the property overlooking the James River. Three levels are incorporated into the Noland and Baskervill plan, each with distinct visual characteristics (see figures 10 and 11):

- formal garden—top level
- promenade and overlook—middle level
- lower terrace—bottom level

Entrances are located at the beginning and end of a wisteria arbored pergola in the formal garden—top level—(see figures 12 and 13). The main or west entrance is approached from a path that extends down the hill from the Dooley mansion; the east entrance approach begins by the carriage house.

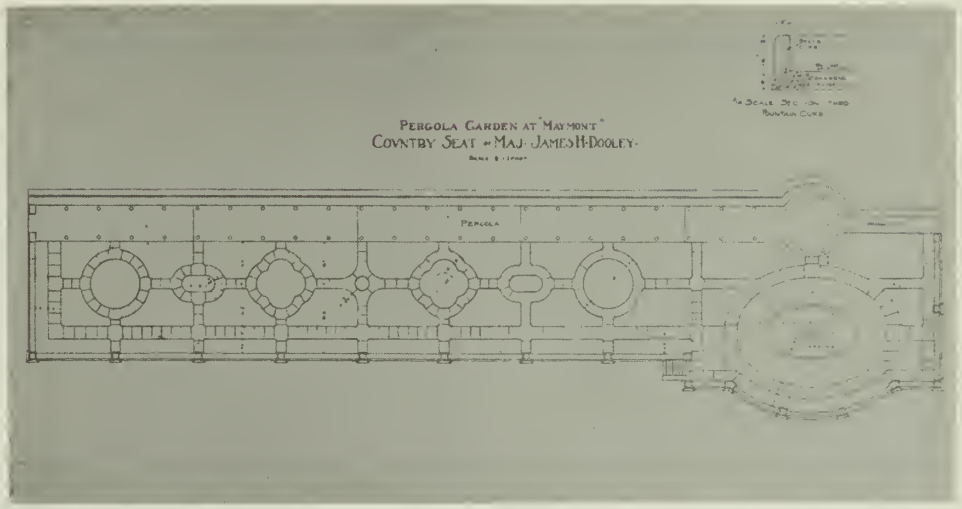

Figure 10. *Formal garden with pergola and fountain, original undated Noland and Baskervill drawing. Courtesy: Baskervill and Sons, Architects.*

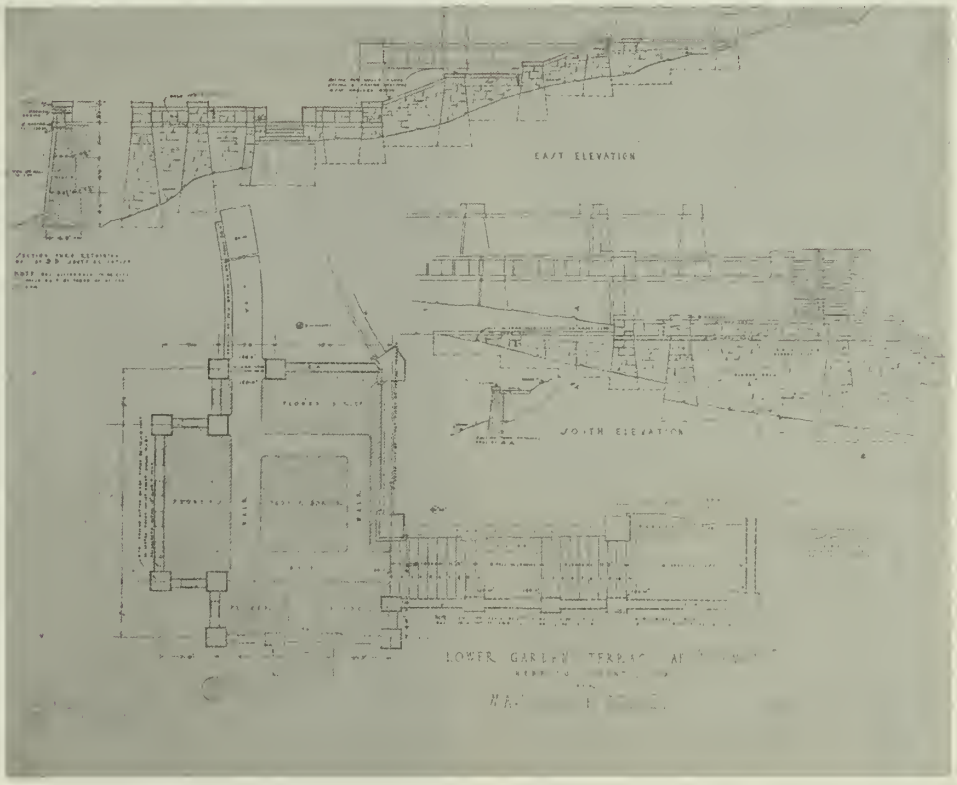

Figure 11. *Lower terrace. Elevations show location of promenade and overlook, and formal garden, original March 1910 Noland and Baskervill drawing. Courtesy: Baskervill and Sons, Architects.*

Using the main entrance, then, and walking between the parallel colonnades of the pergola, views of the formal garden to the south are visible (see figure 12). The promenade and lower terrace, however, are completely out of view. The pergola terminates in a domed area that has two exits: one leads to the formal garden itself, the other to the stairs down to the lower terrace. On entering the formal garden from the domed or east end of the pergola, the fountain pool and surrounding lawn become the focal point (see figure 13). Looking westward, the walk system and planting details of the formal garden become apparent. The granite retaining wall, designed to be decorated with large marble urns, forms the southernmost boundary (see figure 14).

Stairs in the southeastern section of the formal garden lead down to the promenade and overlook—middle level—(see figure 14). The major feature of this long walk that extends east to west alongside the retaining wall is the beautiful view to the south. The major point of interest along the walk occurs about midway along its length at a semicircular opening that marks the beginning of a chain fountain that cascades down the hill. Stairs on either side of the fountain lead down from the promenade level to a path that ultimately ends in the Japanese garden.

The lower terrace—bottom level—is a small private space accessible only from the formal garden. The granite retaining wall on its northernmost side and the lush planting surrounding it on the remaining sides give this terrace a feeling of enclosure. Some southern views, however, are maintained.

Figure 12. *Formal garden looking east, 1925. Photo: Dementi Studio, Richmond, Virginia.*

Figure 13. *Formal garden looking west, 1925. Photo: Dementi Studio, Richmond, Virginia.*

Present Condition

The Italian garden has generally survived well over the years, and possesses the majority of its original architectural, sculptural, and natural features (see figures 15, 16, 17 and 18). However, it has developed serious structural problems that should be corrected immediately by stabilization project work so that the public may continue to enjoy the garden as an integral part of Maymont Park. There are two major problems, both verified by a consulting structural engineer during an investigation of the site in May 1979. First, the fill originally used was not compacted sufficiently and has been slowly settling during the life of the garden. This settlement has not only created uneven pavement causing hazardous conditions, it has interrupted the intended drainage pattern, thus permitting additional water to percolate behind the retaining walls and under pavements, resulting in front heaving of both (see figure 19). Second, the deterioration of mortar in the joints of both pavement and walls has allowed water to enter and, once again, promoted frost heaving (see figure 20).

Detail photographs A-P that follow, specifically keyed to the Present Condition drawing (see figure 21), document deterioration of the garden's pavement and retaining walls.

In addition to the walkways and retaining walls, there are several other conditions that need to be corrected as soon as possible:

- Slippery walkways under the pergola. Unfortunately, the original granolith path was covered with concrete panels. These panels tend to become dangerously slippery when wet, posing a hazard to public safety (see figure 22).
- Deterioration of the structural members, trimwork, and moulding of the pergola's dome; removal of the original clay tile roof and replacement with a metal roof; and a missing copper-clad finial (see figure 23).
- Missing marble garden urns (see figure 24).

Figure 14. *Steps to promenade on south side of formal garden showing marble garden urns, 1925. Photo: Dementi Studio, Richmond, Virginia.*

Alterations have been made to the original garden for what were considered functional reasons and, although they are not part of the specific recommendations for grant project work, should be addressed within an overall restoration effort:

- Alteration of the east entrance: conversion to planting beds for hedge.
- Alteration of the garden: addition of a walkway from the pergola to the formal garden.
- Alteration of the fountain pool in the formal garden: removal of a stone formation (see figure 13).

Finally, the original planting theme of the garden incorporated many materials not characteristically included in an Italian garden such as arborvitae, peonies, roses, tulips, and English ivy. Further complicating the planting issue, materials added through the years have not been part of a focused objective to conform with the original plantings (see figure 25).

Recommendations for Stabilization/Restoration Work

The following project work items, most of which are indicated on the Restoration Plan (see figure 26), should be undertaken in order to stabilize or restore those deteriorated/damaged portions of the Italian garden illustrated and described in the preceding section. These recommendations are divided into four categories and discussed in order of work priority: masonry, pergola and dome, marble garden urns, and plantings.

Masonry. Areas involved: formal garden, promenade and overlook, and lower terrace. All damaged mortar joints need to be repaired as soon as possible by removing deteriorated mortar by hand and repointing to match the original work (see figure 27). Test panels must be constructed with approved mortar mixes. It is also essential that stairs and walkways be re-set on a firm foundation on grade to allow ground water runoff (see figure 28). The original granite paving stones quarried at Maymont should be retained, or, when replacement is necessary, the new stone should match the original.

Figure 15. *Main entrance to formal garden from west, 1975. Photo: Barry W. Starke.*

Figure 16. *Fountain pool in formal garden, 1975. Photo: Barry W. Starke.*

Figure 17. *Lower terrace looking west, 1975. Photo: Barry W. Starke.*

Figure 18. *Chain fountain from bottom level, 1975. Photo: Barry W. Starke.*

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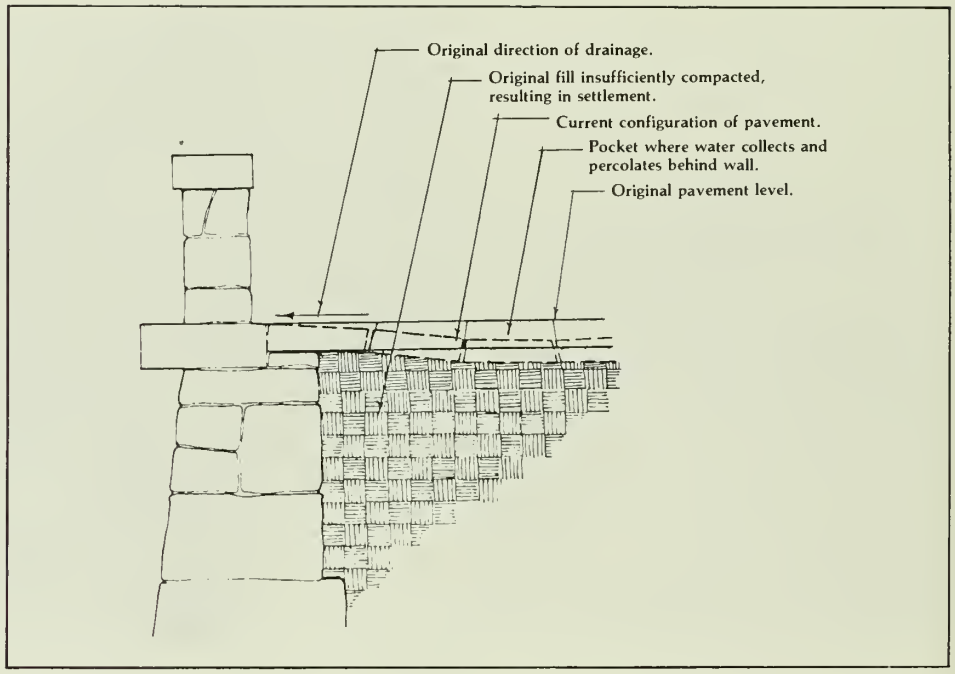


Figure 19. *Present Condition drawing of pavement, 1979. Drawing: Earth Design Associates.*

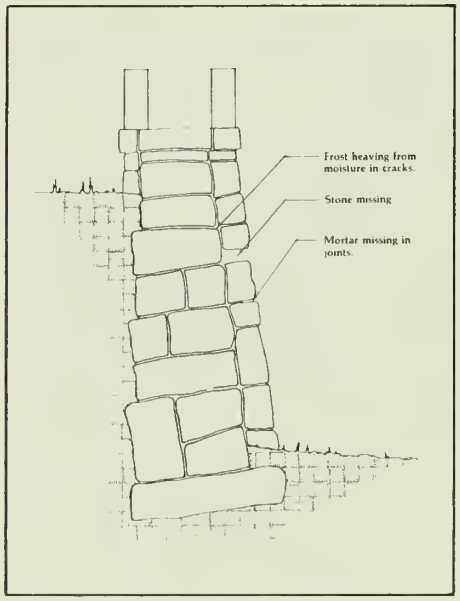


Figure 20. *Present Condition drawing of retaining walls, 1979. Drawing: Earth Design Associates.*

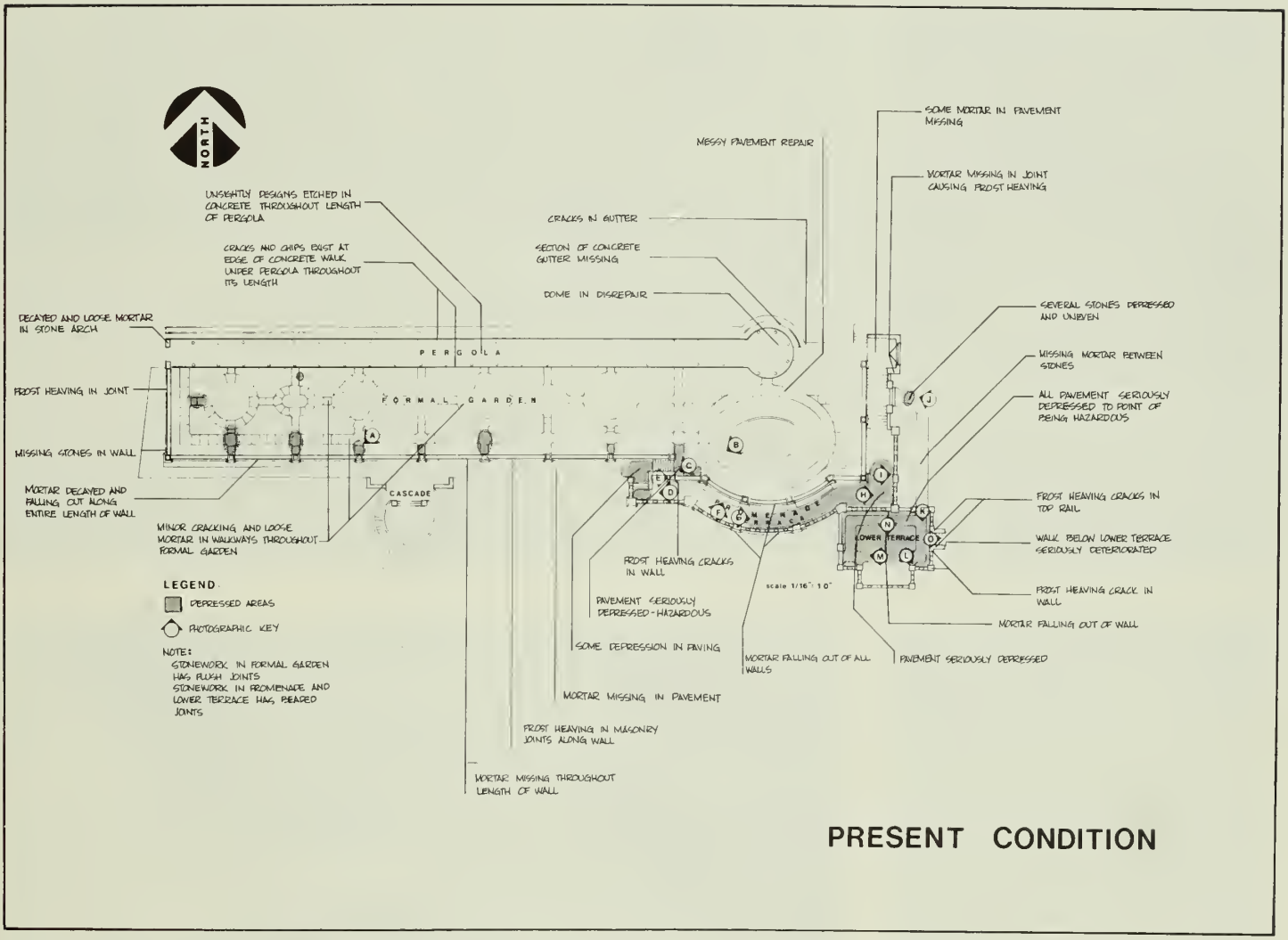
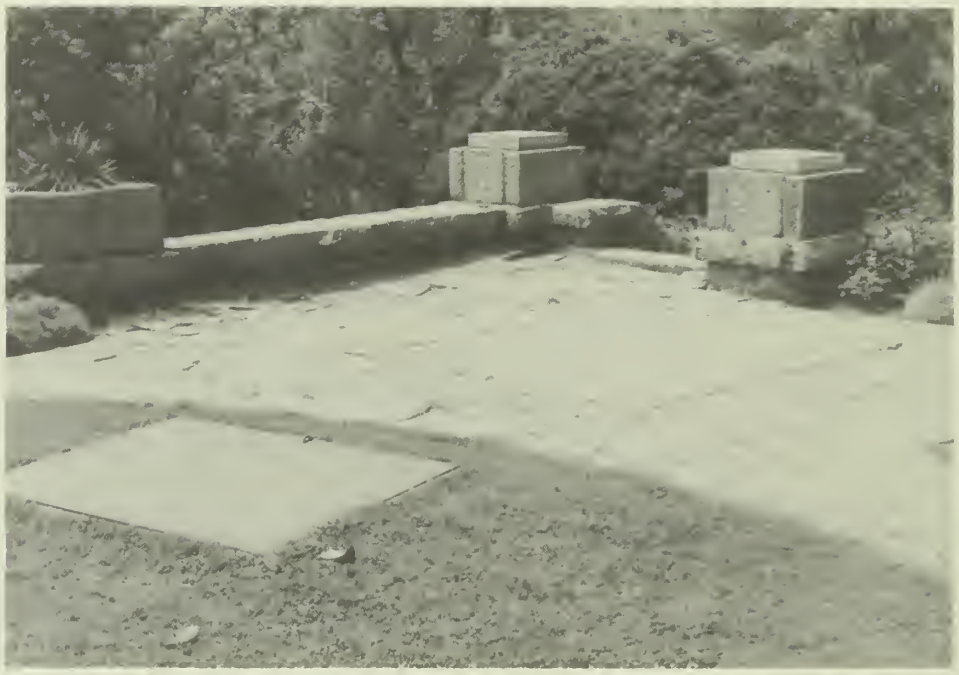


Figure 21. *Present Condition drawing. Detail photographs A-P show seriously damaged pavement and retaining walls. The photographic series illustrates the cumulative effects of uneven settlement, improper drainage, frost heaving, and mortar deterioration and loss. Drawing: Earth Design Associates.*

A.

Walkway in the formal garden (A,B,C).



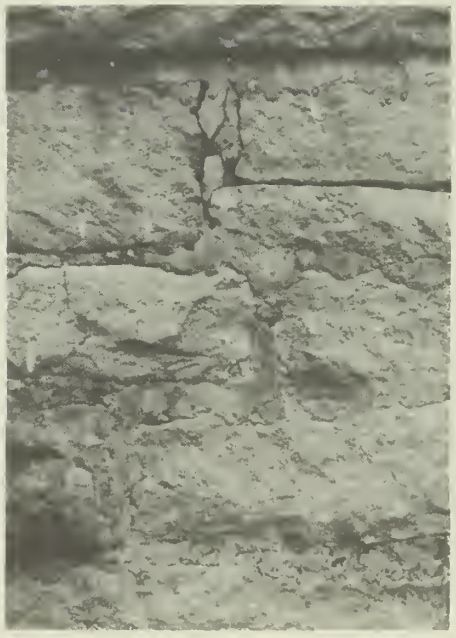
B.

C.

Landing adjacent to stairs leading to the overlook (B,C,D).

D.

E.



F.

Stonework in the retaining walls above the promenade level (E,F).

G.

Stonework on the promenade level below the fountain (G,H,I).

H.

I.

J.

Walkway from the formal garden down to the overlook along the promenade level (J).

K.

L.

Walkway in the lower terrace (K,L,M,N).

M.

N.

O.

P.

Walkway between the promenade of the formal garden down to the lower terrace (O,P).

Pergola and Dome. Area involved: formal garden. The recent concrete walkway under the pergola covering the original granolith surface may be successfully retained if it is scored by bushhammering (see figure 22). It is recommended that this be done immediately. Such a treatment will be an acceptable safety measure to prevent visitors to the garden from falling on what is otherwise a very slippery walkway when wet. Removing the concrete and restoring the granolith surface is, of course, an option, but because of the high cost and Maymont's other preservation needs, should be considered a low priority. The deteriorated structural members of the pergola's dome also need to be replaced on a priority basis. As a secondary concern, the existing metal roof (see figure 23) should be removed and replaced with new roofing—specifically, with clay tiles to match the original size and color—and flashed with 20 oz. copper to assure a watertight system (see figure 29). In addition, any deteriorated trimwork and moulding on the dome needs to be replaced to match the original, after which an exterior oil base paint should be applied, consistent with the historic paint scheme. Finally, the dome's copper clad finial should be reconstructed to match the original configuration (see figure 13).

Marble Garden Urns. Areas involved: formal garden and promenade and overlook. Many of the urns have been dismantled and placed in storage. Fortunately, however, they are intact and simply need to be returned to their original locations, as documented by early photographs (see figure 14).

Plantings. Area involved: formal garden. Although the present planting scheme does not entirely lend itself to the style of the Italian garden (see figure 25), neither did the original scheme carried out by Sarah O. May Dooley (see figures 12 and 13). Mrs. Dooley apparently selected many plant materials during her European travels and supervised the actual planting of the trees, shrubs, and flowers, but she did not, for example, ever utilize evergreens such as Italian cypresses which would have resulted in an appearance more characteristically Italian. In theory, then, there are three possible ways the garden's plant materials may be addressed that would be consistent within this project: 1) the non-original plantings could be removed and replaced with the original plantings, but this action

Figure 22. *Concrete walkway panels in place over original granolith, 1980. Photo: Gail E. Hammerquist.*

would need to be based upon an original plant list or planting scheme. Our research in conjunction with the Maymont Foundation, however, was unable to produce such documentation; 2) the 1925 photographs could be used to re-create the Dooley garden at the year of Mrs. Dooley's death (see figures 12 and 13); or 3) the existing plantings could essentially be replaced in kind and maintained. In the absence of an original plant list and because the 1925 photographs are necessarily limited in their coverage of the garden, the third option will probably be pursued. It is suggested that the public be made aware through an interpretive sign that the plant materials in Mrs. Dooley's garden were never an actual part of the formally planned architectural scheme and that they are now mostly of local origin.

To create a conjectural Italian garden is a tempting idea, but would violate the Secretary of the Interior's Standards for Historic Preservation Projects (see appendix B). This work category should therefore be considered as the lowest priority and should not be undertaken until all other stabilization/restoration work has been completed.

Figure 23. *Pergola dome requiring stabilization/restoration, 1980. Photo: Gail E. Hammerquist.*

Figure 24. *Granite pedestals for marble garden urns—with top slab removed—temporarily used as planters, 1980. Photo: Gail E. Hammerquist.*

Figure 25. *Formal garden looking west from fountain pool showing recent plantings, 1975. Photo: Barry W. Starke.*

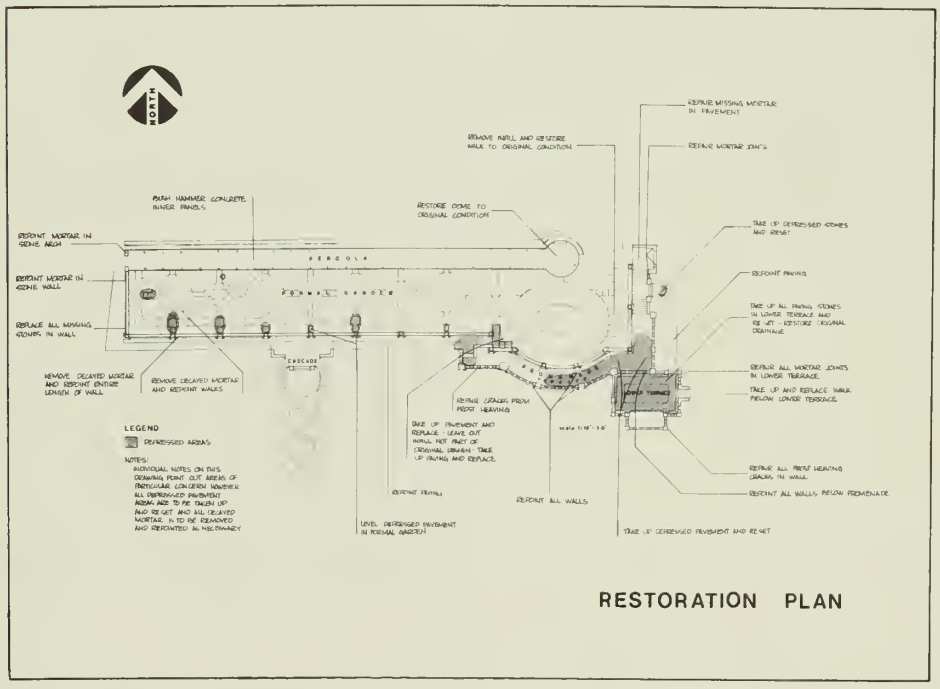


Figure 26. *Restoration Plan, 1979. Drawing: Earth Design Associates.*

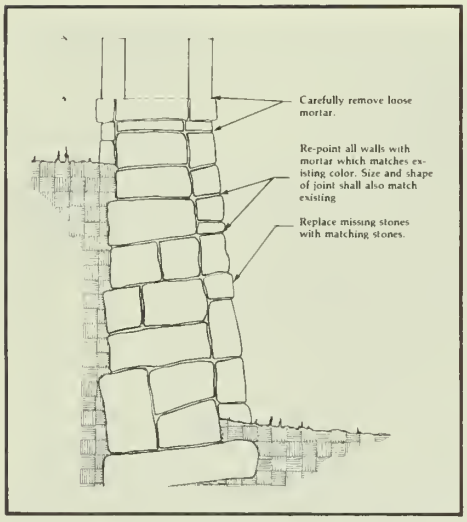
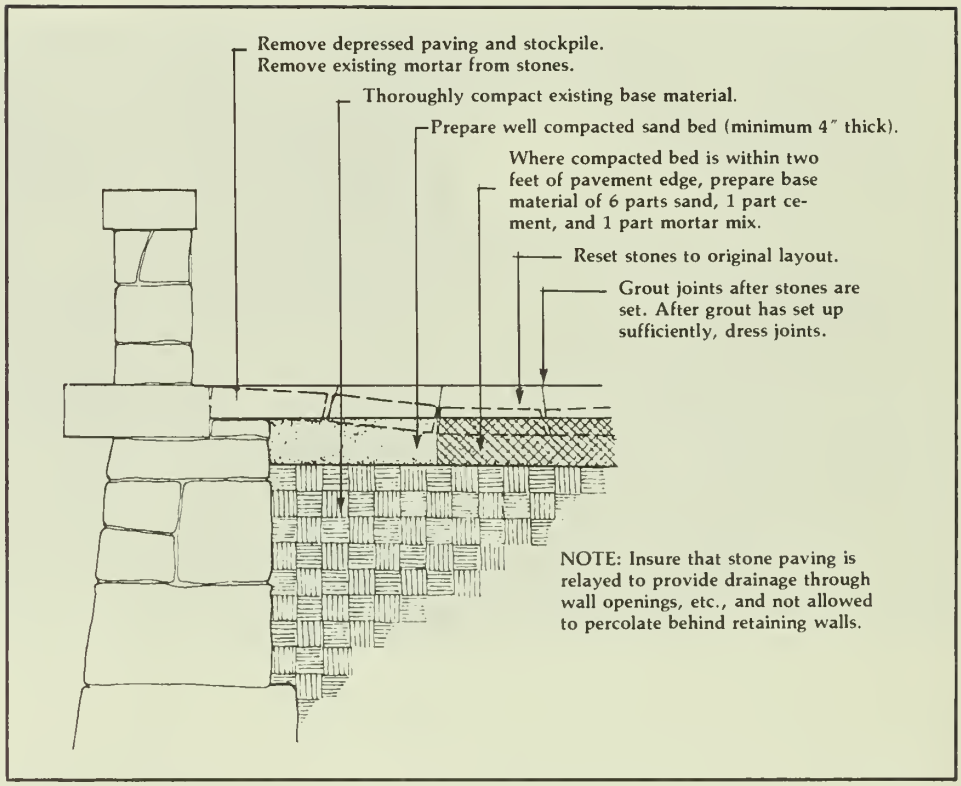


Figure 27. *Wall repointing detail, 1979. Drawing: Earth Design Associates.*



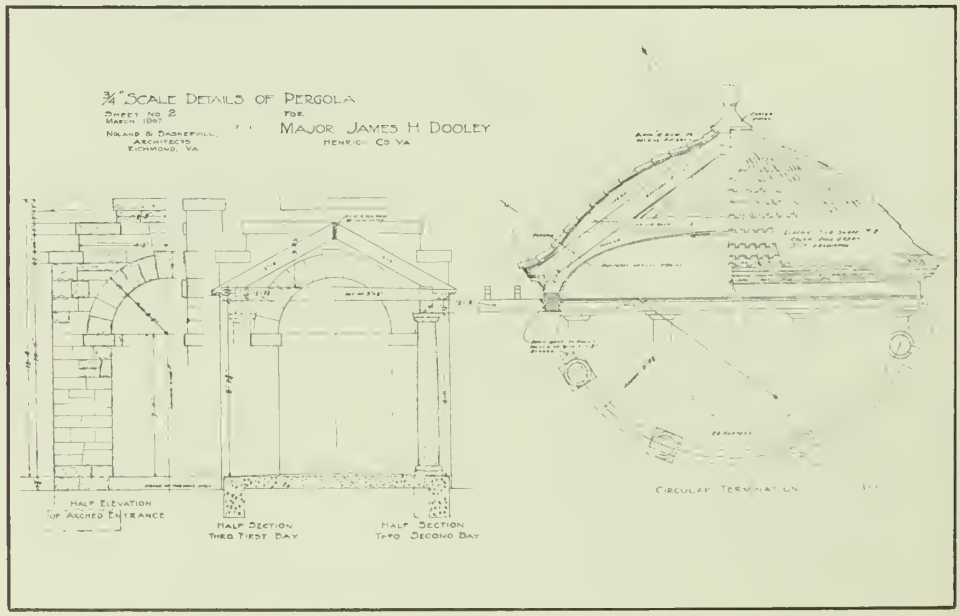


Figure 29. *Detail of pergola dome to be used for roof restoration/reconstruction, original March 1907 Noland and Baskervill drawing. Courtesy: Baskervill and Sons, Architects.*

Appendix A Architect's Specifications for Project Work "Italian Garden", Maymont Park

These specifications were developed after the physical investigation and evaluation of the "Italian garden" were concluded. All specific stabilization/ restoration project work items conform to the Secretary of the Interior's Standards for Historic Preservation Projects. It should be remembered, however, that they were developed for a particular historic resource and therefore may not be directly applicable to other historic preservation projects.

Architect's Specifications

Division 1 - GENERAL

1A - Scope of Work

1A1 - Applicable provisions of the General Conditions and other Contract Documents govern this specification as a whole. The work under this Contract includes the furnishings of all labor, materials, equipment, appliances, and cartage, and performing all operations necessary to complete this project in its entirety in accordance with the plans and specifications.

1A2 - Labor or material not specified or shown, but properly inferable from the Contract Documents shall be performed and supplied in conformity with the standards established herein.

1A3 - The drawings and specifications are complementary each to the other. What is called for by one shall be as binding as if called for by both. Where a conflict between the two occurs, the specification shall overrule.

1A4 - The work consists of the stabilization and restoration of the "Italian Garden" of Maymont Park which is situated in Richmond, Virginia. The appearance of the garden will be returned to its original condition while various structural changes will be made which will enhance its usage as a public facility. The garden's plant materials will not be altered at this time.

1A5 - Workmanship - All work included in this contract shall be performed by craftsmen who have had experience in each of the respective work types. Examples of previous successful projects may be requested by the Landscape Architect prior to the award of the contract.

End of Division 1

Division 2 - SITE WORK

2A - Demolition

2A1 - General - All applicable provisions of the Contract Requirements and Division 1 - GENERAL shall govern the work of this section.

2A2 - Scope of Work - Without limiting the scope, this work shall generally include the following measures:

2A2.1 - The taking up and storing of present paving stones as shown in the drawings.

2A2.2 - The removal of old mortar or grouting of the paving stones.

2A2.3 - The removal of loose or decayed mortar from walls and other stonework.

2A3 - Safety Precautions and Regulations - The Contractor shall erect necessary barricades and fences and post notices. Work shall be done in a manner to insure the safety of individuals and property, and the project shall be left in a safe condition with all necessary barricades, fences, and warning signs in place.

2A3.1 - All applicable laws, ordinances and regulations shall be strictly adhered to. Permits shall be secured by the Contractor.

2A3.2 - Care shall be taken not to damage adjacent areas. The Contractor shall be responsible for any damage done.

2A4 - Additional Work - Removal of material as shown on drawings shall be done to the extent indicated on the drawings. Contractor shall consult the Owner if conditions are encountered which might make additional work advisable.

End of Division 2

Division 4A - MASONRY - RE-POINTING WALLS

4A1 - General - All applicable provisions of the Contract Requirements and Division 1 - GENERAL shall govern the work of this section.

4A2 - Scope of Work - This section includes corrective re-pointing of all masonry joints and replacement of all deteriorated masonry units.

4A2.1 - The Contractor shall coordinate the work under this section with all other trades.

4A3 - Sample - Samples must be provided and approved by the Landscape Architect before work is performed.

4A3.1 - Complete a four foot square section of an existing masonry wall. Show joints, mortar color, cleaned appearance, etc. Panel approved by Landscape Architect shall serve as a standard for the project.

4A4 - Mortar - Mortar for all masonry work shall be Type M, conforming to ASTM Designation C-270-64T. Lime shall be double hydrated mason's lime, Type S, conforming to ASTM Designation C-270-49. Admixtures such as salt, calcium chloride or other substances which may cause efflorescence shall not be used. Do not re-temper. Mortar to be colored to match existing. An analysis of the original mortar must be performed as per the Virginia Historic Landmarks Commission Specification and approved by the Virginia Historic Landmarks Commission.

4A4.1 - Grouting for all horizontal surfaces shall have a higher water content to provide a free flowing mixture to insure filling of all voids in joints between masonry units.

4A4.2 - Mixing: The mixing water shall be clean enough to drink, and free from deleterious amounts of acids, alkalis, or organic materials. Mortar shall be mixed in a drum type power mixer for a period of not less than five (5) minutes after all materials have been placed in the machine. Hand mixing shall be used only when approved. Pre-mixed mortar meeting the above standards is acceptable.

4A5 - Joints - Joints to match original in size and shape. Joints to be stippled before mortar completely sets.

4A6 - Procedure - Remove all mortar and debris from damaged to eroding masonry joints to a sufficient depth to eliminate all loose, damaged or otherwise unsound material, or a minimum of 3/4".

4A6.1 - Removal of existing damaged mortar to be accomplished by the use of cold chisels and hammers only. Power saws of any type or other device or technique which would damage the edges of faces of the existing stone will not be permitted. This does exclude the use of electrically or pnuematically operated tools.

4A6.2 - Flush raked joints with water prior to repointing.

4A6.3 - Force mortar into joints with sufficient pressure to pact joint solid. Use tools to pack mortar. Remove excess mortar and tool joint as specified above. Do not leave mortar spread across face of stone.

4A6.4 - Protect masonry against freezing for not less than 48 hours after installation.

4A6.5 - Do not use or build with frozen material.

4A6.6 - No admixtures of any type will be allowed in the mortar mix.

4A7 - Workmanship - Masonry shall not be set when the ambient temperature is below 36°F on a falling temperature except by written permission of the Landscape Architect.

4A7.1 - Protective measures: Surfaces of masonry not being worked on shall be protected at all times during construction period.

4A7.2 - Mortar: Mortars that have stiffened because of chemical reaction (hydration) shall not be used. Except as specified below, mortar shall not be used and placed in final position more than 2 1/2 hours after mixing where air temperature is 80°F or higher. Where air temperature is less than 80°F the mortar shall be used within 3 1/2 hours after mixing. Mortar not used within these time intervals shall be discarded. No retempering of mortar will be allowed.

4A7.3 - Calcium chloride or agents containing calcium chloride shall not be used.

4A8 - Re-pointing Old Masonry and Masonry Repairs - All exposed existing masonry faces shall be re-pointed. Thoroughly rake out all existing loose mortar back to table solid base, removing all stone and mortar dust. Repair or replace exterior old cracked stonework as required, whether locations are shown on the drawings or not.

4A8.1 - Wet down faces to be re-pointed ahead as work progresses. Press and bed new mortar solidly into joint, leaving no packets. Joint to match as nearly as possible adjacent existing.

End of Division 4A

Division 4B - STONEWORK - RELAYING OF GRANITE PAVING

4B1 - General - The granite stone pavers, originally quarried at Maymont Park, are used for walkways throughout the three levels of the Italian Garden. It is, therefore desirable to retain as much of the original stone as possible in the reconstruction.

4B2 - Scope of Work - This section includes restoration by the resetting of the existing granite pavers so as to allow for proper drainage or ground water run-off since this has contributed to the present problems.

4B3 - Mortar - See Division 4A4b for mix.

4B4 - Joints - Joints to match original in size and struck flush. Joints to be stippled before mortar completely sets.

4B5 - Procedures:

4B5.1 - Landscape Architect shall identify, on-site, all deteriorated stonework. Such stonework will be accurately restored.

4B5.2 - Prepare a compacted earth sub base for the well compacted sand bed (minimum 4")

4B5.3 - Base under granite pavers within 2 feet of the edge of the paving shall be a mixture of six parts sand, one part portland cement, and one part mortar mix.

4B5.4 - Cut accurately to shape and dimensions to match existing work.

4B5.5 - Do not build on frozen work; remove and replace stonework damaged by frost or freezing.

4B5.6 - Do not use frozen materials, or materials mixed or coated with ice or frost. Do not use salt to thaw ice. Do not lower the freezing point of mortar by use of admixtures of anti-freeze agents, and do not use calcium chloride in mortar or grout.

4B5.7 - Clean stone before setting by thoroughly scrubbing with fiber brushes followed by a thorough drenching with clear water. Use only mild cleansing compounds that contain no caustic or harsh fillers or abrasives. If not thoroughly wet at time of setting, drench or sponge stone.

4B5.8 - A numbering system, approved by the Virginia Historic Landmarks Commission, will be employed to insure that the granite pavers are reset in the same location.

4B5.9 - The urns currently in storage at the site are to be reassembled and returned to their original locations under the supervision of the Landscape Architect.

End of Division 4B

Division 5A - PERGOLA AND DOME RESTORATION

5A1 - General - It is the general intent to restore the pergola and dome structures to their original appearance. Although the pergola is generally unaltered, the dome has been somewhat altered from its original condition. Reference is made to the original dome drawing which gives the specifications to which the dome is to be restored.

5A2 - Scope of Work - This section includes but is not necessarily limited to the following:

5A2.1 - Replacement of any deteriorated and unsafe structural elements to match the original design and provide shop drawings as necessary, to be approved.

5A2.2 - Replacement of any deteriorated trimwork and mouldings to match the original design and provide shop drawings as necessary, to be approved.

5A2.3 - Removal of any elements not consistent with the specifications of the original dome drawing, including but not limited to metal roof. The Landscape Architect shall specify at the site which elements are to be removed.

5A2.4 - Installation of all elements and materials not presently existing on the dome but indicated for the original dome, including but limited to the copper-clad finial and clay tile roof.

5A2.5 - Removal of existing plaster and installation of new plaster domical ceiling. Specifications for the new plaster work and lath shall be as noted.

5A3 - Procedures:

5A3.1 - All elements inconsistent with the original dome drawing shall be verified at the site by the Landscape Architect and interpretations of the drawing shall be by the Landscape Architect and binding on the Contractor.

5A3.2 - Deteriorated structural elements, trimwork and mouldings, and new trimwork and mouldings required to duplicate original conditions shown by the original dome drawing shall be milled to size and shape as indicated on the drawing.

5A3.3 - Woodwork to be painted shall have exposed faces free from defects that would show after being painted. Grade AWI, Section 300, premium species white pine.

5A3.4 - All items of millwork shall be carefully erected with tight fitting joints, carefully cut and secured. Exposed nails shall be set for putty. Back prime all millwork before installation.

5A3.5 - Finial to be milled to shape indicated area clad in 20 ounce copper sheathing to match the original. Oil base paint shall be used for all exposed (exterior) features. The Landscape Architect shall verify the design to the Virginia Historic Landmarks Commission.

5A3.6 - Existing metal roofing shall be removed and roof sheathing replaced as required to insure and adequate nailing base. New roofing shall be clay roofing tiles, to be reproduced to match the original Ludowici-Celadon Company. Tiles to be duplicated are Ludowici T-12, shape of graduating size, and of dull green color, to match original.

5A3.7 - New roofing tiles shall be installed as per manufacturer's specifications and flashed with 20 ounce copper as required to insure a watertight roof system.

5A3.8 - Remove existing plaster ceiling finish and install new lath and plaster. Plaster shall be of finish as directed by the Landscape Architect.

5A3.9 - All exterior and interior surfaces of wood and plaster (dome only, pergola to be excluded) shall be painted.

5A3. 10 - Paint colors other than the existing color will require paint research and analysis and shall be sent to the Virginia Historic Landmarks Commission, along with Munsell color chips, to be approved prior to painting.

5A3.11 - Previously painted surfaces must be free of dust, dirt, oil, excessive paint chalk or other contaminants. Remove any loose paint and feather ragged edges where old paint has been removed.

5A3.12 - Prime all bare wood spots and apply two coats of acrylic enamel to all wood surfaces. Prepare surfaces and apply paint according to manufacturers recommendations.

5A3.13 - Plaster surfaces shall be primed with one coat primer - sealer and one finish coat of acrylic enamel applied according to manufacturers recommendations. Oil base paint shall be used for all exposed (exterior) features.

5A3.14 - Adequate protection shall be provided surrounding surfaces to prevent splattering of paint on surfaces not being painted.

End of Division 5A

Appendix B The Secretary of the Interior's Standards for Historic Preservation Projects

The Secretary of the Interior's Standards for Historic Preservation Projects are the required basis for SHPOs and HCRS to evaluate Historic Preservation Fund grant-assisted acquisition and development work proposals for properties listed in the National Register of Historic Places. The types of treatments that may be undertaken on registered properties are defined; and both the general standards that apply to *all* treatments and the specific standards that apply to *each* treatment are listed.

HCRS, Technical Preservation Services, is pleased to include the standards as an appendix to this case study not only because they constitute the main program management requirement but because the case studies illustrate the successful use of the standards by project personnel in the States for planning and executing grant-assisted project work. We have highlighted those portions of the standards that apply to this and to all projects involving the stabilization and restoration of registered properties.

Copies of *The Secretary of the Interior's Standards for Historic Preservation Projects with Guidelines for Applying the Standards,* may be purchased from the Superintendent of Documents, Government Printing Office, Washington, DC 20402. The stock number is 024-016-00105-2 and the price, $2.30. Please do not send cash or stamps.

Definitions for Historic Preservation Project Treatments

The following definitions are provided for treatments that may be undertaken on historic properties listed in the National Register of Historic Places:

Acquisition

Is defined as the act or process of acquiring fee title or interest other than fee title of real property (including the acquisition of development rights or remainder interest).

Protection

Is defined as the act or process of applying measures designed to affect the physical condition of a property by defending or guarding it from deterioration, loss or attack, or to cover or shield the property from danger or injury. In the case of buildings and structures, such treatment is generally of a temporary nature and anticipates future historic preservation treatment; in the case of archeological sites, the protective measure may be temporary or permanent.

Stabilization

Is defined as the act or process of applying measures designed to reestablish a weather resistant enclosure and the structural stability of an unsafe or deteriorated property while maintaining the essential form as it exists at present.

Preservation

Is defined as the act or process of aplying measures to sustain the existing form, integrity, and material of a building or structure, and the existing form and vegetative cover of a site. It may include initial stabilization work, where necessary, as well as ongoing maintenance of the historic building materials.

Rehabilitation

Is defined as the act or process of returning a property to a state of utility through repair or alteration which makes possible an efficient contemporary use while preserving those portions or features of the property which are significant to its historical, architectural, and cultural values.

Restoration

Is defined as the act or process of accurately recovering the form and details of a property and its setting as it appeared at a particular period of time by means of the removal of later work or by the replacement of missing earlier work.

Reconstruction

Is defined as the act or process of reproducing by new construction the exact form and detail of a vanished building, structure, or object, or a part thereof, as it appeared at a specific period of time.

General Standards for Historic Preservation Projects

The following general standards apply to all treatments undertaken on historic properties listed in the National Register:

1. Every reasonable effort shall be made to provide a compatible use for a property that requires minimal alteration of the building structure, or site and its environment, or to use a property for its originally intended purpose.
2. The distinguishing original qualities or character of a building, structure, or site and its environment shall not be destroyed. The removal or alteration of any historic material or distinctive architectural features should be avoided when possible.
3. All buildings, structures, and sites shall be recognized as products of their own time. Alterations which have no historical basis and which seek to create an earlier appearance shall be discouraged.
4. Changes which may have taken place in the course of time are evidence of the history and development of a building, structure, or site and its environment. These changes may have acquired significance in their own right, and this significance shall be recognized and respected.
5. Distinctive stylistic features or examples of skilled craftsmanship which characterize a building, structure, or site, shall be treated with sensitivity.
6. Deteriorated architectural features shall be repaired rather than replaced, wherever possible. In the event replacement is necessary, the new material should match the material being replaced in composition, design, color, texture, and other visual qualities. Repair or replacement of missing architectural features should be based on accurate duplications of features, substantiated by historical, physical, or pictorial evidence rather than on conjectural designs or the availability of different architectural elements from other buildings or structures.
7. The surface cleaning of structures shall be undertaken with the gentlest means possible. Sandblasting and other cleaning methods that will damage the historic building materials shall not be undertaken.
8. Every reasonable effort shall be made to protect and preserve archeological resources affected by, or adjacent to, any acquisition, protection, stabilization, preservation, rehabilitation, restoration, or reconstruction project.

The following specific standards for each treatment are to be used in conjunction with the eight general standards and, in each case, begin with number 9. For example, in evaluating acquisition projects, include the eight general standards plus the four specific standards listed under Standards for Acquisition.

Standards for Acquisition

9. Careful consideration shall be given to the type and extent of property rights which are required to assure the preservation of the historic resource. The preservation objectives shall determine the exact property rights to be acquired.
10. Properties shall be acquired in fee simple when absolute ownership is required to insure their preservation.
11. The purchase of less-than-fee-simple interests, such as open space or facade easements, shall be undertaken when a limited interest achieves the preservation objective.
12. Every reasonable effort shall be made to acquire sufficient property with the historic resource to protect its historical, archeological, architectural, or cultural significance.

Standards for Protection

9. Before applying protective measures which are generally of a temporary nature and imply future historic preservation work, an analysis of the actual or anticipated threats to the property shall be made.
10. Protection shall safeguard the physical condition or environment of a property or archeological site from further deterioration or damage caused by weather or other natural, animal, or human intrusions.
11. If any historic material or architectural features are removed, they shall be properly recorded and, if possible, stored for future study or reuse.

Standards for Stabilization

9. **Stabilization shall reestablish the structural stability of a property through the reinforcement of loadbearing members or by arresting material deterioration leading to structural failure. Stabilization shall also reestablish weather resistant conditions for a property.**
10. **Stabilization shall be accomplished in such a manner that it detracts as little as possible from the property's appearance. When reinforcement is required to establish structural stability, such work shall be concealed wherever possible so as not to intrude upon or detract from the aesthetic and historical quality of the property, except where concealment would result in the alteration or destruction of historically significant material, or spaces.**

Standards for Preservation

9. Preservation shall maintain the existing form, integrity, and materials of a building, structure, or site. Substantial reconstructon or restoration of lost features generally are not included in a preservation undertaking.
10. Preservation shall include techniques of arresting or retarding the deterioration of a property through a program of ongoing maintenance.

Standards for Rehabilitation

9. Contemporary design for alterations and additions to existing properties shall not be discouraged when such alterations and additions do not destroy significant historic, architectural, or cultural material and such design is compatible with the size, scale, color, material, and character of the property, neighborhood, or environment.

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

Standards for Restoration

9. Every reasonable effort shall be made to use a property for its originally intended purpose or to provide a compatible use that will require minimum alteration to the property and its environment.

10. Reinforcement required for structural stability or the installation of protective or code required mechanical systems shall be concealed whenever possible so as not to intrude or detract from the property's aesthetic and historical qualities, except where concealment would result in the alteration or destruction of historically significant materials or spaces.

11. When archeological resources must be disturbed by restoration work, recovery of archeological materials shall be undertaken in conformance with current professional practices.

Standards for Reconstruction

9. Reconstruction of a part or all of a property shall be undertaken only when such work is essential to reproduce a significant missing feature in a historic district or scene, and when a contemporary design solution is not acceptable.

10. Reconstruction of all or a part of a historic property shall be appropriate when the reconstruction is essential for understanding and interpreting the value of a historic district, or when no other building, structure, object, or landscape feature with the same associative value has survived and sufficient historical documentation exists to insure an accurate reproduction of the original.

11. The reproduction of missing elements accomplished with new materials shall duplicate the composition, design, color, texture, and other visual qualities of the missing element. Reconstruction of missing architectural features shall be based upon accurate duplication of original features substantiated by historical, physical, or pictorial evidence rather than upon conjectural designs or the availability of different architectural features from other buildings.

12. Reconstruction of a building or structure on an original site shall be preceded by a thorough archeological investigation to locate and identify all subsurface features and artifacts.

13. Reconstruction shall include measures to preserve any remaining original fabric, including foundations, subsurface, and ancillary elements. The reconstruction of missing elements and features shall be done in such a manner that the essential form and integrity of the original surviving features are unimpaired.

Other Technical Preservation Services Division preservation case studies available from the Government Printing Office:

The Morse-Libby Mansion, Portland, Maine: A Report on Restoration Work, 1973-1977
Morgan W. Phillips. *Preservation case study.* A report on HCRS grant-assisted project work, describes and illustrates preservation methods and techniques employed in the exterior restoration of an Italianate mansion, including the cornice, gutter, and downspouts, and the small rear entrance porch and cellar bulkhead. Makes a commitment to repairing rather than replacing historic building materials. 55 pages. 84 illustrations. Appendices. 1977. Stock Number: 024-005-00699-1. $2.40.

Fort Johnson, Amsterdam, New York: A Historic Structure Report, 1974-1975
Mendel-Mesick-Cohen. *Preservation case study.* An HCRS grant-assisted project, documents the manor house's initial construction and subsequent alterations through historical, physical, and pictorial evidence; also documents the current state of the building's architectural materials and overall structural stability. Recommends an appropriate preservation treatment; establishes priorities for work items. Archeological report included. 54 pages. 89 illustrations. Appendices, 1978. Stock Number: 024-005-00706-7. $2.40.

Carr Mill, Carrboro, North Carolina: A Rehabilitation Project Under the Tax Reform Act of 1976
Margaret A. Thomas. *Preservation case study.* Provides a detailed description of the rehabilitation of a mill complex into a shopping mall and offices. Includes project economics, rehabilitation strategy using Federal historic preservation tax incentives, and a historical overview. 32 pages. 7 illustrations. 1979. Stock Number: 024-016-00117-6. $1.50.

Chateau Clare, Woonsocket, Rhode Island; Rodman Candleworks, New Bedford, Massachusetts: Rehabilitation Through Federal Assistance
Floy A. Brown. *Preservation case study.* Discusses the renovation of two historic buildings in New England, one for housing, the other for offices. Includes project economics, rehabilitation strategy using Federal assistance from HCRS and the U.S. Department of Housing and Urban Development, and a historical overview. 32 pages. 15 illustrations. 1979. Stock Number: 024-016-00119-2. $1.50.

Olmsted Park System, Jamaica Pond Boathouse, Jamaica Plain, Massachusetts: Planning for Preservation of the Boathouse Roof
Richard White. *Preservation case study.* An HCRS grant-assisted project, presents a process of documenting preservation work. Includes a brief history of the site and building, evaluation of roof deterioration, architectural drawings and specifications, and a summary of completed work. 58 pages. 25 illustrations. Appendix (the Secretary of the Interior's Standards for Historic Preservation Projects). 1979. Stock Number: 024-016-00121-4. $2.75.

Planning for Exterior Work on the First Parish Church, Portland, Maine, Using Photographs as Project Documentation
John C. Hecker, AIA. *Preservation case study.* An HCRS grant-assisted project, presents a process of planning for stabilization and restoration work. Includes a preliminary survey of existing conditions with annotated photographs. Architectural specifications by Sylvanus W. Doughty. 58 pages. 15 illustrations. Appendix (The Secretary of the Interior's Standards for Historic Preservation Projects). 1979. Stock Number: 024-016-0012-6. $2.75.

Abbeville, South Carolina: Using Grant-in-aid Funds for Rehabilitation Planning and Project Work in the Commercial Town Square
John M. Bryan and the Triad Architectural Associates. *Preservation case study*. Presents a process of planning for the rehabilitation of exterior facades using HCRS grant assistance. Includes a historical background of the town square and an inventory of 19th and 20th century commercial buildings. Recommends project work for buildings inventoried as well as for the urban settings by means of architectural drawings and sketches. 55 pages. 24 illustrations. Appendices, including the Secretary of the Interior's Standards for Historic Preservation Projects. 1970. Stock Number: 024-016-00126-5. $3.50.

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Comment Form

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Preservation Case Studies

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The Italian Garden

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