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Historic Architecture Program
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THE FARM BUILDINGS at SAGAMORE HILL

Sagamore Hill National Historic Site
Oyster Bay, New York

Historic Structures Report

THE FARM BUILDINGS

at

SAGAMORE HILL

HISTORIC STRUCTURES REPORT

Sagamore Hill National Historic Site
Oyster Bay, New York

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LIST OF FIGURES AND CREDITS

Note: unless otherwise noted, all photographs are by the author, James Lee, 2007.

Figures

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James J. Lee III

INTRODUCTION

EXECUTIVE SUMMARY

Purpose and Scope

The Farm Buildings at Sagamore Hill are the subject of this Historic Structures Report (HSR). The Gardener's Shed (LCS# 005443), Farm Shed (formerly known as the Carriage Shed, LCS# 005445), Chicken House (formerly known as the Tool Shed/Chicken Coop, LCS# 005444), Ice House (LCS# 005441), and Pump House (LCS# 040956) were directly related to the farm operations at Sagamore Hill. The New Barn was also part of the Sagamore Hill farm complex and was covered in a separate and previous HSR printed in 2005.

This HSR was produced by the Historic Architecture Program (HAP) of the National Park Service's Northeast Regional Office in order to document the development and use of the farm buildings at the Sagamore Hill National Historic Site (NHS). Furthermore, it is intended to inform and guide the rehabilitation of those historic structures.

The Sagamore Hill National Historic Site (Sagamore Hill NHS) has recently completed a General Management Plan (GMP). The preferred alternative of the GMP proposes the creation of management zones within the Park, which includes a historic core zone. The historic core includes the Theodore Roosevelt Home (main house), domestic and agricultural outbuildings, and surrounding grounds.[1] The Gardener's Shed, Farm Shed, Chicken House, Ice House, and Pump House are within the historic core. The Park intends to preserve the exteriors of the Gardener's Shed, Farm Shed, Chicken House, Ice House, and Pump House. The interiors of all the buildings will be rehabilitated. The Gardener's Shed would be used to house interpretive media related to the farm operations and the interiors of the other buildings would be used for storage. Non-historic structures within the historic core include the Hose Reel House and the Windmill. The Hose Reel House was erected by the Theodore Roosevelt Association in 1953 and is attached to the north end of the Pump House. The Windmill (LCS# 001245) was reconstructed in 1971 to replicate the historic Windmill and is maintained by the Park as a cultural resource. The HSR will be primarily concerned with the historic structures and will deal with the non-historic structures in the context of the historic core and the other buildings. The preparation of the HSR will provide the Park with support information for the continued management and preservation of these structures.

The scope of this HSR was to perform a "thorough" investigation of the farm buildings at Sagamore Hill NHS as defined by the *Director's Order 28*.[2] The report, which deals primarily

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[1] Sagamore Hill National Historic Site, General Management Plan, Environmental Impact Statement. (Boston, MA: Department of the Interior, National Park Service, Northeast Region, 2006).

[2] Director's Order - 28, Cultural Resource Management Guideline, NPS, 1997, Chapter 2, pg. 18: **Thorough Investigation**: For Historical studies this means research in selected published and documentary sources of known or presumed relevance that are readily accessible without extensive travel and that promise expeditious extraction of relevant data, interviewing all knowledgeable persons who are readily available, and presenting findings in no greater detail than required by the task directive.

with the subject buildings, incorporates context and background information about Sagamore Hill. The HSR contains "Chronology of Development and Use," "Current Physical Description," and "Character-Defining Features and Recommendations" for the historic farm buildings at Sagamore Hill, in accordance with National Park Service (NPS) standards. Paint analysis and color matching of the exterior finishes of each building is included as an appendix to this report. The report does not include a condition assessment, nor does it include "Part 2. Treatment and Use" or "Part 3. Record of Treatment," which should be accomplished by the contractor after the treatment is completed.

In fiscal year 2010, it was decided to professionally edit this report and print the final draft of the HSR. At that time, some sections were edited and updated, including the nomenclature for the Farm Shed and Chicken House. Those names were updated to reflect the most recent changes to the National Register Nomination Forms, which have been submitted to the Keeper of the National Register. Work orders referenced in the HSR (written in 2007) were not updated during the 2010 editing.

Historical Overview[3]

The Sagamore Hill estate is situated on the peninsula of Cove Neck and was purchased by Theodore Roosevelt in 1880. The land had previously been used by the Matinecock Native Americans, an Algonquin tribe, until they signed away their rights to settlers of European descent.[4] Large portions of the property were actively farmed by settlers from the late-seventeenth century through the nineteenth century, when Roosevelt purchased the property. During his stewardship, Theodore Roosevelt continued to maintain the working farm and derived immense enjoyment from the natural setting of the site. Soon after purchasing the property, Roosevelt and his first wife, Alice Lee, began planning a residence at the site. Days after giving birth to their daughter, Alice Lee died. The tragedy of her death weighed heavily on Theodore Roosevelt but he was determined to build on the property and provide a good home for his new daughter. The main house at Sagamore Hill was completed in 1885. The majority of the farm buildings were completed between 1885 and 1905. Theodore Roosevelt married his second wife, Edith Kermit Carow, in 1886. Theodore Roosevelt shared his love of Sagamore Hill with his family and continued to enjoy the property in all seasons until his death in 1919.

Edith K. Roosevelt maintained Sagamore Hill as a residence until her death in 1948. During her stewardship the property continued as a working farm, though perhaps not as active as during Theodore Roosevelt's time. The most significant change to the site during this period was the construction of Old Orchard House, the home of Theodore Roosevelt, Jr. and his wife. The couple purchased four acres of land from Edith Roosevelt in 1938 and built a brick

[3] This section of the report relies primarily on Regina Bellavia and George W. Curry, *Cultural Landscape Report for Sagamore Hill National Historic Site* (Brookline, MA: U.S. Department of the Interior, National Park Service, Olmstead Center for Landscape Preservation, 1993; Reprint 2003).

[4] John E. Hammond, *The Early Settlement of Oyster Bay* (Oyster Bay, NY: Oyster Bay Historical Society, Freeholder Magazine, 2003) p. 1. Mr. Hammond also notes that Native Americans may not have believed they were signing away their rights to the land but may have thought instead that the gifts and monies exchanged (if any) were merely a form of tribute from the settlers to the Native Americans.

Colonial Revival-style house, dubbed Old Orchard House, in the apple orchard east of the main house.

In the 1940s, Edith K. Roosevelt and her heirs began discussing the fate of Sagamore Hill with the Roosevelt Memorial Association (RMA). The RMA, later the Theodore Roosevelt Association (TRA), had been chartered by an Act of Congress in 1920 to preserve the legacy of Theodore Roosevelt, as well as the places associated with his life and presidency. Both the RMA and a separate memorial organization, the Women's Roosevelt Memorial Association (WRMA), were founded to memorialize Theodore Roosevelt; and both had the goal of operating an historic house museum to honor the former president.[5] The WRMA restored and opened the Birthplace of Theodore Roosevelt in Manhattan in 1923. The RMA was interested in preserving Sagamore Hill as a museum and a tribute to Roosevelt and his accomplishments. Upon Edith K. Roosevelt's death, the RMA continued to pursue the purchase of the property.

Negotiations between Mrs. Roosevelt's heirs and the RMA culminated in the final purchase of Sagamore Hill by the RMA in 1950. The sale included the entire site, the buildings, and most of the contents of the main house. The RMA intended to open the site as a shrine to Theodore Roosevelt. In June 1953 the RMA, now the Theodore Roosevelt Association (TRA),[6] opened the site and the museum located in the main house to the public. The TRA continued to manage the site until 1963 when they donated Sagamore Hill to the federal government.

Public Law 87-547, signed by President John F. Kennedy on July 25, 1962, authorized the establishment of the Theodore Roosevelt Birthplace and Sagamore Hill National Historic Site. Sagamore Hill National Historic Site was formally established in July 1963 and since then the National Park Service, under the auspices of the Department of the Interior, has preserved and maintained the site.

Statement of Significance

The National Register of Historic Places has determined that all the buildings are significant and contributing resources to Theodore Roosevelt's estate. The Sagamore Hill National Historic Site and the Theodore Roosevelt Birthplace National Historic Site were authorized by Public Law 87-547, signed by President John F. Kennedy on July 25, 1962. Sagamore Hill NHS was established in July 1963, and was listed on the National Register of Historic Places on October 15, 1966. The significance of the estate is attributed to its association with Theodore Roosevelt, 26th President of the United States, his wife Edith Kermit Roosevelt, and their son Theodore Roosevelt, Jr. The architecture of the main house, a Queen Anne style structure designed by the renowned architectural firm of Lamb & Rich and constructed in 1884-1885, is also identified as one of the criteria for listing on the National Register.

[5] Victoria Andrilenas, "Draft Finding Aid for the Theodore Roosevelt Association (TRA) Records Relating to Sagamore Hill, Addendum" (Boston, MA: NPS, NER, Museum Services Center, July 2006) p. 21.

[6] The Roosevelt Memorial Association (RMA) changed its name to the Theodore Roosevelt Association (TRA) in 1953 and in 1955 the TRA and the WRMA consolidated under the name the Theodore Roosevelt Association (Andrilenas, p. 21).

During Theodore Roosevelt's presidency, 1901-1909, Sagamore Hill served as the "Summer White House" and was the setting for the initial conferences negotiating the peace in the Russo-Japanese War in 1905.[7] Sagamore Hill was also important as a family home that remained in the Roosevelt family for 64 years. Theodore Roosevelt used the estate as his retreat during all seasons until his death in 1919. Edith Kermit Roosevelt continued to use Sagamore Hill as her residence and the focus for family activity until her death in 1948.[8]

Throughout the Roosevelt family residency, Sagamore Hill was also a working farm, with portions of its 87 acres maintained as cultivated fields, pastures, and an orchard and gardens, all bordered by woodland.[9] The farm included a century-old barn, which was on the property when Theodore Roosevelt acquired it in 1880.[10] Roosevelt planned to continue the farming operations at Sagamore Hill and in addition to his home constructed several buildings to support farm activities.

In 1883, Theodore Roosevelt commissioned the Stable and Lodge, designed by Lamb & Rich, which housed the property's caretaker and some of Sagamore Hill's farm animals.[11] The following year construction began on the main house. The Ice House was built at the same time as the main house and was also designed by Lamb and Rich. It served as a support structure for the estate from the time of its completion through the residency of Edith Roosevelt.

Farm buildings at Sagamore Hill included the Gardener's Shed, Farm Shed, and Chicken House. These structures were apparently added to the site between ca. 1885 and ca. 1900 and were part of a complex of buildings that supported the estate.

The first Windmill was erected at Sagamore Hill in circa 1884 and a partially buried Pump House was believed to have been constructed at that same time. In 1905, the Windmill was replaced and it appeared the extant Pump House was constructed. The Pump House was later expanded with the addition of a second underground room constructed from poured concrete. By 1948, the Windmill built in 1905 had been removed from the site. The extant Windmill was reconstructed by the NPS in 1971.

The Old Barn was used by Roosevelt and his staff until it collapsed in 1904. It was replaced with the New Barn in 1907, which became part of the farming operations at Sagamore Hill.[12] The preferred alternative of the GMP includes the Theodore Roosevelt Home (main house), Ice House, Farm Shed, Chicken House, Gardener's Shed, Pump House, reconstructed Windmill, and New Barn within the Historic Core Zone.

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[7] Bronwyn Krog, *National Register of Historic Places Inventory – Sagamore Hill National Historic Site* (Boston, MA: U.S. Department of the Interior, National Park Service, North Atlantic Regional Office, October 1978), Statement of Significance.

[8] Marie L. Carden and Richard C. Crisson, *Sagamore Hill, Home of Theodore Roosevelt, Historic Structure Report* (Boston, MA: U.S. Department of the Interior, National Park Service, North Atlantic Regional Office, 1988), p. 17.

[9] Bellavia and Curry, *Cultural Landscape Report for Sagamore Hill NHS,* p. 1.

[10] Ibid, pp. 32-33.

[11] Bellavia and Curry, p. 34.

[12] Francis Wilshin, *Historic Resource Study, Sagamore Hill and the Roosevelt Family*, Vol. I (Denver, CO: U.S. Department of the Interior, National Park Service, Denver Service Center, October 1972), p. 114.

The Farm Buildings at Sagamore Hill were an important part of the farming operation at the estate and remained a fixture on the site throughout the Roosevelt's occupancy. The focus of interpretation of Sagamore Hill as the summer home of Theodore Roosevelt includes the interpretation of the working farm, of which the farm buildings were an integral part.

Research Conducted

This report documents the history of the farm buildings at Sagamore Hill NHS relying on physical investigation of extant building materials and documentary research using both primary and secondary sources. Repositories consulted and utilized for materials pertaining to the subject are as follows:

Cove Neck Village, Town Clerk, Cove Neck, NY
Harvard University Libraries, Cambridge, MA
Library of Congress, Washington, DC
Sagamore Hill National Historic Site Archives, Oyster Bay, NY
Theodore Roosevelt Association, Oyster Bay, NY
Oyster Bay – East Norwich Public Library, Oyster Bay, NY
Oyster Bay Historical Society, Oyster Bay, NY
Oyster Bay Town Hall, Building Department, Oyster Bay, NY
NPS, Historic Architecture Program Library, Lowell, MA
NPS, Olmsted Center for Landscape Preservation, Brookline, MA

Research Findings

Review of the reports, documents and photographs available in the Sagamore Hill NHS Archives provided background for further research and physical investigation of the farm buildings. Previous reports by Regina Bellavia and Francis Wilshin, among others, provided useful background information and were helpful in determining where to conduct further research. Research focused in the Sagamore Hill NHS archival collection and the Theodore Roosevelt Association (TRA) papers stored at Sagamore Hill NHS and also included examination of the Theodore Roosevelt Papers and Theodore Roosevelt Collection Photographs at Harvard College Libraries.

The Lamont Library at Harvard University is a repository for the microfilm version of the Theodore Roosevelt Papers. The papers consist of correspondence, press releases, articles, personal diaries, business papers, as well as other items and are arranged in 15 series. The collection was indexed by the Library of Congress in 1969 and includes the papers of Theodore Roosevelt, and Edith Kermit Roosevelt, as well as many other family members and associates.[13] The Theodore Roosevelt Papers provided limited information regarding the

[13] *The Theodore Roosevelt Papers Finding Aids at the Library of Congress* (Library of Congress: http://memory.loc.gov.ammen/trhtml/trfaid.html).

farm buildings at Sagamore Hill. There was some correspondence regarding the Old Barn and the New Barn but the documents reviewed did not discuss other outbuildings at length. There were numerous correspondence concerning the replacement of the Windmill in 1905, which was previously documented by Francis Wilshin (Appendix B).[14]

Extensive research was conducted at the Sagamore Hill NHS Archives. The materials reviewed included the papers of Edith Kermit Roosevelt, the site's collection of TRA papers, and the documents of the NPS. The Sagamore Hill account books kept by Mrs. Roosevelt yielded information about the use and maintenance of the farm buildings. The records of the TRA also helped determine some of the alterations and maintenance of the buildings and helped establish the sequence of exterior paints. In a similar manner, the NPS records provided information on changes to the buildings and the frequency of regular maintenance.

Recommended Treatment

The period of significance for Sagamore Hill NHS as defined by the revised National Register Nomination forms is 1884-1948, which includes the development of the historic farm core. The historic farm core during the Roosevelt period included the Gardener's Shed, Farm Shed, Chicken House, Ice House, and Pump House, as well as a Windmill, which was reconstructed in 1971.

The overall treatment for the site is rehabilitation in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Structures*. The treatment of the farm buildings will focus on restoration of the exterior elements of the buildings to reflect their historic appearance at the close of the period of significance. The GMP proposes the rehabilitation of the interiors of the buildings for various uses including interpretation and storage.

The proposed treatment for the Gardener's Shed, Farm Shed, Chicken House, Ice House, and Pump House would involve restoring the exteriors to reflect their historic appearance during the Roosevelt period. The interiors of all the buildings would be rehabilitated, with the Gardener's Shed used to house interpretive media related to the farm operations and the interiors of the other buildings used for storage. Non-historic structures within the historic core include the Hose Reel House and the Windmill. The Hose Reel House was erected by the Theodore Roosevelt Association in 1953 and is attached to the north end of the Pump House and is maintained as a cultural resource. The Windmill was reconstructed in 1971 to replicate the historic Windmill and is maintained by the Park as a cultural resource.

The GMP recommends that the exterior of the Gardener's Shed be restored. The 1986 stabilization and rehabilitation project preserved the existing structure but did not restore some features from the Roosevelt period. The Park should consider restoring certain features of the shed to better reflect its use during the Roosevelt period. Those features include the window openings in the sliding door and the stovepipe on the east elevation of the roof. The rehabilitation of the interior should include the addition of interpretive media

[14] Francis Wilshin. "The Windmill of Sagamore Hill, A Part of the Basic Data Study and Historical Base Map of Sagamore Hill." (Washington, DC: U.S. Department of the Interior, National Park Service, Eastern Service Center, May 27, 1970).

about the farm. Interpretative materials should focus on the gardens and gardening staff, as well as the landscape and manicured lawns around the Main House. The Gardener's Shed was directly related to those activities and would therefore be the logical site for their interpretation.

The exterior of the Farm Shed should be restored to reflect the building's historic appearance. It is further recommended that the interior be rehabilitated and remain open to visitors. The existing vending machines and maintenance items should be removed and if feasible, some interpretive materials that would provide visitors with a better understanding of the activities at the farmyard should be introduced in the first story of the building.

The GMP proposes that the exterior of the Chicken House be restored to reflect its historic appearance. However, changes made by the TRA in the 1950s significantly altered the appearance of the south elevation of the building and there is not enough information at this time to accurately restore the exterior. The physical evidence of the historic fenestration on the both the exterior and the interior of the Chicken House should be retained and preserved. The preservation of those elements will be important to future research that might include a more extensive building investigation to better determine the character of the historic configuration and possibly restore the building to its historic appearance.

The proposed treatment for the interior of the Chicken House is rehabilitation for storage. However, the west room (Room 101) is currently used to display the Park's collection of tools and farm related items. It is recommended that Room 101 remain open and that, if feasible, some interpretive materials be introduced in the space to provide visitors with a better understanding of the original use of the building as a poultry house with an adjacent chicken yard. The incorporation of additional interpretive materials may require the removal or relocation of the existing display items. The adjacent room (Room 102) is a small room that retains some historic elements and is currently used for storage. In addition, the south wall of Room 102 has some evidence of the historic fenestration of the building. The historic materials in Room 102 should be retained and preserved. The room can continue to be used for some storage as long as the historic elements are not affected by that use. The east room of the building (Room 103) was extensively altered by the TRA for storage and could continue to be used for that purpose.

As with the other farm buildings, the GMP proposes that the exterior of the Ice House be restored to reflect its historic appearance. To achieve this, alterations made to the exterior by the TRA would have to be removed. The alterations included changes to the building materials on the north elevation entry doorway and the addition of a south elevation entry doorway. However, the changes to the north entry doorway did not significantly alter the massing or appearance of the building and could be retained. Furthermore, there is insufficient documentation of the historic appearance of the north entry doorway to accurately restore its historic appearance. The most significant alteration was the addition of the south entry doorway, which added a dormer to the octagonal roof, interrupted the roofline, and cut through the brick wall. However, alterations by the TRA should be treated as an accretion in accordance with the Secretary of the Interiors Standards for Rehabilitation that may acquire historic significance in their own right.[15] The treatment of the Ice House should consider the relative significance of the TRA additions and the consequences of removing later alterations.

[15] NPS website URL – http://www.cr.nps.gov/hps/tps/stanguide/rehab/rehab_standards.htm.

Since the interior of the Ice House was significantly altered by the TRA and there is insufficient information to restore the historic interior, it could be rehabilitated for storage. The rehabilitation of the interior could include removing partitions erected for the restrooms.

Though the GMP does not discuss the treatment of the Pump House, presumably the exterior of the structure would be preserved to reflect its historic appearance. The interior of the Pump House should be repaired and maintained and should continue to be used for storage and to house some utility services.

Since the Hose Reel House is attached to the north end of the Pump House and is described as part of the Pump House structure in both the revised NR Nomination and the GMP,[16] it should be treated as an accretion in accordance with the Secretary of the Interiors Standards for Rehabilitation that may acquire historic significance in its own right.[17] The treatment of the Pump House should consider the consequences of removing the TRA additions when restoring the structure. It is recommended that the Hose Reel House be treated as an accretion in accordance with the Secretary of the Interiors Standards and that the entire Pump House structure be preserved as part of the historic record of the site.

[16] Miller and Leahy, DRAFT National Register Continuation Sheet, Section 7, p. 7
Sagamore Hill National Historic Site, General Management Plan, p. 3-7

[17] NPS website URL – http://www.cr.nps.gov/hps/tps/stanguide/preserve/preserve_standards.htm.

ADMINISTRATIVE DATA

Location of Site

Sagamore Hill is located on Long Island in the village of Cove Neck, New York (figs. 1 & 2). Long Island extends some 118 miles northeast from the shores of Manhattan, and is 20 miles across at its widest part. The village of Cove Neck was incorporated in 1927 and is situated in the Town of Oyster Bay, Nassau County, New York, along the northwestern shore of Long Island, approximately thirty-five miles from Manhattan.[18]

National Register of Historic Places

Sagamore Hill National Historic Site (Sagamore Hill NHS) was listed on the National Register of Historic Places on October 15, 1966. The National Register of Historic Places (NR) nomination forms (Registration Form and Continuation Sheet) are currently being revised. The Statement of Significance for the revised NR Registration Form lists Criteria A, B, C, and D as qualifying criteria for Sagamore Hill. The revised form notes the Period of Significance for the site as 1884 – 1948. Sagamore Hill NHS is significant for its association with Theodore Roosevelt (1858 – 1919), Edith K. Roosevelt (1861 – 1948), and Theodore Roosevelt, Jr. (1887 – 1944), as well as the architecture of the main house at Sagamore Hill (constructed 1884-1885). The areas of significance include politics/government, architecture and conservation. Of primary significance for the site is the period attributed to the Roosevelt presidency, 1901 – 1909, but the site is also significant as the Roosevelt family home from 1884 – 1948.[19]

The physical description of Sagamore Hill in the revised registration form has a list of historic structures that includes the Gardener's Shed, Farm Shed, Chicken House, Ice House, and Pump House as contributing resources and the reconstructed Windmill as a non-contributing resource.[20] The National Register of Historic Places Registration Form and Continuation Sheet were revised in 2005 – 2009 and have recently been submitted to the Keeper of the National Register of Historic Places for acceptance.

[18] Bellavia and Curry, p. 1.

[19] Marla Miller and Kristin Leahy, *DRAFT National Register of Historic Places Registration Form – Sagamore Hill National Historic Site* (Boston, MA: U.S. Department of the Interior, National Park Service, Northeast Regional Office, revised, 2005), "Statement of Significance."

[20] Miller and Leahy, *DRAFT National Register Continuation Sheet*, Section 7, pp. 5 – 7 & p. 12.

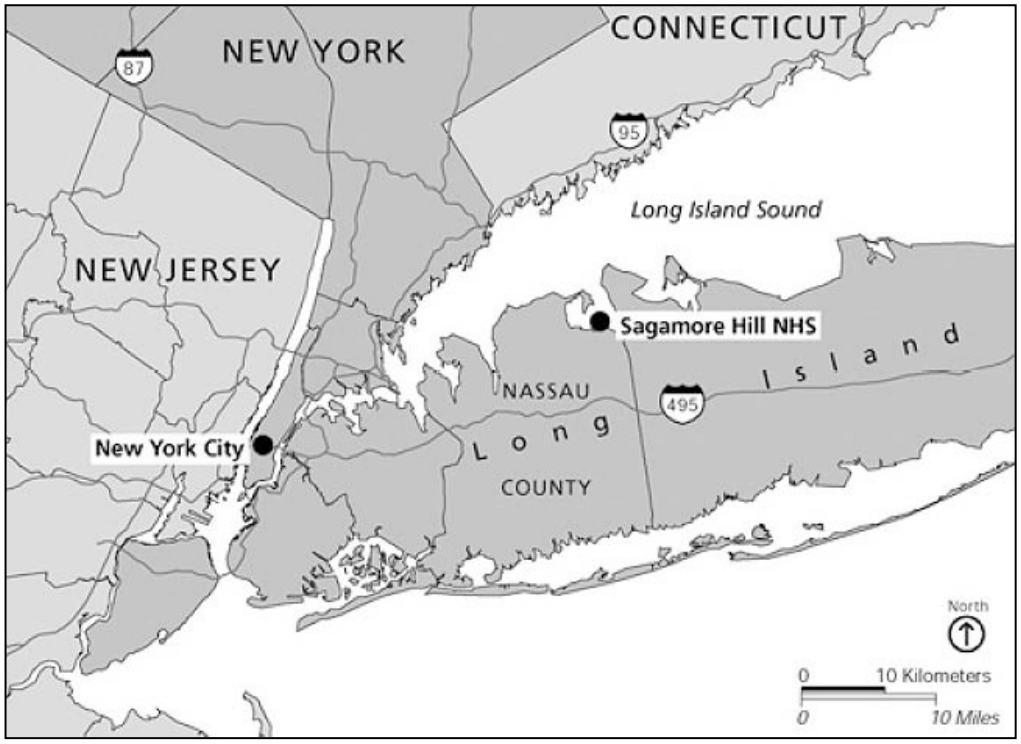

Figure 1. Location map for Sagamore Hill NHS, Oyster Bay, NY.

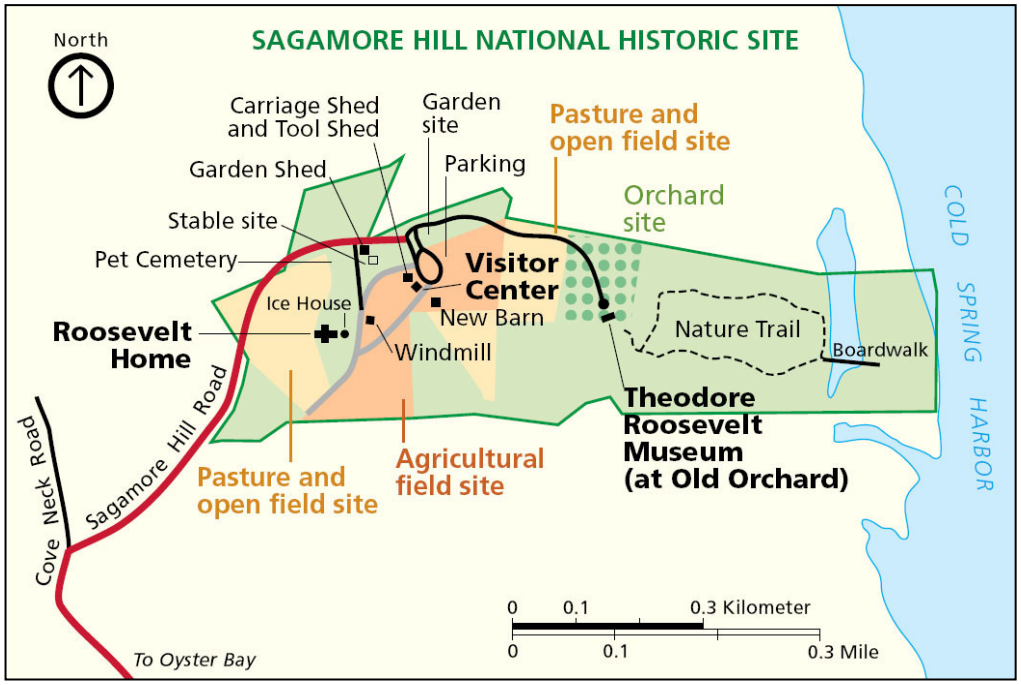

Figure 2. Sagamore Hill NHS site map.

List of Classified Structures (LCS) Information

The farm buildings within the historic core are the subject of this Historic Structure Report (HSR). These structures include the Gardener's Shed (LCS# 005443), Farm Shed (LCS# 005445), Chicken House (LCS# 005444), Ice House (LCS# 005441), and Pump House (LCS# 040956). These agricultural structures within the historic core were directly related to the farm operations at Sagamore Hill and all are listed in the LCS as contributing resources (fig. 3). The reconstructed Windmill (LCS# 001245) is also managed as a cultural resource. The following is selected and cited from LCS information for the Farm Buildings listed above.[21]

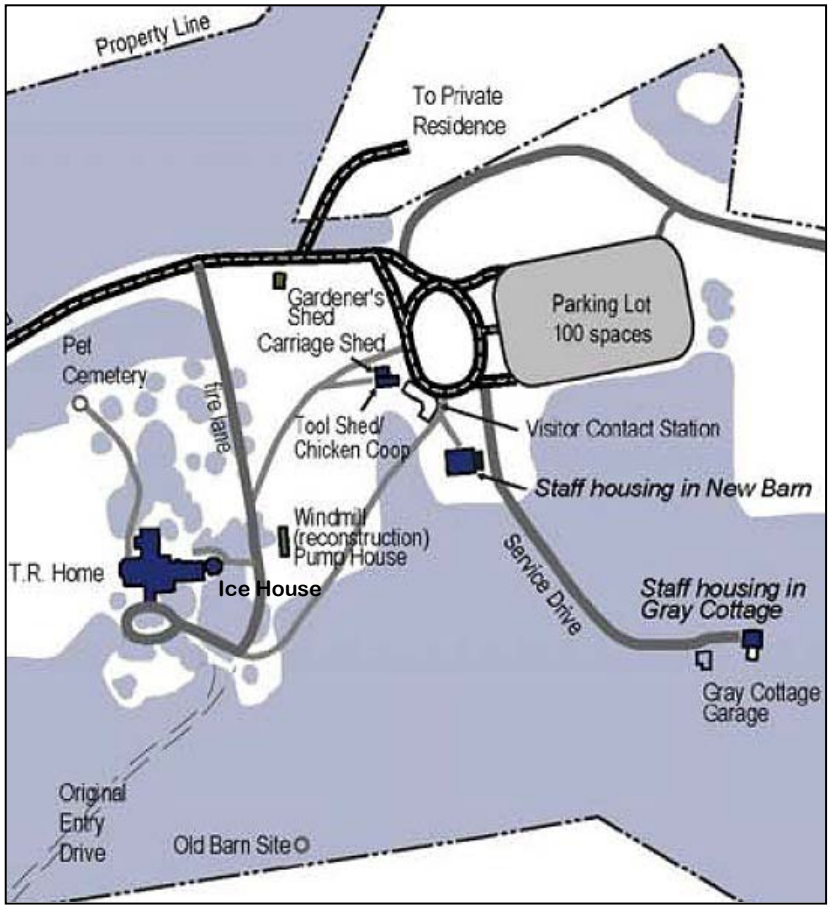

Figure 3. Site map of Sagamore Hill, including the historic farm core.

[21] *List of Classified Structures-Sagamore Hill National Historic Site* (National Park Service website http://www.hscl.cr.nps.gov/insidenps/reports.asp).

Figure 4. Gardener's Shed: East and North elevations looking southwest, 2007.

Gardener's Shed:

Preferred Structure Name:	Gardener's Shed
Structure Number:	B08
Other Structure Names:	Wood and Tool Shed
LSC ID:	005443
National Register Status:	Entered – Documented
National Register Date:	10/15/1966
Significance Level:	Contributing
Short Significance Description:	Extant during Theodore Roosevelt's tenure, possibly as early as 1890 (1890 reference to gardener living in tool shed in summer). Used to store firewood & tools, which were indispensable for keeping the farm equipment in good repair. TRA removed stovepipe and outhouse.

Figure 5. Farm Shed: North and West elevations, looking southeast, 2007.

Farm Shed:

Preferred Structure Name:	Carriage Shed[22]
Structure Number:	B09
Other Structure Names:	Farm Storage Carriage House
LSC ID:	005445
National Register Status:	Entered – Documented
National Register Date:	10/15/1966
Significance Level:	Contributing
Long Significance Description:	Erected during Theodore Roosevelt's tenure, likely just before adjacent tool shed/chicken coop (same materials but latter's window on south wall faces tool shed's north wall). While known as the "Carriage House" since TRA period, the building was too small to house TR's carriage, which was stored on 1st floor of the stable. An interview with one of a former farm manager's children in 1970s described it as the "farm shed" or "garage". Concrete foundation & floor indicates it was built after 1890.

[22] This information is cited from the current LCS information. Based on the current research the preferred structure name will be changed to the "Farm Shed."

Figure 6. Chicken House: South and West elevations, looking northeast, 2007.

Chicken House:

Preferred Structure Name:	Tool Shed/Chicken Coop[23]
Structure Number:	B10
Other Structure Names:	Chicken House Chicken Coop and Tool Shed
LSC ID:	005444
National Register Status:	Entered – Documented
National Register Date:	10/15/1966
Significance Level:	Contributing
Long Significance Description:	Built during Theodore Roosevelt's tenure, likely soon after the adjacent Carriage Shed, as evidenced by the use of similar materials. The building served dual purposes: as a chicken house and for farm tool storage. Concrete foundation and floor indicates a post-1890 construction date. The Chicken House may have served as a tangible reminder of the fondness that the Roosevelt's had for chicken, and they are said to have eaten chickens nearly every day while they were in residence at Sagamore Hill.

[23] Based on the current research the preferred structure name will be changed to the "Chicken House."

Figure 7. Ice House: North and West elevations, looking southeast, 2007.

Ice House:

Preferred Structure Name:	Ice House
Structure Number:	B11
Other Structure Names:	No records
LSC ID:	005441
National Register Status:	Entered – Documented
National Register Date:	10/15/1966
Significance Level:	Contributing
Long Significance Description:	Built 1885 at the same time as main house, the Ice House was located 20' east of the house and was used to store ice cut from nearby ponds. After Theodore Roosevelt became president, ice was delivered to Sagamore Hill and stored for the family's use. The Ice House was also a holding area (containing 2 large tanks) for the estate's reserve water supply. Altered in 1951 by TRA to provide restroom facilities, it is currently used for storage.

Figure 8. Pump House: South elevation, looking north, 2007.

Pump House:

Preferred Structure Name:	Pump House
Structure Number:	B12
Other Structure Names:	No records
LSC ID:	040956
National Register Status:	Determined Eligible – SHPO
National Register Date:	03/29/1996
Significance Level:	Contributing
Short Significance Description:	Associated with estate's water system. Erected 1884 – 1886 when original Windmill was constructed. Housed pumping station for a well and the engine for the fire hydrant system.

Figure 9. Windmill, reconstructed in 1971: South and West elevations, looking northeast, 2007.

Windmill:

Preferred Structure Name:	Windmill
Structure Number:	B18
Other Structure Names:	Reconstructed Windmill
LSC ID:	001245
National Register Status:	Entered – Documented
National Register Date:	10/15/1996
Significance Level:	Contributing[24]
Short Significance Description:	Original Windmill constructed 1884 – 1886 associated with estate's water system; replaced 1905 with new, improved wheel and tower (by A.J. Corcoran). When there was no wind, water was pumped by hand from the kitchen. Removed or dismantled by 1948 and reconstructed 1971 on original site.

[24] The recommendation of the *DRAFT National Register Continuation Sheet* (Miller and Leahy, NR Continuation Sheet, revised 2005, Section 7, p. 12) is that the Windmill be listed as a non-contributing resource. However, the Park plans to continue managing it as a cultural resource (see "Pump House &Windmill, Construction").

Proposed Treatment & Use

The preferred alternative of the GMP proposes that the exteriors of the Gardener's Shed, Farm Shed, Chicken House, and the Ice House be restored to reflect their historic appearance. The interior of the Gardener's Shed would be used to house interpretive media related to the farm operations and the interiors of the other buildings would be used for storage. The Pump House is also identified as a historic structure and will be preserved as part of the historic core.

The preferred alternative does allow for the removal of non-historic structures in support of resource management and interpretive objectives. However, the reconstructed Windmill is managed as a cultural resource and is significant in the interpretation of the site. The Hose Reel House attached to the north end of the Pump House is documented as part of the Pump House structure in the GMP, the revised NR Continuation Sheet, and the List of Classified Structures. The Hose Reel House is currently managed as a cultural resource.

Related Studies

The following publications, identified in the Cultural Resources Management Bibliography, were consulted in the preparation of this report. Some of these publications provide more background information about the history of Sagamore Hill, specific buildings on the site and the cultural landscape. Should the reader desire, he/she could consult the publications listed below.

Bellavia, Regina M. and George W. Curry. *Cultural Landscape Report for Sagamore Hill National Historic Site*. Brookline, MA: U.S. Department of the Interior, National Park Service, Olmstead Center for Landscape Preservation, 1993, Reprint 2003.

Brown, J., J. DeMarce, P. Steele, and J. MacInnes. *Historic Resources Management Plan, Sagamore Hill*. U.S. Department of the Interior, National Park Service, Sagamore Hill National Historic Site, 1975.

Carden, Marie L. and Richard C. Crisson. *Sagamore Hill Home of Theodore Roosevelt, Historic Structure Report*. Boston, MA: U.S. Department of the Interior, National Park Service, North Atlantic Regional Office, 1988.

Interpretive Prospectus, Sagamore Hill National Historic Site, New York. U.S. Department of the Interior, National Park Service, 1970.

Krog, Bronwyn. "National Register of Historic Places Inventory – Sagamore Hill National Historic Site". Boston, MA: U.S. Department of the Interior, National Park Service, North Atlantic Regional Office, October 1978.

Lee, James J. III. *The New Barn, Historic Structure Report, Sagamore Hill National Historic Site, Oyster Bay, New York*. Lowell, MA: DOI, NPS, NER, Historic Architecture Program, 2005.

Miller, Marla and Kristin Leahy, "DRAFT National Register of Historic Places Registration Form – Sagamore Hill National Historic Site". Boston, MA: U.S. Department of the Interior, National Park Service, Northeast Regional Office, revised, 2005.

Sagamore Hill National Historic Site, General Management Plan, Environmental Impact Statement. Boston, MA: Department of the Interior, National Park Service, Northeast Region, 2006.

Wilshin, Francis. *Historic Resource Study, Historical Base Map Documentation*. Denver, CO: U.S. Department of the Interior, National Park Service, Denver Service Center, October, 1972.

Wilshin, Francis. *Historic Resource Study, Sagamore Hill and the Roosevelt Family*. Denver, CO: U.S. Department of the Interior, National Park Service, Denver Service Center, October, 1972.

Wilshin, Francis. *The Windmill of Sagamore Hill A Part of the Basic Data Study and Historical Base Map of Sagamore Hill*. Washington, DC: U.S. Department of the Interior, National Park Service, Eastern Service Center, May 27, 1970.

DEVELOPMENTAL HISTORY

HISTORICAL BACKGROUND AND CONTEXT

Early History of Long Island[25]

Prior to the settlement of Long Island by Europeans, the area was inhabited by Native Americans who called the island Seawanhacky (Island of Shells).[26] The Native Americans led a nomadic existence, taking advantage of seasonal climate changes and the bountiful environs of Long Island.[27] The tribe inhabiting the area, which included Oyster Bay, was the Matinecock Indians, who were part of the Algonquin family of Native Americans. The Matinecocks had several villages throughout Long Island with an estimated population of 6,500 in the early 1600s.

The first European contact with Long Island in the early 1600s was during the explorations of Henry Hudson in 1609 and Adrian Block two years later. During this same period the Dutch discovered and settled the southern tip of Manhattan Island and named it New Amsterdam. It was sometime during these early explorations that Oyster Bay received its name, which appeared on maps prepared by Dutch traders after a trading expedition in 1621.

Both the Dutch and the English were very active in trading and exploring in the northeast and the Long Island area. The island thus became settled with both Dutch and English communities. The early history of Long Island is embroiled in disputes between the Dutch and the English. Much of the island was initially claimed as Dutch territory by the Dutch West India Company, but the Dutch could not control such a large territory and often allowed English settlers to establish communities throughout the area.

The Treaty of Hartford signed between the Dutch and English in September 1650 appeared to give control of sections of Long Island, including Oyster Bay, to the English. But this again was an area of contention that remained unresolved for years.

The dispute over territory and the governance of Long Island continued well into the second half of the 17th century. In August 1664 the Dutch relinquished control over New Amsterdam, which was renamed New York and converted into an English colony in 1665. A treaty between the English and the Dutch, signed in 1674, finally gave the English control of New York and Long Island.[28]

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[1] The following section was copied from: James J. Lee III, *The New Barn, Historic Structure Report* (Lowell, MA: DOI, NPS, NER, Historic Architecture Program, 2005).

[26] The section relies primarily on the research and writing performed by John E. Hammond entitled "The Early Settlement of Oyster Bay" (The Oyster Bay Historical Society, *Freeholder Magazine*, 2003). A more in-depth discussion of the early history of Oyster Bay can be found in that article, as well as Francis Irvin's *Oyster Bay: A Sketch* (Oyster Bay, NY: Oyster Bay Historical Society, 1987).

[27] Bellavia and Curry, p. 11.

[28] Ibid, pp. 11 – 12.

Oyster Bay[29]

The first settlement in Oyster Bay was established by the Dutch in 1632, but the Dutch settlers did not remain in the area. It was later occupied by English squatters in the 1640s. However, the English did not have permission from the Dutch to do so, nor had they purchased the land.[30]

The first legal claim to land in Oyster Bay by settlers of English descent was in 1653 when a group of settlers sailed from Barnstable, Massachusetts, to Oyster Bay. Their ship was the *Desire,* which was owned by Samuel Mayo. Mayo, along with Reverend William Leverich and Peter Wright, first purchased land in Oyster Bay from the Native Americans living in the area. The three bought their land from the local Matinecock chieftain, sachem Mohannes, also known as sagamore Assiapum[31], in the spring of 1653. However, it was not until the Colony of New York was established that the settlement at Oyster Bay received its charter from the new government in 1667.

From the time of its establishment into the 18th century, Oyster Bay remained a small community, with a more densely populated village center surrounded by land cultivated for agricultural production. The town benefited from both the fertile soil in the area and the deep, protected harbor, which offered access for trading ships and ferry service to Manhattan Island. As a result, Oyster Bay developed into a prosperous community.

The American Revolution saw British troops occupy Oyster Bay to take advantage of the area's convenient harbor and bountiful land. The troops cleared woodlands for firewood and confiscated portions of the local farmers' crops, all of which took a great toll on the resources of Oyster Bay. The economies of the North Shore communities of Long Island, including Oyster Bay, were slow to recover after the war. The area's population had declined, and the British troops had so depleted the natural resources that it took years for them to rebound.

Not until the Long Island Railroad (LIRR) was completed in 1844 did Long Island really begin to revitalize (fig. 10). However, the layout of the rail lines did not extend to Oyster Bay, and citizens of the town had to use the Syosset line, which was completed in 1854. The LIRR finally completed a branch to Oyster Bay in 1899,[32] which led to the community's growth as a recreation area and summer residence for wealthy New Yorkers.

"Theodore Roosevelt's ancestors were among these prominent New Yorkers. His grandfather, Cornelius van Schaak Roosevelt, founded the Chemical Bank of New York, and

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[29] The following section was copied from: James J. Lee III, *The New Barn, Historic Structure Report* (Lowell, MA: DOI, NPS, NER, Historic Architecture Program, 2005).

[30] The section relies primarily on Hammond, "The Early Settlement of Oyster Bay", and Bellavia and Curry, *Cultural Landscape Report.*

[31] This particular Algonquin chieftain is alternately referred to as sachem Mohannes, Sagamore Mohannis, and sachem Assiapum in various publications. Both of the nouns "sachem" and "sagamore" mean a Native American chief, especially from the Algonquin tribe. The most recent publications indicate that the chief's name was Mohannes, who was also known as Assiapum. The 1653 deed was not reviewed during the research of this report.

[32] Bellavia and Curry, p. 14.

his father Theodore Roosevelt, Sr., a prominent figure in charitable and civic organizations, was a founder of the American Museum of Natural History."[33] Members of the Roosevelt clan began spending their summers in Oyster Bay in the 1870s, and Theodore Roosevelt continued the family tradition when he purchased property in the Cove Neck area of Oyster Bay in 1880 (figs. 11 & 12).

During the late 19th century and into the 20th century when Theodore Roosevelt was residing at Sagamore Hill, the town of Oyster Bay was still a small community. The village area remained the most densely populated, and was also home to the druggist, doctor, post office, and tavern. The summer residences were built farther away from the village center and occupied large tracts of land overlooking the water.

The natural resources of the area continued to play an important role in the lives of Oyster Bay residents. The fertile soil provided area farmers with a good harvest, and the bay and harbor served local fishermen. Oyster Bay was also becoming a popular place for recreation, which was fostered by the easy access to water, as well as the clean and healthy climate away from New York City.

The extension of the LIRR to Oyster Bay in 1899 definitely helped spur the growth of the community. That same year Oyster Bay and the Cove Neck area became part of the newly formed county of Nassau, which had been parceled off from the eastern half of Queens County. Along with the rest of Long Island, Oyster Bay was a growing community. The advent of the automobile and the construction of new roadways at the beginning of the 20th century also contributed to the expansion of the area.

This period in Long Island's history was marked by the construction of lavish estates supporting opulent life styles, and it has been described as the "Gold Coast era." This prosperity particularly affected the North Shore of Long Island and the town of Oyster Bay. The estates of Louis Comfort Tiffany and railroad tycoon Otto Kahn were among those constructed in the vicinity of Oyster Bay.

Theodore Roosevelt's association with Oyster Bay and its environs began before the Gold Coast Era, and during that time of grand estates, Sagamore Hill remained a more modest estate surrounded by woodlands and a working farm.

[33] Ibid, p. 14.

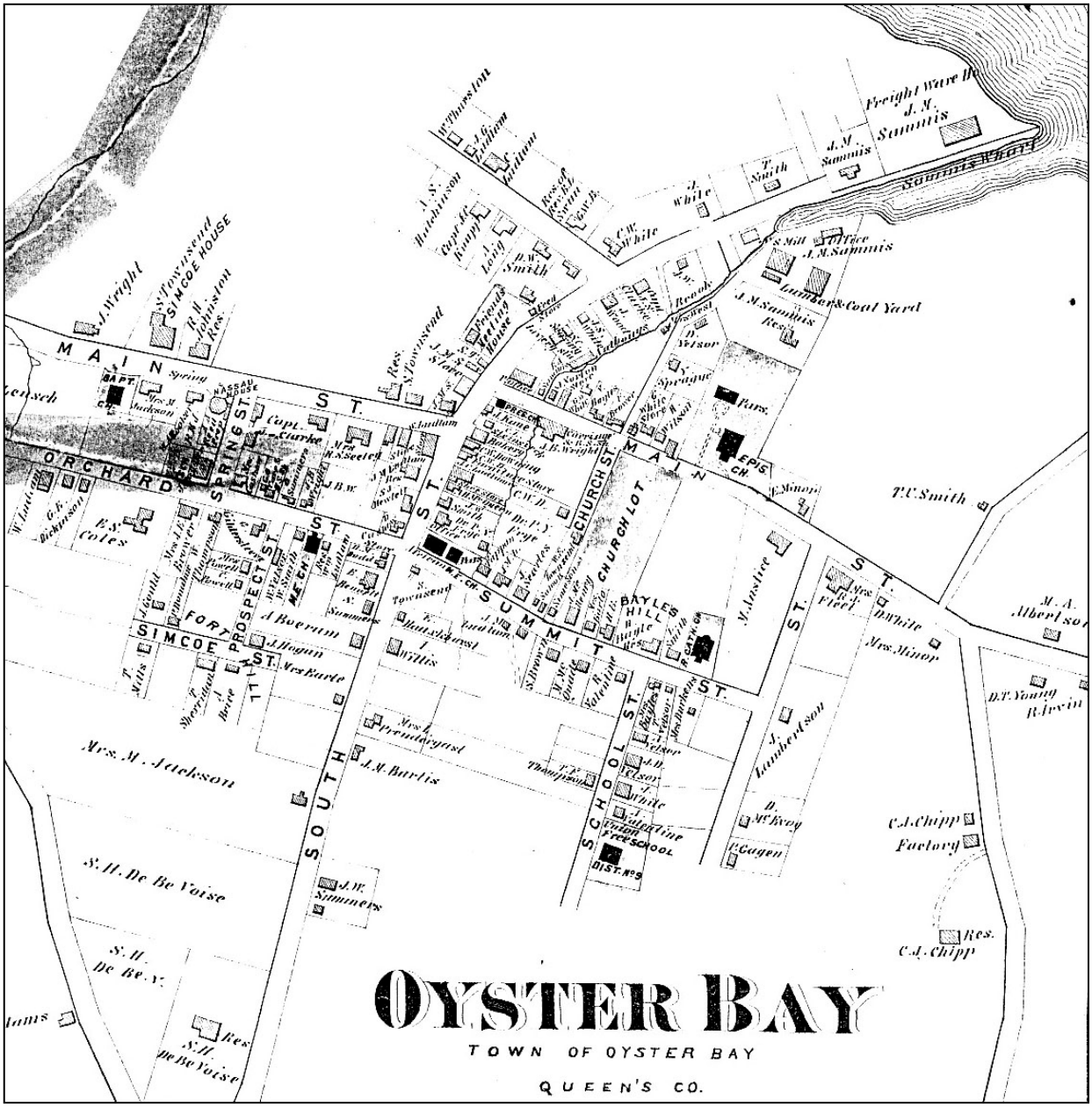

Figure 10. Map of Oyster Bay, Long Island, New York ca. 1860, prior to LIRR.

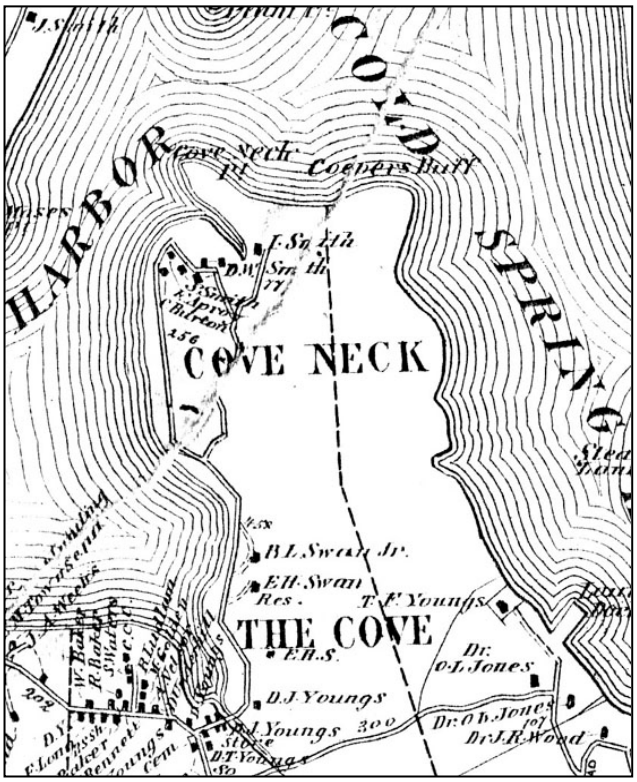

Figure 11. Map of Cove Neck, ca. 1860, prior to property purchase by Theodore Roosevelt.

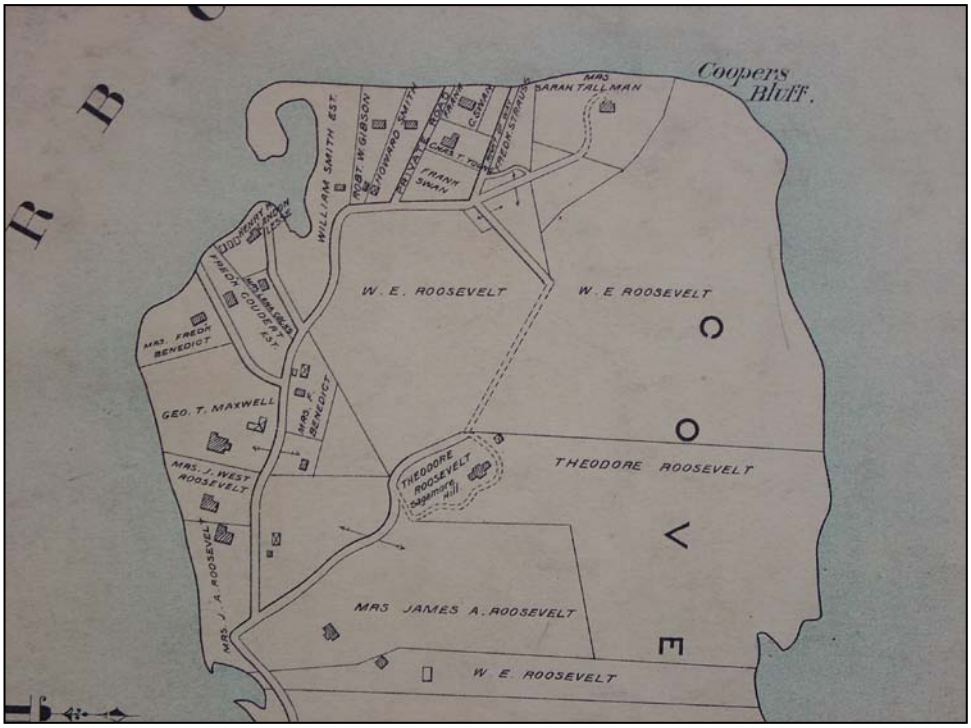

Figure 12. Map of Cove Neck, Oyster Bay, New York, 1906, depicting property of Theodore Roosevelt.

Sagamore Hill[34]

The property purchased by Theodore Roosevelt was situated on the highest point of Cove Neck in the town of Oyster Bay. The area had been owned by the local tribe of Algonquin Indians, the Matinecocks, who had assigned their rights to the property to Joseph Cooper in 1667, who subsequently deeded the land to the Youngs family.[35] The Youngs were farmers who had been among the early settlers of Oyster Bay.[36] In 1880 Thomas Youngs deeded to Theodore Roosevelt approximately 155 acres on Cove Neck that extended across the breadth of the peninsula, from Oyster Bay Harbor to Cold Spring Harbor.[37] The parcel was abutted by property that primarily belonged to the Roosevelt family. Roosevelt later sold off some of his land, again mostly to relatives, so that by 1906 the estate at Sagamore Hill was comprised of 87 acres of open pasture, woodland, and beach frontage on Cold Spring Harbor (fig. 12).[38]

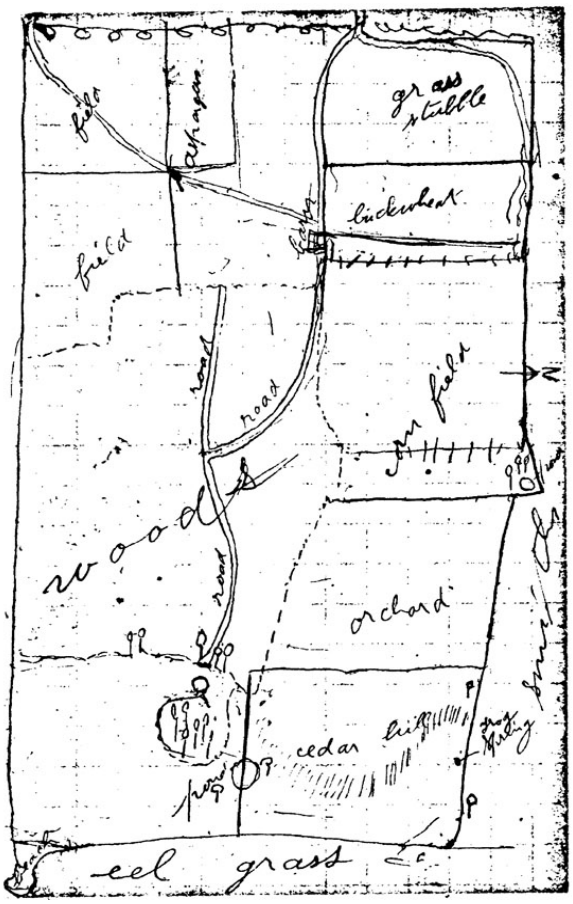

Figure 13. Sketched map of Sagamore Hill by Theodore Roosevelt, ca. 1880.

At that time Theodore Roosevelt was married to Alice Hathaway Lee, whom he had met in Boston while attending Harvard University. Theodore Roosevelt made a sketch of his new property and the couple began planning the estate (fig. 13).

Theodore Roosevelt hired the architectural firm of Lamb & Rich to design a stable and lodge for the property and in 1883 John A. Wood & Son were contracted to build the structure (fig. 14).[39]

The Queen Anne-style main house, also designed by Lamb & Rich and constructed by John A. Wood & Son in 1884 – 1885, was situated on what was then a treeless hill with a commanding view of Oyster Bay Harbor and Long Island Sound (fig. 15).

[34] Portions of the following section were copied from: James J. Lee III, *The New Barn, Historic Structure Report* (Lowell, MA: DOI, NPS, NER, Historic Architecture Program, 2005).
[35] Bellavia and Curry, p. 19.
[36] Irvin, *Oyster Bay: A Sketch*, p. 41.
[37] Bellavia and Curry, p. 19.
[38] Ibid, pp. 20 – 23.
[39] Ibid, p. 34.

Figure 14. Stable and Lodge at Sagamore Hill: West elevation, ca. 1905.

Figure 15. Main house at Sagamore Hill, ca. 1885. Note Ice House located east of house, right side of image.

Before the home at Sagamore Hill was built, both Alice Lee Roosevelt and Theodore Roosevelt's mothers died on the same day. Though stricken, Roosevelt decided to proceed with plans for the main house at the estate. He considered naming the property Leeholm in honor of Alice Lee, but instead named the property Sagamore Hill, after the Matinecock Indian Sagamore Mohannes:

> Sagamore Hill takes its name from the old Sagamore Mohannis [sic], who, as chief of his tribe, signed away his rights to the land two centuries and a half ago. The house stands right on the top of the hill, separated by fields and belts of woodland from all the other houses, and looks out over the bay and Sound. We see the sun go down beyond the long reaches of land and water.[40]

As Roosevelt developed his country estate, outbuildings were built in support of the domestic activities at the Main House and farming operation at Sagamore Hill.

The Ice House was constructed at the same time as the main house, in a similar style and using similar materials. It was situated just yards away from the east elevation of the house and is depicted in one of the earliest photographs of the residence (fig. 15). Correspondence to Theodore Roosevelt suggests that the first Windmill, which probably had a pump house, was constructed at the property in 1884.[41] Research indicated that the oldest section of the extant Pump House was constructed in circa 1905 (see "Pump House, Construction"). All of these structures provided functions that were in direct support of the main residence at Sagamore Hill and also supported the farm operation at the estate.

Figure 16. The Old Barn at Sagamore Hill, prior to 1904.

The Old Barn was "the only building on the bare treeless hill" when Theodore Roosevelt purchased the property in 1880. [42] The Barn was close to a century old and was situated on the southern boundary approximately 400 feet southeast of the main house.[43] Roosevelt used it to support the farming operation, and it also played a role in family recreation at Sagamore Hill. The Roosevelts were especially fond of using the Barn for obstacle races when it was full of hay. [44]

The 1880 deed to the property indicated that the Old Barn was used for storage of crops. Roosevelt wrote it was "full of hay," and it may have housed livestock as well.[45] Historic photographs of the Old Barn depicted a wood-frame structure with vertical siding

[40] Theodore Roosevelt, *Theodore Roosevelt: An Autobiography* (New York: The MacMillan Co., 1913), p. 342.

[41] Francis Wilshin. "The Windmill of Sagamore Hill: A Part of the Basic Data Study and Historical Base Map of Sagamore Hill". (Washington, D.C.: DOI, NPS, Eastern Service Center, 1970) p. 1.

[42] Bellavia and Curry, p. 19.

[43] Ibid, p. 33.

[44] Roosevelt, *Theodore Roosevelt*, p. 372.

[45] Bellavia and Curry, pp. 19 and 32.

and large hinged doors more or less centered on the side elevation, which was typical of an English Style Barn (fig. 16).[46] In a letter to Theodore Jr. dated November 4, 1903, Theodore Roosevelt wrote: "The old barn I am sorry to say, seems to be giving away at one end."[47] This was the beginning of the end for the Old Barn, which appears to have completely collapsed or been demolished by the fall of 1904.[48] The foundation stones remain along the southern property line of the Sagamore Hill National Historic Site.[49]

The Stable and Lodge formed the core of the farming operation at Sagamore Hill. The Gardener's Shed, Farm Shed, and Chicken House were all apparently built between 1885 and 1900 to support the farming activities at Sagamore Hill. After the collapse of the Old Barn in 1904, the New Barn was added to the list of farm buildings. Planning for the New Barn began in 1904 and upon reviewing the plans in the fall of that year Edith K. Roosevelt wrote farm manager Noah Seaman stating:

> I want a barn like the old barn without any cellar, for I know all that concrete must be what adds the expense, and the cows can be put on the same floor as the hay, with a couple of stalls for the farm horses beside them if there is room.[50]

Figure 17. New Barn: North elevation, with Noah Seaman (right), farm hand and cows, ca. 1907

In that letter, Mrs. Roosevelt made it clear that she felt a replacement barn that more closely copied the Old Barn was more desirable and suited to the current requirements at Sagamore Hill. In light of her concern the New Barn was built with a crawlspace instead of a full cellar. The Barn was a timber-framed structure with a gambrel roof and large doorways with sliding doors on the north and south elevations. Account book entries and correspondences indicate that the New Barn was completed by July 1907 (fig. 17).[51] This completed the farmyard at the estate and all of the outbuildings supported the active farm and residence at Sagamore Hill.

The Gardener's Shed, Farm Shed, Chicken House, Ice House, Pump House, and reconstructed Windmill, as well as the New Barn, remain extant within the historic core at

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[46] James J. Lee III, *The New Barn, Historic Structure Report* (Lowell, MA: DOI, NPS, NER, Historic Architecture Program, 2005) p. 5; see this report for further discussion of the Old Barn.

[47] Theodore Roosevelt to Theodore Roosevelt, Jr., November 4, 1903. Series 2, Vol. 43 – p. 246, Reel 332, Theodore Roosevelt Paper (TR Papers), Library of Congress (LOC), Harvard University Library (HL), Government Documents Microtext Division (GDMD).

[48] Francis Wilshin, *Historic Resource Study, Historical Base Map Documentation*. Vol. II (Denver, CO: U.S. DOI, National Park Service, Denver Service Center, October, 1972) p. 50.

[49] Krog, Item 7, p. 6.

[50] Edith K. Roosevelt to Noah Seaman, October 3, 1904 (partial excerpt) Series 2, Volume 106- p. 447, TR Papers. LOC, HL, GDMD.

[51] James J. Lee III, *The New Barn, Historic Structure Report* (Lowell, MA: DOI, NPS, NER, Historic Architecture Program, 2005) pp. 28 – 30.

Sagamore Hill (figs. 2 & 3). Historic photographs prior to 1950 usually depicted the farm buildings in the background of the image but did provide documentation of the buildings as part of the Sagamore Hill farm. Historic photographs and archival records also document the existent of additional farm buildings that are no longer extant, the Stable and Lodge being foremost among these. A Cow Shed, Corn Crib, Wood Shed, Smoke House, Small Chicken Coop, rabbit hutches, dog houses, and privies were among the other outbuildings supporting the farming operation at Sagamore Hill (fig. 18).

Figure 18. Theodore Roosevelt with dogs, ca. 1905. Note farm sheds and hay in background, which are no longer extant.

The extant buildings within the historic farm core at Sagamore Hill are representative of the farming operation at the estate. They remain an example of how Sagamore Hill was developed and used by Theodore Roosevelt and are an important part of the interpretation of the site. The farming activities at Sagamore Hill were just one example of Roosevelt's love of nature and belief in living a "strenuous life."[52]

[52] Roosevelt, Theodore. *The Strenuous Life;* Essays and Addresses. New York: The Century Co., 1900. Copyright, 1900, by the Outlook Company; 1900, by the Churchman Co.; 1899, by the S.S. McClure Co.; 1900, by the Century Co. The DeVinne Press; Bartleby.com, 1998.

GARDENER'S SHED

CHRONOLOGY OF DEVELOPMENT AND USE

Construction

The Gardener's Shed served as one of the farm outbuildings at Sagamore Hill. Though the date of construction is not known, physical evidence suggests that it was built in ca. 1885. The style of the Gardener's Shed and the construction methods vary from those of the other extant farm buildings. The building was timber framed versus the balloon framing construction methods used for the Farm Shed and Chicken House. Though the framing technique does not provide a definitive date of construction, it was generally used prior to balloon framing. In addition to the framing, the paint analysis determined that the Gardener's Shed had more paint layers than other extant farm buildings, as well as some paint colors that were not used on the other buildings (see Appendix D).

Some exterior elements of the Gardener's Shed were constructed in the Gothic Revival Style popular during the Victorian era. Applied in a simple form, that style was reflected in the vertical siding with battens, the open gables and eaves with enclosed rafters, and diamond shaped window openings in the gable ends of the building. Review of historic photographs found that a similar diamond window opening was used in one of the gables of the Stable and Lodge (fig. 14). The Stable and Lodge and main house were both designed in the Queen Anne-style and had been completed by 1885. The use of Victorian-era elements on the Gardener's Shed further supports the circa 1885 date of construction in keeping with the construction of the other Victorian-era buildings at Sagamore Hill.

Original Appearance

The original appearance of the Gardener's Shed was determined through building investigation, examination of historic photographs, and review of documentation. Though the shed was extensively renovated in 1986, some of the original materials were left intact and those that were removed were replaced in-kind. Through examination of the paint evidence it was possible to discern which elements were original and gain a better understanding of the original structure. The following descriptions of original appearance are based on existing building materials and the documentation of the building.

Exterior Elements

The Gardener's Shed was situated near the northern boundary of Sagamore Hill, behind the Stable and Lodge. It was a single story rectangular structure that was 16 feet 4 inches wide by 22 feet 3½ inches long. The façade of the building faced east and was the only elevation with an exterior doorway. The shed was constructed with a gable roof and the gable ends of the building faced north and south.

The first documentary evidence of the building was a circa 1905 photograph with the Gardener's Shed in the background (fig. 19). In that photograph, the Gardener's Shed appears to be in its original configuration.

Figure 19. Bob Ferguson with dog, Gardener's Shed in background, ca. 1905.

The Gardener's Shed was constructed on locust posts set in the ground and did not have a foundation. The original posts were identified during renovations of the shed and at that time were replaced with similar posts.[53]

The exterior walls of the Gardener's Shed were clad with vertical ship-lap boards with vertical battens at the seams. The boards were typically 8½ inches wide and the battens were 2 inches wide. Both edges of the battens had a coved profile. Though all the battens were replaced during renovations, the in-kind replacement battens were milled on site to match the historic materials.[54] On the east and west elevations the siding terminated at a plain

[53] Paul Sazani. "Completion Report Rehabilitation and Stabilization of Three Outbuildings, Sagamore Hill National Historic Site". (Boston, MA: North Atlantic Historic Preservation Center, 1986; copy at NER Lowell, MA).

[54] Ibid.

cornice below the soffit of the roof. The extant cornice trim, which paint evidence indicates was original to the building, measured 5 inches wide. The siding on the south and north elevations stopped at a similar raked cornice below the raked soffit.

The only exterior entrance to the Gardener's Shed was through the east elevation doorway. Though the door was replaced, historic photographs appear to depict the original elements (figs. 19 & 20). The doorway was 6 feet 10 ½ inches wide and had a sliding door. The door was approximately 6 inches wider than the opening and slid to the right/north. The door moved on two rollers attached to either end of it. The rollers ran along a steel track attached to a wooden rail that was fastened to the doorway lintel. These elements were reused when the door was reconstructed and are extant. The door was constructed with the same ship-lap vertical boards and battens that were used for the siding. The boards were attached to a stile-and-rail frame. The lintel above the doorway was constructed with 10 inch wide board that extended to the right of the doorway to the northeast corner of the building. As previously described, the sliding door rail and track were attached to the lintel board and also extended to the right/north of the doorway.

Figure 20. Gardener's Shed with adjacent sheds: Looking northwest, 1950.

The historic photographs depict two window openings in the sliding door (figs. 20 & 24). In one photograph the door appears to have six-light sashes installed in each window opening. Closer examination of the photographs suggests that these window openings were later alterations to the original doors. This was indicated by the uneven placement of the openings in the door, the rough opening, and the absence of trim. It is not known when the window openings were added but the doors were probably solid when first constructed. The existing, reconstructed doors are solid, with no window openings or other openings.

The Gardener's Shed was built with diamond shaped window openings in the gable-ends that had square sashes rotated to appear as diamonds. In historic photographs the south window appears to be equal on all sides (figs. 19 & 20). There are no historic photographs of the north elevation but physical evidence suggests that the north window opening was rectangular. Paint evidence indicated that both sashes were part of the original structure. However, physical and documentary evidence suggested that the sashes were switched, one for the other, in the 1950s (see, "Alterations, 1951"). Both window openings had a single fixed sash with four lights. The lights in the south window sash appear to be square. The window openings were trimmed with a plain surround.

Similar to other outbuildings at Sagamore Hill, the roof of the Gardener's Shed was covered with wood shingles. Based on extant features, some of which were original to the building, the eaves and soffit of the roof were finished with plain board trim. The eaves measured 4½ inches wide and the soffit was 5½ inches wide. The soffit along the rake of the gable-end was 6 inches wide. Historic photographs depicted plain ridge boards that have been replaced with similar elements.

Interior Elements

The interior of the Gardener's Shed consisted of a first story and a loft. There was apparently a crawl space below the first story but no finished area. The area of the first story was approximately 336 square feet.

The first story of the Gardener's Shed was constructed in an unfinished manner, typical of a barn or similar outbuilding. The floor was constructed with 8 inch wide tongue-and-groove boards running north-to-south. The walls were open to the framing and exterior siding. The ceiling was also open to the framing and the flooring of the loft. An open stairway along the south wall led to the loft area.

Three closets lined the north wall of the first story (fig. 21). These were built-in closets that appeared to be part of the original building. The closets were constructed with plain tongue-and-groove boards and had a tongue-and-groove board ceiling below the first story ceiling joists. The three closets were divided by tongue-and-groove partitions. Each closet had a board-and-batten door constructed with beaded tongue-and-groove boards and hung on butt hinges. The doors had a cast lock set with a brass knob, which appeared to be original.

Figure 21. Gardener's Shed: Closets along north wall, 2007.

The stairway on the south wall of the first story provided access to the loft. The stairway was built with an open staircase that was 3-feet wide with 9½ inch deep treads that were 1⅛ inches thick. The rise was 8 inches high but the stairs were open with no riser boards. The stringers were constructed with 2 inch by 10 inch

boards. The stairway led to a board-and-batten trap door with strap hinges on the left/south side. The door opened into the unfinished loft space above the first story.

The loft appeared to be part of the original structure and was an unfinished space. The floor of the loft was constructed with 7½ inch tongue-and-groove boards that were fastened with wire nails. The loft area was open to the roof framing and sheathing, and the wall framing on the gable-ends. As previously described, the window openings in the north and south gables provided light for the loft area. The window openings had no interior trim and the sashes were fixed. The only painted finishes in the loft were the interior of the sashes, which were green.

Structural Elements

The Gardener's Shed was a timber-framed building. The framing members had been vertically sawn from larger stock and then radial sawn to full dimension timbers. The evidence of the saw marks was consistent with the period of construction. The framing techniques were also typical of a small farm building from that period. Some framing members were replaced during the 1986 renovations but efforts were taken to replicate the existing material (figs. 22 & 25).

Below the sill level, the Gardener's Shed was supported by locust posts. The 6 inch by 6 inch sills rested on the posts and were joined at the corners with half-lap joints. The framing of the first floor consisted of 3 inch by 8 inch joists running east-west that were notched and fastened to the east and west sills. The corner posts and intermediate posts were 4 inch by 6 inch and were connected to the sills with mortise and tenon joints. The south gable end had one intermediate post (fig. 25) and the east and west elevations had two intermediate posts. On the east elevation the intermediate posts framed the doorway. Two interior 3 inch by 6 inch beams running east-west connected the east and west elevation intermediate posts and were attached with mortise and tenon joints. The north and south end-girts were mortised into the corner posts and the east and west plates were set on top of the corner posts. This made the tops of the plates higher than the end girts. The dimensions of the original plates on the east and west elevations are unknown. The extant plates of the shed in 1986 were made up of two wooden members, each measuring 2 inch by 4 inch and laid on their flat sides. The use 2 inch by 4 inch lumber for the wind braces and horizontal nailers in the original construction indicated that the plate may have also been original. However they seem undersized in comparison with the other timber framing. It seems likely that the original plates were replaced when the roof was repaired in 1957 (see, "Alterations, 1951"). That would explain the use of undersized lumber and the absence of timber plates.

Between the posts, 2 inch by 4 inch boards were installed horizontally as nailers for the exterior siding. The nailers were fastened to the posts with nails and were installed at 2 feet and 4 feet 3¼ inches above the floor. The frame of the shed was supported by wind braces that were nailed to the posts and beams.

Figure 22. Gardener's Shed: North elevation framing, 1986.

Upon examination of the 1986 reconstruction photographs and existing building elements, it was apparent that the partition walls dividing the closets also served as structural elements for the shed (fig. 22). There was no intermediate post on the north wall and the closet partitions helped support the north girt. A photograph from the reconstruction of the shed depicts the framing of the north wall and the integral closet construction. The original northeast and northwest corner posts were retained during the renovations, as was the 3 inch by 6 inch north girt. Those framing members were depicted in the 1986 photograph and remain extant.

The framing of the first floor ceiling consisted of 2 inch by 6 inch joists that ran north-south. The ceiling joists were fastened to the tops of the end girts and the interior beams. In the loft the window openings were framed with 2 inch by 4 inch boards and the rafters measured 2 inch by 4¾ inch. The rafters were notched at the plate and nailed together at the ridge. The roof was framed with no ridge board.

Original Use

When Theodore Roosevelt purchased Sagamore Hill there were already crops being grown on the property, as indicated by his sketch (fig. 13). Apparently Roosevelt wanted to continue farming operations at the site and chose to have the Stable and Lodge constructed to house the farm manager and support the farming operation. The Gardener's Shed was constructed as one of several outbuildings that were used in the agricultural activities at the site. The first story and loft of the shed were apparently used for storage of tools and implements used about the farm and gardens. There was no evidence of previous use of the crawl space underneath the first story.

The gardens at Sagamore Hill were probably planted soon after the main house was built and were well established by the 1890s.[55] The proximity of the Gardener's Shed to the garden suggested that it was primarily used for storing items related to the cultivation of the garden. Anecdotal evidence suggested that the shed was used as quarters for the gardener, Alfred Davis, during the warmer months when he was working at Sagamore Hill.[56] It was during Davis's use of the shed as his quarters that a woodstove was installed on the first story. Historic photographs depicted the stovepipe on the east side of the roof and the hole and

[55] Bellavia and Curry, p. 57.
[56] Amy Verone, SAHI Curator, Interview based on recollections of Roosevelt children, 2007.

framing in the first story ceiling for the stovepipe remain extant (fig. 20). How Davis arranged the space for accommodations is not known, but it seems likely that he would have used some of the closet space to store his belongings. It also appears that during Alfred Davis's use of the Gardener's Shed, a privy was built on the north side of the shed for his use. The privy was noted on the 1950 insurance map of Sagamore Hill (Appendix A). The description of the Gardener's Shed in the 1950 insurance documents included the woodstove and noted that it hadn't been used in many years. This suggests that the shed was only used as quarters during Alfred Davis's tenure and was not considered as regular housing for the staff at Sagamore Hill.

The 1919 Inventory of the Personal Property of the late Theodore Roosevelt indicated that the Gardener's Shed was used for storing both garden and lawn maintenance tools. The inventory included items that were stored in the "Tool House," which given the number and size of items was presumably referring to the Gardener's Shed. (The shed was also called the "Tool House" in the 1950 insurance documents.) The inventory included the following[57]:

Tool House	
Small Hand Tools Including – Rakes, Hoes, Shovels, About 50 Pieces	$ 15.00
Grind Stone Iron Frame	5.00
Ames Hand Cultivator	5.00
Three Hand Lawn Mowers 18 – 20 and 22 inch	20.00
	$ 45.00

The 1919 inventory demonstrated that both gardening tools and lawn mowers were stored in the Gardener's Shed. Given the shed's location near the gardens and the manicured lawns of the property this was a logical use for the outbuilding.

When the Great American Insurance Company surveyed the site in 1950, the Gardener's Shed was listed as the "Tool House" (Appendix A). The documents noted that the building was used for storing tools for the maintenance of the gardens and property, demonstrating that the shed continued as a support building for the estate, and specifically the gardens and lawns, throughout the Roosevelt period. The building was still referred to as the "Tool and Implement Shed" as recently as 1986.

The 1950 insurance map depicted two other sheds northeast of the Gardener's Shed (Appendix A). These sheds were also depicted in the 1950 insurance photograph (fig. 20). Robert Gillespie, Jr. identified these sheds as the Wood Shed, which was closest to the northeast corner of the Gardener's Shed and the Smoke House. Mr. Gillespie also recalled that his father helped construct the Smoke House.[58] As depicted in the 1950 photograph, the

[57] Wilshin, Vol. II, p. 77.
[58] Robert Gillespie, Jr., interview by Jessica Kraft, July 17, 1973. SAHI Archives.

Wood Shed appeared to have had a lean-to roof and there was an open connecting storage space between it and the Smoke House. The Smoke House appeared to be a small gabled building. These sheds were also part of outbuildings supporting the farm at Sagamore Hill and give the impression of an active farmyard at the site of the Gardener's Shed. They were among the "Miscellaneous Sheds" in the 1950 insurance survey and were subsequently demolished.

Alterations

1885 – 1948

The documentary and physical evidence indicated that few alterations were made to the Gardener's Shed during the Roosevelt period (1885 – 1948). As previously described, the window openings in the sliding door that were evident in historic photographs appeared to be alterations to the original doors. Also the stovepipe was probably added to the building. These alterations most likely took place during the period that Alfred Davis used the shed as temporary quarters. The window openings in the door would have been the only source of light on the first story when the doors were closed and were probably added by Davis for that purpose. The stove would have been his only source of heat in an un-insulated and unfinished space. There were no other known changes to the building prior to the renovations by the TRA in the 1950s and the NPS in 1986. The renovations by the TRA did not appear to make any significant changes to the building and the NPS renovations took care to save as much existing materials as possible and to replace deteriorated materials in-kind.

1950

The Gardener's Shed was listed as the "Tool House" in the insurance inspection and survey dated June 1950 (Appendix A). It was described as a one story building with an attic, board and batten siding, shingle roof, wood floor and open stairway. The stove had a tile chimney but, according to the caretaker, it had not been used in years.[59] The insurance documents were accompanied with photographs (fig. 20) and provided information regarding the use and historic appearance of the building.

1951

The TRA hired the firm of Henry Otis Chapman, Randolph Evans, & William E. Delehanty Architects as the architectural advisors for Sagamore Hill in 1950. The architects worked on a number of projects at the property over the next several years and hired the E. W. Howell

[59] Great American Insurance Co., Inspection and Survey, June 1950. TRA Materials, Box 5, Folder 2, SAHI Archives.

Company, Babylon, NY, as their general contractor. The initial work focused on repairs and upgrades to the main house but also included rehabilitation of the farm buildings.[60]

E.W. Howell Company provided estimates for re-roofing and painting several outbuildings at Sagamore Hill in December 1951. A letter dated December 10, 1951, from Chapman, Evans, Delehanty Architects to Howard Smith of the TRA, outlined the estimates and the work to be performed.[61] The estimates included line items for roofing the "Tool House"[62] as the building was known at the time. The letter estimated the cost of alternate roofing materials including asbestos shingles, "Firechex" asphalt shingles, and 10-to-15-year asphalt shingles. The letter discussed the use of asbestos shingles for the roofing material as the best of the three materials quoted, as well as the best match to the asbestos shingles on the roof of the main house, which had been completed in 1950. It also stated that the estimates for all buildings included "2 coats of gray paint the same as the present color." [63] An appropriation for some of the work was made by the TRA, Sagamore Hill Committee meeting on December 18, 1951.[64] However, the Gardener's Shed may not have been included in that particular project. The letter from the architects noted that none of the work was budgeted and the committee may have decided to delay the repairs to the Gardener's Shed roof. Documents in the NPS maintenance files indicated that the roof and shingles were replaced by Schreiner & Taylor in 1957.[65] No further documentation of the roof work was found in the archives but photographs taken by NPS in the 1960s (fig. 23) depicted a wood shingle roof that was different from the 1950 photograph (fig. 20). The 1960s photograph depicted a relatively new roof with no chimney pipe, which had apparently been removed when the roof was replaced.

Figure 23. Gardener's Shed: Looking northwest, ca. 1963.

[60] Bellavia and Curry, p. 139.

[61] Robert I. Powell, Chapman, Evans, Delehanty Architects, to Howard C. Smith (Powell to Smith), December 10, 1951. TRA, HSC, SAHI – 9800, Box 8, Folder 1.

[62] Ibid.

[63] Ibid. p. 2.

[64] Minutes of the Executive Committee Meeting of the Sagamore Hill Committee, December 18, 1951, p. 39. TRA, HSC, SAHI – 9800, Box 8, Folder, Executive Committee Minutes 1942-1952.

[65] Robert O. Kempf. NPS Form 10-768, Individual Building Data, Gardener Shed, Bldg No. 8, 1/31/1969. SAHI Maintenance Files.

Review of the historic photographs indicated that the TRA also altered the gable windows of the Gardener's Shed. The earlier images of the south elevation of the shed showed what appeared to be a square sash rotated 45 degrees to form a diamond shaped window opening. However, the 1960s photographs depicted a window that had a rectangular appearance, which is extant. Examination of the existing window openings suggested that the window sash might have been switched when the TRA had the roof replaced. The extant north window has a square sash but an earlier window opening was filled in to accommodate the square sash (see "Current Physical Description"). The paint evidence and muntin profiles of the two window sashes indicated that they were contemporary and were probably original but for some unknown reason they were switched when the roof was replaced.

1957

A letter from Mrs. Harold Kraft to Mr. Robert Weitzman awarded the contract for painting buildings at Sagamore Hill on April 10, 1957. The list of buildings included "One outbuilding near service road."[66] The only outbuilding by the service road, which runs along the northern boundary of the property, was the Gardener's Shed. The letter stated that the paint scheme should "match the entire color scheme of the Souvenir Shop."[67] Paint research included analysis of the exterior elements of the Gardener's Shed and on site examination of the paint layers on the body of the former Souvenir Shop. The analysis indicated that the color scheme of the Gardener's Shed in circa 1957 was a gray paint color on the body and trim elements and a green paint color on the sash (Appendix D).

1963 - 1969

Sagamore Hill was established as a National Historic Site in 1963. At that time the Gardener's Shed was apparently in good condition due to the 1957 renovations by the TRA. Photographs taken at that time depicted the building with a new roof and in good repair (fig. 23).

The NPS completed an *Individual Building Data* form for the "Gardener Shed; Bldg. No. 8" in January 1969. The form provided a description of the building and a brief evaluation of the conditions. At the time the Gardener's Shed was listed in good condition overall and good structural condition.[68] Photographs of the building taken at the same time recorded the existing conditions (fig. 24).

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[66] Mrs. Harold Kraft to Robert Weitzman, April 10, 1957. TRA, HSC, SAHI-9800, Box 12, Folder 5, SAHI Archives.

[67] Ibid.

[68] Robert O. Kempf, NPS, Form 10-768, Individual Building Data, Gardener Shed; Bldg. No. 8, 1/31/1969. SAHI Maintenance Files.

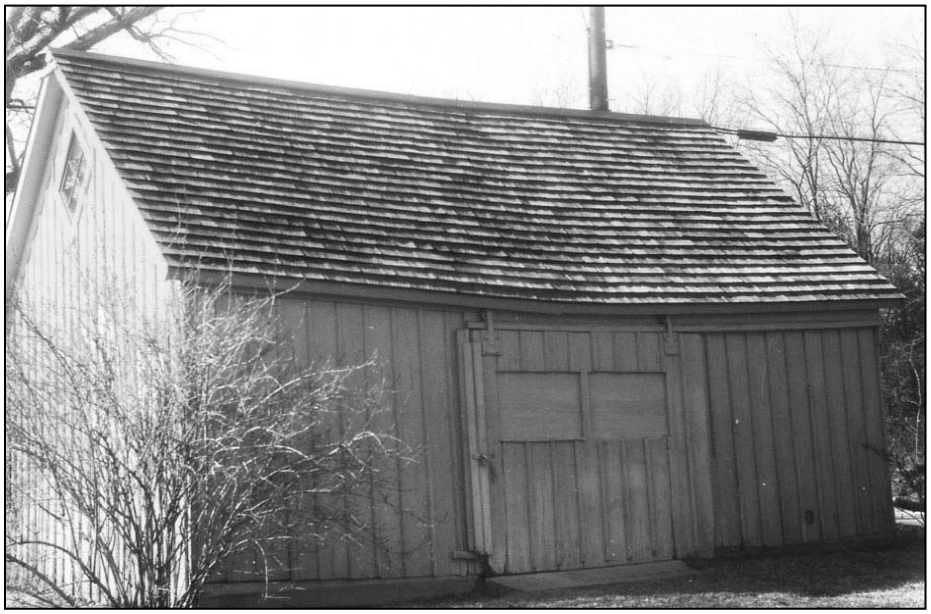

Figure 24. Gardener's Shed: Looking northwest, 1969.

The NPS did not make any significant alterations to the building from 1963 to 1986. The paint analysis indicated that the shed was painted light gray in the 1970s but no further building alterations were documented until 1986. By that time the Gardener's Shed was in need of significant structural work and a large portion of the siding and roof needed repairs. The Park was using the shed for storage at the time.

1986[69]

The project for the "Rehabilitation and Stabilization of Three Outbuildings" at Sagamore Hill NHS included the "Tool and Implement Shed" or Gardener's Shed and began in May 1986. The work was performed by the North Atlantic Historic Preservation Center (NAHPC). The NPS staff members from the NAHPC were E. Blaine Cliver, Chief Historical Architect, Richard Crisson, Historical Architect, Paul Sazani, Project Supervisor, and Stuart Williamson, Woodcrafter. Sazani and Williamson were the carpentry crew on site and did all of the structural work and most of the siding repairs. The project was finished in the fall of 1986 by Park staff members Doug Lederman, Carpenter, and George Dziomba, Carpenter Helper. They rebuilt the sliding door and replaced the wood roof.

[69] The information in the following section references the report by Paul Sazani. "Completion Report Rehabilitation and Stabilization of Three Outbuildings, Sagamore Hill National Historic Site" (Boston, MA : North Atlantic Historic Preservation Center, 1987. Copy at NER, Lowell, MA).

Figure 25. Gardener's Shed: South elevation showing in-kind replacement framing, 1986.

During the rehabilitation and stabilization of the Gardener's Shed, all materials that were deteriorated were replicated and replaced in-kind.

Structural

Structural work began with the replacement of the piers supporting the Shed from below. Ten new locust posts were installed to support the sill at the locations of the corner posts and the intermediate posts.

All of the sills were deteriorated and required replacement. They were replaced in-kind with 6 inch by 6 inch white pine sills that were joined with half-lap joints at the corners. The east, sill was installed in two pieces with a lap joint and 5/8 inch threaded rods connecting the two pieces.

The southeast, southwest, and south elevation center posts were replaced with 4 inch by 6 inch white pine timbers (fig. 25). The posts were joined to the sills with "slot mortise and tenon joinery". On the east elevation, the posts that frame the east doorway were also replaced with similar material. The north and west elevations retained their original posts.

The south end-girt was replaced with a 4 inch by 6 inch white pine timber. The girt was joined to the south elevation posts with mortise and tenon joinery. The north end-girt, which measures 3 inch by 6 inch was left intact and remains extant.

The header over the east elevation doorway was also replaced with a 4 inch by 6 inch timber. The report noted that the replacement header was larger than the original but did not give

the size of the original header. The size was increased to a 4 inch by 6 inch timber to insure the structural integrity of the building.

The floor joists for the first story were deteriorated and needed replacement. The wood plank floor was labeled and removed, and the rotten joists were removed. The joists were replaced in-kind with 3 inch by 8 inch white spruce. The photographs of the project appeared to depict the joists notched at the sills but the report does not specify how the joists and sills were joined. After the joists were replaced the flooring was reinstalled.

Efforts were taken to preserve and retain the horizontal nailers and the wind braces. Where necessary these elements were replaced in-kind with full dimension 2 inch by 4 inch white pine lumber. The east plate above the doorway header was also replaced with a full dimension 2 inch by 4 inch piece of white pine.

During construction, all structural materials were treated with "Cuprinol" wood preservative.

Siding

Over half of the exterior board-and-batten siding was deteriorated and as the project progressed, none of the battens were deemed salvageable. All of the siding was removed and the boards that were salvageable were reused on the north and west elevations. During the current investigation it was evident that the boards had been reused on the west elevation where there was a distinct line of built-up paint near the top of each board. The siding on the east and south elevations, as well as a portion of the north elevation, was replaced in-kind with 15/16 inch thick by 9⅜ inch wide by 14 foot long ponderosa pine with ship-lap joints. The siding was fastened with Tremont steel cut nails, common #8D galvanized. All of the battens were replaced in-kind and milled on site. At the time of the current investigation there was no evidence of the original battens. The new battens measured ¾ inch by 1 ¾ inch by 14 foot and had a cove along both edges. The battens were made with clear ponderosa pine and fastened with Tremont steel cut nail, finish #5 galvanized.

The rehabilitation of the exterior siding included the addition of a 9 inch wide water table on all elevations of the building. Review of the historic photographs indicated that the Gardener's Shed did not have a water table prior to the 1986 rehabilitation. The historic photographs depict the board-and-batten siding extending down over the sill and terminating just above grade. Though the addition of the water table was not discussed in the Completion Report, it may have been added because the extant siding was rotted at the bottom. It may have also been considered a measure to protect the siding from rot due to water at the ground level. Whatever the reason for the addition of the wood water table, it was not a historic feature of the Gardener's Shed.

Window Openings

The north and south gable window openings were reframed duplicating existing size and dimensions. The Completion Report did note that the south window did not appear to be original to the building. As previously discussed, it appeared that both the north and south

window openings were altered during the rehabilitation by the TRA. There was evidence that originally the north window opening was larger and that a section of the original window opening had been filled in with a board. In 1986, the existing window openings were reframed as found.

Front Doorway

It was determined during the rehabilitation that the front sliding door of the Gardener's Shed was not salvageable. It was replaced by Park staff using the same materials as the siding. The door was constructed with board-and-batten siding secured to a stile and rail frame. The existing rollers, and track and rail were retained. The rail that holds the track was secured to the doorway header with lag bolts.

As previously noted, window openings had been cut into the original door sometime after the construction of the Shed (likely during the Roosevelt period). However, the rebuilt door did not replicate this feature of the door. The replacement door was constructed without window openings, which may have been an accurate representation of the original door.

Roof

Park staff removed the wood shingle roof of the Gardener's Shed. The report stated that the deteriorated wood lath under the shingles was also removed but does not indicate whether that meant all of the lath or only portions. In any event, the lath was replaced and new shingles were installed on top of it. The replacement shingles were 18 inch white cedar and were laid with a 6 inch exposure on average. The ridge of the roof was covered with WR Grace Ice and Water Shield and 7 inch wide pine boards were placed on both sides of the ridge.

Once the rehabilitation was completed, Hydrozo water repellent was applied to the roof.

Flooring

As previously described, the first story flooring of the Gardener's Shed was removed to make repairs to the floor joists. During the work it was found that approximately one third of the floor planks were deteriorated and needed replacing. The planks were replaced in-kind and the floor was reinstalled.

Painting

Upon completion of the project, the exterior siding and trim of the Gardener's shed was primed and painted. Contractor, Pettiford & Pettiford, performed the work. The building was painted with two shades of gray paint. A medium gray color, Benjamin Moore GN-76, was used on the body of the building and a lighter gray color, Benjamin Moore GN-3, was

used on the trim.[70] Completion photographs of the building indicated that the body color was darker and was applied to most of the building elements. The trim color appeared to be a lighter gray and was applied only to the window sashes. NAHPC staff took exterior paint samples during this project and a preliminary analysis was performed, though the documents did not indicate that the colors were matched under a microscope. The Benjamin Moore colors were most likely based on existing colors and do not appear to match the historic paint colors (see Appendix D).

Landscaping & Drainage

By the beginning of the project in 1986, the Gardener's Shed had sunk 7 inches below grade. During the project excess fill was removed from around the building and the structure was raised back up to its "original" height. Further landscaping included re-grading around the building to allow air to circulate underneath the structure. A drainage system was installed along the perimeter of the building. That consisted of trenches with 4 inch perforated pipe installed below grade and gravel placed in the trench.

The 1986 rehabilitation and stabilization represented the most extensive work performed on the Gardener's Shed. The efforts of the NPS ensured the preservation of the shed as a part of the Sagamore Hill farm building complex.

1986 – Present

Since the 1986 rehabilitation and stabilization, the Gardener's Shed has received regular maintenance by Park staff. Maintenance files indicated that the shed was painted periodically and Park staff noted that a group of volunteers painted the outbuilding in the late 1990s. There have been no significant changes to the building since 1986.

A 2002 inspection of the Gardener's Shed generated two work orders. Work order 101671 included estimations for repairs to the exterior siding and painting the exterior of the building. Work order 101672 included an estimate for replacing the wood shingle roof on the shed. This work has not been performed but is currently open for bids by private contractors.

[70] Though the Benjamin Moore Co. no longer uses this numbering system, the HAP paint lab has some of the older fan decks from Benjamin Moore and the color swatches matching the 1986 numbers were found in those fan decks.

GARDENER'S SHED

CURRENT PHYSICAL DESCRIPTION

The following description of the Gardener's Shed is meant to augment the descriptions in the preceding sections "Original Appearance" and "Alterations." In addition, the documentation of the rehabilitation and stabilization of the Gardener's Shed in 1986 recorded most of the exterior and structural elements, as well as some interior elements ("Alterations, 1986"). The descriptions in those sections that are part of the current physical description will not be repeated in detail in the following section.

Exterior Elements

Figure 26. Gardener's Shed: East elevation, 2007.

Figure 27. Gardener's Shed: North elevation, 2007.

The Gardener's Shed is located north of the main house on the right side of the access road to Sagamore Hill. It is a one-story rectangular building with a gable roof. The shed is oriented with its ridge running north-south and the entry doorway is on the east elevation.

The Gardener's Shed is supported by ten locust posts and has no foundation. Wire screen has been installed around the perimeter of the posts to prevent animals from burrowing under the building.

The shed is sided with vertical ship-lap boards with vertical battens at the seams. More than 50% of the siding boards were replaced in 1986 and all of the battens were replaced. The 2-inch wide battens have coved edges and were milled on site to match the original material.

The siding extends to the corners of the building and there are no corner boards. The cornices of the building, on both the side walls and the gable ends, were trimmed with plain boards.

Figure 28. Gardener's Shed: Door roller and track, 2007.

A concrete ramp on the east side of the Gardener's Shed leads up to the wide entry doorway. The east elevation doorway has a sliding door that is constructed from the same board and batten materials as the siding. The interior of the door is framed with stiles and rails that provide the door's structural support. The door is hung from two rollers that run along a metal track and rail attached to the doorway lintel. Though the door was reconstructed in 1986, the rollers and track from the original door were reused and lag bolts were added to re-secure the rail to the lintel.

The Gardener's Shed has diamond shaped window openings in the gables of the north and south gable-ends. Both window openings have a single fixed sash with four lights and are cased with plain wood trim. They both also have a distinctive muntin style in which one muntin is wider than the other (figs. 29 & 30). A similar paint layering sequence was found on both window sashes. Based on these observations it appears that the windows are from the same period. In historic photographs the south window appears to be equal on all sides and the sash has square lights (figs. 19 & 20). However, the window currently on that elevation is rectangular (fig. 29). Examination of the extant north window, which is equal on all sides, indicates that it was not the original window in that opening. The framing of the north window opening was altered to accommodate the square sash and the earlier rectangular opening was filled in (fig. 30). It is not known whether the sashes were replaced or whether they were switched. However, the sashes do appear to be correct for the period of construction, which suggests that for some unknown reason they were switched during the TRA renovations.

Figure 29. Gardener's Shed: Interior of south gable window and sash, 2007.

Figure 30. Gardener's Shed: Interior of north gable window and sash, 2007.

The roof of the Gardener's Shed is covered with wood shingles and a plain board ridge. The roof extends beyond the side walls of the shed creating the eaves which are boxed with plain boards. The gable ends of the roof extend beyond the end walls of the shed and the rake and soffit are enclosed with plain board trim.

Interior Elements

Figure 31. Gardener's Shed: Interior of first story looking southwest, 2007.

Figure 32. Gardener's Shed: Interior of loft looking north, 2007.

The interior of the Gardener's Shed has an open room on the first story and a loft under the gable roof. There is a crawl space below the first story but it is unfinished and not easily accessible. The interior spaces of the shed are currently used as storage by the Park. Interestingly, some of the stored items, such as lawn maintenance equipment, are the modern equivalent of what the Roosevelts would have stored there.

Figure 33. Gardener's Shed: Framed stovepipe opening, 2007.

The first story of the Gardener's Shed has one room that is unfinished. The floor is covered with wide planks and the walls are open to the structural framing and the inside face of the siding boards. The ceiling is open to the loft floor joists and flooring. The hole for the former stovepipe is framed between two floor joists, approximately five feet into the building, near the stairway on the left. The framing for the stovepipe opening is lined with a metal pan and discarded strap hinges are installed on either side of the round hole for support (fig. 32). Besides the photographic documentation, this is the only evidence that suggests that a stove was once installed in the Gardener's Shed, likely providing a more habitable place (see "Original Use".)

The north wall of the first-story room is lined with three closets (fig. 21). The walls and ceilings of the closets were constructed with tongue-and-groove boards. The center and east closets have hinged doors constructed with beaded tongue-and-groove boards. The center closet door has a cast lock set with a brass knob, apparently original, and the east closet door has scars of a similar lock set.

An open stairway on the south wall of the first story leads to a board-and-batten trap door entrance to the loft area. The loft is an open area under the gable roof with visible, open roof framing and lath, as well as open wall and window framing on the gable-ends. The floor is covered with tongue-and-groove boards and there are no trim or finishes in the loft.

Structural Elements

The previous sections on "Original Appearance" and "Alterations" describe in detail both the extant original framing and the replacement framing used during the rehabilitation and stabilization of the Gardener's Shed in 1986. Those sections should be referred to for a full description of the framing including timber dimensions and joinery.

The Gardener's Shed is a timber-framed structure that was constructed with full dimension sawn lumber. On all elevations, locust posts support timber sills that are joined with half-lap joints at the corners. The first story is framed with one post in each corner, two intermediate posts on both the east and west elevations, and one center post on the south elevation (fig. 25). There is no center post on the north elevation and it appears as though the closet partitions are providing additional support on that elevation (fig. 22). The posts are connected by beams that span the width of the building (east-west) and plates are installed on top of the east and west walls. The timber frame is supported by diagonal wind-braces, thus forming the primary timber frame.

The doorway of Gardener's Shed is framed by the two intermediate posts on the east elevation. An oversized header is installed between the posts to provide support for the plate and the structural load.

The first story floor is framed with joists that are installed between the east and west sills. The loft floor is framed with joists that span from the north and south end girts to the intermediate beams. The loft floor joists are staggered at the intermediate beams in order to span the entire length of the structure.

On the exterior walls, smaller dimension horizontal framing is installed between the posts to provide a nailing surface for the siding.

The roof is framed with common rafters that are notched at the plate and overhang the exterior walls to form the eaves. The roof does not have a ridge board or any additional structural support.

FARM SHED

CHRONOLOGY OF DEVELOPMENT AND USE

Construction

The Farm Shed was one of several farm buildings at Sagamore Hill that were located northeast of the main house. The Farm Shed, along with the Chicken House, Cow Shed, and other small sheds, made up a cluster of outbuildings that were at the core of the farming operation. There was no known documentation of the original construction of the Farm Shed but physical evidence suggested that it was built in circa 1900. The materials used in the construction of the building and the methods of construction are consistent with the circa 1900 date.

Comparison between the Farm Shed and other farm buildings provided information helpful in identifying the Farm Shed's period of construction. First of all, there were differences in the style of siding used on the Farm Shed versus the Gardener's Shed. As previously described, the Gardener's Shed had Gothic Revival-style vertical siding; whereas the Farm Shed had Colonial Revival-style horizontal siding (see "Original Appearance"). Also, the number of paint layers on the exterior elements indicated that the Gardener's Shed was built before the Farm Shed. Further comparison of the paint evidence on the Farm Shed versus the paint layers on the adjacent Chicken House suggested that those two buildings were constructed during the same period (Appendix D). The Sagamore Hill account books kept by Edith K. Roosevelt recorded a $499.95 increase in the property taxes between 1899 and 1900.[71] That large an increase in the tax suggested that the property was improved by either the addition of more land or the construction of additional buildings on the site. Previous research determined that Theodore Roosevelt did not purchase additional land on Cove Neck in 1899 or 1900,[72] which indicated that more buildings were added to the tax rolls in 1900. Based on the documentary and physical evidence it appeared that the Farm Shed was constructed in circa 1900.

[71] Sagamore Hill Account Book, 1889-1917. Edith Kermit Roosevelt Papers, Box 10, SAHI Archives.
[72] Bellavia and Curry, pp. 19 – 23.

Original Appearance

The Farm Shed appeared to retain most of its original elements and has not under gone any significant alterations since it was first built. Through building investigation, examination of historic photographs, and review of documentation it was possible to determine the original appearance of the Farm Shed. Through examination of the paint evidence it was possible to discern which elements were original and gain a better understanding of the original structure. The following descriptions of original appearance are based on existing building material and the documentation of the building.

Exterior Elements

The Farm Shed was situated northeast of the main house on a level portion of the meadow where a small farmyard was developed. The Chicken House was situated south of the Farm Shed and fences that enclosed the farm pastures extended north of the building. Historic photographs depicted dirt roads and pathways west of the building (figs. 35 & 37).

The Farm Shed was a rectangular structure that measured 13 feet 3 inches wide by 18 feet 3 inches long. The shed was a single story building with a gable roof and a loft. The gable ends of the building faced east and west. The exterior doorway and the loft doorway were both centered on the west elevation.

As with most of the farm structures, the Farm Shed appears in the background of early photographs. Historic photographs dating from 1913 through the 1920s appeared to depict the Farm Shed in its original configuration (figs. 34 -37).

The Farm Shed was constructed on top of a poured concrete foundation. The foundation wall extended about 6 inches above grade on all elevations. A concrete ramp was constructed on the west elevation that sloped down to grade.

The Farm Shed was sided with drop siding, also known as novelty siding, with a 4½ inch reveal. That type of siding consists of horizontal wood boards with tongue-and-groove edges that allow the lower edge of each board to interlock with the top edge of the board below it.[73] The top edge of the board is slightly beveled so that the boards can be joined. Drop siding was introduced in the late-nineteenth century[74] and was typically used in Colonial Revival-style structures. Though the Farm Shed is a simple structure, the use of this type of siding was an indication that the building was constructed in circa 1900.

The siding was trimmed with 4 inch wide corner boards. The corner boards on the west elevation flanked the double doorway and formed the sides of the doorway surround.

The west elevation doorway led to the interior of the Farm Shed and was the only first story doorway. The doorway was 12 feet 6 inches wide and held double barn doors. Both doors

[73] Cyril M. Harris. *American Architecture an Illustrated Encyclopedia*, (New York: W.W. Norton & Company, Inc., 1998) p. 104.
[74] Ibid.

were constructed with vertical tongue-and groove boards that were 7½ inches wide. The exterior of both doors were framed with stiles and rails and two X-braces. The inside of the both doors were Z-braced. Each door had three strap hinges that were hung on iron pintles driven into the framing of the shed. The south/right door had a vertical board along the left edge that overlapped the north/left door when the doors were closed. It also had a board for securing the doors when closed. That board was attached to the door with a bolt and could be wedged behind a small block attached to the lintel that would hold the doors closed. The doorway was trimmed with a 4 inch surround and a beveled cap was installed above the doorway lintel.

The loft doorway was centered in the west gable end of the Farm Shed. It was 3 feet wide and 3 feet 2 inches high. The loft door was a board-and-batten door constructed with 7½ inch wide tongue-and-groove boards. The door was hung on two strap hinges fastened with screws and had a hasp lock with a hook. The loft doorway was surrounded with a plain 2¾ inch wide trim, with a cap over the lintel. The loft doorway had a 2 inch thick sill that was slightly beveled.

The Farm Shed had five window openings on the first story. There were two window openings on both the north and south elevations and one window opening on the east elevation. All of the widows had double-hung, two-over-two sashes. All of the first story exterior window openings measured 2 feet 7¼ inches wide by 4 feet 11½ inches high. The top and bottom sashes were both 2 feet 7 inches wide by 2 feet 6 inches high and each light was 1 foot 1 inch wide by 2 feet 1½ inches high. The window openings were trimmed with 4 inch wide plain surrounds and the lintels had a beveled cap. The windows had 2 inch thick sills.

There was one second story window opening centered in the east elevation gable that opened into the loft. The window opening was 2 feet 3½ inches wide by 2 feet 1 inch high and was surrounded by 2¾ inch plain board trim. The original sash was not extant, nor was there any early photographic documentation of the east elevation of the Shed.

The gable roof of the Farm Shed was covered with wood shingles. The ridge of the roof was likely covered with ridge boards. Though the ridge details are not depicted in the historic photographs reviewed, the extant ridge is covered with ridge boards, a replication of the historic ridge executed during the 1986 roof work. The eaves of the roof extended 7 inches beyond the walls and were boxed with plain boards. A 4 inch cyma recta molding with a coved lower edge was applied to the eaves fascia. The gable ends of the roof had an 8 inch wide raked soffit with a raked fascia. The same cyma recta molding used on the eaves fascia was installed on the raked fascia.

Interior Elements

The Farm Shed was constructed with a first story and a second story loft. Both stories had a single open space with no partitions. The area of the first story was approximately 234 square feet.

The first story was constructed on the poured concrete foundation and a concrete slab, which formed the floor of the first story. The interior walls were covered from floor to ceiling with 7 inch wide horizontal ship-lap boards. At the exposed ceiling joists, boards were installed between the joists along the north and south walls. Those boards were angled to match the pitch of the roof. All of the interior boards were fastened with wire nails. The first story window openings, which were previously described, had no interior trim. The east window opening is currently trimmed with 3½ inch plain board casing but it is not known whether that trim was original. The ceiling, which measured 9 feet 10½ inches above the floor level, was open to the framing and the flooring of the second story loft.

Approximately five feet from the west doorway, a round timber spans the width (north to south) of the Farm Shed. The timber is 8 feet above the level of the floor and approximately 5 inches in diameter. The timber does not appear to be a supporting structural member but was more likely a functional element of the shed.

The second story loft of the Farm Shed was an unfinished space that was accessed via the west elevation loft doorway. The floor was covered with 7 inch wide ship-lap boards that were fastened with wire nails. The east elevation window opening illuminated the loft area and had no trim. There were no other finish materials in the loft. Since the loft area was under the gable roof, there were no side walls and the ceiling was open to the roof framing and roofing materials.

Figure 34. Sagamore Hill: Photograph taken during Ethel Roosevelt Derby's wedding, 1913. Farm Shed and Chicken House in background.

Figure 35. Sagamore Hill: Northeast of main house, depicting Farm Shed, Chicken House, and surrounding farm yard, ca. 1920.

Figure 36. Richard Derby, Jr. at Sagamore Hill, ca. 1918. Farm Shed and Chicken House depicted in background.

Figure 37. View of farm yard at Sagamore Hill, depicting Farm Shed, Chicken House, and New Barn, ca. 1920.

Structural Elements

The Farm Shed was most likely a balloon-framed building constructed with dimensional lumber. Balloon framing was a system of framing that began in the 1830s and was widely used in the late-nineteenth century. Typical balloon-framed houses consisted of two inch thick dimensional studs (varying in width) that extended the full height of the building.[75] Though a significant part of the framing was covered by interior boards, it appeared that the Farm Shed was balloon-framed.

As previously discussed, the Farm Shed was constructed with a poured concrete foundation to which the sills were attached. The sills of the shed were 2 inch by 6 inch full dimension lumber that were installed on the north, east and south elevations. Since the doorway took up the whole west elevation there was no need for a sill. The corners of the building were framed with 4 inch by 4 inch posts. The corner posts on the west elevation framed the doorway and a 2 inch by 10 inch doorway header spanned between the two posts.

The walls of the Farm Shed were framed with 2 inch by 4 inch studs that were fastened to the sills with wire nails. The studs extended up to the plate, which supported the roof framing. The plate of the shed was not visible but typically it would have been constructed with two 2 inch by 4 inch boards laid on their flat sides and nailed together.

The gable walls in the loft of the Farm Shed were framed with 2 inch by 4 inch boards, as was the east elevation loft window opening. The roof of the shed was framed with full dimension 2 inch by 6 inch rafters with a 1 inch by 6 inch ridge board. The rafters extended beyond the plate to form the eaves of the shed.

Original Use

As previously discussed, portions of the Sagamore Hill property were already being farmed when Roosevelt purchased the property. In 1906, about forty-seven acres were under cultivation and the remainder of the property was woodland.[76] The Stable and Lodge was constructed in 1884 and formed the core of the farmyard. As the farming operation at Sagamore Hill became established, additional support buildings were erected and a small farmyard developed northeast of the main house. The Farm Shed was built as one of the farm outbuildings in circa 1900.

Though it was apparent that the Farm Shed was constructed as a support structure for the farm at Sagamore Hill, the actual use of the building was not well documented. The wide doorway with hinged barn doors suggested that the building may have been used to store carriages or wagons, but the building was too small to accommodate the Roosevelt's carriage,

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[75] Ibid p. 18.
Virginia & Lee McAlester. *A Field Guide to American Houses.* (New York: NY Alfred A. Knopf Publishing, 1984) pp. 36 -38.

[76] Bellavia and Curry, p. 78.
Walter Andrews. "Theodore Roosevelt as a Farmer." *Farm Journal.* December 1906. (copy at SAHI Archives, courtesy of Theodore Roosevelt Collection, Harvard College Library) p. 431.

which was stored on the first story of the stable.[77] In addition the 1919 inventory of Theodore Roosevelt's estate indicated that the items related to the buckboards, buggies, and wagons were stored in the Carriage House (Stable and Lodge) and the most of the large farm equipment was stored in the New Barn. Additionally, the Farm Shed was not even listed in the 1919 inventory. [78]

An interview with Robert Gillespie, Jr. gave the best indication for the use of the Farm Shed during the period that his father was working at Sagamore Hill (1914 – 1943). In that interview, Mr. Gillespie described the building as "the farm shed" or "garage."[79] He further recollected that "pigs were kept in the garage after they were slaughtered"[80] and that the oxen harnesses were stored there. It appeared to be possible that the round timber spanning the width of the shed was used to hang the carcasses of the slaughtered pigs. However, this was not discussed during Mr. Gillespie's interview. Photographic documentation from the same period did not clearly depict how the building was used but did illustrate the shed as part of the cluster of farm buildings (fig. 37).

The 1950 Great American Insurance Company inspection and survey listed the Farm Shed as the "Caretaker's Garage" (Appendix A). The building was among the "Miscellaneous Sheds" and was described as a storage building for junk. The survey was accompanied by a photograph of the west elevation of the Farm Shed and adjacent structures that appeared to depict the building in its original configuration.

Figure 38. Farm Shed: Cow Shed to the north and Chicken House to the south, 1950.

[77] *Sagamore Hill National Historic Site, General Management Plan, Environmental Impact Statement*. (Boston, MA: Department of the Interior, NPS, Northeast Region, 2006) p.3-8.
[78] Wilshin, Vol. II, p. 77.
[79] Robert Gillespie, Jr., interview by Jessica Kraft, July 17, 1973. SAHI Archives.
[80] Ibid.

Alterations

1900 - 1948

Review of historic photographs of the Farm Shed suggested that the building was not significantly altered from the date of construction in circa 1900 through Edith Roosevelt's residency in 1948. A comparison of the earlier images (figs. 34 - 37) and the 1950 image (fig. 38) indicated that the building was largely unaltered during that time span.

Paint analysis indicated that the Farm Shed was painted several times during that period and also confirmed that most of the exterior elements were original to the building. There was documentation of exterior painting of the main house and several buildings at Sagamore Hill in 1901 – 1902.[81] Since this included the Chicken House adjacent to the Farm Shed, it seemed probable that the Farm Shed was also painted at that time.

The current research did not find any further documentation of alterations made to the Farm Shed during the Roosevelt period.

1950

The Farm Shed was listed as the "Caretaker's Garage" in the insurance inspection and survey dated June 1950 (Appendix A). It was described as a frame building measuring 12 feet by 18 feet by 13 feet with one story and an attic, a shingle roof, and concrete floor. The survey also noted that there was no heat or light in the building.[82] The insurance documents were accompanied with photographs (fig. 38) and provided information regarding the use and historic appearance of the building.

1951

As described in the discussion of the Gardener's Shed, Chapman, Evans, Delehanty Architects solicited estimates from E.W. Howell Company in 1951 for re-roofing and painting several outbuildings at Sagamore Hill. The aforementioned letter, dated December 10, 1951, included estimates for roofing the "Chicken House & Adjacent Garage", referring to the Chicken House and Farm Shed.[83] As with the Gardener's Shed, the estimates for the Farm Shed included asbestos shingles, "Firechex" asphalt shingles, and 10 to 15 year asphalt

[81] William Loeb to Tomasky, Feb. 3, 1902. Theodore Roosevelt Papers, Vol. 105, p. 251. Library of Congress Collection at Harvard College Library, Microfilm Reel 360.

[82] Great American Insurance Co. Inspection and Survey. TRA Materials, box 5, folder 2, SAHI Archives.

[83] Robert I. Powell, Chapman, Evans, Delehanty Architects, to Howard C. Smith (Powell to Smith), December 10, 1951. TRA, HSC, SAHI – 9800, Box 8, Folder 1, Chapman, Evans, and Delehanty, 1944 – 1951.

shingles, as well as "2 coats of gray paint the same as the present color."[84] The TRA appropriated funds to do some of the work,[85] which apparently included the installation of asphalt shingles on the roof of the Farm Shed. This was evident from NPS documentation of the Farm Shed in the 1960s that noted the roofing material as asphalt shingles.[86] Since the appropriation was made in December 1951, the work was probably accomplished in 1952. A photograph taken in 1953 depicts a portion of the Farm Shed, which appeared to be painted gray and had asphalt shingles (fig. 39).

Figure 39. Dwight D. Eisenhower motorcade at Sagamore Hill, 1953. Farm Shed and cow shed depicted in background.

1957

In an April 10, 1957 letter from Mrs. Harold Kraft concerning the painting contract for several outbuildings buildings at Sagamore Hill, "Two small buildings near Souvenir Shop" were included.[87] The letter was apparently referring to the Farm Shed and the Chicken House and stated that the paint scheme should "match the entire color scheme of the Souvenir Shop."[88] Paint analysis of the exterior elements of the Farm Shed in comparison with the paint colors on the body and trim of the former Souvenir Shop indicated that the siding and most of the trim elements were painted gray. However, it was evident from paint

[84] Ibid.

[85] Minutes of the Executive Committee Meeting of the Sagamore Hill Committee, December 18, 1951, p. 39. TRA, HSC, SAHI – 9800, Box 8, Folder, Executive Committee Minutes 1942-1952.

[86] Robert O. Kempf, Carriage Shed, Bldg. No. 9, 1/31/1969. Individual Building Data, Form 10-768, U.S. Department of Interior, NPS. SAHI Maintenance Files.

[87] Mrs. Harold Kraft to Robert Weitzman, April 10, 1957. TRA, HSC, SAHI-9800, Box 12, Folder 5, SAHI Archives.

[88] Ibid.

analysis and historic photographs that the window trim and sashes of the Farm Shed were painted green during this period (Appendix D).

1963 - 1969

The maintenance of the Farm Shed by the TRA helped to preserve the building as an example of the farm buildings at Sagamore Hill. When the NPS took over the site, the Farm Shed appeared to be in good condition (fig. 40).

Figure 40. Farm Shed: West elevation, ca. 1963.

The *Individual Building Data* form for the "Carriage Shed; Bldg. No. 9" dated January 31, 1969 recorded that the structure was in good condition overall and good structural condition.[89] The survey of the building included photographs depicting the condition of the building at the time (fig. 41). The photographs indicated that the building remained in good condition and depicted that the siding of the building was painted a lighter color than the window trim and sashes (Appendix D).

From the 1960s through the late 1980s, the Farm Shed was used as an interpretive space for the site.[90] The interior of the shed was used to display carriages, harnesses, lanterns, and other items related to the carriages. In order to close the displays off to the public, a picket fence barrier was installed just inside the west elevation doorway (fig. 42). When the displays were removed, the barrier was also taken down.

No building alterations were documented between 1963 and 1986, when the shed was rehabilitated by the NPS.

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[89] Kempf, Carriage Shed, Bldg. No. 9, 1/31/1969.

[90] This use may have begun with the TRA and was inherited by the NPS, but there was no documentation of this use in the TRA files researched for this report.

Figure 41. Farm Shed: North elevation and west elevation gable, 1969. Note lighter siding paint color and darker window trim and sashes.

Figure 42. Farm Shed: Interior interpretive displays, 1988.

1986[91]

The Farm Shed was part of the "Rehabilitation and Stabilization of Three Outbuildings" at Sagamore Hill in 1986. As described in the Gardener's Shed Alterations section, the project was done by the NAHPC. The carpentry was done by Paul Sazani and Stuart Williamson, and the exterior painting was contracted to Pettiford and Pettiford.

Structural

The rehabilitation of the Farm Shed required a minimal amount of structural work. This included some replacement of framing members and wood consolidation.

A portion of the north sill was deteriorated and required replacement. Approximately five feet at the west end of the north sill was replaced with 2 inch by 6 inch (nominal) Douglas fir treated with preservative. This was the only sill repair. All sills were subsequently treated with Cuprinol.

The only other structural repair was to the northeast corner post, where ten inches of the bottom of the post was replaced with 4 inch by 6 inch (nominal) spruce lumber. The repair was joined to the existing post with a scarf joint.

The sills and studs were treated with "Beta Consolidant" as needed.

Siding

The Farm Shed was constructed with drop or novelty siding, previously described. The rehabilitation of the shed required replacement of portions of the siding on three elevations. All of the deteriorated siding was replaced with ⅞ inch thick ponderosa pine that was milled on site to replicate the existing siding. The siding was fastened with Tremont #N-21, steel cut nails, common #8D galvanized.

On the north elevation of the shed, the bottom three courses were replaced. On the east elevation, approximately one-third of the siding needed replacement. New siding was installed from the sill level up to about the middle of the first story window opening. The drop siding on the south elevation had been damaged by the water run-off from the roof of the Chicken House. Approximately three-quarters of the siding was deteriorated and needed replacement. Replacement siding was installed from the sill level up to the extant original siding.

The rehabilitation of the exterior included the replacement of all corner boards. They were replaced with 1¼ inch thick clear pine boards milled to dimension on site. The corner boards were fastened with 8D and 10D cut finish nails, galvanized. During the current investigation,

[91] The information in the following section references the report by Paul Sazani. "Completion Report Rehabilitation and Stabilization of Three Outbuildings, Sagamore Hill National Historic Site" (Boston, MA : North Atlantic Historic Preservation Center, 1987. Copy at NER, Lowell, MA).

the existing corner boards were 4 inches wide. This was presumably the width of the original elements, though the report does not elaborate on that detail.

Window Openings

The east elevation first story and gable windows were deteriorated from water damage. The report noted that the window frames (surrounds) and sills were almost completely destroyed. New material for the windows was milled on site duplicating existing size and dimensions. Repairs were also made to the window jambs on the east elevation. The photographic documentation reviewed from the project did not depict the deteriorated windows in detail. It was presumed that the "window frame" discussed in the report referred to the window surround/trim and not the actual framing for the window openings. If repairs were made to the framing of the window opening, they would have been noted under structural repairs.

Roof

The asphalt shingle roof of the Farm Shed and the wood shingle roof below that were both removed. The deteriorated wood lath under the shingles was replaced as needed with new lath milled on site to the original dimensions. A new wood shingle roof was installed using white cedar shingles with an average exposure of 5¾ inches. A total of 22 courses were installed. The ridge of the roof was covered with WR Grace Ice and Water Shield and 6 inch wide pine boards were placed on both sides of the ridge.

Some repairs were made to the soffits, eaves, and rakes of the building. This included minor replacement of wooden materials that were milled on site and epoxy repairs.

Once the rehabilitation was completed, Hydrozo water repellent was applied to the roof.

Painting

All new siding and trim materials were primed before installation. Upon completion of the project, the exterior siding and trim of the Farm Shed was prepped, primed and painted. Contractor, Pettiford & Pettiford, performed the work. Similar to the Gardener's Shed, the building was painted with a medium gray body color (Benjamin Moore GN-76) and a lighter gray window trim color (Benjamin Moore GN-3).[92] Completion photographs of the building indicated that the medium gray was applied to most of the building elements and the lighter gray was applied only to the window sashes and trim. Exterior paint samples were taken in 1986 but there were no records of a paint analysis from that project. It appeared that these colors were based on an approximation of the historic paint colors (Appendix D).

[92] Though the Benjamin Moore Co. no longer uses this numbering system, the HAP paint lab has some of the older fan decks from Benjamin Moore and the color swatches matching the 1986 numbers were found in those fan decks.

The 1986 rehabilitation and stabilization represented the most extensive work performed on the Farm Shed. The efforts of the NPS ensured the preservation of the Shed as a part of the Sagamore Hill farm building complex.

1986 – Present

Since 1986, the Farm Shed has received regular maintenance by Park staff. Maintenance files indicated that the shed was painted periodically and Park staff noted that a group of volunteers painted the outbuilding in the late 1990s. There have been no significant changes to the building since 1986.

The maintenance file for the Farm Shed included a *Condition Assessment Survey - Supplement* that noted that five windows should be removed and replaced, as well as two Farm Shed doors.[93] Based on examination of the materials and paint analysis, it was apparent that this work was not performed. Though the current condition of these elements may require some repair, these elements should not be removed and replaced but preserved and repaired with in-kind materials as necessary. This has been the traditional approach to these buildings and should continue to be the policy for preserving the Farm Shed and all other farm buildings on the site (see Character-Defining Features).

Upon the 2002 inspection of the Farm Shed, a work order was created with estimates for repairs to the exterior siding and trim. The work order also included painting the exterior of the building. This work has not been performed but is currently open for bids by private contractors.

[93] Condition Assessment Survey – Supplement, Work Order 257093. SAHI Maintenance Files. The report was not dated and as mentioned, the work was not done.

FARM SHED

CURRENT PHYSICAL DESCRIPTION

The following description of the Farm Shed is meant to augment the descriptions in the preceding sections "Original Appearance" and "Alterations." The descriptions in those sections that are part of the current physical description will not be repeated in detail in the following section.

Exterior Elements

It appears that the Farm Shed has not been significantly altered since the Roosevelt period. The exterior of the building retains most of its original elements. When original elements were replaced efforts were made to match the new elements to the historic building materials. The exterior elements of the shed are currently painted gray, which paint analysis indicated was a common choice for the exterior, though in varying shades (Appendix D).

The Farm Shed is a rectangular building with a gable roof. The building is oriented with the gables facing east and west and the front facing west. The exterior of the Farm Shed is 13 feet 3 inches wide by 18 feet 3 inches long.

The Farm Shed's foundation is comprised of poured concrete with a large aggregate and rises about 6 inches above grade. The west elevation of the Shed has a concrete ramp leading to the entry doorway and the interior of the building. The ramp appears to be constructed of poured concrete similar to the foundation material, but with a more recent layer of concrete on top. A concrete slab, likely installed by the TRA and previously used to store a dumpster for the concession business, is adjacent to the east elevation.

The exterior walls of the Farm Shed are clad with horizontal tongue-and-groove drop siding, also known as novelty siding, that has a 4½ inch reveal. The top edge of each siding board is beveled to fit into the groove on the bottom of the board above. The corners of the shed are trimmed with 4 inch wide corner boards extending to the eaves of the roof.

The Farm Shed doorway is on the west elevation, extends the full width of the building, and has double doors. Both doors are 6 feet 3 inches wide and 8 feet 8 inches high. The doors are constructed with vertical tongue-and groove boards that are framed with stiles and rails. The exterior of each door has two panels with an X-brace in each panel. The inside of both doors are Z-braced and have an additional diagonal brace. Each door is hung with three strap hinges on iron pintles. Four of the pintles are driven into the framing of the Shed, but the bottom two pintles on the right/south door are mounted on plates that are fastened to the

doorframe. These appear to be replacement pintles, though it was not determined when they were installed.

The loft doorway is also on the west elevation located in the center of the gable. It has a board-and-batten door that is hung on the north/left side of the doorway with strap hinges and secured with a hasp on the south/right side of the doorway. The loft doorway is trimmed with a plain board casing and a cap is installed over the doorway lintel.

The first story of the Farm Shed has five window openings. The north and south elevations both have two window openings placed symmetrically on the exterior wall and the east elevation has one window opening placed in the center of the wall. All of the first story exterior window openings have double-hung, two-over-two sashes. The sashes have cyma recta molded muntins and rails. The window surrounds are constructed with plain boards and a beveled cap is installed over the lintel.

A single window opening is centered in the east elevation gable. The window has one single-pane fixed sash. The window opening is cased with plain board trim and has a beveled cap over the lintel.

The Farm Shed has a gable roof that is covered with wood shingles and plain boards are installed on the ridge. The eaves of the roof extend beyond the walls and are boxed with plain boards. A cyma recta molding with a coved lower edge was applied to the eaves fascia. The gable ends of the roof have a raked soffit and fascia. The same cyma recta molding on the eaves fascia was installed on the raked fascia.

Interior Elements

The interior of the Farm Shed consists of a single room on the first floor and loft space under the gable roof. The first story room is used for storage and to house vending machines for visitors. The loft is used for storing wood and other maintenance related materials.

The first story of the Farm Shed has a poured concrete foundation and a concrete slab floor with a drain in the center. As previously discussed, the entrance ramp has an added layer of concrete over what appears to be the original ramp. The ramp comes to the level of the concrete floor of the building, indicating that the existing floor was also added and is possibly a more recent layer of concrete over an earlier floor.

The interior walls are covered with horizontal ship-lap boards that are painted white. The ceiling is open to the floor joists of the second story loft and the bottoms of the loft floor boards. A timber installed below the level of the floor joists spans the width of the Farm Shed. The timber does not appear to serve any structural purpose and was probably associated with the use of the building during the Roosevelt period. Mesh has been installed below the floor joists and timber to deter birds from roosting there.

The first story window openings have no interior trim except for the east window, which has a 3½ inch plain board casing. The interiors of all the first story windows are covered with plexiglass that has become discolored with age.

The loft of the Farm Shed is an unfinished space with a single doorway on the west elevation. The floor is covered with ship-lap boards fastened with wire nails. Otherwise the loft is open to the roof framing and shingles. The east elevation window opening is framed with 2 inch by 4 inch boards and has no trim.

Structural Elements

The Farm Shed is constructed with dimensional lumber and appears to be a balloon-framed structure. A significant portion of the framing is covered by interior boards but some framing was visible on the first story and the loft. Those elements were fully described in the section on "Original Appearance."

The Farm Shed sills are installed on top of the foundation on the north, east and south elevations. The walls are framed with corner posts and dimensional studs. The roof of the building is framed with common rafters that extend over the plate to form an overhanging eave. Since the doorway spans the full width of the west elevation, an oversized header is installed between the northwest and southwest corner posts.

The extant framing of the Farm Shed appears to be consistent with a balloon-framed structure, which was a well established framing technique by the time the shed was built in circa 1900.

Figure 43. Farm Shed: Looking southeast, 2007.

Figure 44. Farm Shed: Looking southwest, 2007.

Figure 45. Farm Shed: First story, 2007.

Figure 46. Farm Shed: Loft, 2007.

CHICKEN HOUSE

CHRONOLOGY OF DEVELOPMENT AND USE

Construction

The Chicken House was constructed as part of the farmyard at Sagamore Hill. Documentary evidence indicated that it was historically known as the Chicken House[94] and the "poultry house"[95] and was primarily used to house the poultry kept at the Sagamore Hill farm (see "Historic Use").

The Chicken House was adjacent to the south elevation of the Farm Shed. Both of these buildings, as well as some smaller structures, constituted the small farmyard at Sagamore Hill, northeast of the main house. The building materials used to construct the Chicken House were similar to those used for the Farm Shed and it appeared that the buildings were constructed during the same period. The most apparent similarity was the exterior drop siding used on both buildings. The placement of two window openings on the south elevation of the Farm Shed suggested that it was built before the Chicken House, since once the Chicken House was built those windows were effectively blocked off. As previously described, the Farm Shed was apparently built in circa 1900. Paint analysis indicated that the Chicken House was built concurrently or soon after the Farm Shed (see Appendix D). Most historic photographs depicted both buildings and, though not identical, they appeared to be a matched pair (figs. 34-37 & 48).

Physical and documentary evidence suggested that the Chicken House was constructed in circa 1900, most likely soon after the Farm Shed. Correspondence from 1902 regarding a painting contract from the previous year mentioned the "poultry house" within the scope of work (see "Original Appearance").[96] The Chicken House appeared to be the only structure on the site that fit the description of a "poultry house" and it was assumed that the letter referred to that structure. This suggested that the building was constructed prior to 1901.

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[94] *List of Classified Structures-Sagamore Hill National Historic Site* (National Park Service website http://www.hscl.cr.nps.gov/insidenps/reports.asp).

[95] William Loeb to Tomasky, Feb. 3, 1902. Theodore Roosevelt Papers, Vol. 105, p. 251. Library of Congress Collection at Harvard College Library, Microfilm Reel 360.

[96] William Loeb to Noah Seamen, Jan. 14, 1902. Theodore Roosevelt Papers, Vol. 105, p. 174. Library of Congress Collection at Harvard College Library, Microfilm Reel 360.

Loeb to Tomasky, Feb. 3, 1902.

Original Appearance

The Chicken House has retained some of its original elements, including most of the elements on the west gable elevation. Overall the building retained its original massing. Through building investigation, paint analysis, examination of historic photographs, and review of documentation it was possible to determine some aspects of the original appearance of the Chicken House. The following descriptions of original appearance are based on existing building material and the documentation of the building.

Exterior Elements

General Configuration

The farmyard at Sagamore Hill included the Chicken House, which was located less than two feet south of the Farm Shed. Historic photographs depicted a fenced in poultry yard extending from the south elevation of the building (figs. 47 & 48).

The Chicken House was a long rectangular building with a gable roof. It was a single story building with a loft and measured 12 feet 2¾ inches wide by 32 feet 2¼ inches long (fig. 50). The gable ends of the building faced east and west, and the west elevation was level with the west elevation of the Farm Shed.

Foundation

The Chicken House had a concrete foundation that was 6 inches wide and rose about 4 inches above grade. The foundation extended around the entire perimeter of the building and the frame of the structure was erected on top of it.

Siding

Like the Farm Shed, the Chicken House was sided with drop siding, also known as novelty siding, with a 4½ inch reveal. As previously described, drop siding was horizontal siding constructed with tongue-and-groove boards and was introduced in the late nineteenth century (see "Farm Shed, Original Appearance").[97] The corners of the building were trimmed with 4 inch wide corner boards. As with the Farm Shed, the use of drop siding on the Chicken House supported the circa 1900 date of construction.

[97] Cyril M. Harris. *American Architecture an Illustrated Encyclopedia*, (New York: W.W. Norton & Company, Inc., 1998) p. 104.

Figure 47. Richard Derby, Jr. at Chicken House, ca. 1918. Photograph depicts south elevation and fenced poultry yard.

Figure 48. View of farmyard at Sagamore Hill from second story of Stable & Lodge, depicting (r. to l.) Chicken House, Farm Shed, and Cow Shed, ca. 1920.

West Elevation

Historic photographs depict the west elevation façade of the Chicken House as it currently appears (figs. 34-37 & 48). There was a single doorway on the south/right side of the façade. A loft doorway at the gable provided access to the second-story loft. The doorways were the only openings on this elevation. The rest of the wall was sided with drop siding. Paint analysis indicated that a majority of the extant siding was original to the building.

The first story doorway led to the west room (Room 101) of the Chicken House. The doorway had a board-and-batten door with a window opening in the top half. The door was constructed with 4½ inch wide tongue-and-groove boards and was 2 feet 6¼ inches wide by 6 feet 3¼ inches high. It was hung with two strap hinges fastened to the north/left side of the doorway. The door window had a four-pane sash that was hinged at the bottom and had a small catch at the top to keep it closed. The doorway had a 2¾ inch wide casing with a cap. The top piece of the casing and cap extended to the left to form the frieze and sill below the loft doorway.

The loft doorway was centered on the west gable-end. The doorway was 3 feet 9 inches wide by 4 feet high and had a board-and-batten door. The door was hung with two strap hinges attached to the north/left side of the doorway and was secured with a hasp and hook on the south/right side. The loft doorway had a 2¾ inch wide casing with a cap over the lintel.

The west elevation had two unique elements. One was a hook on the north/left side of the elevation that held a short ladder for accessing the loft. The hook and ladder appeared in many historic photographs and in some cases the ladder was leaning against the building below the loft doorway. To the south/right of the first story doorway was a vertical board with a narrower board or rail attached to it. The photographs did not clearly show its function but it may have been an anchor for some of the chicken wire fencing that enclosed the yard south of the building.

North Elevation

The north elevation of the Chicken House faced the Farm Shed and was completely enclosed. The wall was clad with drop siding that terminated at the corner boards. At the top of the wall below the overhanging eaves was a plain frieze.

East Elevation

The east elevation of the Chicken House had one door and a window opening in the gable. It was also clad with drop siding. The extant doorway was on the south/right side of the elevation and appeared to be original to the building. However, the doorway was altered by the TRA and a modern two-panel door had been installed in the doorway. The window opening was installed in the center of the gable and was 1 foot 11 inches wide by 2 feet 5½ inches high with a fixed sixteen-pane sash with 4 inch by 5¾ inch lights. The window opening was trimmed with a 2¾ inch wide surround. Paint evidence indicated that both the window sash and casing were original elements of the building.

South Elevation

Historic photographs indicated that the south elevation had large multi-paned window sashes or doors in the center of the building. There were smaller window openings at the east end of the south wall and likely the west end as well. However, these window sashes were removed during subsequent alterations to the building and the photographs were the only record of the original configuration.

The south elevation of the Chicken House would have been the practical choice as the site for openings allowing poultry access into the fenced yard south of the building. It was also the recommendation of the period literature on farm buildings to install large windows facing the south or southeast to admit sunlight and keep the building warm.[98] The historic photographs depicted multi-paned openings on the south elevation of the building (fig. 47). The photographs depicted what appeared to be two sets of multi-pane doors in the center of the south elevation. Each set had two doors and each door had fifteen panes of glass (3 panes wide and 5 high). One set of doors would have opened into Room 102 and the other would have opened into Room 103. The west window opening on the south elevation opened into Room 101 and appeared to have a single sash with twelve panes of glass (3 wide by 4 high). However it is possible that this was a storm sash in the window opening.

The rest of the south elevation was clad with drop siding, some of which was extant. The extant siding of the south wall also exhibited an anomaly that appeared to be evidence of the original configuration of the window and door openings of the chicken coop (fig. 51). A change in the level of the horizontal siding over the existing window openings on this elevation suggested that the original openings were larger. As discussed above, the historic photographs depicted large window openings and doorways on the south elevation of the Chicken House. Again, period literature noted the importance of sufficient ventilation for poultry houses, as well as large windows on the southern exposure of the buildings.[99] A difference in the siding on the south wall was the only remaining exterior evidence of these elements and appeared to confirm the photographic evidence. There was also extant framing evidence in the interior of the building that supported the existence of the large doors at the center of the south elevation (see "Interior, Room 102"). However, all the evidence did not provide enough information to conclusively determine the details of the original openings (see "Current Physical Description" & "CDFs & Recommendations, Chicken House").

Roofing

The gable roof of the Chicken House was covered with wood shingles and the ridge was covered with ridge boards. The eaves of the roof extended 11 inches beyond the walls and were boxed with a plain boards. The eaves fascia was 6 inches wide and was also enclosed with plain board trim. Unlike the Farm Shed, the Chicken House did not have any decorative trim elements or moldings. The gable-ends of the roof had an 11½ inch wide raked soffit with a raked fascia. The raked soffit was also enclosed with plain board trim.

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[98] Byron D. Halsted. *Barns, Sheds and Outbuildings*. (New York: Orange Judd Co., 1881; reprinted by The Stephen Green Press, Brattleboro, VT, 1977) p. 86.

[99] Ibid.

Interior Elements

Plan

The Chicken House was constructed with a first story and a second story loft. The first story of the building was divided into rooms by partitions that ran north-south (fig. 50). Each room had a doorway near the south end of the partition wall and/or the exterior wall. There were also openings on the south wall of each room, which were previously described. The area of the first story was approximately 384 square feet.

Some original interior elements appeared to be extant, but alterations have removed and covered some original features. It appeared that the extant rooms at the west end of the building (Rooms 101 & 102) were most representative of the original structure and that the east room (Room 103) was altered, with little evidence of its original configuration discernable.

Room 101

Room 101 was at the west end of the Chicken House and was accessed from the exterior via the west elevation doorway. This room was 9 feet 8 inches wide by 11 feet 3¼ inches long.

Immediately over the threshold was a 4 inch step down to the floor level. It was unclear whether the extant concrete slab floor was the original floor, though the technology for poured concrete existed at the time of construction and the foundation as poured concrete. Also, the floor extended under what appeared to be the original partition between Room 101 and Room 102. If the original floor was not concrete, it was certainly concrete by the end of the Roosevelt period (see "Alterations").

The west and north walls were covered with horizontal shiplap boards that were 7 inches wide. The south wall was covered with similar boards and had a window opening that was centered on the wall. As previously described, the window had been altered and the original sash was not thoroughly documented.

The partition between Room 101 and Room 102 formed the east wall of Room 101. The partition was framed with 2 inch by 6 inch and 2 inch by 4 inch lumber which was exposed in Room 101. The wall of the partition was built with vertical tongue-and-groove boards. The doorway to Room 102 was located at the south end of the partition wall.

The doorway to Room 102 was framed with 2 inch by 4 inch lumber and the threshold of the doorway was approximately 8 inches above the floor level. The doorway had a Z-braced door constructed with tongue-and-groove boards. The door was hung on the south/right side of the doorway with strap hinges and had a handle on the left side. There was no evidence of a latch for the door.

The ceiling of Room 101 was open to the framing and flooring of the second story loft. The walls, ceilings, and surfaces of the doors facing in to Room 101 were all painted white. In situ examination of the finishes indicated that the earliest layers were whitewashes.

Room 102

Room 102 was an interior room created by two interior partitions. It was the only room with evidence of its former use as an area for housing poultry.

Room 102 was a rectangular room that measured 6 feet 2 inches wide by 11 feet 5¼ inches long. The room was accessed by a doorway in the west partition wall from Room 101 and had a doorway to Room 103.

Like Room 101, the extant floor was concrete, which was possibly the early floor material.

The west partition wall was covered with vertical tongue-and-groove boards. Examination of the paint evidence indicated that the wall was originally painted a dark green and later covered with several layers of whitewash. Whitewash was recommended for chicken coops and was typically used on the interior of farm buildings.[100]

The north wall was covered with horizontal shiplap boards and was also white washed.

Figure 49. Chicken House: Room 102, east partition wall and evidence of roost on both the north and east walls, 2007.

The east wall was constructed with 2 inch by 6 inch and 2 inch by 4 inch farming and was covered with different types of boards. The lower 2 feet of the wall was covered with vertical tongue-and-groove boards. Above those were five courses of horizontal shiplap boards. The rest of the wall was originally open to Room 103 (now enclosed by new framing and wallboard) and was covered with chicken wire. The boards on the east wall were whitewashed.

The extant wall materials indicated that a roost for the poultry was situated at the north end of Room 102. There were scars on the west wall where a board to support the roost may have been attached. On the north wall there was a board mounted at the same height as the scar

[100] Ibid, p. 97.

on the west wall. And along the east partition wall was another scar indicating that a sloped board had been attached to that wall (fig. 49). The evidence suggested that this was where one of the roosts was installed.

As previously discussed, historic photographs indicated that the south wall was enclosed with a set of double doors that had multiple panes of glass. Most evidence of the doors was removed during alterations to the building and now the south wall has a single window opening with double-hung sashes. However, there was evidence of framing for an opening/doorway that would have occupied most of the south wall (see "Alterations," & fig. 64). At the end of the east wall was a 2 inch by 6 inch stud that was positioned with the flat side against the exterior wall. Above the stud was a 2 inch by 6 inch header that ran the width of the room and was mortised into the post in the southwest corner of the room. The positioning of the stud and the existence of the header suggested that the south wall was framed for a large opening. All of the other extant framing on that wall was added during subsequent renovations and the wall itself is open to the tarpaper and exterior siding. Both the physical and documentary evidence supported the existence of a large opening on the south wall that may have been a doorway with double doors leading to the fenced-in chicken yard.

The ceiling of Room 102 was open to the floor framing and flooring for the loft. These elements were also coated with several layers of whitewash.

Room 103

Room 103 was extensively altered by the TRA and the existing materials cover any evidence of the original configuration of the east end of the Chicken House. The existing room measured 15 feet 6 inches wide (east-west) by 11 feet 3 inches long and was finished with modern materials (see "Alterations").

It was possible that the original appearance of the east end of the Chicken House was similar to the west end. The existing room may have been divided into two rooms with a partition similar to the extant partition between Room 101 and Room 102. Extant framing indicated that the east wall had a doorway in the existing opening, but the door was replaced and the doorway slightly altered. Historic photographs indicated that the south wall had multi-pane openings like those in Room 102, but these were not depicted clearly in the photographs. Currently the south wall has two window openings with double-hung sashes.

Loft

The second story loft of the Chicken House was an unfinished space that was accessed via the west elevation loft doorway. The floor was covered with 3½ inch wide tongue-and-groove boards that were fastened with wire nails. The east elevation window illuminated the loft area and had no interior trim. The loft area was open to the roof framing and roofing materials. The tops of the posts framing the south and north walls and the north and south plates were also visible in the loft.

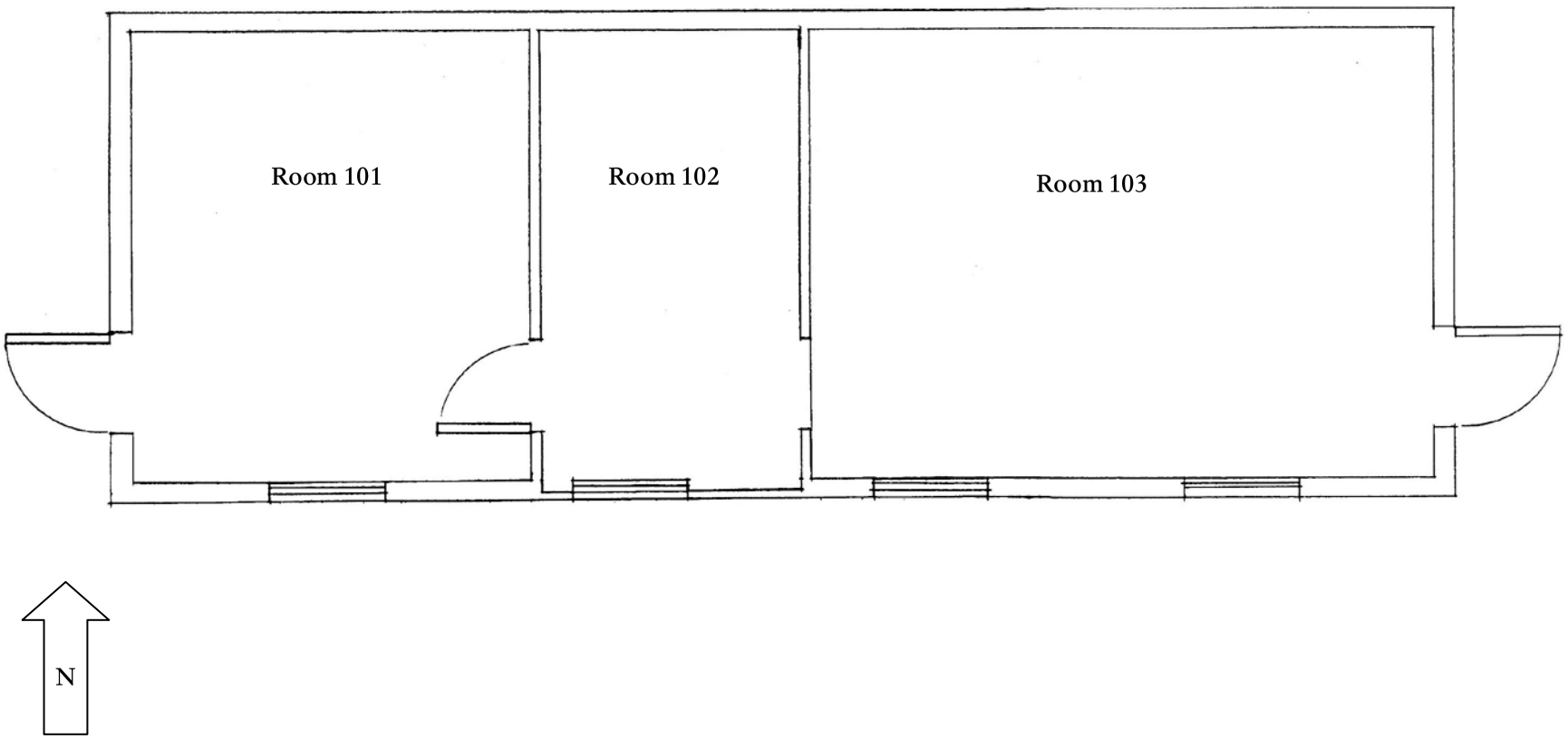

Figure 50. Chicken House: Existing first floor plan (not to scale), 2007.

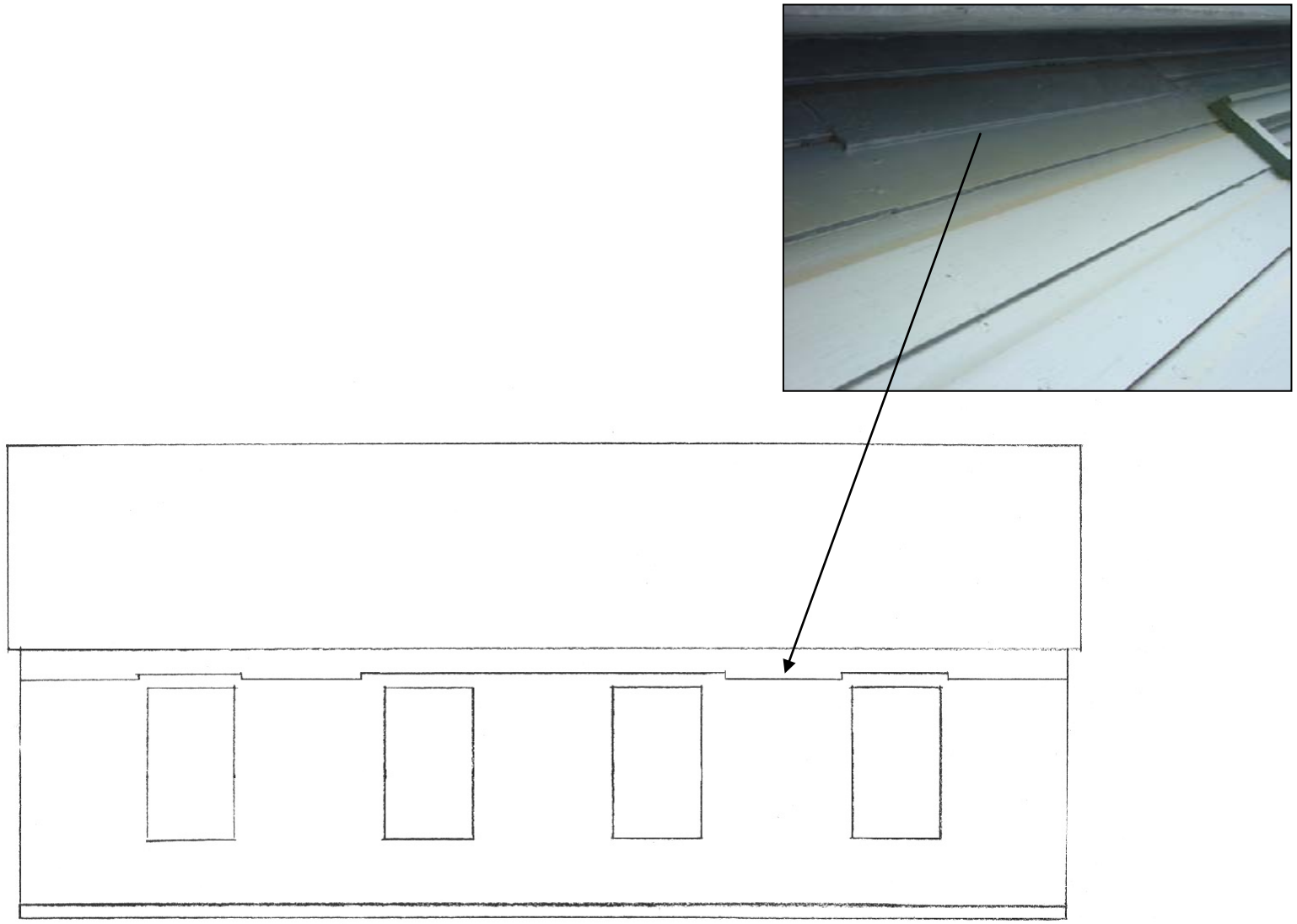

Figure 51. Chicken House: South elevation illustrating anomaly in siding that may represent evidence of earlier openings (not to scale), 2007.

Structural Elements

The structural framing of the Chicken House was not typical but was adapted to the function of the building. In NPS documents, the structure has been categorized as balloon-framed, which was apparently the most accurate description. Some of the framing members are exposed on the first story and in the loft, which made it possible to discern the basic framing of the building. However, most of the first story walls were covered and it was not possible to observe the framing in those areas.

The Chicken House was constructed with full dimension 2 inch by 6 inch sills fastened to the poured concrete foundation. The principle framing system for the building was constructed with eight 4 inch by 6 inch posts that extended from the sill to the plate. A post was positioned in each corner and two intermediate posts were installed on both the north and south elevations. The secondary framing between the posts consisted of 2 inch by 4 inch studs.

The extant framing observed on site indicated that a 2 inch by 6 inch header was attached to the posts approximately 8 inches below the plate. The header was notched into the posts so that it both carried the loft floor joists, and also formed the header for the previously described south elevation doorways.

The loft floor joists were constructed with 2 inch by 6 inch lumber to which the tongue-and-groove loft floor boards were attached.

The posts supported 2 inch by 6 inch plates on the north and south elevations. The roof was framed with 2 inch by 4 inch rafters that were notched at the plate and extended beyond the exterior walls to form the eaves. The rafters extended to the peak of the roof and there was no ridge board.

As previously described, the extant partition walls appeared to be historic and were framed with 2 inch by 6 inch and 2 inch by 4 inch lumber. The partitions extended from north to south and were constructed with the wide/flat side of the lumber parallel with the partition wall. The 2 inch by 6 inch loft floor joists formed the header for the wall and a 2 inch by 4 inch rail installed about 4 inches above the floor formed the bottom structural member of the wall. The doorways were framed with 2 inch by 4 inch members. Vertical boards were attached to these framing members to form the wall between Rooms 101 and 102. Since the partition between Room 102 and Room 103 was not a full height wall, an additional 2 inch by 4 inch stud was installed in that partition wall (fig. 49).

The extant framing of the Chicken House indicated that the building was constructed with unique framing that was suited to its primary use as a poultry house.

Original Use

It was well documented that the active farmyard at Sagamore Hill included raising chickens. Theodore Roosevelt was apparently fond of chicken and kept a flock that was primarily for

eating.[101] Roosevelt sometimes had fried chicken with his breakfast[102] and it was usually served with at least one meal a day.[103] As previously discussed, it appeared that the Chicken House was constructed in circa 1900 and its primary function was as a poultry house.

In 1906, Noah Seaman, the Sagamore Hill farmer, was keeping a flock of Barred Plymouth Rock chickens at the farm, as well as some turkeys.[104] Raising chicken continued to be part of the Sagamore Hill farm when Robert Gillespie was superintendent. At that time, about 100 chickens were on the farm. [105] As previously described, historic photographs from that same period depicted the fenced-in chicken yard, as well as the chicken coop (figs. 47 & 48). Historic photographs further indicated that the loft was used for storing hay, which appeared to be depicted in a circa 1920 photograph (fig. 35).

The 1919 Inventory of the Personal Property of the late Theodore Roosevelt included a list of the farm's flock and their value:[106]

CHICKEN YARD

About Seventy-five Chickens	
White leghorn and Rhode Island Reds	$ 50.00
About One Hundred Small Chicks	25.00
	$ 75.00

However, since the inventory is of personal property it does not list the chicken coop.

The account books of Edith Roosevelt indicated that the chicken coop continued to be a part of the Sagamore Hill farm through 1940, when the account books end. The account books further indicated that the sale of eggs from the chickens was generating revenue for the farm.[107] Apparently, a small flock of chickens was kept on site even after Mrs. Roosevelt died. The 1950 insurance company survey noted that there were "a few chickens kept in this building."[108] It appeared that the Chicken House was the chicken coop for the Sagamore Hill farm from circa 1900 through the end of the Roosevelt period in 1948.

The documentary and physical evidence support the conclusion that the Chicken House was the original chicken coop at Sagamore Hill. The earliest documentation of the building referenced it as the "poultry house"[109] and when the property was surveyed in 1950 it was listed as the "Wood Shed and Chicken House."[110] Review of the 1950 documentation suggested that the wood shed was actually attached to the east elevation of the building

[101] Katie O'Rourke Meany, interview by Jessica Kraft, 1969. SAHI Archives.

[102] Charles Sommerville, "How Roosevelt Rests", *Broadway Magazine*, September 1907, 664. Copy at SAHI Archives, CLR Box 1, File 30.

[103] Katie O'Rourke Meany, interview by Jessica Kraft, 1969. SAHI Archives.

[104] Walter Andrews. "Theodore Roosevelt as a Farmer." *Farm Journal.* December 1906. (copy at SAHI Archives, courtesy of Theodore Roosevelt Collection, Harvard College Library) p. 431.

[105] Robert Gillespie, Jr., interview by Jessica Kraft, July 17, 1973. SAHI Archives.

[106] Wilshin, Vol. II, p. 78.

[107] Sagamore Hill Account Book, 1912-1940. Edith Kermit Roosevelt Papers, Box 20, SAHI Archives.

[108] Great American Insurance Co. Inspection and Survey. TRA Materials, box 5, folder 2, SAHI Archives.

[109] Loeb to Tomasky, Feb. 3, 1902.

[110] Great American Insurance Co. Inspection and Survey.

(Appendix A). That would also account for the documented size of the building, which was listed as "about 40 ' (feet)"[111] long, when it is actually 32 feet long (closer to 30 feet, if approximated). Apparently the wood shed was demolished by the TRA when the building was repaired. The 1950 survey also noted that there was a "Small Chicken House"[112] adjacent to the larger chicken house. The early documents of the TRA continued to refer to the building as the "Chicken House."[113] The origin of the Tool Shed/Chicken Coop designation for the building appears to be either later with the TRA or with the NPS.

Of the documentary materials reviewed, the first time the building was listed as the Tool Shed/Chicken Coop was in an NPS form dated January 1969.[114] Robert Gillespie, Jr. mentioned that his father sharpened Roosevelt's axes in the tool shed but did not indicate which building he meant.[115] He may have been referring to the Gardener's Shed, which was historically referred to as the Tool House. The original use of the west room (Room 101) that is now used to display various tools is not known. It may have held some tools but was probably also used to store feed for the poultry.

Most of the physical evidence and visual clues (especially on the exterior) of the building's former use have been removed by alterations. The interpretation of the site will be important in communicating the historic use of the Chicken House to the visiting public.

Alterations

1900 – 1948

The fact that the Chicken House continued to be used as a chicken coop until the 1950s suggested that there were few alterations to the building during that time period. Of the documents reviewed, there was no record of significant repairs or alterations to the building beyond the required maintenance. Comparison of historic photographs of the Chicken House appeared to confirm that the building was not significantly altered from the date of construction in circa 1900 through Edith Roosevelt's residency in 1948.

The earliest record of maintenance to the Chicken House was during the exterior painting campaign of the main house and several buildings at Sagamore Hill in 1901 – 1902. The letter from William Loeb, Theodore Roosevelt's secretary, to Mr. Tomasky requested that the painter fulfill his contract including painting "two small windows in poultry house."[116] Of the documents reviewed none were found that discussed other maintenance or alterations to the building.

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[111] Ibid.
[112] Ibid.
[113] Powell to Smith, December 10, 1951.
[114] Robert O. Kempf. NPS Form 10-768, Individual Building Data, Tool Shed/Chicken Coop, Bldg No. 10, 1/31/1969. SAHI Maintenance Files.
[115] Robert Gillespie, Jr., interview by Jessica Kraft, July 17, 1973. SAHI Archives.
[116] Loeb to Tomasky, Feb. 3, 1902.

Exterior paint analysis indicated that the Chicken House was painted several times during the Roosevelt period but did not indicate further alterations. The significant alterations to the building occurred during the TRA period of ownership.

1950

The Chicken House was listed under "Miscellaneous Sheds" as the "Wood Shed and Chicken House" in the insurance inspection and survey dated June 1950 (Appendix A). It was described as a frame building about 40 feet by 14 feet by 9 feet high with a concrete and dirt floor. The survey also noted that the building was in fair condition and had no heat or light.[117] The photographs with the insurance documents included a view of the west elevations of the Chicken House, Farm Shed, Cow Shed and surrounding farmyard (fig. 38). A general suggestion of the survey was that all miscellaneous sheds be torn down and that it would not destroy the historic value of the memorial site. Though some of the smaller sheds were removed, the Chicken House survived.

1951

The 1951 estimates from E.W. Howell Company for re-roofing and painting several outbuildings at Sagamore Hill included the Chicken House (see "Farm Shed, Alterations"). In that document the building was grouped with the adjacent Farm Shed and they were listed as the "Chicken House & Adjacent Garage."[118] The estimates for the Chicken House, as with the other outbuildings, included asbestos shingles, "Firechex" asphalt shingles, and 10-to-15-year asphalt shingles, as well as "2 coats of gray paint the same as the present color."[119] Though none of the work was budgeted, the TRA appropriated funds to do some of the work.[120] Photographic and written Documentation of the Chicken House by the NPS in the 1960s indicated that the roofing was asphalt shingles, which was most likely the roof installed by the TRA.[121] Since the appropriation was made in December 1951, the work was probably accomplished in 1952.

1956 – 1957

The TRA constructed a Souvenir Shop and Canteen for visitors in 1956. The building was situated southeast of the Chicken House and Farm Shed and attached to the east elevation of the Chicken House (fig. 52). The plan called for the east end of the chicken coop (Room 103) to be converted into storage for the Canteen. Though no further documentation of these

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[117] Great American Insurance Co. Inspection and Survey. TRA Materials, box 5, folder 2, SAHI Archives.

[118] Powell to Smith, December 10, 1951.

[119] Ibid.

[120] Minutes of the Executive Committee Meeting of the Sagamore Hill Committee, December 18, 1951, p. 39. TRA, HSC, SAHI – 9800, Box 8, Folder, Executive Committee Minutes 1942-1952.

[121] Robert O. Kempf, Carriage Shed, Bldg. No. 9, 1/31/1969. Individual Building Data, Form 10-768, U.S. Department of Interior, NPS. SAHI Maintenance Files.

changes was discovered during the recent research, it appeared that renovation of the Chicken House in 1956 included the most significant changes to the building. The changes included alterations to the south elevation and Room 103.

During the renovation of the Chicken House, the south elevation was altered to its current configuration. The large openings with multi-light doors and window sashes were removed and in-filled to accommodate window openings with double hung, six-over-six sashes. In all, four new double-hung sashes were installed and the existing window sashes and doors were removed. The in-filled siding on the south elevation replicated the drop siding used on the rest of the building. It appeared that the east elevation doorway was also altered at that time. The extant door is a two-panel stile-and-rail door that was probably installed in 1956. Paint analysis indicated that the left doorway casing was also replaced at that time. The casing was replaced with 4¾ inch wide trim that does not match the 2¾ inch wide casing on the right side of the doorway. Window shutters were also installed on the south elevation during the renovations. The alterations effectively removed the exterior evidence of the building's former use as a chicken coop.

The renovation of the Chicken House included some interior changes as well. The east end (Room 103) of the building was converted into a storage room for the Canteen. The changes included removing existing building material and installing modern materials. The interior walls and ceiling were all covered with wallboard with battens at the seams. Shelving was installed along the west and north walls and utility lighting was installed. The alterations to Room 103 covered over evidence of the earlier structure and significantly altered the use of the rooms.

The area west of the souvenir shop and canteen and south of the Chicken House (encompassing the former chicken yard) was turned into a picnic area. As pointed out by Gina Bellavia, the addition of the new building in relation to the existing historic structures created a group of buildings that appeared to be historically related[122] but did not exist during the Roosevelt period. The addition of the Souvenir Shop and Canteen not only altered the Chicken House, but also the surrounding farmyard that had been an important part of life at Sagamore Hill.

Soon after the renovations in 1957, the Chicken House was included in the painting contract for the outbuildings at Sagamore Hill (see "Farm Shed, Alterations"). Given that it was now attached to the canteen, it made sense that the paint scheme should "match the entire color scheme of the Souvenir Shop."[123] Paint analysis and review of historic photographs indicated that most of the exterior elements of the Chicken House were painted gray and that the window trim and sashes, as well as the window shutters were painted green during this period (Appendix D).

[122] Bellavia and Curry, p. 152.
[123] Mrs. Harold Kraft to Robert Weitzman, April 10, 1957.

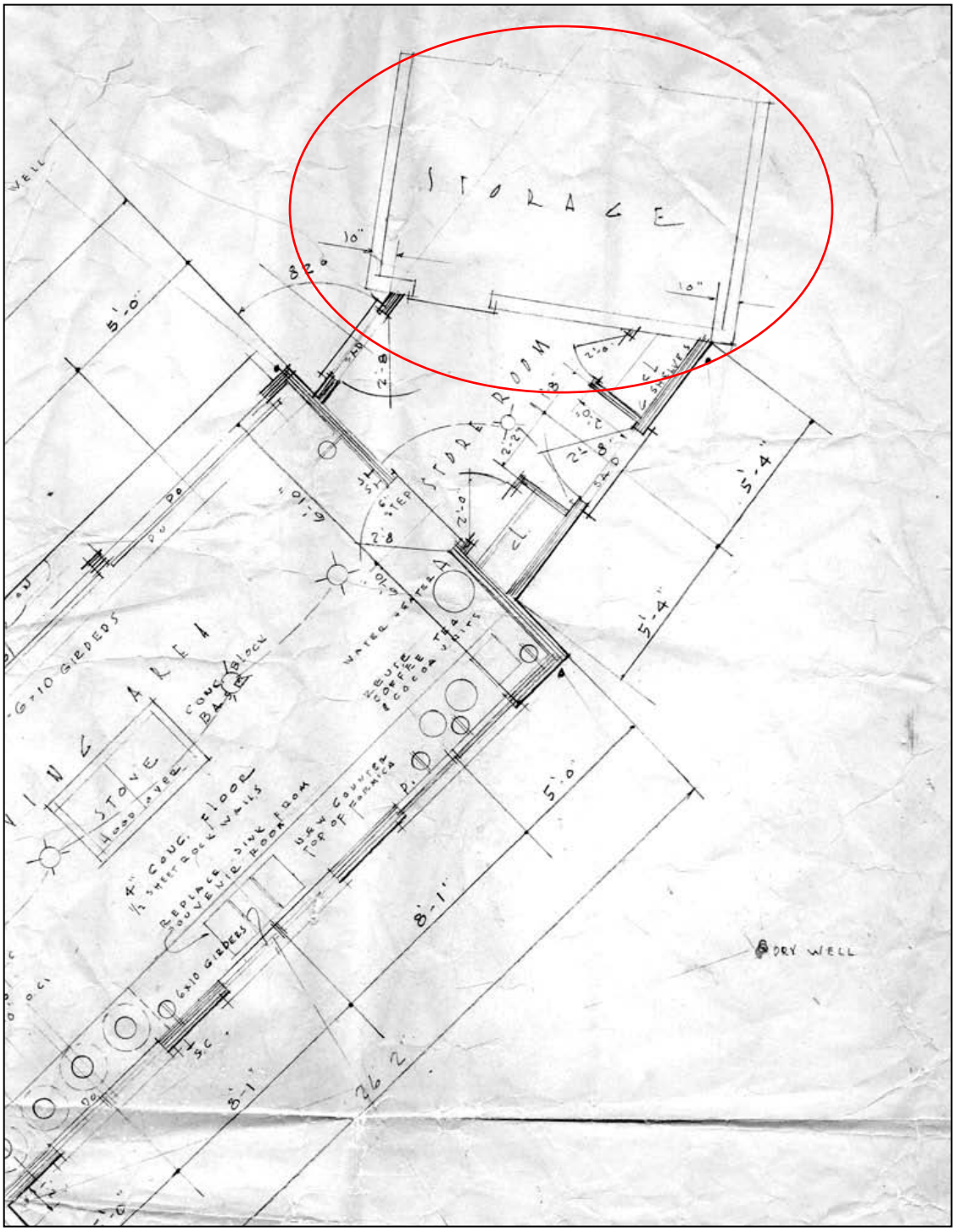

Figure 52. Floor plan of Canteen: Chapman, Evans, & Delehanty, 1956. Plan depicts east end of Chicken House (circled in red) as a storage room (Room 103).

1963 - 1969

After the 1956 – 1957 alterations, the Chicken House was well maintained by the TRA and was in good condition when the NPS took over Sagamore Hill. The west elevation of the building retained its original elements, preserving some evidence of the former structure (fig. 53).

Figure 53. Chicken House: West elevation, ca. 1970.

The *Individual Building Data* form for the "Tool Shed/Chicken Coop; Bldg. No. 10" dated January 31, 1969 recorded that the structure was in good condition overall and good structural condition. The form noted that the original use of the building was as a chicken house and that it dated to approximately 1885. It also recorded that the Chicken House was attached to the Canteen and that a portion of the building was used as Canteen storage. [124]

Since the 1960s, and possibly earlier, the west room of the Chicken House (Room 101) has been used as an interpretive space for the site.[125] Primarily Room 101 has been used to display tools but has also been used to exhibit whetstone sharpening wheels and other items related to the Sagamore Hill farm. In order to close the displays off to the public, a picket fence barrier was installed just inside the west elevation doorway (fig. 62).

The research did not uncover any documentation of alterations to the building between 1963 and 1986, when the Chicken House was rehabilitated by the NPS.

[124] Kempf, Tool Shed/Chicken Coop; Bldg. No. 10, 1/31/1969.

[125] This use may have begun with the TRA and was inherited by the NPS, but there was no documentation of this use in the TRA files researched for this report.

Figure 54. Chicken House: West elevation gable, ca. 1980. Note lighter siding paint color and darker window sash in door.

Figure 55. Chicken House: South elevation, ca. 1980. Note paint scheme and connector to Canteen on right side of image.

1986[126]

The Chicken House was one of the outbuildings included in the "Rehabilitation and Stabilization of Three Outbuildings" at Sagamore Hill in 1986. As previously described, the project was done by the NAHPC and the project staff included Richard Crisson, Historical Architect, Paul Sazani, Project Supervisor and Stuart Williamson, Woodcrafter. As with the other outbuildings the exterior painting was performed by Pettiford and Pettiford (see, "Gardener's Shed Alterations").

Project objectives included determining whether or not the south elevation of the Chicken House had been altered, when it had been altered, and whether it could be restored. After reviewing historic photographs and documents it was concluded that the building was altered but that the date was not known. As previously discussed, the current research reached the same conclusions and speculated that the changes took place in 1956 – 1957 when the Souvenir Shop and Canteen were constructed. The project in 1986 considered restoring the Chicken House to its former appearance but Richard Crisson and Dwight Pitcaithley, Regional Historian, determined that there was not enough evidence to offer conclusive information for the restoration of the south elevation.

The project staff proceeded with the rehabilitation and stabilization of the building as it existed and did not make any significant alterations. No alterations were made to the interior of the building during the 1986 project or any other subsequent projects.

Photographs of the Chicken House prior to and during the project indicated that the connector between the building and the Canteen had been removed by 1986. That work probably coincided with the renovation of the Canteen as public restrooms, which occurred in circa 1984.[127]

Structural

The most extensive structural damage was found on the north elevation of the building. The deterioration was apparently the result of water coming off of both the Chicken House roof and the Farm Shed roof. The report noted that there were drainage problems between the two buildings and that the Park planned to address the issue.

The water damage on the north elevation had not only caused damage to the wooden elements but had also affected the foundation. Repairs were made to the north elevation foundation and the northeast corner using "Acryl #60" to bond the new cement to the existing material. The north sill was completely deteriorated and was replaced with 2 inch by 6 inch Douglas fir. Copper flashing, which was not an original feature, was installed over the sill to protect it from further damage. Approximately two thirds of the northeast corner post was replaced with 4 inch by 6 inch Douglas fir that was joined with a half-lap, and fastened

[126] The information in the following section references the report by Paul Sazani. "Completion Report Rehabilitation and Stabilization of Three Outbuildings, Sagamore Hill National Historic Site" (Boston, MA : North Atlantic Historic Preservation Center, 1987. Copy at NER, Lowell, MA).

[127] No information was found regarding the addition of the restrooms to the Canteen during the current research but presumably that took place around the time when the Ice House was being repaired (1983 – 1984). The connector was definitely removed by the time the 1986 project began.

with five-eighths threaded rod and marine epoxy. The center post on the north elevation was blocked with fir and the studs were sistered on each side when possible.

All of the exposed sills and studs were treated with "Beta Consolidant" as needed.

Siding

The rehabilitation of the Chicken House required repairs to the "double novelty siding" or drop siding on three elevations. On the north elevation, the lower courses were deteriorated, necessitating first repairing the sill then replacing four courses of siding. Additional siding on that wall was repaired or replaced as needed. The east elevation required the removal and replacement of approximately half of the siding. On the south elevation the west window was severely damaged and the siding to the left of it in the southwest corner was also deteriorated. The siding in the southwest corner was replaced after the window repairs were completed (figs. 56 & 59). Also, the bottom three courses of siding on the south elevation were replaced. All siding was replaced with ⅞ inch thick ponderosa pine milled on site to replicate the existing drop siding. The siding was fastened with Tremont #N-21, steel cut nails, common #8D galvanized.

The rehabilitation of the exterior included the replacement some of the corner boards. They were replaced with 1¼ inch thick clear pine boards milled to dimension on site. The corner boards were fastened with 8D and 10D cut finish nails, galvanized.

During the current investigation it was determined that the corner boards on the west elevation had not been replaced and were representative of the original elements. In addition few, if any, repairs were made to the west elevation, which retains the original elements to the building.

Window Openings

The west window on the south elevation was deteriorated from water damage. Repairs to the window included replacement of the window sill, framing, and side rails (fig. 56). New material for the window was milled on site duplicating existing size and dimensions. The report did not discuss whether the window sash was repaired or replaced. The existing window does have a vinyl track but the sashes match the other sashes on the south elevation and appeared to date from the TRA renovations in 1956.

Roof

The asphalt shingle roof of the Chicken House was removed and a new wood shingle roof was installed (figs. 57 & 58). The deteriorated wood lath under the shingles was replaced as needed with new lath milled on site to the original dimensions. The new wood shingle roof used white cedar shingles with an average exposure of 5¾ inches. The ridge was covered with WR Grace Ice and Water Shield and 6 inch wide pine boards were installed on both sides of the ridge.

Some repairs were made to the soffits, eaves, and rakes of the building. This included minor replacement of wooden materials that were milled on site and epoxy repairs.

Once the rehabilitation was completed, Hydrozo water repellent was applied to the roof.

Painting

All new siding and trim materials were primed before installation. Upon completion of the project the exterior siding and trim of the Chicken House was prepped, primed and painted. Contractor, Pettiford & Pettiford, performed the work. Similar to the other outbuildings, the building was painted with a medium gray body color (Benjamin Moore GN-76) and a lighter gray window trim color (Benjamin Moore GN-3).[128] Completion photographs of the building indicated that the medium gray was applied to most of the building elements and the lighter gray was applied only to the window sashes and trim (figs. 58 & 59).

The 1986 rehabilitation and stabilization represented the most extensive work performed on the Chicken House.

1986 – Present

Since 1986 the Chicken House has received regular maintenance by Park staff. Maintenance files indicated that the building was painted periodically and Park staff noted that a group of volunteers painted the outbuilding in the late 1990s. There have been no significant changes to the exterior or interior of the building since 1986.

The maintenance file for the Chicken House included a *Condition Assessment Survey - Supplement* dated June 6, 2003 that noted no deficiencies were found and referred to work orders from the previous years.[129] Work orders 101900 and 101891 from 2002 were updated in June 2003 and included the preparation and painting of the building and the replacement of the wood shingle roof. Proposals for the exterior painting of several outbuildings were recently sought from private contractors and the work should be performed during fiscal year 2008.

[128] Though the Benjamin Moore Co. no longer uses this numbering system, the HAP paint lab has some of the older fan decks from Benjamin Moore and the color swatches matching the 1986 numbers were found in those fan decks.

[129] Condition Assessment Survey – Supplement, Work Order 257095. SAHI Maintenance Files. The report was not dated and as mentioned, the work was not done.

Figure 56. Chicken House: South elevation, west window. Repairs to the sill, frame, and rails, 1986.

Figure 57. Chicken House: Repairs to roof, including replacement of wood lath and installation of wood shingle roof, 1986.

Figure 58. Chicken House and Farm Shed: Completion photograph of west elevations, 1986.

Figure 59. Chicken House: Completion photograph of south elevation, west window, 1986. Note different shade of gray on siding and window elements.

CHICKEN HOUSE

CURRENT PHYSICAL DESCRIPTION

The following description of the Chicken House is meant to augment the descriptions in the preceding sections "Original Appearance" and "Alterations." The descriptions in those sections that are part of the current physical description will not be repeated in detail in the following section.

Exterior Elements

The exterior elements of the Chicken House are very similar to those observed on the Farm Shed. The Chicken House is a rectangular building with a gable roof and is situated 1-foot 10-inches south of the Farm Shed. Both sheds are oriented with their gable roof ridges running east – west and have the appearance of a matched pair of buildings constructed to support the farm at Sagamore Hill (figs. 34-37 & 48). Current research indicates that they were likely both built in circa 1900.

The Chicken House sits on a poured concrete foundation. It is clad with drop siding or novelty siding that matches the dimensions of the siding on the Farm Shed. The corners, doorways and window openings of the Chicken House are trimmed with plain boards.

The west elevation of the Chicken House appears to retain most of its original elements (fig. 60). That elevation has a first story doorway to the west room (Room 101) and a loft doorway in the gable. The first story doorway has a board-and-batten door with a window opening in the top half that has a four-pane sash. The loft doorway has a board-and-batten door hung on strap hinges. The loft door has a round hole cut in the bottom left side of the door. The hole was also evident in some historic photographs, but its purpose is not known.

The north elevation of the Chicken House is completely covered with drop siding and has no openings. This may be due to its close proximity to the Farm Shed but is more likely influenced by the buildings original use as a chicken coop. By completely enclosing the north elevation, the building was kept warmer and reduced drafts.

The east elevation of the Chicken House is also sided with drop siding. A first story doorway is located on the south side of the elevation and two-panel door that is 2 feet 4¼ inches wide by 6 feet 2½ inches high and was probably installed when the TRA connected the Chicken House to the Canteen. The east elevation gable has one window that opens into the loft area.

The window opening has a fixed sash with 16 small panes of glass and is trimmed with a plain board casing.

The south elevation has four window openings that are symmetrically placed and have double-hung, six-over-six sashes (fig. 61). The sashes are 2 feet 8 inches wide by 2 feet 3¾ inches high and have six lights measuring 8¾ inches wide by 11½ inches high. As previously described, the windows were installed by the TRA but have not been significantly altered since the 1950s. Like the other elevation, the south wall is sided with drop siding and the corners are trimmed with plain boards. A variation in the horizontal line of the siding near the top of the south wall suggests some earlier elements of the building. Following the level of the horizontal siding it is higher over the all the window openings and continues to be higher over the entire middle bay of window openings (fig. 51). The difference in the siding appears to outline the former openings of the chicken coop. Though the photographic evidence and the interior framing elements support this, there is not enough information to determine the exact size of the earlier openings without further investigation.

The roof of the Chicken House is covered with wood shingles and the ridge was covered with ridge boards. The building has overhanging eaves that are boxed with plain boards and the edges of the gable slopes project beyond the gable-end walls and are also enclosed with plain board trim.

The landscape around the Chicken House is level. The west elevation has a walkway leading to the west doorway and is otherwise grassed over. On the south side is a picnic area that was installed by the TRA. The east elevation has an elevated concrete slab that was installed when the building was connected to the Canteen. The slab is about 4 inches above grade and is level with the top of the building's foundation and the east elevation doorsill. This could potentially cause problems with water draining into the east room (Room 103) of the Chicken House. Drainage is also an issue on the north side where and gravel and below grade drain pipes are installed between the Chicken House and the Farm Shed to accommodate the rain water coming off of both roofs.

Interior Elements

Plan

The interior of the Chicken House has three rooms that are separated by north-south partition walls that appear to be original to the building (fig. 50).

Room 101

The west elevation doorway of the Chicken House leads to Room 101. Room 101 is a rectangular room that is used to display tools that are part of the Park collection.

The floor level is about 4 inches below that of the doorway threshold. The floor is covered with a poured concrete pad. A small area of the room in front of the doorway is closed off by a picket fence and locked gate, restricting visitors from the display area.

The exterior walls of the room are covered with horizontal shiplap boards that are painted white (fig. 62). The east wall is a partition wall between Rooms 101 and 102 and was built with vertical tongue-and-groove boards and dimensional framing that is exposed to Room 101. Tools and farming implements are hung on the north and west walls and a shelf is installed on the east partition wall for display.

There is one window opening roughly centered on the south wall. The doorway to Room 102 at the south end of the partition wall has a board-and-batten door that opens in to Room 101.

The ceiling of Room 101 is open to the framing and flooring of the second story loft and is also painted white.

Room 102

Room 102 is a small rectangular room that appears to retain some features of the chicken coop (figs. 63 & 64). The room is currently used as storage by the Park and is not accessible to visitors.

Each wall of Room 102 is different (fig. 63). The west partition wall (between Room 101 and 102) has vertical boards that extend from the floor to the ceiling. The north wall is covered with horizontal shiplap boards from floor to ceiling. The east wall, which is a partition between Rooms 102 and 103, is covered with vertical boards at the base of the wall, and horizontal boards above those. The horizontal boards end at 4 feet 6 inches above the floor level and the rest of the wall is open to the wallboard in Room 103. The upper portion of the east wall was originally open to the adjacent room (Room 103) and is covered with chicken wire. There is evidence of the buildings use as a chicken coop on the west, north, and east walls. The finishes on the walls are degraded and probably have not been altered since the Roosevelt period.

The south wall of Room 102 has evidence of original framing and the configuration of the original openings, as described in "Original Appearance" (fig. 64). The wall is open to the framing, tarpaper and inside of the siding. There is a window opening on the right/west side of the wall.

The doorway on the west partition wall is framed so that there is a step over the bottom framing member. The doorway between Rooms 102 and 103 was framed in a similar manner. That doorway was blocked off when Room 103 was altered and the door was removed.

The ceiling of Room 102 is open to the floor joists and flooring of the loft.

Room 103

Room 103 is a large rectangular room that was converted to storage by the TRA and is currently used as storage by the Park (fig. 65).

Room 103 is accessed through the east elevation doorway. There is a step down on to the poured concrete floor. The walls and ceiling are covered with wallboard with battens at the seams. There are two window openings on the south wall and shelves line the west and north

walls. This is the only room in the Chicken House that has been supplied with electricity. Metal electrical cable conduit is exposed along the west wall and runs to the center of the room where a utility fixture is installed.

Loft

The loft of the Chicken House is accessed through the west elevation loft doorway. The loft is open to the roof framing, as well as some other framing for the building (fig. 66). At the east end of the loft is a window opening with a single fixed sash, which is currently covered with plywood.

Structural Elements

As previously described, the Chicken House appears to have a unique framing system adapted for the original use of the building. The sills of the Chicken House were full dimension 2 inch by 6 inch lumber resting on the poured concrete foundation. Exposed framing in the loft indicates that the walls of the building are framed with 4 inch by 6 inch posts that support 2 inch by 6 inch plates on the north and south elevations (fig. 67). Due to the length of the building both the north and south plates were constructed with two 2 inch by 6 inch plates that are joined with half-lap joints at the intermediate posts. The walls between the posts were framed with 2 inch by 4 inch studs. A section of the south wall in Room 102 is framed with 2 inch by 6 inch studs and headers that are indicative of original openings. The roof is framed with common 2 inch by 4 inch rafters that are notched at the plate and nailed together at the peak with no ridge board.

Figure 60. Chicken House: West elevation, 2007.

Figure 61. Chicken House, South elevation, 2007.

Figure 62. Chicken House: Room 101, looking northwest, 2007.

Figure 63. Chicken House: Room 102, looking northwest, 2007.

Figure 64. Chicken House: Room 102, looking southeast. Note framing of south wall, 2007.

Figure 65. Chicken House: Room 103, looking northwest, 2007.

Figure 66. Chicken House: Loft, looking east, 2007.

Figure 67. Chicken House: Loft, south elevation post, plate and common rafter, 2007.

ICE HOUSE

CHRONOLOGY OF DEVELOPMENT AND USE

Construction

The architectural firm of Lamb & Rich designed the Stable and Lodge and the main house at Sagamore Hill and both structures were built by John A. Wood & Son in 1884 and 1885 respectively. One of the earliest photographs of the main house, taken in circa 1885, depicted the Ice House situated east of the house (fig. 15). That documentation and similarities between the main house and the Ice House indicated that the Ice House was one of the earliest outbuildings to be constructed at Sagamore Hill and was probably also designed by Lamb & Rich. The best historic photograph of the Ice House shows the northwest side of the building and appeared to depict the building as it was originally constructed with the original doorway on the north elevation (fig. 68). This photograph and a description of the building both from the 1950 insurance evaluation of the property, provide some information about the original structure.

Figure 68. Ice House at Sagamore Hill: Looking southeast, June 1950.

The Ice House was one of several outbuildings constructed at Sagamore Hill. However unlike the structures built to support the farming activities, the Ice House was within the domestic realm of Sagamore Hill and directly supported the activities at the main house. Due to this, the Ice House was situated closer to the house than other farm-related outbuildings. The correlation between the Ice House and the main house was reflected in the buildings' proximity to one another, as well as design and construction elements.

Original Appearance

The Ice House was a utilitarian structure that followed a similar design to the main house, albeit simpler. Though the original plans for the house do not include the Ice House, it was built with similar materials as the house. The brick walls and steeply pitched wood shingle roof, as well as the overhanging eaves were found on both structures and reflect the Queen Anne-style characteristics that were executed in greater detail on the main house.

The Ice House was an octagonal structure constructed circa 1885 and located approximately 20 feet from the main house. It was situated on the gently sloping grade east of the house, making it accessible to the east porch and service wing of the house. In one historic photograph there appeared to be some type of lattice adjacent to the south side of the Ice House. (fig. 69).

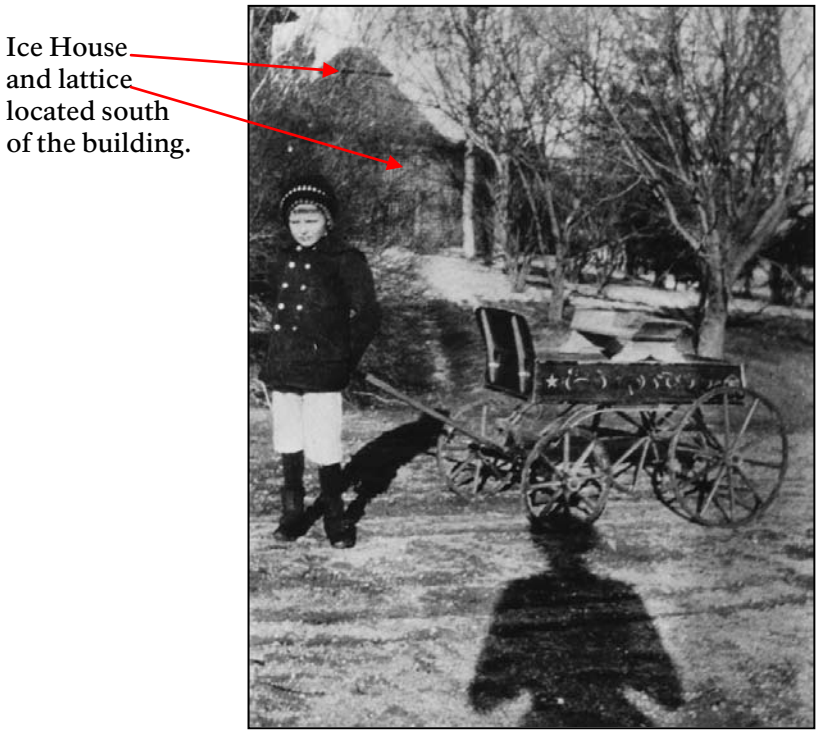

Figure 69. Archie Roosevelt with wagon, Ice House and lattice in background, 1901.

Certain aspects of the building were predetermined by its function as an ice house and typical of period buildings that stored ice. It was constructed with no window openings and only

one entry doorway. Period publications also recommended that ice houses be well ventilated, have proper drainage and be well insulated.

> There are some general principles to be observed in the proper construction of any kind of ice house, and all else is of secondary importance. There must be perfect drainage, and no admission of air beneath, ample ventilation and perfect dryness above, and sufficient non-conducting material for packing below, above, and around the ice, by which its low temperature may be preserved. [130]

The Ice House at Sagamore Hill appeared to have been well ventilated to allow the water vapor of the melting ice to escape and the masonry structure provided some insulation for keeping the ice cold. The building was also constructed with a cylindrical cistern below grade.

The Ice House at Sagamore Hill was designed and built to match the architecture and materials of the main house and in that respect it was probably not like other ice houses. Period literature indicated that most ice houses were rectangular and more often constructed with wood rather than masonry. The octagonal shape and masonry walls of the Ice House differentiated it from typical period buildings for storing ice. The building was apparently designed and built in the context of the other structures on site, with consideration for the pragmatic use of the structure.

Exterior Elements

The octagonal Ice House measured 8 feet 11 inches on a side and was covered by an eight-sided hipped roof. The foundation of the structure extended below the frost line and was constructed with brick. Below the brick foundation walls was a concrete lined cistern.[131]

On the southeast side of the Ice House was a below grade window opening which was surrounded by a concrete well. The concrete window well measured 4 feet by 2 feet 1 inch and provided access to 3 foot wide by 1 foot 9 inch high opening in the masonry wall. The window opening appeared to have been framed and had a three-pane window sash that was removed (the sash was found in the cistern). Though altered, this appeared to be an original feature of the Ice House and would have provided access to the below grade cistern.

The brick walls extended 5 feet above grade forming the exterior walls of the Ice House. The brick walls were approximately 7 inches thick and were laid in a common bond. The brickwork was typically constructed with four stretcher courses and one header course but varied due to the octagonal shape that required the insertion of shorter bricks at the corners. The brick was laid in light colored mortar with an average joint that was ⅜ inch wide and was lightly struck. The exterior surfaces of the brick and mortar were coated with three layers of red colored paint to match the color of the brick on the house (Appendix D).

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[130] Halsted, pp. 141-159.
Lee Corbett. *Farmers' Bulletin No. 475, Ice Houses*. (Washington, D.C.: U.S. Dept. of Agriculture, 1911).

[131] On site investigation and *List of Classified Structures-Sagamore Hill National Historic Site* (NPS website http://www.hscl.cr.nps.gov/insidenps/reports.asp).

The only above grade entry to the Ice House was on the north elevation of the building (fig. 68). The 1950 photograph of the Ice House that depicted the entry doorway and the description from the same period provided evidence of the original entrance to the building.

The entry doorway to the Ice House was a 3 foot 10¾ inch wide wooden entry centered on the brick wall of the north elevation. The entry doorway extended above the slope of the Ice House roof to approximately 8 feet 6 inches above grade and was covered by a gable roof. The portion of the entry doorway above the roofline was wood framed and was 4 feet 7¾ inches wide. The gable roof of the entry doorway was joined to the hip roof of the Ice House and formed a dormer-like structure.

The walls of the entry doorway were later altered but the historic photograph depicted wood shingles on the front wall of the entry doorway, above the door. The side walls of the dormer-like structure have been replaced but were also originally covered with wood shingles.

A pedimented portico formed the roof of the entry doorway and projected 1 foot 8 inches. The pediment was constructed with wood shingles and 6 inch raked cyma recta moldings, as depicted in the 1950 photograph. The cornice of the portico also had an applied cyma recta molding similar to the raked molding. Paint evidence also indicated that these moldings were original to the structure. The soffit of the portico was covered with 4½ inch wide beaded tongue-and-groove boards that also had paint evidence that suggested they were original to the building.

The insurance description described the entry door as a 5 inch thick wood door.[132] The photograph accompanying the insurance documents showed the door open and it appeared to be a thick wood door with vertical boards on the interior. The exterior of the door did not appear in any of the historic photographs of the structure. This was the only above grade doorway to the Ice House during the Roosevelt period.

Figure 70. Quentin Roosevelt on roof of Ice House, ca. 1905.

The Ice House was constructed with a steeply pitched eight-sided hip roof (fig. 70). The roof was framed with 2 inch by 6 inch rafters that extended 1 foot 11 inches beyond the brick walls of the building, forming wide eaves. The roof was covered with board sheathing and was finished with wood shingles. At the peak of the roof was an eight-sided cap or saddle that covered a vent at the top of the structure. The saddle was also covered with wood shingles and a piece of metal, presumably cooper, was installed at the peak. Historic photographs of the roof indicated that the wood shingles were overlapped along the ridges of the roof, but there was not a separate ridge cap constructed with woven wood shingles as in the current roof (figs. 7, 68, & 70).

[132] Great American Insurance Co., June 5, 1950. Item No. 2. SAHI – 9800, TRA, Box 5, Folder 2, (Appendix A).

The overhanging eaves of the roof were open to the framing. The eaves fascia wrapped around the building and was constructed with a 6-inch board and an applied 3-inch wide cyma recta and quarter-round molding.

Interior Elements

The interior of the Ice House was altered by the TRA and does not retain its original configuration. Investigation of the building and research of typical ice storage buildings from that period suggested that the interior of the Ice House was simple with an open plan.

The Ice House was built as a single story building with a cistern below grade. The cistern was a round brick structure constructed one brick thick and parged with ¾ inch concrete. The floor of the cistern was concrete and the concrete parged walls extended 9 feet 4 inches up to the first story level of the Ice House. As previously described, access to the cistern was from an exterior below grade window opening with a concrete well.

The first story of the Ice House was accessed through the north doorway. The doorway apparently opened in to a single room on the first story with brick walls, wood ceilings and wood floors. Though the alterations have covered most evidence of the earlier floors, the extant flooring materials seen from the basement cistern suggest a built-up floor constructed with 2 inch by 8 inch and 2 inch by 4 inch lumber.

The interior walls were brick and appeared to have been covered with a thin parge or whitewash. There do not appear to have been any partitions in the original structure.

The ceilings of the Ice House below the hipped roof were covered with tongue-and-groove boards that were fastened with cut nails. The evidence of the cut nails used to fasten the interior boards further supports the construction date of ca. 1885. The transition from cut nails to wire nails was occurring at that same period. Therefore, the use of cut nails in the Ice House suggested a date of construction pre-dating the extensive use of wire nails, which is generally considered to be ca. 1890.

Figure 71. Ice House: Ceiling near peak of roof, original tongue-and –groove boards with vent holes (modern fan), 2007.

Toward the peak of the roof was an octagonal ceiling constructed with tongue-and-groove boards that was perforated with 1 inch diameter holes for ventilation (fig. 71). As previously described, a vent cap at the peak of the roof allowed for proper ventilation of the building. Typical ice houses had ventilation at the eaves and the peak of the roof.[133] The Ice House at Sagamore Hill may have had additional vents at the eaves but they are not extant.

[133] Halsted, p. 157.

Structural Elements

As previously described, the Ice House was a masonry building whose brick walls formed the primary structural component of the building. The common bond used in the construction of the walls employed both stretcher and header courses that created the structural integrity of the wall. The brick walls were laid with mortar, likely a sand-lime mortar typical for that construction and similar to that used on the main house. (Mortar analysis was previously performed on the main house but was not performed on the Ice House as part of this building investigation).

The cistern below grade was constructed with brick and concrete, as previously described. Later alterations make it hard to discern the original construction, however some extant features of the first floor structural system were observed from the cistern. The floor appeared to have been supported by 4 inch by 6 inch beams and the flooring structure of 2 inch by 6 inch members increased the structural integrity of the floor.

The octagonal hip roof was constructed on top of the brick walls. As previously described the 2 inch by 6 inch rafters extended beyond the exterior walls to form a wide eave. The rafters rested on a plate that was set along the top of the brick exterior walls. Examination of the extant plate indicated that it was 2¾ inches thick and probably 6 inches wide. The 2 inch by 6 inch rafters at each hip extended to the peak of the octagonal roof. Additional rafters were installed on each side of the roof and extended from the eaves up to the hip rafters. The interior and exterior sheathing added to the rigidity and strength of the roof structure.

The structure of the north entry doorway and portico was concealed behind interior boards and later alterations. These elements were most likely framed in a similar manner to other wooden portions of the building using dimensional lumber.

Original Use

In the late-nineteenth and early-twentieth century, the harvesting and use of ice increased. Ice was considered an important commodity and its' use on the farm was a necessity. It was used to keep meats and dairy products from spoiling and was essential for dairy farms. Ice was harvested from lakes, ponds, and streams throughout the northern United States and stored in a variety of structures that were characterized as ice houses. There were specific requirements of a structure to make it ideal for the storage of ice. It was especially important to have an ice house on a farm, which was further removed from the town center where a perishable supply of ice could be purchased.[134]

The Ice House at Sagamore Hill was an important part of the farming and domestic activities at the property. Several descriptions of life at Sagamore Hill include some discussion of the Ice House and its use. In an interview with Alice Roosevelt Longworth, she described the Ice

[134] Halsted, p. 140.
John T. Bowen. *Farmers' Bulletin No. 1078, Harvesting and Storing Ice on the Farm*. (Washington, D.C.: U.S. Dept. of Agriculture, 1920) pp. 3-5.

House as being "full of ice" and "very in use." When queried about the source of the ice, she said it was from a pond owned by "Katrina Carl" or her family and that the Roosevelt's bought their ice from them.[135] Katie O'Rourke Meany, who was a domestic servant at Sagamore Hill from 1906 – 1909, noted that the Ice House was filled periodically by an "ice man from Roslyn" and that he would also fill the icebox on the porch with ice from the Ice House.[136] Robert Gillespie, Jr. son of Robert Gillespie who was the superintendent at Sagamore Hill for 29 years, indicated that the ice was harvested from nearby, presumably on the property.[137] However, the interview with Alice Longworth refuted that, suggesting that the two small ponds on the property were stagnant and insufficient for ice harvesting.[138]

It is possible that the ice was initially harvested by the Sagamore Hill farm staff from nearby ponds and in later years delivered to the property. This was the recollection of Ethel Roosevelt Derby[139] and appeared to be supported by the descriptions cited above and the Sagamore Hill account books of Edith K. Roosevelt from 1889 – 1919. The records for 1889 included payments for ice delivery in both February and March but not other months. The following year, 1890, included ice delivery every month of the year, with the largest payments from June through September. Over the next two years the account book recorded ice delivery to the site every month, with larger deliveries during the summer. In 1893 no payments were made during the summer months, but a large bill for ice delivery paid in September indicated a lump sum payment for the summer season.[140] These account book entries established the delivery of ice to Sagamore Hill where it was stored in the Ice House.

The ice was apparently stored using eel grass as an insulating material.[141] Though eel grass is no longer extant at the site, period publications suggested similar materials for insulating an ice house, including sawdust, charcoal powder, marsh hay, as well as oat, wheat, or buckwheat chaff.[142]

The concrete lined cistern below the Ice House was not mentioned in the documents reviewed. The cistern appeared to be part of the original structure and was most likely part of the water storage system at Sagamore Hill. The cistern has a solid concrete floor, which indicates that it was designed for water storage versus ice storage, necessitating a drain in the floor. There are several pipes coming into the cistern but they appeared to be later alterations and not part of the original construction. The concrete around the pipes had been broken to fit the pipe and patched with cement, indicating that the pipes were not original. However, some of the pipes do appear to be older than others and may have been added during the Roosevelt period. There are references to reserve water from the well being stored in a frost-proof storage tank[143] that might refer to the cistern below the Ice House. Upon investigation, it certainly appears that the cistern held water at some point, but when and how long it was in use is not known.

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[135] Alice Roosevelt Longworth, interview by Peter Steele, February 1, 1974, p. 23. SAHI Archives.
[136] Katie O'Rourke Meany, interview by Jessica Kraft, 1969. SAHI Archives.
[137] Robert Gillespie, Jr., interview by Jessica Kraft, July 17, 1973. SAHI Archives.
[138] A.R. Longworth, p. 23.
[139] Ethel R. Derby, interview and notes by Jessica Kraft. CLR files, SAHI Archives.
[140] Sagamore Hill Account Book, 1889-1917. Edith Kermit Roosevelt Papers, Box 10, SAHI Archives.
[141] Ethel R. Derby, interview and notes by Jessica Kraft. CLR files, SAHI Archives.
[142] Halsted, p. 141.
[143] Walter Andrews. "Theodore Roosevelt as a Farmer". *Farm Journal*, December, 1906. Houghton Library, Harvard College Libraries. Copy at SAHI Archives.

Documents cited by Francis Wilshin indicated that a "wooden tank" was installed in the Ice House when the water system for Sagamore Hill was improved in 1905 (see "Pump House & Windmill, Alterations").[144] The tank was apparently used for reserve water storage and it was the recollection of Ethel Roosevelt Derby that there were two big tanks in the Ice House.[145] One of the tanks she was referring to might have been the cistern.

The documentary and anecdotal evidence indicated that the Ice House and the cistern below served as support structures for Sagamore Hill during Theodore Roosevelt's lifetime and into the period of residency by Edith K. Roosevelt.

Alterations

1885 – 1948

The account books of Edith Roosevelt indicated that ice was being purchased for Sagamore Hill through 1940, at which time the account book ends. The quantities of ice or how much was stored in the Ice House is not known. The recollections of children and household staff suggested that the building was used for its intended purpose during most of the Roosevelt period.

In 1905 there was a lot of activity at Sagamore Hill that was focused on the addition of the North Room and also included improvements to the water system on the property (see "Pump House & Windmill, Construction" and "Alterations").[146] At that time, a wooden tank was installed in the Ice House for reserve water storage. It was not known where the tank was placed, but presumably it was on the first story of the building.

The documentation examined for this report suggested that there were no other significant changes to the Ice House during the Roosevelt period. Historic photographs of the building appeared to confirm this. However, it appears that some large steel beams supporting the floor of the Ice House were added by Williams, Whitman, plumbers for the site during Theodore Roosevelt's residency. The beams are extant and could be seen from inside the cistern. There was one center 12 inch **I**-beam spanning the Ice House from east – west, and there was a half **I**-beam (or **C**-shaped beam) installed about three feet to either side of the center beam. Writing on one of the beams showed that it was delivered to "Williams – Whitman, Sagamore Hill, Oyster Bay, LI" in care of "Pres. Theodore Roosevelt." The beam was also dated and, although one of the numbers was faint, it appeared to read "1917", indicating the date of installation (fig. 72). When the beams were installed sections of the floor may have been replaced, but this could not be determined from the physical evidence on site.

[144] Wilshin, *Historic Resource Study,* Vol. II, p. 42.
[145] Ethel R. Derby, interview and notes by Jessica Kraft.
[146] Wilshin, *Historic Resource Study,* Vol. II, p. 28 – 47.

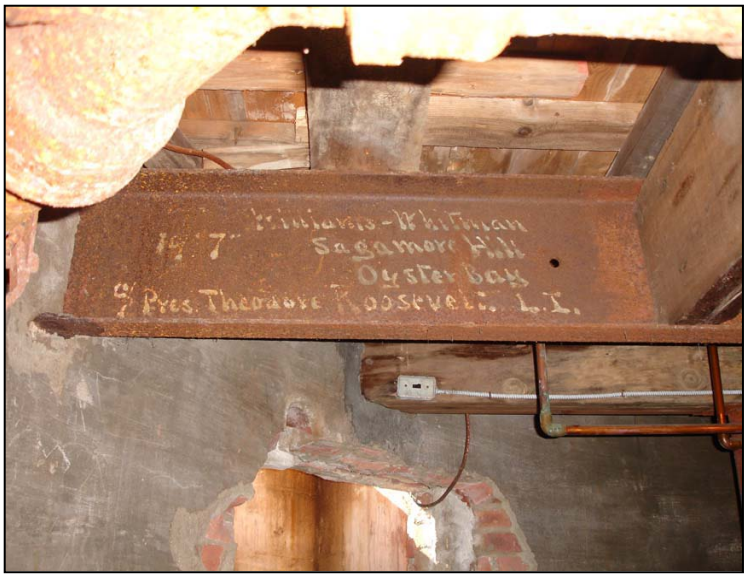

Figure 72. Steel beam in the basement/cistern of the Ice House, inscribed with the address and date, 2007.

By the end of Edith Roosevelt's life, it appeared that the Ice House was no longer used to store ice. There may have still been some connection to the water system for the site but that was not mentioned in the documentation reviewed. When Sagamore Hill was inspected in 1905, the Ice House was apparently used for storage of miscellaneous items.[147]

1950

The Great American Insurance Co. Inspection and Survey in June 1950 described the Ice House as an eight-sided building with brick walls, a wood shingle roof and a wood floor. It noted that the building had been used for ice or cold storage and that it was currently used to store odds and ends. The survey included a photograph of the Ice House, which provided the clearest photographic documentation of the building before it was altered by the TRA (fig. 68).

1951 - 1953

Soon after the TRA purchased the property, the Ice House was converted to restrooms for visitors to Sagamore Hill. A contract with E.W. Howell Co. Builders was signed on October 10, 1951 and included repairs and alterations to the Ice House.[148] Preliminary plans for the restrooms depicted a partition wall running east – west that divided the building in to a north/Men's Room and south/Women's Rooms (fig. 73).

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[147] Great American Insurance Co. Inspection and Survey. Item No. 2 (Appendix A).

[148] Agreement between Contractor, E.W. Howell Co. and Owner, RMA, October 10, 1951. TRA Admin. Records 1880-1978; Site Admin. Files: Restoration and Renovation Records. SAHI 9800. Box 12, Folder 1. SAHI Archives.

In order to access the Women's Room, an entry doorway had to be added to the south elevation of the building. The new south entry doorway was modeled on the existing north elevation doorway. It was built with a gable roof that that formed a dormer-like projection at the main roof and had a projecting portico. The new doorway was clad with vertical tongue-and-groove beaded boards on the south wall and shingles on the sidewalls of the dormer. The doorway had a board-and-batten door constructed with the same vertical boards as the wall and a tilt-in transom above the door (fig. 74). Alterations at the time included some changes to the north entry doorway as well. Those alterations included new cladding, new door, louvered pediment, and addition of a transom above the doorway. The renovation of the Ice House also included the installation of asbestos shingles on the roof.

As illustrated by the drawing, the interior was partitioned to create two restrooms (fig. 73). The extant building elements suggest there were changes to the preliminary plans, but the partition remained in approximately the same location. The interior alterations included the addition of bathroom stall partitions, toilet and sink fixtures, and water and sewer pipes for the restrooms. The new plumbing for the restrooms was evident in the cistern below the first story. TRA documents indicated that the floor of the Ice House was re-enforced and covered with vinyl tile. The brick walls were painted and the sloped ceilings above the brick walls were finished with a resinous coating. Near the top of the building, a new ceiling was installed below the original vents, which were previously described (see "Original Appearance"). The new ceiling was constructed with tongue-and-groove boards and had an access hatch in the north/men's room. At that time, a vent fan was installed above the new ceiling (fig. 71). The addition of the restrooms in the interior of the Ice House removed most evidence of its former use for storing ice.

1953 - 1963

In 1953, the Ice House, along with main house and the Pump House, was painted "in new colors chosen by Mr. Powell."[149] Powell was an employee of Chapman, Evans, & Delehanty Architects and had apparently been given the responsibility of choosing the paint colors for some of the buildings at Sagamore Hill (Appendix D).

The Ice House was maintained as the public restrooms by the TRA, with few additional changes over their ownership. In 1957, an estimate for 390 square feet of brick pathway around the restrooms was submitted by Patsy Izzo and Sons, Inc.[150] A sketch accompanying the estimate indicated a walkway beginning south of the building with a path to the Women's Room and a path around the west side of the building that led to the north entry for the Men's Room. There was no further documentation of the project in the files examined, but the extant walkways match the 1957 plan and were probably installed at that time (fig. 74).

There did not appear to be any other significant changes to the building during the TRA tenure.

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[149] E.W. Howell to Mrs. Kraft, March 3, 1953. TRA Admin. Records 1880-1978; Site Admin. Files: Restoration and Renovation Records. SAHI 9800. Box 12, Folder 1. SAHI Archives.

[150] Patsy Izzo & Sons, Inc. to TRA, March 28, 1957. TRA Admin. Records, Box 12, Folder 1.

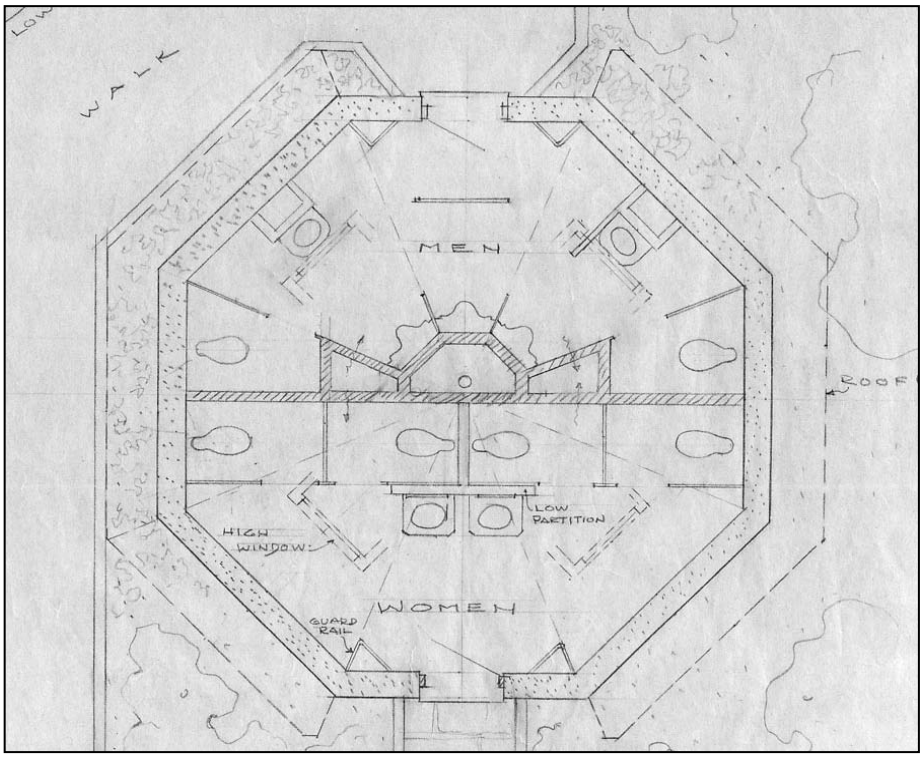

Figure 73. Preliminary plan for converting Ice House to restrooms, 1951. The final alterations varied from this plan.

Figure 74. Ice House: After 1951 conversion to restroom, also depicting 1975 brick walkway. Photograph taken in 1969 by NPS.

1963 – 1983

When the NPS took over the site in 1963 the building was still functioning as public restrooms. The NPS *Individual Building Data* form for the "Ice House or Comfort Station; Bldg. No. 11" dated January 31, 1969 listed the use of the structure as "Public Comfort Station." The form stated that the building had masonry walls and an asbestos shingle roof. The building was listed in good condition overall and good structural condition and good mechanical condition. It was further noted that the water, electrical and sewer systems of the Ice House were the same that served the main house.[151] Over the next two decades of the NPS ownership, the Ice House remained a restroom facility (fig. 74). The Park continued to maintain the buildings and photographs indicated that the building was in good condition.

1983 – 1984

In September 1983, a contract for "Re-roofing Theodore Roosevelt Home and Ice House" was awarded to Pettiford and Pettiford Contractors, Inc. West Orange, NJ.[152] The contract called for the removal of existing asbestos shingles from both buildings and the installation of new wood shingles. The replacement shingles were 18 inch white cedar shingles that were installed with a 6 inch reveal. Contract drawings detailed new coated copper ridge caps on the gable roofs over the north and south entries, as well as coated copper valley flashing. A new lightning protection system was installed by subcontractor, Koshofer Lightning Protection. The re-roofing project was apparently an effort on the Parks part to replace building material added by the TRA with more historically accurate materials.

Sagamore Hill maintenance files indicated that in addition to the roofing, the building was re-pointed.[153]

There was no reference to the interior of the Ice House in the documentation of the renovation project. However, it appeared that the restrooms were removed at this time and new facilities were installed in the Canteen/Visitors Center building near the Farm Shed and Chicken House.

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[151] Kempf, Ice House or Comfort Station, Bldg. No. 11, 1/31/1969.

[152] Contract no. CX1600-3-0062 between Contractor Pettiford & Pettiford, Inc. and Owner NPS. Files contain other correspondence and 15 architectural drawings for the house and Ice House roofing project located at NER, Lowell, MA.

[153] SAHI Maintenance Files, WO# 102043.

1984 - Present

There have been no significant alterations to the building since 1984 and it appears to be in good condition. Regular maintenance of the building by the Park has included exterior painting and minor repairs. In 2003, estimates were prepared for replacing the roof, re-pointing the brick, replacing the railing near the north entry, and replacing the floor with tongue-and-groove yellow pine.[154] However, it does not appear that this work has been released for public bid. The toilet and sink fixtures have been removed and the interior is currently used as storage.

[154] SAHI Maintenance Files.

ICE HOUSE

CURRENT PHYSICAL DESCRIPTION

Figure 75. Ice House: North and West elevations, looking southeast, 2007.

Exterior Elements

Foundation

The octagonal Ice House rests on a circular foundation above a cylindrical cistern. The foundation walls were constructed with brick and appear to be three-bricks thick based on investigation below grade at the southeast window well. On site observations indicated that the cistern is one-brick thick and lined with concrete. The foundation transitions from three-bricks thick to one-brick thick below grade. Where this transition occurs was not determined.

Figure 76. Ice House: Window well on southeast elevation, 2007.

The only opening at the foundation level is a window opening on the southeast side of the building (fig 76). The window frame and sash were removed during alterations to the building. The window opening is surrounded by a poured concrete window well, which was previously

described. The window is currently open to the cistern and the window well is protected by a wooden cover constructed with pressure-treated lumber.

Walls

The exterior brick walls of the Ice House are 5 feet high and approximately 7 inches thick. As previously described, the walls were laid in a variation of a common bond and likely pointed with a sand-lime mortar in a similar fashion to the main house. The brick walls terminate at the doorways on the north and south elevations of the building, which are subsequently described.

On site investigation and paint analysis at the Historic Architecture Program (HAP) laboratory in Lowell, MA determined that the exterior brick had been painted in the past. Most of the paint has worn off the building, but some chalky red paint survives below the eaves of the building. Paint analysis determined that the exterior brick had been painted red at least three times (see Appendix D).

Doorways

North Entry Doorway

Figure 77. Ice House: North Entry Doorway, 2007.

The north entry doorway is accessed via a brick walkway that leads around the east side of the main house. A black metal railing with decorative balusters is installed at the northeast corner of the walkway and is attached to the Ice House near the entry doorway. The north elevation of the Ice House has a 3 foot 10¾ inch opening in the brick wall for the north entry doorway. The original doorway was altered by the TRA when the restrooms were installed. The existing doorway retains the overall scale of the original entry, as well as the pedimented portico and dormer roof that projects from the main roof of the Ice House (figs. 75 & 77). Above the main roof line the entry doorway is wider, measuring 4 feet 7¾ inches wide.

The façade of the entry doorway is constructed with tongue-and-groove beaded vertical boards that are 5⅜ inches wide. The sidewalls of the dormers are covered with wood shingles that were installed during renovations to the building but appear to replicate an original feature of the Ice House.

The door on the north elevation of the Ice House is also constructed with tongue-and-groove vertical boards, which are attached to battens and Z-braces on the inside of the door. The

door is hung with three modern-strap hinges and has a reproduction thumb-latch handle. A modern brass lock set is installed above the handle.

The transom above the door has a three-light sash that measures 2 feet 6½ inches wide by 1 foot 1¼ inches high. The sash is hinged at the windowsill and tilts inward. The sash has ¾ inch wide Colonial Revival-style muntins. An exterior screen is installed in the window opening.

The dormer roof of the north entry doorway is tied into the main roof and extends over the doorway to form the pedimented portico. The overall structure of the dormer and portico appear to be original to the Ice House. The soffit of the portico is constructed with 4½ inch tongue-and-groove boards with an edge bead, which do not match the façade boards. Examination of paint layers indicates that the soffit boards are original to the building. A modern light fixture has been cut in to the soffit. The cornice of the portico and the rake of the pediment are both constructed with cyma recta moldings. Based on paint analysis these also appear to be original elements. Metal louvers were installed in the pediment when the Ice House was converted to restrooms. The dormer roof is covered with wood shingles and capped with a rounded ridge that is covered with zinc-coated copper. The valleys formed at the junction of the dormer and main roof are lined with zinc-coated copper.

South Entry Doorway

The south entry doorway was installed by the TRA when the Ice House was converted to restrooms in 1951 (fig. 78). The entry is similar to the north entry doorway but there are some differences. The opening in the brick wall for the south entry doorway is 2 feet 11½ inches wide, which is about a foot narrower than the north side. Above the main roof line the entry doorway is wider, measuring 4 feet 9 inches wide. Examination of the masonry around the opening indicates that both have been altered, further indicating that this was a later alteration.

Figure 78. Ice House: South Entry Doorway, 2007.

Certain elements common to both entries indicate that those materials were installed by the TRA during the initial renovation or during later repairs. The façade of the south entry doorway is clad with tongue-and groove vertical boards and the sidewalls of the dormer are sided with wood shingles. The door and transom window elements of the south entry are similar to those of the north entry. Examination of paint samples from similar elements on both the north and south entry doorways determined that they had comparable paint layering and were installed at the same time. With the exception of the sidewall shingles, which were a later repair, these elements were installed during the TRA restroom renovations.

The roof and pedimented portico of the south entry doorway are also similar to the north entry doorway in materials, size and scale. However, the soffit of the portico uses the same tongue-and-groove boards as the siding, as opposed to the north side that uses narrower edge-beaded boards. Also the rake moldings of the south entry pediment are cove moldings and do not match the cyma recta moldings used elsewhere on the building. Though minor details, the differences between the two entry doorways are indicative of the different periods of construction.

Roofs

The main roof of the Ice House is an eight-sided hip roof covered with wood shingles (fig. 75). The hips of the roof are capped with wood shingles installed in a woven pattern.

The roof rafters extend beyond the walls of the building forming open eaves that are 1 foot 8 inches deep. The roof cornice has a cyma-recta molding that appears to be original to the building. A similar molding is applied to the exposed edges of the rafters at each entry doorway.

A small eight-sided cap or saddle is perched on the peak of the roof for ventilation of the building. The cap is covered with zinc-coated copper at the very peak and a lightning rod has been attached in that location.

The dormers of the entry doorways interrupt north and south sides of the roof. As previously described, these dormers are covered with wood shingles.

Finishes

The current finishes on the Ice House are typical for the outbuildings at Sagamore Hill NHS. The wooden elements, including siding, trim, and doors are painted gray. The window sashes are currently painted green. There was evidence that the elements of this building were historically painted to match those of the Main house (Appendix D).

As previously mentioned, the exterior of the brick walls were historically painted red to match the brick portions of the main house. However, the degraded condition of the extant paint indicated that the walls have probably not been painted since the Roosevelt family tenure.

Interior Elements

Cistern/Basement

Figure 79. Ice House: Cistern, looking southeast toward window opening, 2007.

The cistern forms the basement of the Ice House (fig. 79). The floor and walls of the cistern are lined with concrete. The floor is solid concrete with no visible drains. Four concrete piers rest on the floor of the cistern and support lally columns that were added either by the TRA or NPS for additional floor support.

The walls are round and there are pipes extending from some of the walls for the plumbing. As previously described, most of the plumbing appears to date from the TRA restroom renovations, but some may have been earlier. The only opening for egress is the window opening on the southeast side of the cistern that leads to the exterior window well. A three-pane sash is extant in the cistern and was presumably the sash for the foundation window.

The ceiling is open to the floor framing for the first story. The extant framing includes a 12 inch-wide steel **I**-beam that spans the center of the building from east to west. This is flanked by two additional steel beams. As previously discussed, the steel framing was apparently added near the end of Theodore Roosevelt's life. Other extant framing included 2 foot by 12 foot lumber that spanned between the steel beams, and 4 foot by 10 foot laminated wooden beams that are supported by lally columns.

First Story

The conversion of the Ice House to restrooms included the addition of a partition wall on the first story of the building. The partition runs east-to-west and essentially divides the first

story in half. The north room is 10 feet 3 inches deep and the south room is 9 feet 3½ inches deep. The north room has two partial walls that abut the partition wall and carry plumbing and ventilation ducts. The south room has a T-shaped partition that abuts the center partition and formed restroom stalls. Both rooms are finished with similar materials and are currently used for storage.

Figure 80. Ice House: North room looking southeast, 2007.

Figure 81. Ice House: South room looking southeast, 2007.

The floors in both rooms are covered with vinyl tile laid over an underlayment and a wood floor below. The floor boards below the tiles appear to be thick and may be remnants of the original built-up floor of the Ice House. Upon examination of the sub-floor from the cistern, it appears that the sub-floor of the first story consists of a layer of 2 inch by 6 inch boards and possibly an additional layer of 2 inch-thick boards, some of which were removed during renovations.

The outer walls of the first story are exposed brick, which has been painted gray. The sloping ceiling above the brick walls was constructed with 8½ inch-wide tongue-and–groove boards attached with cut nails. The boards are currently covered with a resinous finish. However, evidence above a small ceiling hatch-way indicates that the wood ceilings were originally unfinished. As previously described, the evidence of the cut nails used to fasten the interior boards further supports the construction date of ca. 1885.

The partition walls on the first story were added by the TRA and are framed with dimensional lumber and wire lath and plaster and finished with gray and yellow paint. The gray paint is applied at the lower level to match the paint color on the brick walls and the yellow paint was used on the upper portions of the walls. A 3 inch baseboard with an cyma recta molded cap is applied around the perimeter of each room. The baseboard is also painted gray.

As previously described, both the north and south doorways have Z-braced board and batten doors constructed with beaded tongue-and –groove boards. The north door has a hydraulic closer that is broken. Both doorways are trimmed with plain surrounds and are painted gray. Transoms are installed above the doorways and secured with a latch and a chain. The interiors of the transoms are also painted gray.

A flat ceiling above the partitions was added by the TRA. It is constructed with 5½ inch tongue-and-groove boards which are shellacked. Modern fluorescent light fixtures are attached to the ceiling. In the north room, a small hatch allows access to a small space where some original features previously described are extant, as well as a ventilation fan (fig. 71).

The Ice House is wired with a single phase, 40-amp electrical service.[155] Though the restroom fixtures have been removed most of the plumbing pipes remain intact. According to the 1969 NPS "Individual Building Data" form, the water, electrical and sewage systems are part of the same system that serves the main house.[156]

[155] Robert O. Kempf, NPS, Form 10-768, Individual Building Data, Ice House or Comfort Station; Bldg No. 11, 1/31/1969. SAHI Maintenance Files.
[156] Ibid

PUMP HOUSE & WINDMILL

CHRONOLOGY OF DEVELOPMENT AND USE

Introduction

The histories of the Pump House and Windmill are linked since they were both constructed to provide water for Sagamore Hill. The following discussion will include information about both structures but will focus on the development and use of the Pump House. There was no windmill on the property when the TRA took over the site and the existing Windmill was reconstructed by the NPS in 1971. The Windmill at Sagamore Hill was the subject of a report prepared by Francis Wilshin in 1970 entitled "The Windmill of Sagamore Hill, A Part of the Basic Data Study and Historical Base Map of Sagamore Hill." Wilshin's report documented the history of the Windmill and made recommendations for the reconstruction of the structure. A copy of this report was included in the Appendix of this report and should be referred to for a more complete study of the Windmill (Appendix B).

Construction

The documentary evidence provided more specific information about the construction of the Windmill and less information about the Pump House. However, since the Pump House was part of the water system at the site, presumably the construction of the two structures coincided. Correspondence between Theodore Roosevelt and A.J. Corcoran indicated that the Windmill was constructed at the time that the main house was built (fig. 82). Roosevelt's letter of 1898 said the Windmill had been on site a dozen years (ca. 1886) and a letter from Corcoran in 1905 noted that the "old wheel had been in operation since 1884."[157] Suffice it to say that the Windmill was constructed in circa 1885 and presumably some sort of pump house or well head was constructed at the same time.

Historic photographs of the Windmill depicted a Pump House at the base of the structure. The report by Francis Wilshin suggested that these photographs depicted the Windmill and Pump House after 1905.[158] One of the photographs that showed the base of the Windmill provided the clearest image of the Pump House (fig. 83). The photograph depicted a sunken structure with a low-pitched roof and a windlass attached to the roof. It was not possible to discern other features of the Pump House from the historic photographs.

[157] Wilshin. "The Windmill of Sagamore Hill". p. 1.
[158] Ibid, p. 13.

Figure 82. Sagamore Hill: Prior to 1905 North Room addition. Note early windmill on left side of image.

Figure 83. Windmill and Pump House at Sagamore Hill: Archie in foreground, ca. 1905.

The Roosevelts were making improvements to Sagamore Hill in 1905. The addition of the North Room was first and foremost but they were also upgrading the water system.[159] Correspondence between Theodore Roosevelt and A.J. Corcoran discussed options for a new tower and Windmill, which were apparently erected in 1905.[160] The water system was also the subject of correspondence between Roosevelt and Heins & LaFarge, the architects for the North Room addition. Those letters were more concerned about the pumps and plumbing for the water system, rather than the tower and Windmill. One letter that discussed the progress of the addition project and other site work included a reference to the construction of a pump house:[161]

> . . .Apparently a considerable portion of this item is really chargeable to the cost of the installation of a sunken-pump-house at the well, rather than the scheme originally contemplated, which was to set the pump in the ice house.

The letter suggested that the existing Pump House (if there was one) was inadequate and that a new one would be built as part of the improved water system. The only other reference to the Pump House in the documentation reviewed for this report was in the 1906 Farm Journal article. That article described a frost-proof building at the well that housed a pump for the water system (see, "Original Appearance").[162] It was apparent that the "sunken-pump-house" discussed was the same structure depicted at the base of the Windmill in the historic photograph (fig. 83).

However, the features of the Pump House depicted in the historic photograph did not appear to match the extant structure. Most notably, the roof pitch of the extant structure appeared to be steeper than the roof pitch of the structure depicted in the historic photographs. As previously described, the historic photographs showed few other details of the Pump House. The extant structure was built as a sunken structure with an original brick foundation forming a room at the south end and a later poured concrete foundation forming a room at the north end. The extant roof extended over both sections and appeared to be built as a unit. Though there was no documentation of these changes, it appeared as though the brick foundation was constructed during the 1905 improvements to the water system and the poured concrete foundation and new roof were added later. That conjecture was supported by the paint evidence on the above ground wooden elements. Analysis of the exterior paints determined that some of the extant roof elements were probably constructed soon after the improvements were made to the Windmill and water system (Appendix D).

There was no other documentation of the Pump House until 1950 when the insurance survey was conducted. At that time the roof line resembled the extant structure and the Pump House had two rooms. Therefore, the extant structure represents the Pump House as it existed during the Roosevelt period.

As previously discussed, the extant Windmill was reconstructed by the NPS in 1971. Efforts were made to replicate the historic Windmill during the reconstruction, but the historic wheel at the top of the tower could not be accurately replicated (see "Alterations, 1970 – 1971"). Since the reconstruction of the Windmill was not historically accurate, the NPS has recommended to the Keeper of the National Register of Historic Places that the Windmill is

[159] Francis Wilshin, *Historic Resource Study,* Vol. II. pp. 28 – 47.
[160] Wilshin, "The Windmill of Sagamore Hill".
[161] Wilshin, *Historic Resource Study*, Vol. II. p.37.
[162] Andrews. "Theodore Roosevelt as a Farmer." *Farm Journal.* December 1906. p. 431.

not eligible for listing on the National Register.[163] The recommendation is that the Windmill be listed as a non-contributing resource. However, the Park plans to continue managing it as a cultural resource.[164]

Original Appearance and Use

Of the documentation reviewed, there was little information regarding the original appearance of the circa 1905 Pump House. The Pump House and the Windmill were apparently constructed as part of the improved water system at Sagamore Hill in 1905. The original appearance was best depicted in historic photographs (fig. 83). The December 1906 Farm Journal article referred to the Pump House when describing the systems used at the Sagamore Hill farm:[165]

> …And in a snug little frost-proof building about a hundred feet from the house, I found a gasoline engine, pumping water from a tubular well 190 feet deep.

The description appeared to fit the structure depicted in the circa 1905 photographs and the brick portion of the extant Pump House.

The circa 1905 Pump House appeared to be the sunken structure at the base of the Windmill. The foundation was constructed with brick walls that extended about a foot above grade. The brick structure was covered with a low pitched gable roof which supported a windlass and had a hole at the ridge for the windmill cables.

The Pump House had one room below grade, which measured 9 feet 10½ inches wide by 16 feet long. The floor of this room was likely concrete. There were no window openings at grade and access to the original Pump House was thought to be through a hatch in the roof.

The Windmill and Pump House constructed in 1905 were both utilitarian structures used to supply water to the main house and the farm at Sagamore Hill. The Farm Journal article aptly described the use of the Pump House. In addition, there was correspondence between Theodore Roosevelt, Heins & LaFarge, and Williams, Whitman, plumbers, discussing the installation of a gasoline-engine pump in conjunction with the improvements to the water system and the construction of the "sunken-pump-house."[166] Simply stated, the structure was used to house the pump for the water system at Sagamore Hill.

[163] Miller and Leahy, DRAFT National Register Continuation Sheet, Section 7, p. 12.
[164] Sagamore Hill National Historic Site, General Management Plan, p. 3-10.
[165] Andrews. "Theodore Roosevelt as a Farmer." *Farm Journal*. December 1906. p. 431.
[166] Wilshin, *Historic Resource Study*, Vol. II. pp. 37 – 43.

Alterations

1884 - 1905

In Theodore Roosevelt's letter to A.J. Corcoran in 1898, he noted his satisfaction with the existing Windmill and that the annual repairs had been moderate (fig. 82).[167] The Sagamore Hill account books kept by Edith Roosevelt appeared to confirm that the Windmill did require some maintenance over the years. In 1889 and 1890 there were minor expenses assigned to the Windmill and repair entries increased over the next two years. An expense of $152.46 listed under "Repairs S." and noted as "windmill" was posted in October 1891. A larger expense of $376.65 was noted as "windmill" in 1892 but in 1893 the expense returned to a minor sum. [168] There was no indication of the work associated with those expenses, but by the turn of the century the Windmill had been in operation for about fifteen years and may have been showing signs of age. Noah Seaman wrote to Roosevelt on December 17, 1901 that the "mill men" had been out to Sagamore Hill to overhaul the mill and put it in good order.[169] Apparently, the old Windmill was in need of repair and by 1905, when A.J. Corcoran wrote President Roosevelt, it was Corcoran's opinion that the tower and mill (wheel) be replaced.

As previously discussed, the documentary and physical evidence suggested that the early brick portion of the extant Pump House was constructed when the new Windmill was built in 1905 (figs. 83 & 84).

1905 – 1948

During the Roosevelt period of residency at Sagamore Hill (through 1948), the Pump House was added to and altered. The 1950 insurance survey documented the extant below grade, two-room structure. The paint evidence suggested that some of the extant roof elements were constructed soon after 1905, though the documents reviewed did not provide a clear indication of when those changes took place. Specifically, the earliest paint layers on the roof trim matched the circa 1900 – 1907 paint colors on the main house, as well as other out buildings (Appendix D).

The addition to the brick Pump House had a poured concrete foundation that was attached to the north end of the existing structure. The concrete walls of the added foundation extended about one foot above grade. After the concrete foundation was added, the exterior of the building measured 11 feet 4 inches wide by 35 feet 8½ inches long.

A brick bulkhead was apparently added to the south end of the 1905 building at the same time. Again, there was no specific mention of the bulkhead addition, but the circa 1905 photographs do not depict a bulkhead, which, had it existed, would have likely been visible in

[167] Wilshin, "The Windmill of Sagamore Hill". p. 1.

[168] Sagamore Hill Account Book, 1889-1917. Edith Kermit Roosevelt Papers, SAHI Archives.

[169] Noah Seaman to Theodore Roosevelt, Dec. 17, 1901. Theodore Roosevelt Papers, Library of Congress Collection at Harvard College Library.

those images. The bulkhead foundation was constructed with brick and had brick steps. A 3 foot wide doorway led into the south room of the Pump House and had a sliding door. The extant stair treads were wooden, likely similar to what was historically used. The bulkhead cover had been rebuilt.

After the concrete section was added, a gable roof was constructed over the Pump House. The roof was framed with dimensional lumber and covered with wood shingles. The gable ends of the roof were covered with wood shingles and trimmed with plain boards. A 1953 sketch of the Pump House indicated that there was a window opening in the north gable of the structure that was subsequently filled in (fig. 87).

The interior of the altered Pump House consisted of two rooms. The bulkhead led to the south room that had brick walls and was 9 feet 10½ inches wide by 16 feet long. A 3 foot 8 inch wide doorway connected to the north room, which had poured concrete walls and was 9 feet 10½ inches wide by 18 feet long. The floors of the Pump House were poured concrete and the ceilings were constructed with tongue-and-groove beaded boards. A four-panel sliding door was installed in the doorway between the two rooms.

The documentary and physical evidence indicated that few other alterations were made to the Pump House and Windmill during the Roosevelt period. The account books noted that a "new mill" that cost $2,504.02 was installed in August 1919. The "mill" generally referred to the wheel but probably did not include the tower. However, by the time the TRA took over Sagamore Hill, both the tower and wheel of the Windmill had been removed from the site.

During this period, greenhouse style windows were installed in the roof of the Pump House. The 1950 photograph of the building (fig. 85) and sketches of the building from 1952 (fig. 87) both depicted two windows on the west side of the roof. There were similar windows on the east side of the roof that were depicted in a photograph taken in 1953 (Appendix C). It was not known when the windows were installed or whether they were part of the original roof that extended over the expanded Pump House.

The only other apparent alteration to the Pump House during that period was the addition of a compressed air system for pumping the water to the house. This included the installation of a six-foot diameter pressure tank that protruded through the east wall of the north room. It was not known when this system was installed, but it was in place by 1950 (fig. 86).

1950

The Great American Insurance Co. Inspection and Survey in June 1950 described the Pump House and included a photograph that depicted a building overgrown with vegetation (fig. 86). It was described as a building that had both brick and concrete walls, which were one foot above ground and six feet underground. The document also described the pumping equipment in the building and noted that the structure had been used as both a pump house and for vegetable storage (Appendix A).[170] The description did not mention the former Windmill and the photograph did not show any evidence of that structure.

[170] Great American Insurance Co. Inspection and Survey. Item No. 3.

Figure 84. Windmill at Sagamore Hill with pump house at base of structure, ca. 1905.

Figure 85. Pump House: Looking east, 1950. Note green-house type window on west side of roof and absence of windmill.

1952 - 1953

Once the TRA had taken over Sagamore Hill, they determined that some type of fire control system should be installed to protect the main house. The firm of Chapman, Evans, and Delehanty Architects was put in charge of the project, with the assistance of the Great American Insurance Co. and their representative, Charles N. Hagar. The system included upgrading the water supply system, installation of fire hydrants, an automatic sprinkler system in the basement of the main house and standpipes for hose connections on each floor of the main house (Appendix C). The pumps and other equipment for the system remained in the Pump House and a sprinkler system was installed in that structure as well (fig. 86).[171]

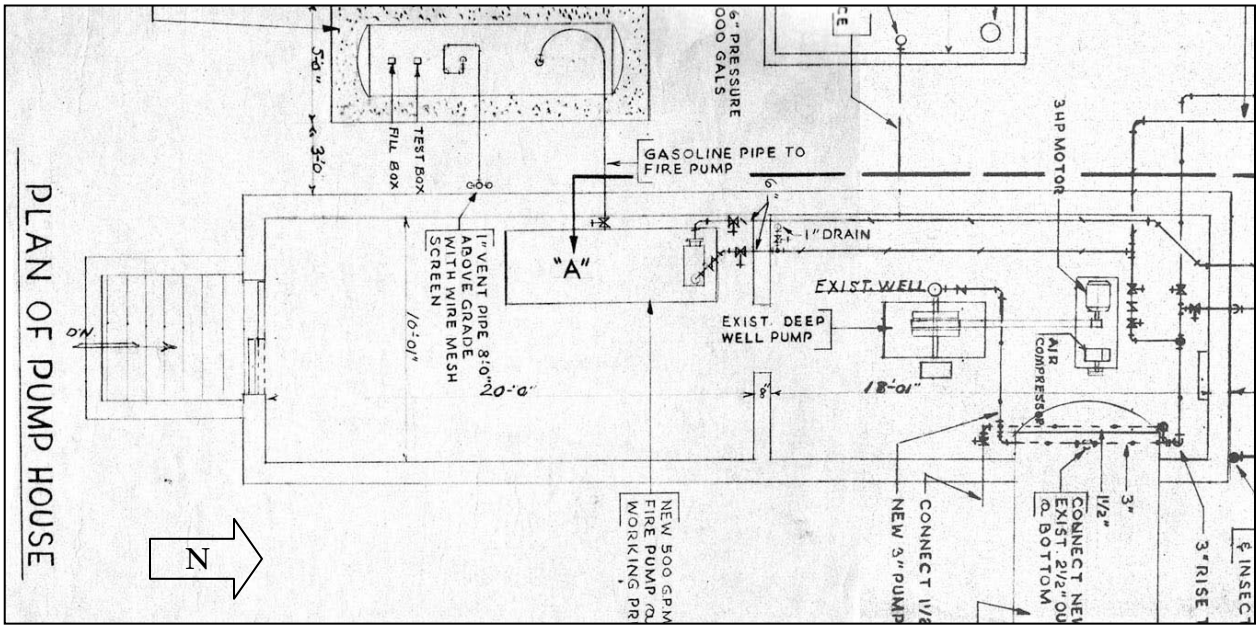

Figure 86. Plan of Pump House: Chapman, Evans, & Delehanty Architects, 1952.

In addition to upgrading some of the equipment and the installation of the sprinkler system, E.W. Howell Company was hired to replace the Pump House roof with asbestos shingles and construct an above ground Hose Reel House at the north end of the Pump House in 1952.[172]

The Hose Reel House was designed by Chapman, Evans, and Delehanty (fig. 87) and built by Howell in 1952 to store the hose reel and other fire protection equipment. The proposal for the building in the TRA files recorded that the building was to be built on locust posts, with 2 inch by 6 inch floor beams, a 4 inch by 6 inch sill, 2 inch by 4 inch studs and rafters, a 4 inch by 4 inch plate, and a 2 inch by 6 inch ridge. The side walls and roof sheathing were constructed with 1 inch by 6 inch boards and covered with asbestos shingles to match the roof of the Pump House.[173] The doorway to the Hose Reel House was on the north side of the building and had double doors.

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[171] Charles N. Hagar. "New Water System Safeguards Historic Buildings," *Water Works Engineering*. September 1953. Cultural Landscape Report files, Box 1, Folder 31, SAHI Archives.

[172] E.W. Howell Co. Statement of services rendered 1952 and 1953. TRA, Addendum, Box 1, Folder 34, SAHI Archives.

[173] E.W. Howell Co. to Chapman, Evans, & Delehanty, April 5, 1952. TRA, Addendum, Box 1, Folder 34, SAHI Archives.

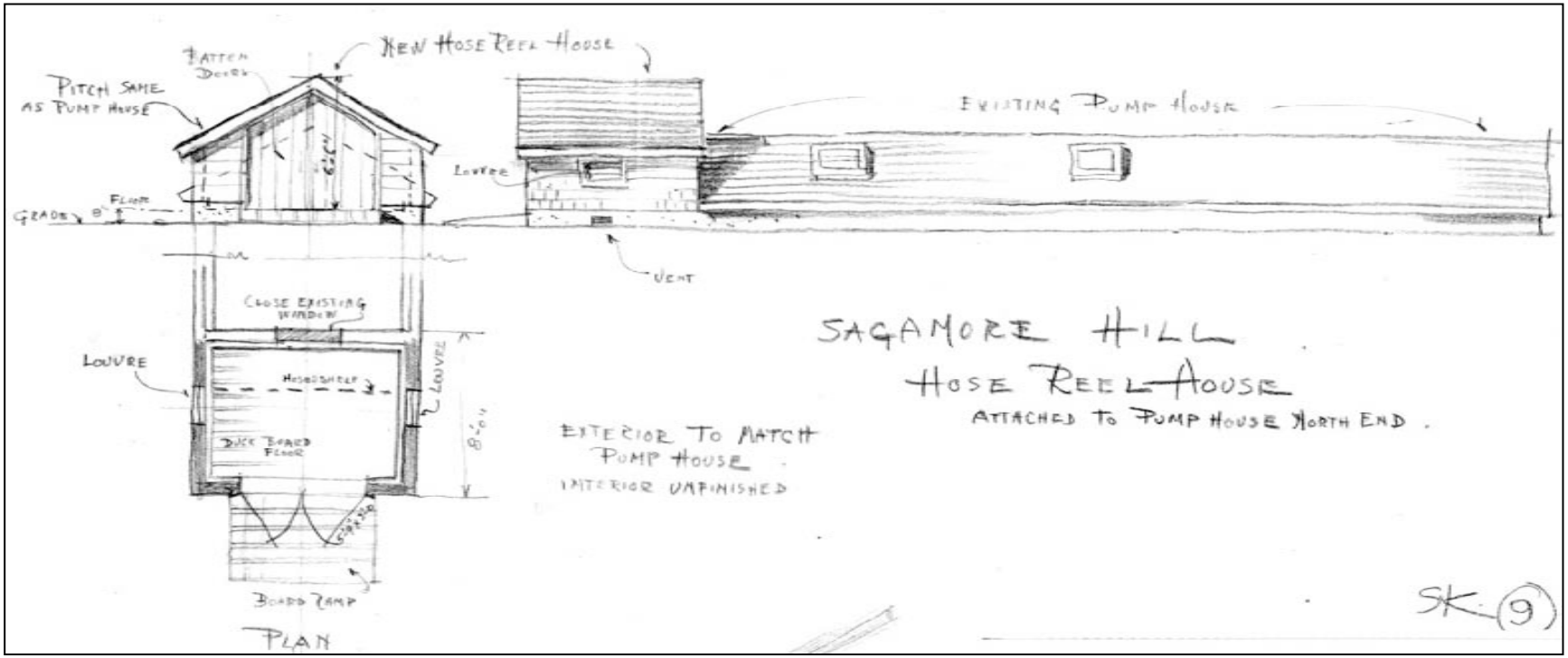

Figure 87. Sketch of Pump House and proposed Hose Reel House constructed at the north end of the Pump House: Chapman, Evans, & Delehanty, April 8, 1952.

1953- 1963

The addition of the Hose Reel House to the north end of the Pump House appeared to be the most significant change to the Pump House during the TRAs ownership. The Pump House complex was among the buildings to be painted "in (the) new colors chosen by Mr. Powell" in 1953.[174] The documentary and physical evidence indicated that the extant Pump House and Hose Reel House were regularly maintained by the TRA and later by the NPS but not significantly altered since the work in the 1950s.

As previously described, there was no windmill at Sagamore Hill by 1950. Historic photographs of Sagamore Hill available to the TRA at the time depicted the Windmill and its location. After making several improvements to the buildings at Sagamore Hill the TRA was considering reconstructing the Windmill. In a letter to Dempster Mill Co. dated June 12, 1956, Robert Scott wrote that he was looking for an 18 foot wheel for a windmill to be built at Sagamore Hill. Scott noted that an architect had made blue prints for a windmill tower based on photographs of the Old Windmill and had provided specifications for the footings and timbers to the TRA.[175] However, the reconstruction of the Windmill was not actually accomplished until after the NPS took over the site.

1963 - 1970

Photographs of the Pump House from the 1960s recorded the buildings condition soon after Sagamore Hill was established as a National Historic Site in 1963 (fig. 88). Though overgrown with vegetation, the building appeared to be unaltered since the TRA additions and in good condition.

Figure 88. Pump House: Looking northwest, 1969. Hose Reel House depicted at north end of Pump House.

[174] E.W. Howell to Mrs. Kraft, March 3, 1953. TRA Admin. Records 1880-1978; Site Admin. Files: Restoration and Renovation Records. SAHI 9800. Box 12, Folder 1. SAHI Archives.

[175] Robert Scott to Dempster Mill Co., June 12, 1956. TRA, Addendum, SAHI Archives.

The NPS "Individual Building Data" form for the "Pump House & Hose House; Bldg. No. 12" dated January 31, 1969 listed the use of the structure as "Domestic Water & Fire Protection." At the time, the Pump House was listed in good condition overall and good structural condition and the mechanical equipment was in fair condition. The form did state that the roofing was wood shingles, which were installed by the TRA and was apparently a change from the asbestos shingles proposed in 1952.[176]

1970 – 1971

Francis Wilshin completed his report on the Windmill at Sagamore Hill on May 27, 1970 (Appendix B). The report documented the early Windmill at the site and the construction of a replacement Windmill in 1905. Wilshin included pertinent primary documentation concerning the construction of the 1905 Windmill, as well as historic photographs documenting the structure. It was Mr. Wilshin's conclusion that the Windmill at Sagamore Hill, including the tower and wheel, was replaced in 1905. Based on the photographic evidence, he determined that the tower was approximately 60 feet high and the wheel was about 22 feet in diameter. He also noted that if A.J. Corcoran had installed the wheel recommended for the 1905 Windmill, it would have been 22 feet 6 inches in diameter. His recommendation was that the historic photographs (figs. 83 & 84, among others) "be used as the guide to authentic restoration of the Sagamore Hill windmill."[177]

Subsequent correspondence and meetings between the NPS and the TRA Sagamore Hill Advisory Committee in 1970 and 1971 determined that the Park would proceed with the reconstruction of the Windmill. The project was opened to competitive bids and on July 8, 1971 the project was awarded to Current Construction Corp.[178] However, during the planning stage project engineer, George Lucko determined that replicating the 22 foot historic wheel would not be practical. The wooden wheel specified would weigh close to 300 pounds and the modern windmill motors would not operate satisfactorily with a wooden wheel of that size.[179] For those reasons, and others enumerated in another letter, Mr. Lucko recommended the substitution of a metal wind wheel for the wooden wheel.[180]

The Windmill was reconstructed per NPS specifications during the summer of 1971. The specifications for the reconstruction of the 60 foot wooden windmill tower called for reinforced concrete piers to support the tower (fig. 89). The tower was constructed with pressure treated, dense grade, Yellow Pine. The corner posts were 6 inch by 6 inch, the corner post buttresses were rough carved 8 inch by 8 inch, the cross braces and horizontal boards were 2 inch by 8 inch, and the deck was 2 inch by 6 inch (fig. 90).[181] A steel ladder was bolted to the tower and a metal windmill wheel was installed on top of the tower.

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[176] Kempf, Pump House & Hose House, Bldg. No. 12, 1/31/1969.

[177] Wilshin, "The Windmill of Sagamore Hill". p. 13.

[178] Jerry Wagers, General Superintendent, NPS, Fire Island National Seashore & New York City Group to Current Construction Corp., July 15, 1971. Windmill Restoration, SAHI Files, NPS, NER, Lowell, MA.

[179] George Lucko, Civil Engineer, to Wagers, April 13, 1971. Windmill Restoration, SAHI Files, NPS, NER, Lowell, MA.

[180] Lucko to Wagers, May 19, 1971. Windmill Restoration, SAHI Files, NPS, NER, Lowell, MA.

[181] "Specification Windmill Tower – Sagamore Hill Construction Provisions," Windmill Restoration, SAHI Files, NPS, NER, Lowell, MA.

Figure 89. Concrete piers for reconstructed windmill tower, 1971.

Figure 90. Windmill: During reconstruction, 1971.

The reconstructed Windmill was completed in September 1971. There were no significant alterations to the Pump House during the reconstruction of the Windmill.

1971 – Present

Since the 1971 project, the Pump House and associated structures have received regular maintenance by Park staff. Maintenance files indicated that the wooden elements of the Pump House and Hose Reel House were periodically painted. There have been no significant changes to the structures since 1971.

Figure 91. Windmill with Pump House and Hose Reel House at base, ca. 1988.

The NAHPC made some repairs to the Windmill tower and wheel in 1988. Repairs to the tower and deck were performed by Paul Sazani. The repairs were apparently minor and were not detailed in the documents reviewed. All wood repairs were done with materials to match the existing 1971 Reconstructed Windmill materials (fig. 91). The metal wheel was also repaired during that project. The project documents indicated that the wheel installed in 1971 had been repaired in 1972 and the project staff determined that the reconstructed 1971 wheel had been a 12 foot wheel. Therefore the 1988 repairs were made with a 12-foot wheel and other necessary parts.[182]

The Pump House and Hose Reel House roofs were replaced with red cedar wood shingles by Park Maintenance staff in 1990. During the same project, the side wall shingles of the Hose Reel House were also replaced. The wooden elements of both structures were subsequently painted.[183]

The underground tank that protruded through the east wall of the north room was removed in the 1990s. The poured concrete wall was patched with concrete blocks or "cinder blocks" laid with a cement mortar. During recent site visits, the concrete blocks were visible above grade and no attempt was made to blend them in with the poured concrete foundation. The landscape where the tank was removed was filled in and leveled.

[182] "Completion Report, Windmill Restoration", SAHI Files, NPS, NER, Lowell, MA.
[183] U.S. DOI, Requisition Form, 9/19/1990, and project notes; SAHI Maintenance Files.

PUMP HOUSE & WINDMILL

CURRENT PHYSICAL DESCRIPTION

Figure 92. Windmill, Pump House and Hose Reel House, 2007.

Pump House

Exterior Elements

The Pump House is a sunken structure that measures 11 feet 4 inches wide by 35 feet 8½ inches long. It was built in two sections that were constructed at two different times. The foundation materials of the two sections were not the same and help differentiate the two stages of construction. The foundation at the south end of the Pump House was constructed with red brick laid in mortar and is 8 inches thick. The foundation of the north end of the building was constructed with poured concrete and is also 8 inches thick. The tops of both foundation walls are exposed about one foot above ground and the remainder of the foundation is underground.

A framed gable wall rests atop the north and south ends of the foundation wall. The north end was covered by the addition of the Hose Reel House in 1953. The south gable wall is exposed and is sided with wood shingles. A 3½ inch rake board was installed at the juncture of the gable wall and the overhanging roof.

The gable roof of the Pump House was constructed as a unit to cover both sections of the building. The roof is covered with wood shingles installed by the Park and has a woven wood shingle ridge cap. The south end of the roof overhangs the gable wall by about 6 inches. The gable-end of the roof is trimmed with 3½ inch verge boards that match the rake boards on the gable wall of the building (fig. 93).

Figure 93. Pump House: South elevation with new bulkhead cover, 2007.

A bulkhead was constructed at the south end of the Pump House to provide access to the underground rooms. The bulkhead has a brick foundation that is 5 feet wide and 7 feet 1½ inches long and extends about 6 inches above ground. The bulkhead cover has double doors and was replaced by the Park in 2007 (fig. 93). The side walls of the bulkhead cover are tongue-and-groove cedar and the two doors were constructed with tongue-and-groove oak. The doors are hinged with strap hinges and a rail was installed where the doors meet. Flashing was installed at the juncture of the bulkhead cover and the south gable wall.

Interior Elements

The bulkhead provides access to the Pump House through the double-doors. Five brick steps with wooden treads lead down to a doorway at the south end of the Pump House. The doorway is 3 feet wide and 6 feet high and has a sliding door leading into the building. The doorway has a board-and-batten door constructed with tongue-and-groove boards. The upper section of the door has a window opening with a fixed four-light sash.

Figure 94. Pump House: South room and bulkhead entry, looking south, 2007.

The south room of the Pump House has brick walls that were initially coated with a whitewash that has been subsequently covered with layers of white paint. The floor of the south room is concrete slab and the early well head, which has been capped, is roughly centered in the room. The ceiling of the south room is covered with 3⅜ inch beaded tongue-and-groove boards. Some of the boards are missing and others are loose. A hinged hatchway in the ceiling provides access to the area under the roof. Attached to the ceiling is piping for the defunct sprinkler system and

more recent metal conduit pipe for the electric light that was installed in the center of the ceiling.

A cinder block tank with a wooden cover abuts the northwest corner of the room. It is not known when this tank was added but since it appears in the TRA drawings of the Pump House, it probably pre-dates 1952.

The doorway from the south room to the north room is 3 feet 8 inches wide and the doorjamb is 8 inches wide [the width of the earlier brick foundation (fig. 95)]. The doorway has a sliding four-panel door.

The north room has poured concrete walls with the exception of an area in the east wall where the pressure tank was removed. That area was patched with concrete blocks and parged with cement. The poured concrete walls appear to be covered with whitewash and subsequent layers of paint. The floor of the north room is concrete slab and approximately in the middle of the room is a raised slab for the pumping engines. Like the south room, the ceiling of the north room is covered with beaded tongue-and-groove boards. However, a large portion of the boards have been removed and plywood patches have been installed in their place. Metal conduit and a utility light fixture have been attached to the ceiling.

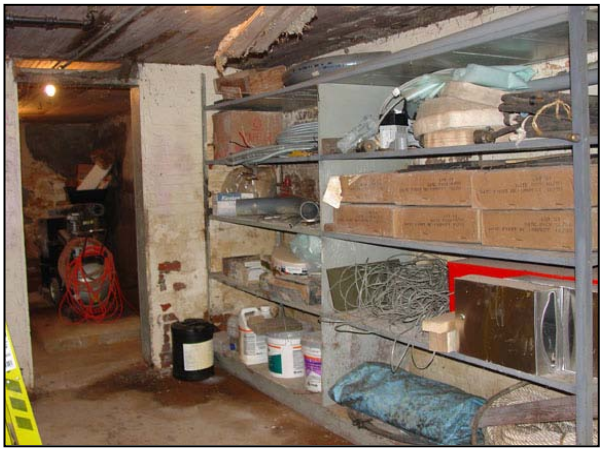

Figure 95. Pump House: Interior south room looking north, 2007.

The interior of the Pump House currently has electrical service boxes attached to the walls in both rooms. The electrical service appears to run to the main house and may also service other structures on the site. Shelves have been installed in both rooms and are used for maintenance storage by the Park.

Structural Elements

The primary structural support for the Pump House is the brick and concrete foundation walls. A plate is attached to the top of the foundation and the gable-end walls and the roof structures are fastened to that. The framing of the gable-end walls was not observed but they were probably framed with 2" by 4" studs. The roof was framed with 2 inch by 4 inch rafters and has a 2 inch by 4 inch ridge board.

During the recent repairs, the bulkhead cover was reframed with pressure treated lumber.

Hose Reel House

Exterior Elements

Figure 96. Hose Reel House: North elevation, 2007.

The Hose Reel House was constructed at the north end of the Pump House in 1953. It is a rectangular structure that is 11 feet 8½ inches wide (east-west) and 8 feet 4 inches long (north-south). The building was constructed on locust piers and screening has been installed at the ground level to keep animals from burrowing underneath the building.

The exterior walls of the Hose Reel House are covered with wood shingles with a 6 inch exposure. The corners are trimmed with 5 ½ inch plain corner boards. Plain 3½ inch trim boards were installed at the cornice of the side walls and the gable rakes.

On the north elevation of the Hose Reel House there is a single step up to the entry doorway. The step is 1 foot 3 inches wide and 7 feet long. It is supported by 4 inch by 4 inch posts and skirt boards are attached below the step.

The Hose Reel House doorway is 6 feet wide and is centered on the north wall of the building. The top of the doorway is within the gable and has a gable shape to accommodate the roof line. The doorway has double board-and-batten doors that are both 3 feet wide and were constructed with 5½ inch beaded boards and Z braces. The doors are hung on strap hinges and secured with a hasp and lock.

The roof of the Hose Reel House was constructed to match the pitch of the Pump House roof. It is covered with wood shingles and the ridge is capped with boards. The roof overhangs the north and south gable ends of the building and is trimmed with 3½ inch verge boards that match the rake boards on the gable wall of the building.

Interior Elements

Figure 97. Hose Reel House: Interior, 2007.

The interior of the Hose Reel House has one room that was specifically built to store fire protection equipment for Sagamore Hill.

The room has a wood floor with 3½ inch tongue-and-groove boards. The walls and ceiling of the room are open to the framing with the exception of the south wall, which is covered with wallboard. The openings for the louvered vents that were depicted in the 1952 sketch (fig. 87) were evident on the east and west walls but have been covered over. A low storage shelf runs along the south wall. A small screened vent to the north room of the Pump House was cut in to the base of the south wall near the center of the wall.

Structural Elements

The Hose Reel House was supported by locust posts that supported a 4 inch by 6 inch sill. [184] The floor was framed with 2 inch by 6 inch floor joists and the walls were framed with 2 inch by 4 inch studs and a 4 inch by 4 inch plate. The roof was framed with 2 inch by 4 inch rafters and a 2 inch by 6 inch ridge. 1 inch by 5 inch exterior sheathing boards were installed on the side walls and roof.

[184] E.W. Howell Co. to Chapman, Evans, & Delehanty, April 5, 1952. TRA, Addendum, Box 1, Folder 34, SAHI Archives. Some framing details were not visible during the current building investigation and the documents were relied upon for those framing details.

Windmill

Figure 98. Windmill: Looking northeast, 2007.

The Windmill was reconstructed in 1971 per the specifications of the NPS based on written and photographic documentation of the circa 1905 Windmill at Sagamore Hill. The Reconstructed Windmill at Sagamore Hill straddles the south end of the Pump House and is a 60 foot wooden structure with a metal windmill wheel installed at the top. Supporting the structure are four re-enforced concrete piers to which the corner posts and corner post buttresses are attached. The four corner posts are constructed with 6 inch by 6 inch pressure treated Yellow Pine. Each corner post is bolted to an 8 inch by 8 inch Yellow Pine buttress that has been carved to replicate the buttresses depicted in historic photographs of the Windmill. The cross braces and horizontal boards are 2 inch by 8 inch pressure treated Yellow Pine and are fastened to the corner posts with carriage bolts. Where the cross braces intersect, they are fastened together with bolts. Near the top of the tower is an octagonal wooden deck constructed with 2 inch by 6 inch Yellow Pine. Due to safety concerns, the deck was not accessible for this investigation and the information for the decking is based on the 1971 specifications.[185] A wooden railing and balustrade is installed around the perimeter of the deck. A steel ladder bolted to the east side of the tower provides access to the deck and windmill wheel. The metal wheel is 12 feet in diameter with metal blades and a metal blade tail.

[185] "Specification Windmill Tower – Sagamore Hill Construction Provisions," Windmill Restoration, SAHI Files, NPS, NER, Lowell, MA.

CHARACTER-DEFINING FEATURES and RECOMMENDATIONS

INTRODUCTION

A historic structure may be significant for its architectural features and/or its association with historic events and persons. The character-defining features (CDFs) of a building are those visual features and elements that define the structure and contribute to the building's historic integrity. Only by retaining those CDFs can the historic integrity of the structure be preserved.

In accordance with the GMP, the overall treatment for Sagamore Hill NHS is preservation and rehabilitation. The proposed treatment for the farm buildings at Sagamore Hill is restoration of the exteriors and rehabilitation of the interiors as components of the preservation and rehabilitation of the site. The Secretary of the Interior's Standards defines rehabilitation "as the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values."[186] Preservation and restoration can occur under the umbrella of rehabilitation. The Secretary of Interior's Guidelines further address the rehabilitation of a property and character-defining features as follows:

1. 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.

2. 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.

3. 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.

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

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

6. 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.

7. 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.

[186] NPS website URL – http://www.cr.nps.gov/hps/tps/stanguide/rehab/rehab_index.htm.

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

9. 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.

10. 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.[187]

The period of significance for Sagamore Hill in accordance with the National Register of Historic Places is 1884 – 1948. The current interpretation of Sagamore Hill places emphasis on the years the site was associated with Theodore Roosevelt, 1884 – 1919. The National Register criteria recognize the significance of the architecture of the Queen Anne-style main house, which dates to 1884 – 1885. The National Register also recognizes Edith K. Roosevelt and Theodore Roosevelt, Jr., as significant persons associated with the site. The period of Edith K. Roosevelt's stewardship, 1919 – 1948, is considered important, but has not been the focus of the interpretation of Sagamore Hill.

In determining the character-defining features of the farm buildings, greatest consideration has been given to the fact that, with the exception of the Reconstructed Windmill and the Hose Reel House, they were all built during Theodore Roosevelt's stewardship of the property. The evidence that there were few alterations to the farm buildings throughout the Roosevelt family's tenure was also important in determining the CDFs of the buildings. The location of the buildings within the historic farm core and their contribution to the farming and household activities at Sagamore Hill were also considerations. The CDFs recognize the entire tenure of the Roosevelt family at Sagamore Hill, 1884 – 1948. However, it appears that Edith Roosevelt made few changes to the outbuildings and most of the CDFs date to Theodore Roosevelt's tenure. Those CDFs that date to Edith Roosevelt's tenure are indicated by a notation in parentheses.

[187] NPS website URL – http://www.cr.nps.gov/hps/tps/stanguide/rehab/rehab_standards.htm

GARDENER'S SHED

CHARACTER-DEFINING FEATURES

Exterior Elements

Design and Context

- Original location of the Gardener's Shed within historic farm core and in relation to the gardens and other farm buildings at Sagamore Hill.
- Overall massing of the Gardener's Shed.
- Incorporation of Victorian-era elements in original design of Gardener's Shed.

Materials

- Vertical board-and-batten wood siding, especially extant original siding on the north and west elevations.
- Wood shingle roofing material that is consistent with materials depicted in historic photographs.

Window Openings and Doorways

- Diamond shaped window openings and sashes in the north and south gable-ends are representative of the original elements, as well as a feature of the original design. (Extant window openings appear to be alterations after the Roosevelt period but are representative of the historic window openings.)
- East elevation doorway, sliding door, and hardware, including the original rollers that the door is hung on, and track and rail that guide the rollers.

Roof and Related Elements

- North – south oriented ridge with gable roof with overhanging eaves and projecting edges of the gable slopes.
- Boxed eaves and projecting edges of the gable slopes constructed with plain boards.

Interior Elements

- Open room plan on first story.
- Walls and ceiling open to the framing elements.
- Plank flooring.
- Three built-in closets lining the north wall.
- Evidence of the opening for a stove pipe and the missing stove.
- Open staircase leading to loft.
- Doorway and board-and-batten hatch door to loft.
- Open loft space with window openings on the gable-ends.

Structural Elements

- Timber frame using full dimension framing materials and traditional joinery, especially extant original framing that was not disturbed during rehabilitation in 1986.

GARDENER'S SHED

RECOMMENDATIONS

The preferred alternative of the GMP discusses the preservation and restoration of the structures within the historic core. The exterior of the Gardner's Shed should be restored to reflect its appearance during the Roosevelt period. If feasible, the restoration of the shed's exterior should include restoring the window openings in the sliding door and the stovepipe on the east elevation of the roof. The interior of the building should be rehabilitated and used to house interpretive media about the farm at Sagamore Hill. However, given its historic use, it would be appropriate for the Gardener's Shed to focus on the interpretation of the gardens and the gardening staff, as well as the landscape around the main house, especially the manicured lawns. Other farm buildings could be utilized to help interpret the farming activities at Sagamore Hill (see "Farm Shed, Recommendations").

Exterior Elements

- The location of the Gardener's Shed is important in the context of the site, the buildings function, and its proximity to the gardens and the other farm buildings at Sagamore Hill. The current location should be retained during restoration.

- The restoration should preserve the overall massing of the building and the Victorian-era design and elements. Those elements include the vertical board-and-batten siding, the diamond-shaped gable-end window openings, and the overhanging boxed eaves and projecting edges of the gable slopes.

- The exterior elements of the Gardener's Shed reflect the building's appearance during the Roosevelts' tenure. This includes the vertical board siding, the doorway and doors, the window openings and sashes, the roofing materials and the exterior trim. Some materials are original to the building and some were replaced in-kind during the 1986 NPS rehabilitation. In all cases, the exterior materials are character-defining features and should be retained and preserved. All exterior materials should be routinely maintained to avoid deterioration. The preservation of these materials may require repair or replacement. In those cases the repairs should be performed with in-kind materials.

- Presently, the wood shingle roof requires replacing and should be replaced with red cedar shingles to match the existing materials. Portions of the vertical board siding are deteriorated beyond repair and will need to be replaced with in-kind material.

- The restoration of the exterior of the Gardener's Shed should include painting the exterior elements with the paint colors recommended in the Exterior Paint Analysis (Appendix D).

Interior Elements

- The rehabilitation of the interior of the Gardener's Shed should preserve and retain the open plan of the first story. The installation of interpretive materials in the building should be performed in a manner that preserves the open plan and does not divide the room.

- The rehabilitation of the Gardener's Shed should preserve the opens walls and ceiling that expose the framing of the building on the first story and in the loft. The use of the interior for interpretation should take advantage of the interior elements of the building to help tell the story of the farming operation at Sagamore Hill and should not conceal these elements.

- The interior elements of the Gardener's Shed reflect the buildings appearance during the Roosevelts' tenure. This includes the plank flooring, built-in closets, the opening for a stovepipe, and the open staircase and doorway to the loft. Though there is no documentation of the type of stove used in the shed, the Park should consider installing a period-appropriate stove for interpretive purposes. Some materials are original to the building and some were replaced in-kind during the 1986 NPS rehabilitation. In all cases, the interior materials are character-defining features and should be retained and preserved. Work that would affect these elements should be carefully considered and planned to have minimal impact on the historic materials.

Structural Elements

- The rehabilitation of the Gardener's Shed should preserve and retain the timber framing and joinery, including extant original framing as well as framing that was replaced in-kind during rehabilitation in 1986. The framing elements should remain exposed on the interior of the building. Work that would affect these elements should be planned for minimal impact.

FARM SHED

CHARACTER-DEFINING FEATURES

Exterior Elements

Design and Context

- Original location of the Farm Shed within historic farm core and in relation to the farmyard and other farm buildings at Sagamore Hill, especially the adjacent Chicken House.
- Overall massing of the Farm Shed.
- Incorporation of late-nineteenth century Colonial Revival-style elements in original design of Farm Shed.

Materials

- Horizontal drop or novelty siding that was indicative of the period of construction and differentiated the Farm Shed from the Gardener's Shed and associated it with the Chicken House.
- Wood shingle roofing material that is consistent with materials depicted in historic photographs.

Window Openings

- The window openings symmetrically placed on the north and south elevations and centered in the east elevation and the double-hung, two-over-two sashes.
- The window opening in the east gable end.

Doorways

- West elevation doorway with double doors and hardware, including the strap hinges and pintles.
- The west elevation loft doorway, door, and hardware.

Roof and Related Elements

- East – West oriented ridge of the gable roof with overhanging eaves.
- Boxed eaves and molded rake boards.

Interior Elements

- Single room plan on first story.
- Horizontal shiplap board walls, the exposed loft floor joists, and the underside of the loft flooring visible in the ceiling of the first story.
- Interior elements of windows.
- Un-hewn round timber spanning width (north – south) of building on first story.
- Open plan in loft space.

Structural Elements

- Framing materials of building including the use of 4 inches by 4 inches posts with 2 inches by 4 inches studs that reflect the balloon framing techniques popular in circa 1890 when the Farm Shed was constructed.

FARM SHED

RECOMMENDATIONS

The preferred alternative of the GMP discusses the preservation and restoration of the structures within the historic core. The exterior of the Farm Shed should be restored to reflect its appearance during the Roosevelt period. The GMP proposes that the interior of the Farm Shed be rehabilitated for storage. However, the interior is currently open to visitors and used to store vending machines and some items related to site maintenance. It is recommended that the interior remain open and that, if feasible, some interpretive materials be introduced into the space to provide visitors with a better understanding of the activities at the farmyard.

Exterior Elements

- Original location of the Farm Shed within historic farm core and its relationship to the adjacent Chicken House should be retained during the restoration of the building. Restoration of the historic farmyard should not alter the location of the building and any work that would impact the way the Farm Shed is situated should be avoided.

- The restoration of the Farm Shed should not alter the overall massing of the building or the east – west orientation of the ridge of the gable roof.

- The exterior elements of the Farm Shed reflect the building's appearance during the Roosevelts' tenure. This includes the horizontal drop siding, full-width doorway and double-doors, loft doorway and door, window openings and sashes, roofing materials, and the exterior trim. Most of these materials are original to the building and help define the character of the shed and reflect the period and style of the Farm Shed. The exterior elements help distinguish the Farm Shed from the Gardener's Shed and link it to the Chicken House. All exterior materials should be routinely maintained to avoid deterioration. Any repair or replacement of these elements should be performed with in-kind materials.

- Presently the window sashes on the south elevation are deteriorated due to water runoff from the Chicken House roof. The sashes should be repaired with in-kind material replicated to match the historic window sashes.

- Deterioration of the trim and siding materials was noted at all four corners of the building. These elements should be repaired with in-kind materials milled to replicate the historic drop siding and trim.

- The restoration of the exterior of the Farm Shed should include painting the exterior elements with the paint colors recommended in the Exterior Paint Analysis (Appendix D).

Interior Elements

- The rehabilitation of the interior of the Farm Shed should preserve and retain the single room plan of the first story. Since the building is currently open to visitors, it is recommended that it remain open but that the vending machines and maintenance items be removed. It is further recommended that, if feasible, the interior of the first story be used for interpretive purposes to enhance the visitors understanding of the farmyard. The installation of interpretive materials in the building should be done in a manner that preserves the open plan and does not divide the room.

- The interior elements of the Farm Shed reflect the building's appearance during the Roosevelts' tenure. This includes the horizontal shiplap board walls, interior window elements, exposed loft floor joists and flooring in the first story ceiling, and the round timber spanning the first story. In all cases, the interior materials are character-defining features and should be retained and preserved. Work that would affect these elements should be carefully considered and planned to have minimal impact on the historic materials.

- The open loft space in the Farm Shed should be retained and preserved. It is currently used for storage and that use could continue after the building is rehabilitated.

Structural Elements

- The rehabilitation of the Farm Shed should preserve and retain the framing materials of building, which reflect the period and type of construction. Work that would affect the framing elements should be carefully considered and be planned to have minimal impact on the historic materials. The preservation of these materials may require repair or replacement. In those cases, the repairs should be performed with in-kind materials.

CHICKEN HOUSE

CHARACTER-DEFINING FEATURES

Exterior Elements

Design and Context

- Original location of the Chicken House within historic farm core and in relation to the farmyard and other farm buildings at Sagamore Hill, especially the adjacent Farm Shed.

- Overall massing of the Chicken House, the east – west orientation of the ridge of the gable roof, and the orientation of the long south elevation in relation to the original open fenestration of that side and the building's original use as a poultry house and evidence of the earlier openings on the south elevation.

- Incorporation of late-nineteenth century Colonial Revival-style elements in original construction of the Chicken House.

Materials

- Horizontal drop siding used on the Chicken House was indicative of the period and related the building to the Farm Shed.

- Wood shingle roofing material that is consistent with materials depicted in historic photographs.

Window Openings

- South elevation historic fenestration that reflected the building's use as a poultry house (not extant, see "Chicken House, Recommendations").

- The window opening and multi-pane sash in the east gable end.

Doorways

- West elevation doorway with window opening and four-pane tilting sash.
- The west elevation loft doorway, board-and-batten door, and hardware.

Roof and Related Elements

- East – West orientation of the ridge of the gable roof with overhanging eaves.
- Boxed eaves and enclosed gables.

Miscellaneous

- The hook on the left/north side of the west elevation and the wooden ladder that hangs on it and was used to access the loft.
- The vertical rail to the right of the door that was likely part of the fencing for the chicken yard.

Interior Elements

- The extant room plan on first story, especially Rooms 101 and 102, which are representative of the Roosevelt period.
- The interior wall elements including: horizontal shiplap boards, partition wall between Rooms 101 and 102 constructed with vertical tongue-and-groove and exposed framing, and the partition wall between Rooms 102 and 103.
- The doorway and board-and-batten door between Rooms 101 and 102, and the extant doorway between Rooms 102 and 103.
- Evidence of the original fenestration on the south wall of Room 102, especially extant framing elements.
- The exposed loft floor joists and underside of loft flooring in the ceiling of the first story.
- Open plan in loft space.

Structural Elements

- Framing materials of building including the use of 4 inch by 6 inch posts, 2 inch by 4 inch studs, and the 2 inch by 6 inch framing of the original openings on the south elevation.

CHICKEN HOUSE

RECOMMENDATIONS

In accordance with the preferred alternative of the GMP, the exterior of the Chicken House should be restored to reflect its appearance during the Roosevelt period. Though there is presently not enough evidence to restore the south elevation to its historic appearance, additional building investigation could help determine the historic configuration of that elevation. Upon the completion of that research, it may be feasible to restore the exterior of the building to its historic appearance. Until then, the Park should preserve the Chicken House and all evidence of its earlier configuration.

The GMP proposes that the interior of the Chicken House be rehabilitated for storage. However, the interior is currently used to display the Park's collection of tools and farm related items. It is recommended that the interior remain open and that, if feasible, some interpretive materials be introduced in the space to provide visitors with a better understanding of the original use of the building as a poultry house with adjacent chicken yard. The incorporation of additional interpretive materials may require that some of the existing display items be removed and/or used in a different location.

Exterior Elements

- Original location of the Chicken House within historic farm core and its relationship to the adjacent Farm Shed should be retained during the restoration of the building. Restoration of the historic farmyard should not alter the location of the building and any work that would impact the way the Chicken House is situated should be avoided.

- The restoration of the Chicken House should not alter the overall massing of the building or the east – west orientation of the ridge of the roof.

- Certain exterior elements of the Chicken House reflect the building's appearance during the Roosevelts' tenure. This is especially true of the west elevation and includes the horizontal drop siding, west elevation doorway and doors, west elevation loft doorway and door, east elevation gable window opening and sash, roofing materials, and the exterior trim. All exterior materials should be routinely maintained to avoid deterioration. The preservation of these materials may require repair or replacement. In those cases, the repairs should be performed with in-kind materials. The restoration of the exterior element should include the application of exterior paints in the colors recommended in the Paint Analysis (Appendix D).

- Unique elements on the west elevation, which include the hook, wooden ladder, and vertical fence rail, are reflective of the Chicken House historic appearance and should be retained and preserved.

- Evidence of the original fenestration on the south elevation of the Chicken House should be retained. Though it was determined in 1986 that there was insufficient evidence to restore the original fenestration, all evidence of the openings, including exterior siding anomalies and interior framing in Room 102, should be retained and preserved. The preservation of those elements will be important to future research that might include a more extensive building investigation to better determine the character of the original fenestration.

Interior Elements

- The rehabilitation of the interior of the Chicken House should preserve and retain the extant room plan of the first story, especially Rooms 101 and 102 that reflect the original appearance and use of the building. Since Room 101 is currently used for interpretive display, it is recommended that it remain open and, if feasible, be used for interpretive purposes to enhance the visitors understanding of the chicken coop and chicken yard. The installation of interpretive materials in the building should be done in a manner that preserves the extant room plan and does not further divide Rooms 101 and 102.

- The interior elements and materials of Rooms 101 and 102 reflect the building's appearance during the Roosevelts' tenure. This includes the horizontal boards on the outer walls, interior partitions, exposed loft floor joists and underside of loft flooring in the first story ceiling, and the doorways and doors. These interior materials are character-defining features and should be retained and preserved. Work that would affect these elements should be carefully considered and planned to have minimal impact on the historic materials.

- The open loft space in the Chicken House should be retained and preserved. It is currently used for storage and that use could continue after the building is rehabilitated.

Structural Elements

- The rehabilitation of the Chicken House should preserve and retain the framing materials of the building, which reflect the type of construction and provide evidence of the original structure. This is especially true of the extant framing of the south elevation evident in Room 102. Work that would affect the framing elements should be carefully considered and planned to have minimal impact on the historic materials. The preservation of these materials may require repair or replacement. In those cases the repairs should be performed with in-kind materials.

ICE HOUSE

CHARACTER-DEFINING FEATURES

Exterior Elements

Design and Context

- Original location of the Ice House east of the main house and adjacent to the service wing and east porch of the main house.
- Overall massing and design of the Ice House, including the octagonal shape, the steeply pitched pyramidal roof, and the north elevation entry gable roof and dormer, as well as the cistern below the first story.
- Incorporation of Victorian-era design and elements that compliment those of the main house.

Materials

- Exterior brick walls, which are similar to the brick used on the main house.
- Brick foundation and concrete parged walls of the below grade cistern.
- Wood shingle roofing material that is consistent with materials depicted in historic photographs.

Window Openings

- The poured concrete window well and below grade window opening to the cistern below the Ice House.

Doorways

- North elevation doorway that was the original entrance to the Ice House. Also certain elements of that doorway and pedimented portico that appeared to be original, such as the portico soffit, and ogee molding in the portico pediment.

Roof and Related Elements

- The eight-sided hip roof with overhanging eaves.
- Open eaves and exposed rafters.
- North elevation entry gable roof and dormer like projection from main roof.
- The cap or saddle at the peak of the roof and the associated ventilation for the Ice House.

Interior Elements

- Exposed brick interior walls.
- The sloped ceilings clad with horizontal tongue-and-groove boards fastened with cut nails.
- The octagonal ceiling near the peak of the roof constructed with tongue-and-groove boards and perforated with holes for ventilation.

Structural Elements

- Brick foundation and common bond brick walls that provide the primary structure of the Ice House.
- Framing of the eight-sided hip roof that includes hip rafters and jack rafters.
- Steel beams supporting the first story floor that were added during the Roosevelt period.

ICE HOUSE

RECOMMENDATIONS

The preferred alternative of the GMP discusses the preservation and restoration of the structures within the historic core. The GMP proposes that the exterior of the Ice House be restored to reflect its appearance during the Roosevelt period. However, that would require removing the TRA addition of the south entry doorway used when the building was converted to restrooms (see "Ice House, Alterations, 1951 – 1953). The Secretary of the Interior's "Standards for Preservation" states "changes to a property that have acquired historic significance in their own right will be retained and preserved."[188] Under that guideline, the changes made by the TRA may acquire historic significance in their own right and are worthy of preservation. The treatment of the Ice House should consider the consequences of removing the TRA additions when restoring the building.

The GMP proposes that the interior of the Ice House be rehabilitated for storage in keeping with the current use. Since the interior was altered by the TRA and there is little information about the original interior configuration, it is recommended that the interior continue to be used for storage.

Exterior Elements

- Original location of the Ice House adjacent to the service wing and porch on the east side of the main house. Rehabilitation of the historic core should not alter the location of the building and any work that would impact the way the Ice House is situated should be avoided.

- The restoration of the Ice House should not alter the massing and design of the original structure, including the octagonal shape, the steeply pitched pyramidal roof with overhanging eaves, and the north elevation entry gable roof with pedimented portico and dormer. These elements reflect the period style that compliments the design of the main house. Any work that would affect these elements should be carefully considered and planned to have minimal impact on the original massing and design that help define the structure as a support building for the main house.

[188] NPS website URL – http://www.cr.nps.gov/hps/tps/stanguide/preserve/preserve_standards.htm.

- The exterior elements of the Ice House reflect the building's appearance during the Roosevelts' tenure. This includes the brick walls, wood shingle roofing, concrete window well and window to the cistern, north elevation doorway, and certain elements of the north doorway including the portico soffit, and cyma recta molding in the portico pediment. Most of these materials are original to the building and help define the character of the shed. The exterior elements also reflect the Queen Anne style that are considered character-defining features and should be retained and preserved. All exterior materials should be routinely maintained to avoid deterioration. The preservation of these materials may require repair or replacement. In those cases, the repairs should be performed with in-kind materials.

- The restoration of the exterior brick should include repointing with a compatible sand-lime mortar.

- The restoration of the exterior elements of the Ice House should include painting the exterior elements, including the brick and trim, with the color palette recommended in the Exterior Paint Analysis (Appendix D).

Interior Elements

- The rehabilitation of the interior of the Ice House should preserve and retain the interior elements that reflect the building's appearance during the Roosevelts' tenure. These include the interior concrete parging of the cistern, brick interior walls, the sloped ceilings and tongue-and-groove boards fastened with cut nails, and the octagonal tongue-and-groove board ceiling near the peak of the roof. The rehabilitation of the interior of the building should be planned to have minimal impact on the historic elements. However, the removal of partitions and material added by the TRA would be allowed as long as it did not adversely affect the character-defining features previously identified.

Structural Elements

- The rehabilitation of the Ice House should preserve and retain the structural brick walls and the hip roof framing materials that reflect the period and type of construction. Work that would affect the structural elements should be carefully considered and planned to have minimal impact on the historic materials. The preservation of these materials may require repair or replacement. In those cases, the repairs should be performed with in-kind materials.

PUMP HOUSE

CHARACTER-DEFINING FEATURES

The GMP and the revised National Register Continuation Sheet consider the Pump House to be a contributing resource to Sagamore Hill NHS. In both documents, the Hose Reel House is included with the description of the Pump House, but the former was constructed by the TRA after the historic period.[189] Though the addition of the Hose Reel House is considered to be part of the developmental history of the Pump House, it was constructed after the Roosevelt period and is not considered a character-defining feature. The reconstructed Windmill is managed by the Park as a cultural resource but is not considered eligible for the National Register. Though the Windmill was part of the estates water system that was linked to the development of the Pump House, it is not discussed in the following CDFs and Recommendations.

Exterior Elements

Design and Context

- Original location of the Pump House within historic farm core and in relation to the well, reconstructed Windmill, the Ice House, and the main house, as well as other farm buildings at Sagamore Hill.

- Overall massing of the below grade sections of the Pump House and the continuous roof-line above those sections.

Materials

- Brick foundation of the circa 1905 south section of the Pump House, including those portions of the foundation that are above grade.

- Poured concrete foundation of the north section of the Pump House added during the Roosevelt family's tenure that include above grade portions of the foundation wall.

[189] Sagamore Hill National Historic Site, General Management Plan, p. 3-7.
Miller and Leahy, DRAFT National Register Continuation Sheet, Section 7, p. 7.

- Wood shingle siding on south gable-end of building.

Doorways

- South elevation bulkhead entry and doorway.

Roof and Related Elements

- The long north-south oriented ridge of the gable roof covering the entire underground structure of the Pump House.
- Wood shingle roofing material that is consistent with materials depicted in historic photographs.

Interior Elements

- Two below-grade rooms.
- Exposed materials of the interior walls, which includes the brick in the south room and the poured concrete in the north room.

Structural Elements

- Brick and poured concrete foundation walls that provide the primary structure of the Pump House.
- Framing of the gable roof.

PUMP HOUSE

RECOMMENDATIONS

The preferred alternative of the GMP discusses the preservation and restoration of the structures within the historic core. Though the plan for the Pump House is not discussed, presumably the exterior of the Pump House will be restored to reflect its appearance during the Roosevelt period. However, that would require removing the TRA addition of the Hose Reel House at the north end of the structure (see "Pump House & Windmill, Alterations, 1952 – 1953). The Hose Reel House is included with the description of the Pump House in both the revised National Register Continuation Sheet and the GMP.[190] The Secretary of the Interior's "Standards for Preservation" states that "changes to a property that have acquired historic significance in their own right will be retained and preserved."[191] Under that guideline, the changes made by the TRA may acquire historic significance in their own right and are worthy of preservation. The treatment of the Pump House should consider the consequences of removing the TRA additions when restoring the structure.

The interior should be rehabilitated and continue to be used for storage and as the location for some utility services. The reconstructed Windmill should continue to be managed as a cultural resource and is not addressed in this section.

Exterior Elements

- Original location of the Pump House within historic farm core and in relation to the well, reconstructed Windmill, the Ice House, and the main house, as well as other farm buildings at Sagamore Hill. Rehabilitation of the historic farmyard should not alter the location of the building and any work that would impact the way the Pump House is situated should be avoided.

- The restoration of the Pump House should not alter the overall massing of the building or the north – south orientation of the gable roof.

- The exterior elements of the Pump House reflect the building's appearance during the Roosevelts' tenure. This includes the brick and concrete foundations, gable-end shingle siding, south elevation bulkhead, roofing materials, and the exterior trim. These exterior materials are considered character-defining features and should be retained and preserved. All exterior materials should be routinely maintained to

[190] Miller and Leahy, DRAFT National Register Continuation Sheet, Section 7, p. 7
Sagamore Hill National Historic Site, General Management Plan, p. 3-7.
[191] NPS website URL – http://www.cr.nps.gov/hps/tps/stanguide/preserve/preserve_standards.htm.

avoid deterioration. The preservation of these materials may require repair or replacement. In those cases the repairs should be performed with in-kind materials.

- A section of the concrete foundation on the east elevation was repaired with concrete blocks when the expansion tank was removed from the building. Those concrete blocks should be parged with concrete in order to blend in with the other sections of the concrete foundation at the north end of the structure.

- The restoration of the exterior of the Pump House should include painting the exterior elements with the paint colors recommended in the Exterior Paint Analysis (Appendix D).

Interior Elements

- The rehabilitation of the interior of the Pump House should preserve and retain the two below-grade rooms of the building. Work that would affect the room plan should be planned to have minimal impact on the extant arrangement.

- The interior elements of the Pump House reflect the building's appearance and use during the Roosevelts' tenure. These are primarily the brick and concrete interior walls of the below grade structure, which are considered character-defining features and should be retained and preserved. Work that would affect these elements should be carefully considered and planned to have minimal impact on the historic materials.

- The tongue-and-groove ceiling in the south room of the Pump House is deteriorated and should be repaired during the rehabilitation of the structure. The repairs should be performed with in-kind materials to preserve the historic appearance of the ceiling.

Structural Elements

- The rehabilitation of the Pump House should preserve and retain the structural brick and concrete walls and the north – south gable roof framing materials. Work that would affect the structural elements should be carefully considered and planned to have minimal impact on the historic materials. The preservation of these materials may require repair or replacement. In those cases, the repairs should be performed with in-kind materials. Repointing of the exterior above grade brick foundation walls should be done with a compatible mortar.

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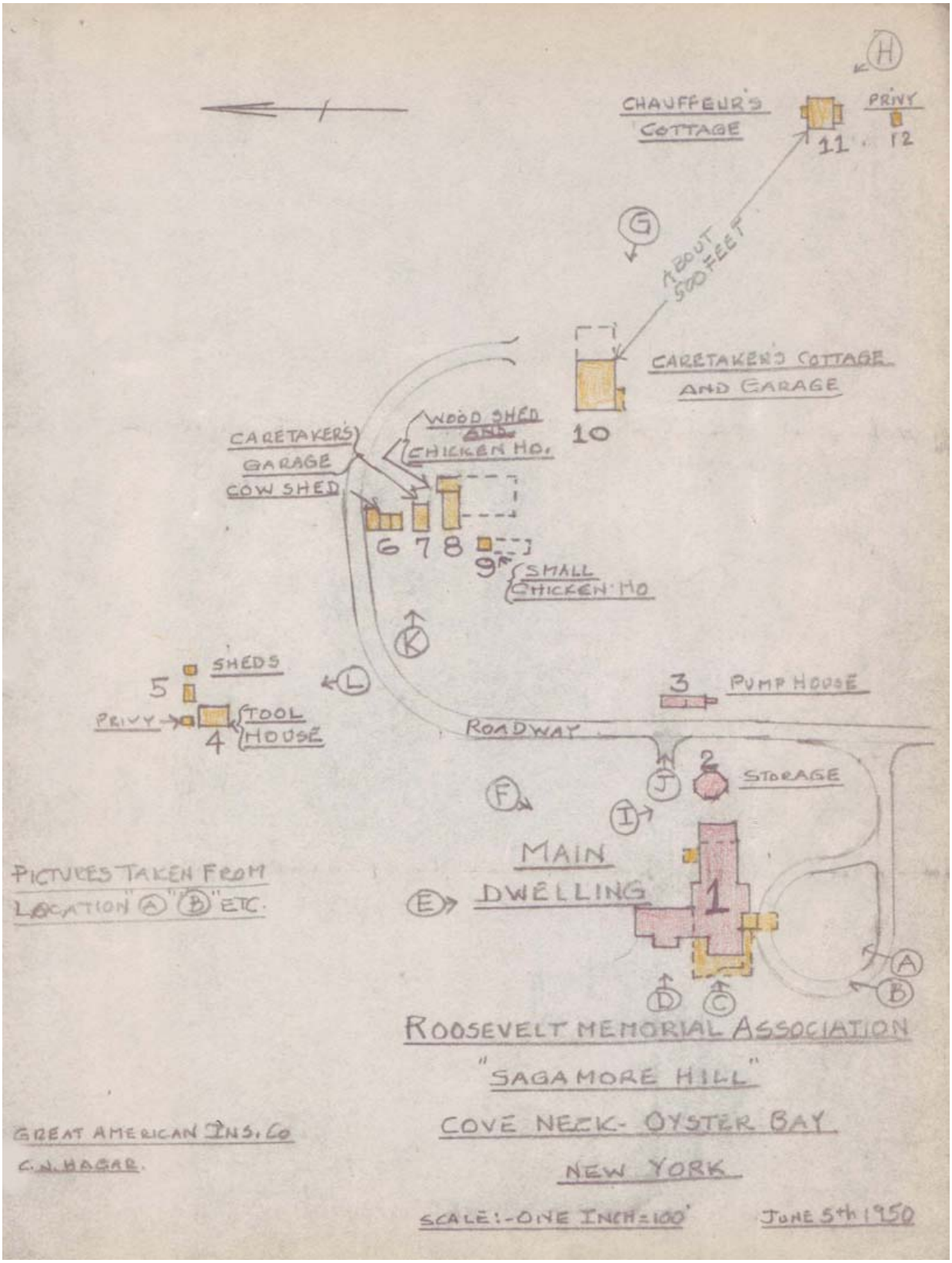
APPENDICES

APPENDIX A

Great American Insurance Agency
Inspection and Survey
June 1950[188]

[188] Great American Insurance Co. Inspection and Survey June 1950. TRA Materials, box 5, folder 2, SAHI Archives. This appendix only contains copies of pertinent pages; see archives for full report.


H
CHAUFFEUR'S COTTAGE
11
PRIVY
12
G
ABOUT 500 FEET
CARETAKER'S COTTAGE AND GARAGE
10
WOOD SHED AND CHICKEN HO.
CARETAKER'S GARAGE COW SHED
6 7 8
9
SMALL CHICKEN HO
K
L
5 SHEDS
PRIVY
4 TOOL HOUSE
3 PUMP HOUSE
ROADWAY
J
2 STORAGE
F
I
MAIN DWELLING
1
E
A
B
D
C
PICTURES TAKEN FROM LOCATION "A" "B" ETC.
ROOSEVELT MEMORIAL ASSOCIATION
"SAGAMORE HILL"
COVE NECK- OYSTER BAY
NEW YORK
GREAT AMERICAN INS. CO
C. N. HAGAR.
SCALE:- ONE INCH = 100'
JUNE 5th 1950

PROPERTY: Storehouse (Ice House) ITEM NO. 2

OCCUPANCY: Was constructed for ice or cold storage. Now used for odds and ends which could easily be stored in the basement of the main dwelling.

DESCRIPTION: An eight sided building with 6" brick walls that are five feet high and a wood shingle roof with wood under sheathing. Wood floor. Five " thick; wood door. Fair repair.

PREVIOUS FIRE INSURANCE AND RATE: $2,700 on building. Rate is .27

ESTIMATED 100% VALUE (JUNE 1950): Replacement value of $2,000. Sound value of $1,000 based upon 25% depreciation and 25% obsolescence.

SUGGESTIONS: NONE

PROPERTY: Pump House ITEM NO. 3

OCCUPANCY: Was pump house and vegetable storage. Now only pump house which takes about 50% of the building.

DESCRIPTION: The walls of this building are one foot above the ground and six feet underground making the shingle peak roof appearing as resting on the ground. Entrance at one end like a cellar entrance. About one-half of the walls are 8" brick and the balance poured concrete. The entire floor is concrete. One-half of the roof space is wood sealed. Size about 38'X10'X8' average height.

EQUIPMENT: In the pump area is a large belt driven deep well pump with two sources of power. First a three horsepower electric motor and second a gasoline driven engine of unknown horsepower. This equipment also operates a small air compressor. In one side wall of the concrete section one end of a six foot diameter steel pressure tank projects about one foot into the room. The caretaker does not know the length or capacity of this buried tank. It is below the basement of the main dwelling so that air pressure is necessary for use in such main dwelling.

PREVIOUS FIRE INSURANCE AND RATE: $4,700 on building and equipment. Rate is .28 on building and contents.

ESTIMATED 100% VALUE (JUNE 1950): Replacement value of $1,485 on building (43¢ a cubic foot) Sound value of $1,100 on building based upon 25% depreciation. As to the pressure tank and pumping equipment it is suggested if possible that information be secured from the original contractor that installed same.

SUGGESTIONS:

1. Provide a ten pound approved carbon dioxide fire extinguisher to be located inside at the entrance door and to be used on the motor and gasoline engine.

2. Also provide a 2½ gallon soda acid fire extinguisher at this same location for use on the building.

PROPERTY: Tool House ITEM NO. 4

OCCUPANCY: Used for garden and other tools necessary to maintain the property.

DESCRIPTION: A one story and attic wood board and batten building with shingle roof, wood floor and open stairway. Stove with tile chimney but which the caretaker says has not been used for many years. Poor repair. One 2½ gallon soda acid fire extinguisher. Recharged April 1950.

PREVIOUS FIRE INSURANCE AND RATE: $1,100 on building. Rate is .34

ESTIMATED 100% VALUE (JUNE 1950): Replacement value of $770 (18¢ a cubic foot). Sound value of $500 based upon 35% depreciation.

SUGGESTIONS:

1. Replace wood shingle roof (now in poor condition) with an approved asbestos shingle or composition roof.

2. Remove the tile chimney which is no longer used as heat is not needed in the building.

NOTE: At the rear of this building is a small privy which can be used. It is not now insured and has no value.

PROPERTY: Miscellaneous Sheds

DESCRIPTION: The sheds as described below at one time were an operating part of the property. However, they are now used for junk except for the chicken house (in which are kept a few chickens) and all are in poor repair. A small chicken house could be erected near the caretaker's building to take care of that occupancy.

SUGGESTIONS:

1. Erect, from the lumber of the miscellaneous sheds a small well painted chicken house to be placed near the caretaker's building.

2. We believe that the appearance of the "Memorial" property would be improved by the tearing down of these miscellaneous sheds and without, in any way, destroying a historic value. They are small frame unpainted farm "shacks."

Specific Details of Such Sheds

ITEM NO. 5 - SHED AT TOOL HOUSE: Two small sheds about 6'X8'X5 and 4'X5'X6' Previous insurance was $100 on building. Would suggest a $25.00 scrap value.

ITEM NO. 6 - COW SHED AND JUNK STORAGE: No cows are kept on the property. The building is about 26' long by about 15' deep and 8' high, of wood with composition roof, dirt and concrete floor. No light or heat. In poor repair. Previous insurance was $550 on building. Would suggest a scrap value of $100.

ITEM NO. 7 - CARETAKER'S GARAGE: Now used for junk storage. A one story and attic frame building 12'X18'X13' average height with shingle roof and concrete floor. No light or heat. Previous insurance was $1,100 on the building. Would suggest a scrap value of $100.

ITEM NO. 8 - WOOD SHED AND CHICKEN HOUSE: A few chickens kept in this building. The suggestion is made that this occupancy be moved to a new small chicken house to be located near the caretaker's dwelling. This is a frame building about 40'X14'X9 feet high with a concrete and dirt floor. No light or heat. Fair repair. Previous insurance was $1,200 on building. Estimated sound value of $400 based upon 35% depreciation and 25% obsolescence.

ITEM NO. 9 - SMALL CHICKEN HOUSE: No longer used. A frame building 8'X10'X7' high with composition roof and cement floor. No light or no heat. Previous insurance was $150 on building. Would suggest a scrap value of $25.00 on building.

ITEM NO. 12 - PRIVY AT CHAUFFEUR'S COTTAGE: No longer used. A 3'X5'X6' frame building. Previous insurance $75.00 on building. Would suggest no value.

APPENDIX B

Francis Wilshin. "The Windmill of Sagamore Hill A Part of the Basic Data Study and Historical Base Map of Sagamore Hill." (Washington, DC: U.S. Department of the Interior, National Park Service, Eastern Service Center, May 27, 1970).

The Windmill

of

Sagamore Hill

A
Part of the Basic Data Study
And Historical Base Map

of

Sagamore Hill

Prepared by:

Francis F. Wilshin, Historian

May 27, 1970

Cocoran--Wind Mill and Water Supply

The original windmill at Sagamore Hill was erected by A. J. Corcoran, March 19, 1898:

> I have now had your windmill on my place at Oyster Bay for a dozen years. It has given great satisfaction, and I consider it an excellent investment. For my situation I think it is the best pumping plant, and hitherto the yearly repairs have been entirely moderate.[1]

According to Corcoran, however, the windmill had been in operation since 1884 as is seen in his letter to Roosevelt dated "Thurs 19th Jan. 1905":

> You will remember the old wheel has been in operation since 1884 and doubtless many parts of it if not all will have to be renewed within a few years.[2]

It is apparent from the attached letters of A. J. Corcoran that the Sagamore Hill water system was not functioning properly in 1905. Corcoran obviously considered the system antiquated and inadequate for the family needs. In a letter to Roosevelt, January 19, 1905, he strongly recommended putting in a new system with work involving:

1. Removal of present windmill and tower.
2. Erection instead of a tank and supporting tower and windmill connecting it with pump then in operation--providing necessary fittings.
3. Provision and installation of tank to have a capacity of 40,000 gals, Corcoran pattern, "regularly made with

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1. Theodore Roosevelt Papers, Lib. Cong. Letter Book Series II, Feb. 1 - April 8, 1898, 4 Part Two, p. 585.

2. Ibid., Series I, Box 86. This would seem the more likely since the house was finished in 1885 and the stable and lodge were built before that.

iron bands, adjustible lugs, draw-rods and friction plates."

4. Supplying and installing "gauge for tank for showing depth of water at all times."

5. Construction of foundation and iron anchorage for support of tower.

6. Construction of tower to sustain tank to be 42' in height from ground line to tank-platform," truss-pattern and iron fastened, timber used to be of Georgia yellow pine, Savannah merchantable grade, dressed and primed with paint (color to be selected) tie-rods and bolts to have cast washers under heads and nuts, ladder to lead from ground-line to platform, thence to top of tank and to bottom inside, roof over top of tank regularly made and fitted, frame-work for support of windmill fitted in tank, all joints with tank made water-tight, no outside covering nor ornamentation but structure to be strong enough in every particular to sustain a tank filled with water (the gross weight being about 200 tons) and resist any pressure brought upon it by wind strains and the working of the windmill."

"All necessary pipe and fittings provided and put in place connecting with the existing system including ball valve in house tank for controlling flow from new tank."

7. Materials and labor--$3,786.00[3]

Corcoran further pointed out that the old wheel should be "thrown aside," to be replaced by his new and improved wheel with a diameter of 22'6". The cost of the new wheel was $840.00 but to make the work complete he would provide a special rebate so that the windmill of the proper size would cost only $462.00 The entire cost would thus be $4,248.00.

In a letter to Seman (Roosevelt Foreman) the next day, Corcoran

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3. Ibid.

furnished further justification for his proposal:

> First and most important is the question of water. The new windmill would run when the old would stand still and /that/ is what you want it to do so that it will take the water as fast as it accumulates in well. The mill is fitted so that you can make it work at a speed to pump just the quantity desired and you will always have a surplus for use in light winds.
>
> Again, the old windmill as you know has been in service for a long time. The main-frame or pivot upon which the mill is mounted is badly worn at the neck where it turns and at any time might during a NW wind cut out there. If this happened that might cause a delay in repairing it for I have not made a mill like yours in nearly twenty years.[4]

Shortly upon the receipt of the letter Roosevelt replied January 25:

> Seaman has sent me your letter. Any work you do is always excellent, and I know the arrangement you propose to be satisfactory, but it represents more money than I care to spend. Could we not arrange to have necessary repairs made to the wind mill and then have a great tank substituted for the small tanks now on the eastern porch outside the laundry? Would not a 20,000 tank do? How many gallons do the present tanks contain? Could you let me know about what the cost would be to repair the wind-mill and put this big tank on the porch in question in place of the present small tanks? then if a calm came we could by hand pump up the necessary water from the reserve tank, while in ordinary times the wind-mill itself would do the pumping. We could put on your new wind-mill, with this tank. I take it the old tower would answer if this was done, would it not.[5]

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4. Ibid.

5. Ibid. Series II, 1904-1905, Dec. 26-Feb. 3, Letterbook 53.

On January 28 Corcoran replied at some length analyzing the limitations of the water system and setting forth two other proposals for its improvement:

Dear Sir:

I have your favor of the 25th inst and in reply beg to say, an explanation of the proposed work requires writing at some length.

When making my estimate of the 19th inst I carefully considered the conditions in connection with your water supply as it exists, and the fact is that you are limited as to the quantity to be obtained, that is, you have a well which yields much below the average, and it has been demonstrated all along the range of hills from Roslyn to Port-Jefferson that if you strain the well by trying to obtain more water than the natural flow you also get running sand and comsequently ruin the well.

In such case a new well must be constructed, the work requiring from three to five months, its depth from 500 to 800 ft in order to tap the proper stratum. I am able to mention a number of such instances which occurred on this chain of hills if necessary.

This being a condition, I proposed a large tank in order to store all the water to be had when it could be pumped. The increase in size of windmill was suggested because the larger windmill will run during the lightest wind, also, with the intention to obtain as nearly as possible a small but continuous stream from well to tank.

Under the circumstances I should not dare to use a pump proportioned to the power of proposed mill preferring present pump worked by a long slow stroke, and with this end in view I advocate the 22'6" diameter wheel. To show my feeling it a necessity I quoted a price for it less than it cost me to make and erect but I wish you to have one of the best outfits in the land for there is nothing too good for you.

I have made two more propositions to meet your suggestions - the No. 2 to furnish a tank containing 20000 gallons and combination tank and windmill tower, similar to my Fig 151 placed over the well and high enough to supply tank in upper part of dwelling, with the old mill - proposition No 3 to be same as No 2 except that the new mill is to be used.

Now - as to repairing old mill - I can do this and will if you so instruct but I dislike doing anything which may prove to be a waste of time and money and which I can not warrant absolutely when completed.

The present skeleton frame-work will not support the proposed new mill. All such frames are made in proportion to the size and power of the windmill they are intended to carry and the new mill would have more than double those of the old.

As to the tanks in your dwelling - the upper has capacity for about 600 gallons - and the two on the porch combined contain about 6000 gallons - the latter having been a cause of annoyance if I may say so since the start because the 6000 gallons should have been available for the family rather than for laundry use, for one can send one's laundry out. I often wonder why the architect should have planned so scanty a supply for the house and I do not know another so small a tank for such service except where it is filled from the city main. Mr. Rich is putting up a small shack on the South Side for his own use and has purchased a tank to contain 3000 gallons placed high enough to supply the wants of the family.

As to putting a tank to contain 20000 gallons on the back porch - such a tank regularly made will be left in height by 16 ft bottom diameter.

Your present tanks are about 8 ft diameter and fill the oblong space. There is not sufficient head-room for the regular 16 x 16' tank and it would be necessary to tear apart some of the building to erect it. Even then it would project outside 7 ft and require a foundation for its support.

If the tank is to contain 20000 fallons and made in height so as not to disarrange the house it will have to be at least 21 ft in diameter, projecting 12 ft outside and requiring a large foundation as well as moving the ice house. If this plan is adapted, unless you make some change in the house to cover it, I am of the opinion it would always be an eye-sore - and further - practically, it would mean a large outlay of money without providing a remedy for the trouble in the house supply. In fact you would be none the better.

Concerning hand pumping - this is hard work - 1000 gallons of water weighing say four and one-half tons-

and to elevate this quantity every day or oftener is a task. As you are aware, times have changed and men are opposed to hard work. If you decide to do this I fear you would have to put an engine in the house later and the tank is so small that the man in charge would occupy more time in starting the engine than filling the tank.

If however you would prefer the 20000 gal. tank at rear of house I will send my engineer to take measurements for the work and report probably cost of tank and foundation under such conditions.

I have written as to these matters without reserve for it is important to commence right, avoiding alterations.

I am now erecting a tank and tower for D Fairfax Bush at Glen Cove to replace an outfit completed two years ago. The work proved thoroughly unsatisfactory and it had to be done again.[6]

Proposition No. 2

Furnish and erect at Oyster Bay LI NY on the Roosevelt property - including -

Tank - to contain 20000 gallons
Gauge for tank
Foundation and anchorage
Tower - 42 ft from ground line to bottom of tank
Pipe and fittings - and the
Old windmill

other material and conditions generally to be as stated in proposition dated 19th of January 1905 (No 1) price to be twenty-five hundred and eighteen 50/100 dollars - $2518.50

or

Proposition No. 3

If you conclude to use the new and larger windmill with the above outfit I am prepared to furnish and erect it as proposed in my estimate of the 19th inst and make same allowance from regular price as quoted therein so that extra cost to you will be four hundred and sixty-two dollars - $462.00 -[7]

6. Theodore Roosevelt Papers, Series I, Jan. 26 - Feb. 20, 1905, Box 57.

7. Ibid., Series I, Jan. 26 - Feb. 20, 1905, Box 87.

The size, character, appearance and location of the windmill of Sagamore Hill can be rather effectively determined from the five attached photographs:

1. Looking south by east showing north side of Sagamore Hill with the windmill to the left center of the photograph.

   Note: Though no date appears on the photograph it can be roughly dated as being prior to March 1905 when construction was started on the North Room. It would further appear that this was the original windmill erected according to Roosevelt in 1886 (letter to Corcoran, March 19, 1898) or in 1884 as stated by Corcoran (letter to Roosevelt, January 19, 1905).

2. Looking south showing what appears to be the same windmill and tower as that shown in No. 5 with the exception of the damage to the wheel.

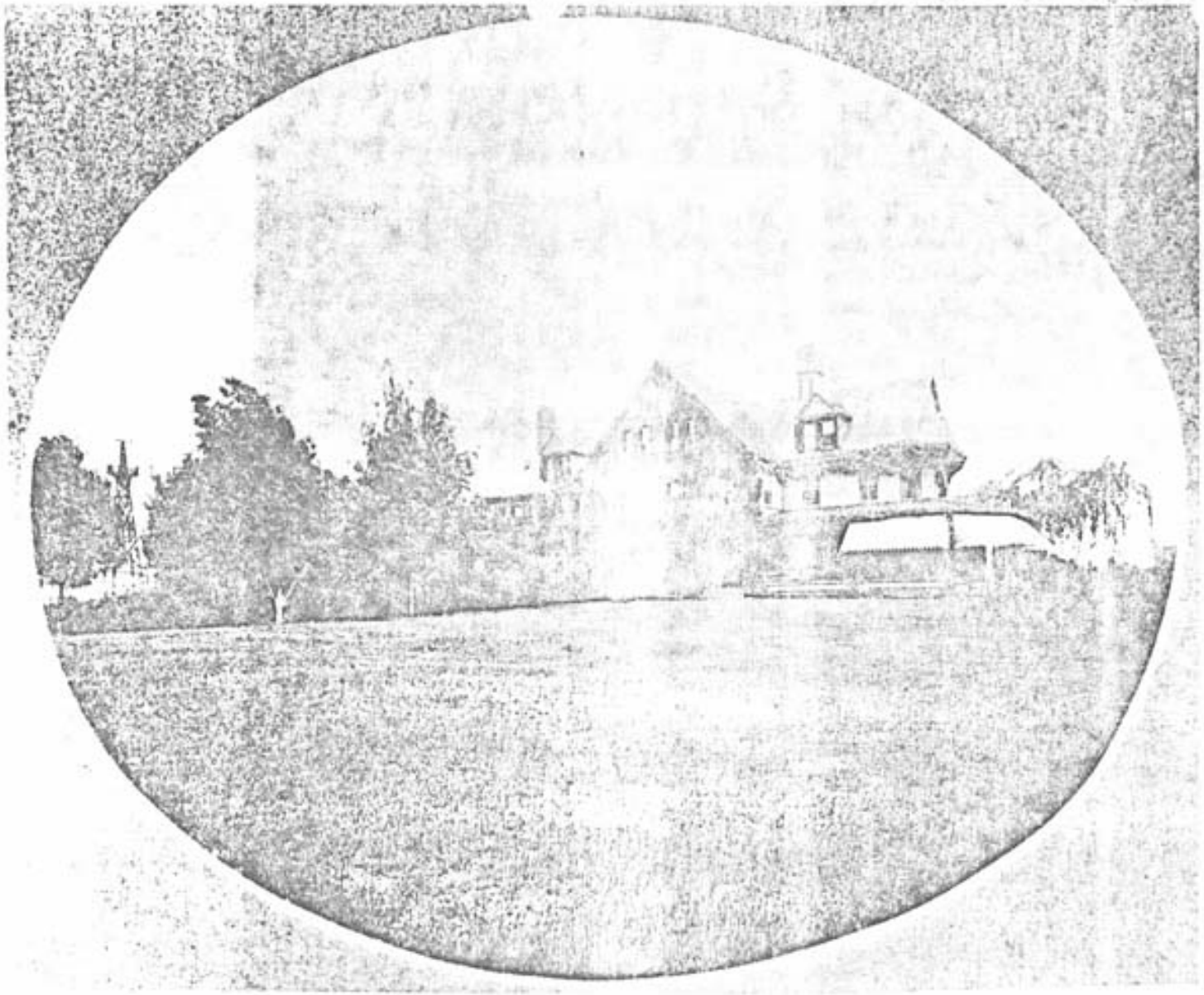
3. Photograph showing close up of foundation section of tower. "Archie" Roosevelt is shown standing on part of the superstructure. Corner post appears to be 6" x 6" and bracing 2" x 10".

4. Looking south showing in greater detail foundation structure of the windmill "Archie" and Quentin, two of the Roosevelt children are seen on the structure. Note in lower left corner embedded timber to which superstructure is bolted. Also note concrete well cap and windlass.

5. Looking southeast showing in practically full detail the appearance of the windmill and tower. For greater structure and foundation detail see photographs Nos. 3 and 4.

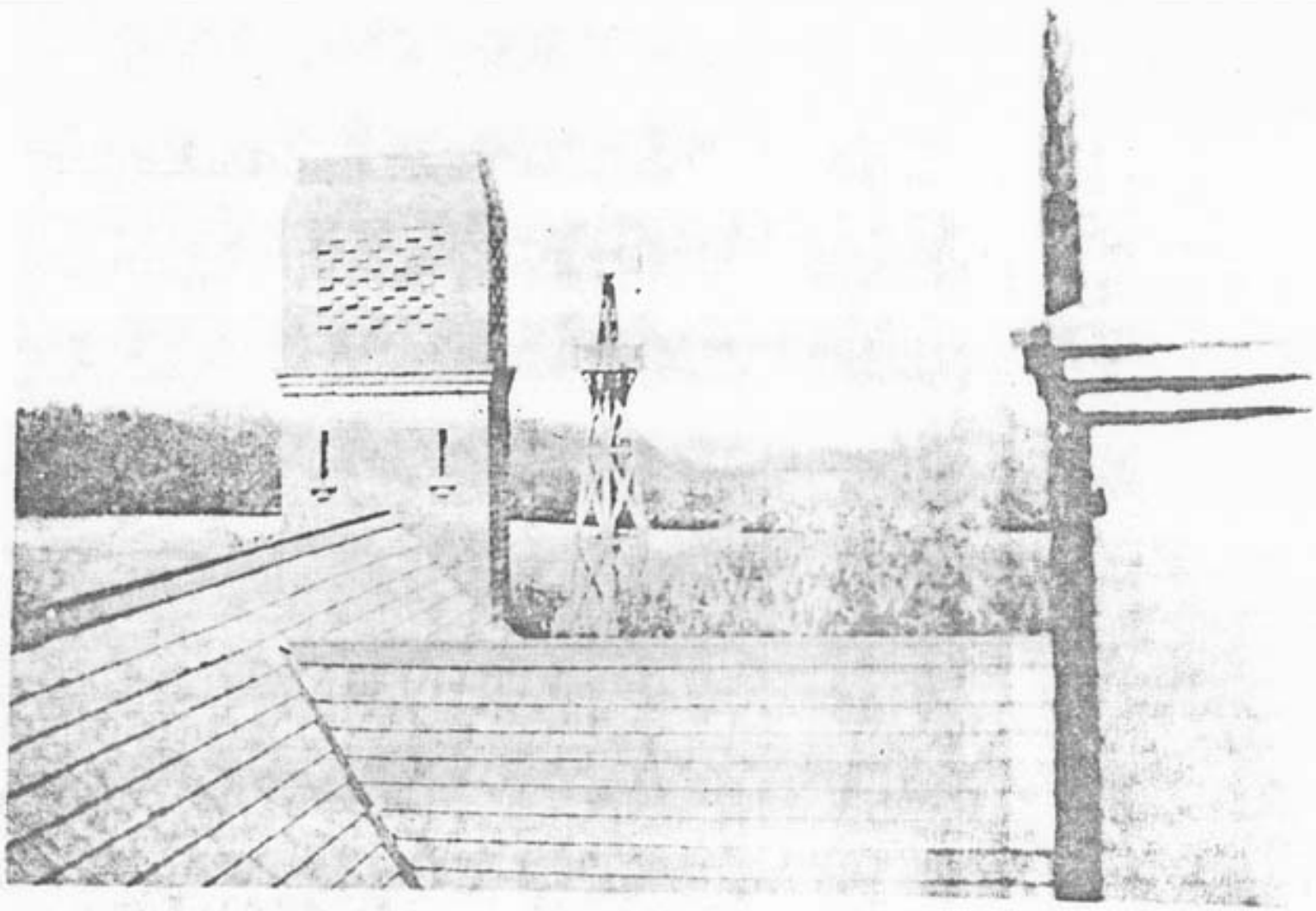
Photograph No. 1

Looking south by east showing windmill to the left center of the photograph. The photograph shows the north side of Sagamore Hill prior to the erection of the North Room in 1905.



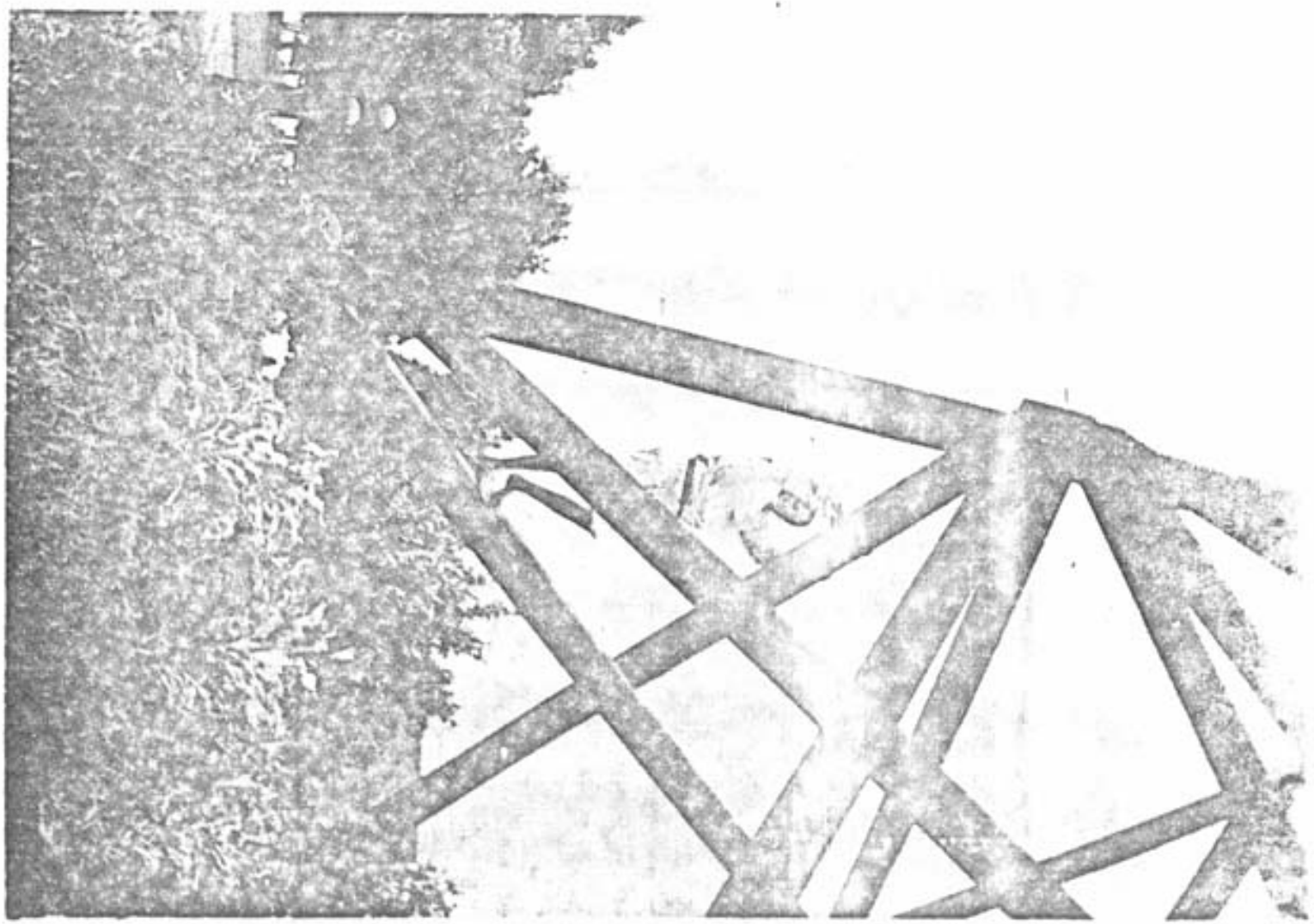
Photograph No. 2

Looking south showing upper part of windmill. Lacking clarity of detail it would nevertheless appear that the left center section of the wheel has been damaged.



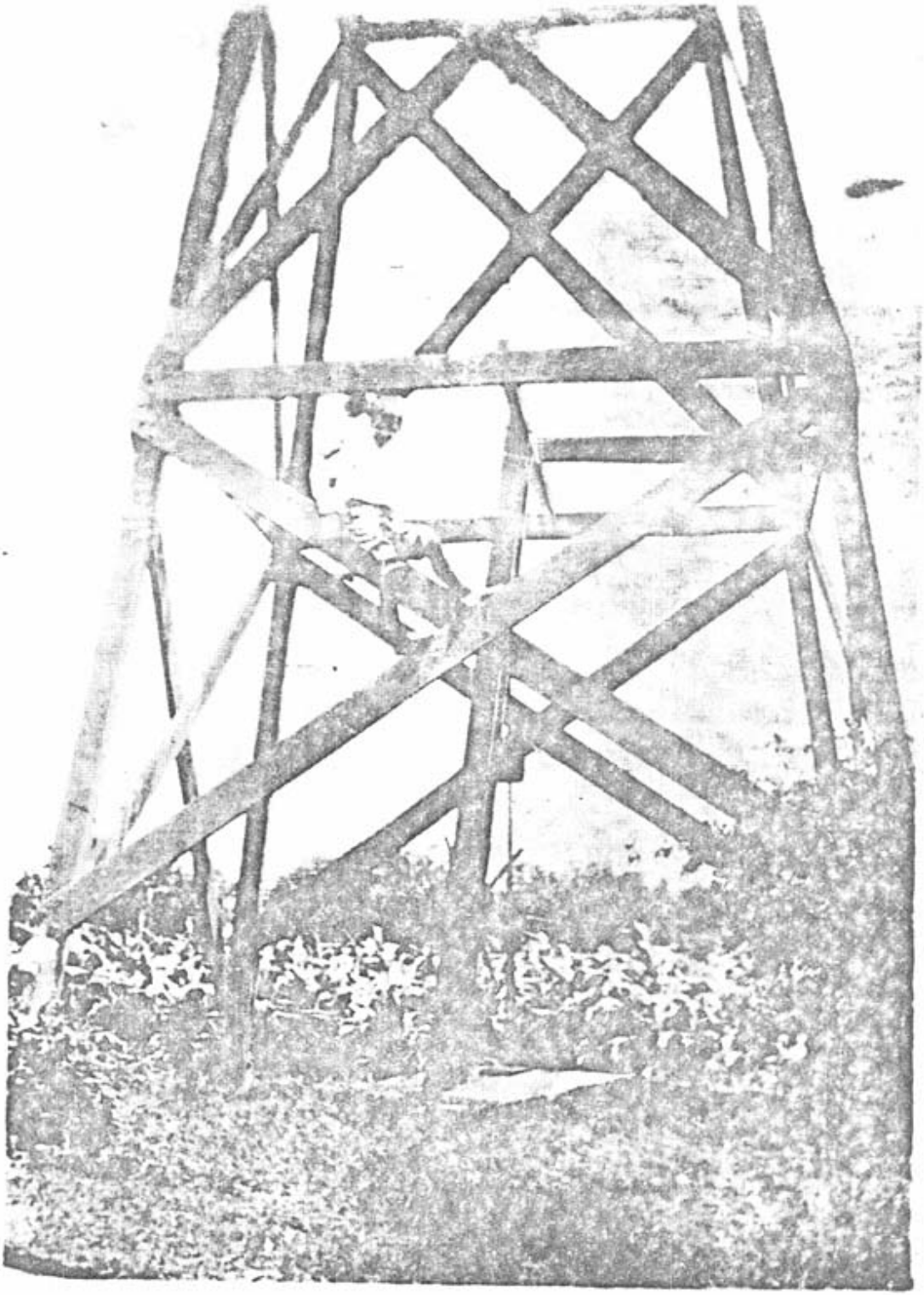
Photograph No. 3

Apparently looking southeast showing close up of foundation structure of the Sagamore Hill windmill tower. Note the manner in which the 6" x 6" x 2" x 10" framing is bolted into imbedded timbers. The boy shown in the photograph is Archie Roosevelt.



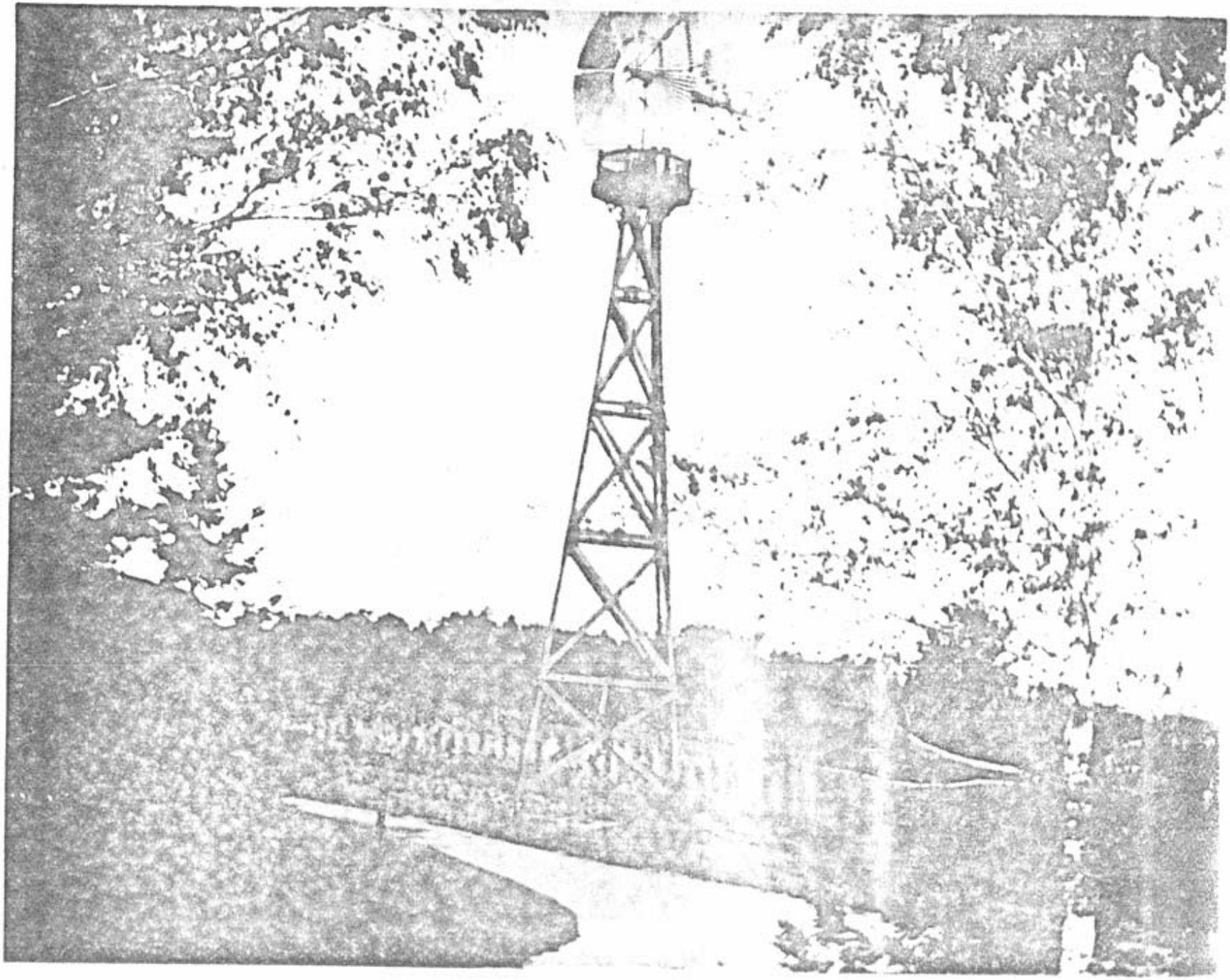
Photograph No. 4

Looking south showing further foundation detail of the Sagamore Hill windmill tower. Note the concrete well cap and windlass. The two boys here shown are Quentin and Archie Roosevelt.



Photograph No. 5

Looking southeast showing the reconstructed windmill at Sagamore Hill erected in 1905. See photographs Nos. 3 and 4 for foundation structural details.



A comparison of photographs Nos. 1 and 5 would seem to permit the following conclusions:

1. They are not the same windmill structures. No. 1 is the first structure antedating March 1905 and No. 5 is a subsequent structure.

2. There are apparently four structural sections in No. 1 while there are five such sections in No. 5. Thus No. 5 is the later and taller structure.

3. The estimated height of the tower in No. 5 is approximately 60 feet based on the man shown in the photograph whose height is estimated at 5'8". Using the same scale it would appear that the wheel was about 22'. If Corcoran put it in it would have been 22'6" for that was the size he recommended and sold.

Though no further documentation was found relative to the choice Roosevelt made relative to the three alternatives proposed by Corcoran in regards to the size and location of tanks it would appear from photograph No. 5 that he did decide to purchase the new improved wheel with a diameter of 22' 6" and a new tower.

We therefore recommend that photograph No. 5, supplemented by photographs No. 3 and 4 showing structural detail, be used as the guide to authentic restoration of the Sagamore Hill windmill..

Francis F. Wilshin
Historian

APPENDIX C

Charles N. Hagar. "New Water System Safeguards Historic Buildings," *Water Works Engineering*. September 1953.[189]

[189] Charles N. Hagar. "New Water System Safeguards Historic Buildings," *Water Works Engineering*. September 1953. Cultural Landscape Report files, Box 1, Folder 31, SAHI Archives.

Theodore Roosevelt Home Is Now a National Shrine

New Water System Safeguards Historic Buildings

CHARLES N. HAGAR
Superintendent, Improved Risk Department,
Great American Insurance Company, New York, N. Y.

An unusually comprehensive water supply and fire protective system has been installed at Sagamore Hill. Now a national shrine, this home is owned and maintained by the Theodore Roosevelt Association. The author describes the main features of the water, fire protection, and fire extinguishment systems.

Charles N. Hagar

ON June 14, 1953, President Eisenhower dedicated, as a National Shrine, the Sagamore Hill home of former President Theodore Roosevelt. Sagamore Hill is located on the outskirts of Oyster Bay, Long Island, N. Y., and although only about three miles from the center of Oyster Bay and its fire departments, there is no public water supply available for fire protection. The story of how water and other means of fire detection and protection were provided for this historical building and its priceless contents is one that can be applied to similar problems for museums, historical buildings, clubs, estate buildings and other properties that are without water necessary for fire protection.

In fact, the design that was developed for providing fire protection with as little disfigurement of the premises as possible, the use of extinguishing agents and equipment that will do the least damage to the property, the quickest possible detection of a fire with immediate transmission of the alarm to the fire department, can all be used for any type of property with or without public water protection.

Oyster Bay has two, part-paid fire departments that operate as one unit in case of fire. Their training and their equipment qualify them to intelligently handle a fire in such a property, but they must have water. In this case, there was no water; therefore the starting point of our problem was the providing of such water.

Sagamore Hill is a twenty-five-room brick and frame dwelling with a detached caretaker's dwelling and a detached pump house that is mostly underground. In that pump house is one end of a buried 5,000-gallon pressure tank, filled from a fifty-gallon per minute deep well pump. This tank provides water for domestic use. Pressure of fifty-five to seventy pounds is maintained in the tank. This tank is also connected to the fire protection system so as to maintain adequate water pressure on the fire system at all times. This pump house is also used for the fire pump and other equipment.

Note—Photographs accompanying this article are shown through the courtesy of the National Board of Fire Underwriters, New York, N. Y.

After consultation with fire protection experts, the decision was made to provide 100,000 gallons of water for the use of the fire department, for the private six-inch fire main and the scattered four private hydrants, for the automatic sprinkler system in the basement of the main house, for the 1½-inch standpipe hose on each floor of the main house, and also for the water spray sprinklers in the pump house. This water is contained in a buried concrete reservoir covered with three feet of earth and located adjoining the pump house and the private road that would be used by the fire department. The reservoir is filled by the fifty-gallon per minute domestic deep well pump. It is also the water supply for the 500-gallon per minute fire pump located in the pump house.

Drop to Forty PSI in Supply Tank Automatically Starts Fire Pump

As already mentioned, the primary supply for the fire protection system is the 5,000-gallon pressure tank. This is recognized as adequate for the initial supply and it is supplemented by the fire pump which starts automatically as soon as the pressure in the tank drops to forty pounds or when water begins to flow in the fire system. The 100-pound pressure of the fire pump against the pressure tank check valves automatically stops the flow of water from the pressure tank into the fire system and the fire pump then supplies the fire system. When the fire pump stops, the pressure tank then automatically starts delivering water. A gasoline driven Underwriters approved fire pump was installed in lieu of an electric motor drive because of the possibility of temporary failure of electric power in the area.

The use of domestic water from the pressure tank starts the deep well pump at fifty-five pounds so that actually the fifty-gallon per minute water supply from that source is pumped into the fire system through the tank until the time the fire pump starts.

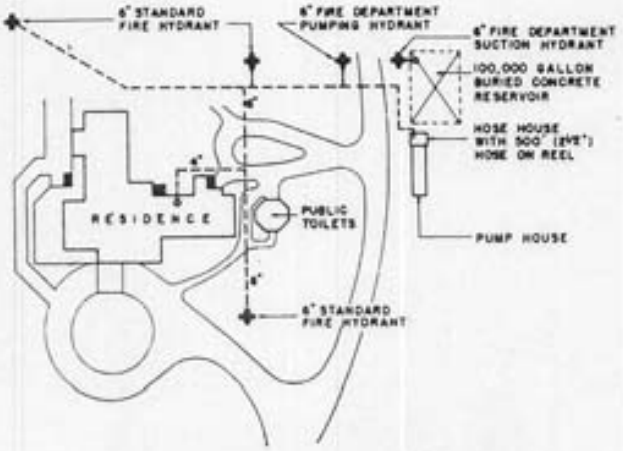
A further source of water for fire fighting is provided by a suction hydrant taking water from the reservoir and so located that a fire engine pumper can be placed between the suction hydrant

Sagamore Hill Location Map

and a "pumper" hydrant that is connected to the private fire mains. Thus the fire engine can pump either into the fire mains or directly into the fire department hose lines attached to the pumper. The distance from the Theodore Roosevelt home to the location of the fire engine is about 150 feet.

This arrangement makes it possible to use the fire engine as a reserve pumping supply for any period that the private fire pump is out of commission. As a further precaution and in case there should be a delay in the fire apparatus reaching the premises, private hose equipment has been provided for use by employes and others, and consists of a hose house erected at the pump house in which is kept a hose cart and sufficient standard 2½-inch hose and auxiliary equipment.

The design, of course, includes proper check valves against water supplies, outside screw and yoke control valves, foot valves on suction lines, water level indicators, suction supply for fire pump under a one-foot head but with a bypass priming supply from the pressure tank, and automatic heat control for the pump house. The installation also includes indicating devices for the two gasoline supply tanks, both of which are located outside of the pump house,



Water and Fire Protection System at Sagamore Hill

storage battery current where needed, trickle charger for the storage battery, standard hydrant threads, and other features of good engineering practice.

Prevention, Detection and Extinguishment of Fires Included

Mention has been made of automatic sprinklers in the basement and standpipe and hose. There are many other interesting features of fire prevention, detection and extinguishment used at this property and all with a very definite purpose. We believe that an explanation of that purpose given at this time will give a better understanding of the overall picture.

The preservation of property from damage or destruction by fire starts with the elimination as far as possible of any condition that may cause a fire. The ordinary fire starts as a tiny blaze. To keep it from spreading, means should be provided to make certain that it is discovered and located as quickly as possible and that the fire alarm is transmitted to the fire department at once. Extinguishment when the fire is in its incipiency means the difference between comparatively little damage and total destruction.

All hazards that might cause or feed a fire such as wood shingles, chimneys, hot air ducts, furnaces, electric wiring, lightning and other miscellaneous items were carefully

Test of Fire Streams at Sagamore Hill

Oyster Bay Fire Departments are testing fire pump and water spray hose stream in comparison with small straight stream of water at the Roosevelt Shrine. This picture is used for the front cover.

checked and, in every way possible, placed in a safe condition.

Conditions indicating the presence of fire occur in the following sequence: (1) Odor; (2) smoke; (3) blaze; (4) heat. Detection of the fire involves all four. Employes in the daytime and approved watchman and clock service at other times covering all portions of the property,

provide the human means for detecting the fire by the odor of smoke or hot metal or by actually seeing the smoke or blaze.

To discover a fire that might occur at a time or in a place where there is no person to smell or see it, an approved temperature rate-of-rise detection system has been installed. This in no way detracts from the appearance of the home because the small tubing that actuates the alarm is installed in such a way that it is practically invisible. The tubing runs around the ceilings of each room and closets in the building except office and basement which are sprinklered. This system responds to any abnormal change of temperature in an area to give an alarm that there is a fire in that area.

Pump House Used for Water Supply and Fire Protection Control Equipment

Originally this building was the vegetable storage and water supply tank house. Because of historical interest, its original appearance has been retained.

This same medium of heat from a fire is also used as a form of detection through the fusing of a sprinkler head resulting in the flow of water through the sprinkler alarm valve and giving an alarm that there is a fire in the basement or the office. In the pump house, a thermostat has been placed over the fire pump; excessive heat at this point moves the thermostat needle which operates a fire gong placed on the outside of the pump house.

Sagamore Hill Alarm Connected to All Oyster Bay Fire Houses

After the detection of fire, the next step is to provide means for sending an immediate alarm. The Oyster Bay Fire Departments have permitted the fire protection equipment of Sagamore Hill to be connected through a telephone line to fire protection central station alarm equipment placed in each fire house. This furnishes the means of giving immediate notification to the fire department that there is a fire at Sagamore Hill.

In the office on the first floor, there is a break-glass manual fire alarm box connected to the fire departments. Instructions have been issued to all employes that on discovery of fire, the alarm is to be given at once through this manual fire alarm box, to be followed by a telephone call to the fire departments. The rate-of-rise fire detection system is also directly connected to the fire department so that detection from that source will give automatic notification of a fire. The electric device attached to the sprinkler alarm valve is connected through this same equipment so that the operation of the sprinkler system will give immediate notice to the fire department. The standpipe hose system on each floor is so designed that the water for same goes through the sprinkler alarm valve so that its use will also automatically notify the fire department.

Interior of Pump House

Above: Deep well pump is in center foreground with fire pump and water pressure tank to the right.

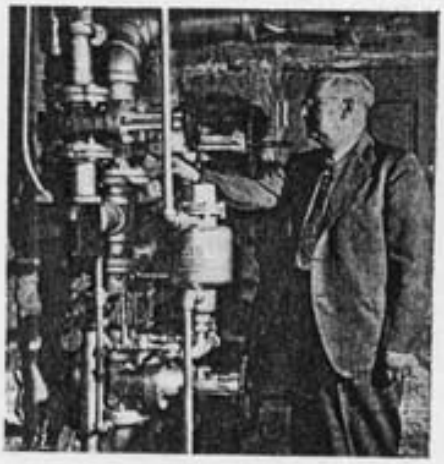
Below: Pressure tank is at right and fire pump at left. Flow switch on fire main at rear left with mercoid pressure switch at top of tank. Both are used for automatic operation of fire pump.

Electric and Water Motor Gongs Provide Local Alarms

Local alarm notification of the operation of the rate-of-rise, the sprinkler and the standpipe systems is by means of electric gongs placed in the main office and on the outside of the caretaker's dwelling. The sprinkler alarm has a water motor gong on the outside of the building which operates when there is a flow of water in the system. An electric gong on the outside of the pump house operates when there is a fire in the pump house. And there are annunciators in the office and on the outside of the main building with drops that indicate to the fire department the location of the trouble through the operation of the fire protection equipment which is installed in these buildings.

Only Office and Basement Could Be Equipped with Sprinklers

When the subject of detection and extinguishment was under consideration, the suggestion was made that the entire building be sprinklered. Objections were made that exposed sprinkler piping in the rooms and in the halls would be unsightly and furthermore would detract from the informal atmosphere of the home as it was during the lifetime of Theodore Roosevelt. It was not practical to provide concealed sprinkler piping. There was also the question of water damage to a particularly susceptible class of contents. However, sprinklers were installed in the office and the basement, which areas contain the real hazards and in which areas visitors are not permitted. In lieu of complete sprinkler protection, attention was centered on providing quick detection and getting the fire department to the fire in the shortest possible time.



Control and Alarm Equipment in Basement of Dwelling

Automatic sprinkler and standpipe and hose systems are included. Water for both systems passes through the sprinkler alarm valve.

Extinguishment with minimum damage to the property by the extinguishing agent was the next problem. The recognized standards call for the use of a water type of fire

(*Continued on page* 839)

APPENDIX D

Exterior Paint Analysis

Introduction

Project Scope

The exteriors of all the farm buildings within the historic core will be rehabilitated. This report describes the findings of the exterior paint analysis conducted on the exterior elements of the Gardener's Shed, Farm Shed, Chicken House, Ice House, and Pump House. The historic paint finishes are described in the following tables, with selected layers matched to a standardized color-notation system for the periods of interpretive interest.[1] For most of the buildings two color matches have been provided, which in most cases were the first paint finish and the circa 1907 paint finish that is consistent with the exterior paint colors currently applied to the Main house.

The information in this report can be used to recreate the historic finishes of the exteriors of the buildings for the periods specified.

Methodology

Paint samples were taken during site visits to Sagamore Hill NHS in June and July 2007. A total of ninety-two exterior paint samples were taken from accessible building elements using an X-acto knife. In the laboratory at the Historic Architecture Program (HAP) in Lowell, MA, all samples were examined with a Bausch and Lomb "Sterozoom 7" microscope under 10 to 70 times magnification, illuminated by tungsten fiber-optic light. Some samples were also examined under ultraviolet light to help determine the sequence and composition of paint layers. Representative samples were mounted in wax-filled petri dishes to better examine their finish sequences. All samples taken from the farm buildings will be stored at the HAP laboratory in Lowell, MA, and will be available for future research.

Limited chemical testing was also preformed in conjunction with the paint analysis. Paints containing lead were identified by spot testing with a solution of sodium sulfide and water. The presence of shellac was determined by testing with denatured alcohol.

The chronological finish stratigraphy from each sample was recorded in chart form; these sequences were correlated to one another through their common layers. These "chromochronologies" are given in the subsequent tables; each horizontal row represents the elements' finishes at one period in time. Drawing upon the documentary and physical research, dates were assigned to some of the rows to illustrate the finishes during certain periods.

Color matches were performed under the HAP microscope to the finish layer determined to be representative of the periods described above. The layers were matched to Munsell

[1] The Munsell Color Notation System is an internationally recognized standard of color measurement that identifies color in terms of three attributes, hue (color), value (lightness/darkness, or degree of white/black mixed in to the color) and chroma (saturation, or intensity of the color).

System color cards, glossy finish, and are included with this report. Photomicrographs of selected paint samples are included with this report and provide representative examples of the paint finishes applied to the particular farm buildings.

All color names are subjective designations intended to distinguish between paint layers and provide a general color notation. The Munsell color notations provide a standard method of color description, but are approximations not exact matches of the historic paint colors. In addition, paints (particularly oil-based) can darken or yellow over time, and certain pigments fade. It should also be noted that color is only one factor affecting a coatings' appearance; sheen, opacity, texture, and application techniques also play a role.

Gardener's Shed Exterior Paint Analysis

Sixteen exterior paint samples were taken from exterior building elements of the Gardener's Shed. The Gardener's Shed was constructed circa 1885 and appears to have been one the earliest farm buildings at Sagamore Hill (see "Gardener's Shed, Original Appearance"). As previously discussed, the shed appeared to have few alterations until the rehabilitation and stabilization project in 1986. During that project efforts were made to preserve original building materials, which were relied on to provide paint evidence for the building. Exterior paint samples were taken from exterior elements that were representative of the Gardener's Shed original materials. Through examination of the paint evidence it was possible to discern which elements were original and gain a better understanding of the original structure. Selected samples from original building materials are listed in Table I, which illustrates the exterior paint colors of the Gardener's Shed from the earliest paint application to the most recent.

The earliest paint colors found on the Gardener's Shed helped establish the period of construction of the building and set it apart from other farm buildings. Analysis of the paint samples determined that the earliest paint colors applied to the Gardener's Shed were similar to paint colors found on the Main house at Sagamore Hill.[2] The first of these was a dark green paint layer, which was found on both the original siding and the original trim. Though there was no documentation of when this paint was applied, a similar dark green paint was present on both the Ice House and the Main house (see "Ice House Exterior Paint Analysis"). The presence of a similar paint color on these three buildings suggested that the Gardener's Shed was constructed in circa 1885, which coincided with the construction of the other two buildings. The paint evidence suggested that all three buildings were painted at the same time, presumably soon after construction. The dark green paint and the Victorian era elements of the Gardener's Shed were important in establishing the buildings date and differentiating it from the other farm buildings. The dark green paint color has been matched to Munsell Color Notation System 5G 2/1.

The subsequent paint layer was a golden tan color that was also found on both the siding and trim. That paint color was not present on any other extant outbuildings on the site, which again sets the Gardener's Shed apart from other farm buildings. However, a similar tan paint

[2] Andrea Gilmore, Sagamore Hill NHS, Paint Study, 1984 (Boston, MA: NPS, North Atlantic Historic Preservation Center, Jan. 28, 1985. Copy at NER, Lowell, MA).

color (identified as mustard yellow) appeared as the second paint layer on the Main house,[3] which further relates the date of construction for the Gardener's Shed to that of the Main house. Though there was no documentation of the application of the golden tan paint color, the evidence suggests that it was applied in the 1890s. This was primarily determined by the layer of paint above the golden tan, which was dark green. As subsequently described, that second dark green paint application was similar to the first paint layer on the Chicken House that was built in circa 1900. In addition the second dark green color was most likely applied in circa 1901, which was consistent with the paint evidence on the Main house. This evidence pre-dates the golden tan color to before 1900 and therefore it was most likely applied in the 1890s.

As discussed above, the paint analysis determined that the paint application after the golden tan was a dark green paint color similar to the first layer. As with the first green paint layer, the presence of the second application of dark green links the Gardener's Shed to the Ice House and the Main house and helped establish a time line for the development of the farm buildings at Sagamore Hill.

The earliest documentation of exterior painting at Sagamore Hill was the letter from Loeb to Tomasky regarding the painting job in 1901 and the fulfillment of the contract.[4] Though this letter did not mention the Gardener's Shed, it appeared that it had been a comprehensive project and it did include items for the Main house and the poultry house. The Chicken House (poultry house) was constructed in circa 1900 and the first layer of paint on that building was a dark green color similar to the third layer on the Gardener's Shed. Comparison of the paint evidence on the two buildings suggested that at least some of the farm buildings including the Gardener's Shed and Chicken House were painted dark green in 1901 along with portions of the Main house (see "Chicken House Exterior Paint Analysis").

It was evident from the exterior paint samples from the Gardener's Shed that the paint layer above the dark green was a gray color. The application of the gray paint appeared to coincide with the application of a similar gray paint to several farm buildings and the Main house in circa 1907. Previous research determined that the exterior of the Main house was painted with a new color palette after the 1905 North Room addition. The new paint scheme for the Main house included a gray paint on the wood shingles and a different shade of gray paint on the wood trim. The paint evidence on the Main house suggested that the new paint scheme was applied in circa 1907.[5] A magazine article written in 1907 describes a barn at Sagamore Hill with fresh gray and green paint. This may have been the circa 1907 New Barn or possibly some other barn-like structure such as the Gardener's Shed. In either case the article does indicate that gray paint colors were being used on the farm buildings in 1907, which supports the conclusion that the Gardener's Shed was painted gray in circa 1907.

The analysis of the paint samples from the Gardener's Shed suggested that the first application of gray, above the green paint layer, would be representative of the paint color present during Theodore Roosevelt's life time. The gray paint color has been matched to Munsell Color Notation System 5PB 5/1. It should be noted that this gray color is similar to the gray paint used on the wood shingles of the Main house but that the trim of the Main

[3] Gilmore, Sagamore Hill NHS, Paint Study, 1984.
[4] Loeb to Tomasky, Feb. 3, 1902.
[5] Gilmore, Sagamore Hill NHS, Paint Study, 1984.

house was finished with a different shade of gray.[6] The paint evidence on the samples taken from the Gardener's Shed indicated that the same gray paint (PB5 5/1) was applied to the siding and the trim elements. This appeared to be true of the other outbuildings as well (see subsequent sections).

Subsequent layers of gray paint appeared to coincide with the Roosevelt family tenure and supported the choice of the gray paint color as an appropriate interpretation of the Gardener's Shed during the Roosevelt period.

It appeared that between circa 1885 and circa 1907 that the Gardener's Shed was painted more frequently than in the fifty year span between circa 1907 and the documented painting project by the TRA in 1957. The evidence suggested that between circa 1907 and circa 1957 all exterior elements of the shed were painted every ten years. However, the elements sampled did indicate that the siding and related elements were painted more often than the eaves elements, which could be because the siding was more exposed. The painting of all exterior elements every ten years does not seem unusual for an outbuilding.

Later layers of green paint appeared to have been applied either late in the Roosevelt period or in the beginning of the TRA ownership. As demonstrated in Table I, the two applications of green paint were found on all of the exterior samples. As previously described, the Gardener's Shed was one of several outbuildings that the TRA had painted to match the Souvenir Shop in 1957 (see "Gardener's Shed, Alterations, 1957"). On site examination of the paint layers on the wood shingle siding and window trim and sashes of the former Souvenir Shop indicated that the siding was painted a gray color and window elements were painted a green color. Similar paint colors were found on the exterior elements of the Gardener's Shed, which indicated that it was painted as requested in 1957.

Subsequent paint applications by the NPS were done with varying shades of gray paint that appeared to be applied to all exterior elements. After the 1986 rehabilitation of the Gardener's Shed the exterior walls and window sashes were painted with different shades of gray. A medium gray color, Benjamin Moore GN-76, was used on the body of the building and a lighter gray color, Benjamin Moore GN-3, was used on the trim (see "Gardener's Shed, Alterations, 1986"). Though the shades of gray have varied, in general an exterior gray paint color has been maintained by the NPS as representative of the Roosevelt period.

The current paint analysis determined that the exterior of the Gardener's Shed was finished with a gray paint color during the Roosevelt period. It is recommended that the rehabilitation of the exterior elements of the Gardener's Shed should include the application of the exterior gray paint color that is specified in Table II.

[6] Ibid.

TABLE I. Gardener's Shed Exterior Elements

SAMPLE	P001, P002	P003, P009	P004, P005	P011
ELEMENT	East elevation doorway elements	East & west elevation boxed eaves elements	North & west elevation vertical siding	South elevation window sash
SUBSTRATE	Wood	Wood	Wood	Wood
ca. 1885	dark green	dark green	dark green	dark green
	golden tan	tan	tan	tan
ca. 1901	dark green	dark green	dark green	dark green
ca. 1907	gray	gray	gray	gray
	gray	gray	gray	gray
			gray	gray
			gray	gray
	green	green	green	green
	green	green	green	
	off-white light gray	light gray	off-white light gray	
ca. 1957	gray	gray	gray	green
	light gray	light gray	light gray	light gray
	gray	gray	gray	light gray
	light gray	light gray	light gray	gray
ca. 1986	gray	gray	gray	light gray
	blue gray	blue gray	blue gray	blue gray

Table II. Gardener's Shed Exterior Elements
Munsell Color Notation System Number & Swatch [7]

Exterior Elements circa 1885	Munsell Color Number & Swatch
Vertical Board-and-Batten Siding, Siding Trim, Doorway Elements, Boxed Eaves, Enclosed Gable Soffits & Rakes, Gable-end Window Trim & Sashes	5G 2/1 (Dark Green)
Exterior Elements circa 1907	**Munsell Color Number & Swatch**
Vertical Board-and-Batten Siding, Siding Trim, Doorway Elements, Boxed Eaves, Enclosed Gable Soffits & Rakes, Gable-end Window Trim & Sashes	5PB 5/1 (Gray)

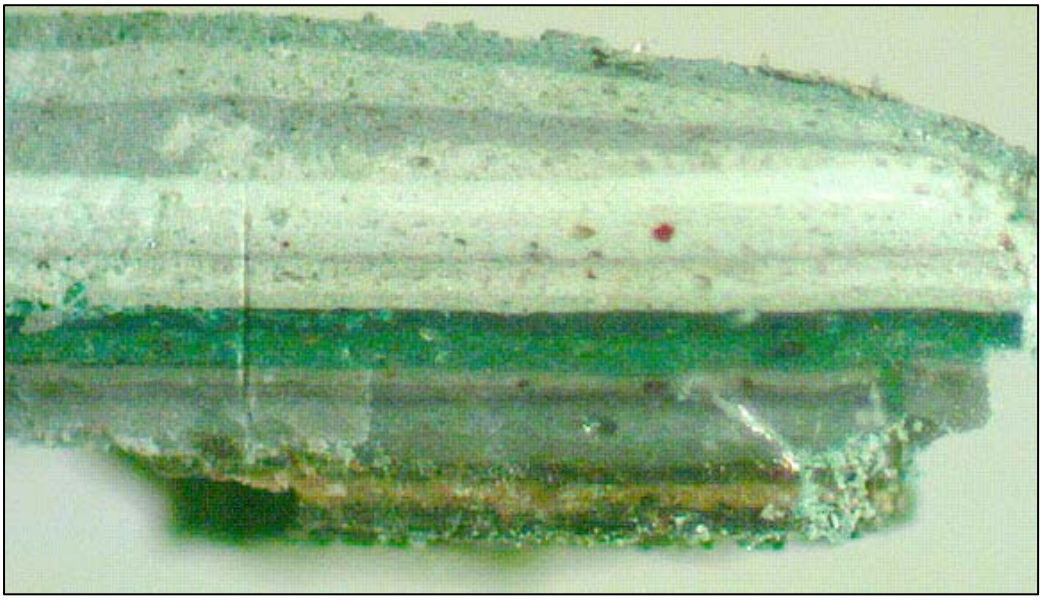


Figure 99. Gardener's Shed paint sample from vertical board siding (P004).

[7] The color swatches on this page are reproduced from digital images. For the accurate color matches see the actual Munsell color swatches provided with the original Draft HSR.

Farm Shed Exterior Paint Analysis

Twenty exterior paint samples were taken from exterior building elements of the Farm Shed. The Farm Shed was constructed circa 1900 and was one of a group of outbuildings that formed the farmyard at Sagamore Hill (see "Farm Shed, Original Appearance"). As previously discussed, the shed appeared to have few alterations from the Roosevelt period through the NPS ownership. Exterior paint samples were taken from exterior elements that were representative of the Farm Shed original materials, as well as replacement materials that would provide a comparison to the original elements. Through examination of the paint evidence it was possible to discern which elements were original and gain a better understanding of the original structure. Selected samples from original building materials are listed in Table I, which illustrates the exterior paint colors of the Farm Shed from the earliest paint application to the most recent.

The first layer of paint found on many of the representative samples was an off-white color. Certain paint samples had two or more layers of off-white paint. The paint evidence indicated that the off-white color was not a primer layer but was the first finish of the Farm Shed. Given the paint stratigraphy above the first layer, it appeared that the off-white paint color was present on the building from the time of construction in circa 1900 to circa 1907.

The exterior paint color of the Farm Shed during this period was not consistent with other farm buildings including the adjacent Chicken House, which were painted dark green. This suggested that the Farm Shed was built after the 1901 painting project and possibly after the Chicken House. However, there was no documentation of the construction of either building, and the other physical evidence suggested that they were constructed during the same period. Indeed, the construction of two windows on the south elevation of the Farm Shed, less than two feet from the north side of the Chicken House, suggested that the Farm Shed was constructed first. The conclusion that the Farm Shed was built in circa 1900 at approximately the same time as the Chicken House appeared to be valid.

The paint layer above the off-white was a blue-gray color and appeared to be applied during an extensive painting project that unified the exterior colors of the farm buildings. As previously described, the blue-gray paint layer appeared to date from the circa 1907 painting campaign at Sagamore Hill. The blue-gray color was similar to the exterior paint color found on all the farm buildings, as well as the wood shingles of the Main house. Examination of paint samples from the trim elements of the Farm Shed indicated that they were also finished with the same blue-gray paint color. The paint evidence further indicated that all the farm buildings were painted the same exterior color from the circa 1907 paint application to the present.

The analysis of the paint samples from the Farm Shed and other farm buildings suggested that the circa 1907 blue-gray paint color was representative of the exterior finish present during Theodore Roosevelt's life time. The gray paint color has been matched to Munsell Color Notation System 5PB 5/1.

Subsequent layers of gray paint appeared to coincide with the Roosevelt family tenure and supported the choice of the gray paint color as an appropriate interpretation of the Farm Shed during the Roosevelt period.

As with the Gardener's Shed, later layers of green paint appeared to have been applied either late in the Roosevelt period or in the beginning of the TRA ownership. As demonstrated in Table III, the two applications of green paint were found siding, siding trim, boxed eaves and roof trim. Photographic evidence indicated that the exterior siding and trim of the Farm Shed had been returned to a gray colored paint by 1953 (fig. 39). Examination of the samples determined that there were multiple layers of green paint on the window elements, indicating that those elements remained green after 1953. This supported the documentary and paint evidence that the TRA paint project in 1957, which specified that the outbuildings be painted to match the Souvenir Shop, included gray colored paint on the siding and trim and green colored paint on the window elements.

The paint evidence indicated that the 1957 paint scheme on the exterior of the Farm Shed was continued by the NPS through the 1980s (fig. 41). Paint analysis determined that several layers of gray paint in varying shades were applied to exterior elements including the siding, siding trim, boxed eaves and roof trim. Photographic and paint evidence indicated that the window elements of the Farm Shed were painted green until the 1986 rehabilitation.

After the 1986 rehabilitation of the Farm Shed the exterior walls and trim were painted with a medium gray color, Benjamin Moore GN-76, and the window surrounds and sashes were painted with a lighter gray color, Benjamin Moore GN-3 (see "Farm Shed, Alterations, 1986"). Though the shades of gray have varied, in general an exterior gray paint color has been maintained by the NPS as representative of the Roosevelt period.

The current paint analysis determined that the exterior of the Farm Shed was finished with a gray paint color during the Roosevelt period. It is recommended that the rehabilitation of the exterior elements of the Farm Shed should include the application of the exterior gray paint color that is specified in Table IV.

TABLE III. Farm Shed Exterior Elements

SAMPLE	P004, P006, P008	P009, P010	P015, P018	P003
ELEMENT	Exterior horizontal drop siding	West elevation raked soffit & molding	East & north elevation window surrounds	North elevation west window lower sash
SUBSTRATE	Wood	Wood	Wood	Wood
ca. 1900	off-white	off-white/tan	off-white	resinous layer
ca. 1907	blue gray	gray	blue gray	blue gray
	gray	gray	gray	gray
	gray		gray	light gray
	light gray			gray
	green	green	green	green
	green	green	green	green
	light gray primer gray	gray	light gray green	green green
ca 1957	light gray	putty	light gray green	green
	light gray			
	light gray	gray	putty green	green
	light gray	light gray	light gray green	green
	off-white/putty	off-white/putty		green
ca. 1986	gray	gray	light gray	white primer light gray
	gray	gray	gray	
	light gray primer blue gray	blue gray	blue gray	

Table IV. Farm Shed Exterior Elements
Munsell Color Notation System Number & Swatch [8]

Exterior Elements circa 1900	Munsell Color Number & Swatch
Horizontal Drop Siding, Siding Trim, Doorway Surround, Loft Doorway Surround, Boxed Eaves & Eaves Molding, Enclosed Gable Soffits & Rakes, Window Surrounds (Window sashes and doors appeared to have resinous coating as the first finish layer).	2.5Y 8/2 (Off-white)
Exterior Elements circa 1907	**Munsell Color Number & Swatch**
Horizontal Drop Siding, Siding Trim, Doorway Surround & Doors, Loft Doorway Surround & Door, Boxed Eaves & Eaves Molding, Enclosed Gable Soffits & Rakes, Window Surrounds & Sashes.	5PB 5/1 (Gray)

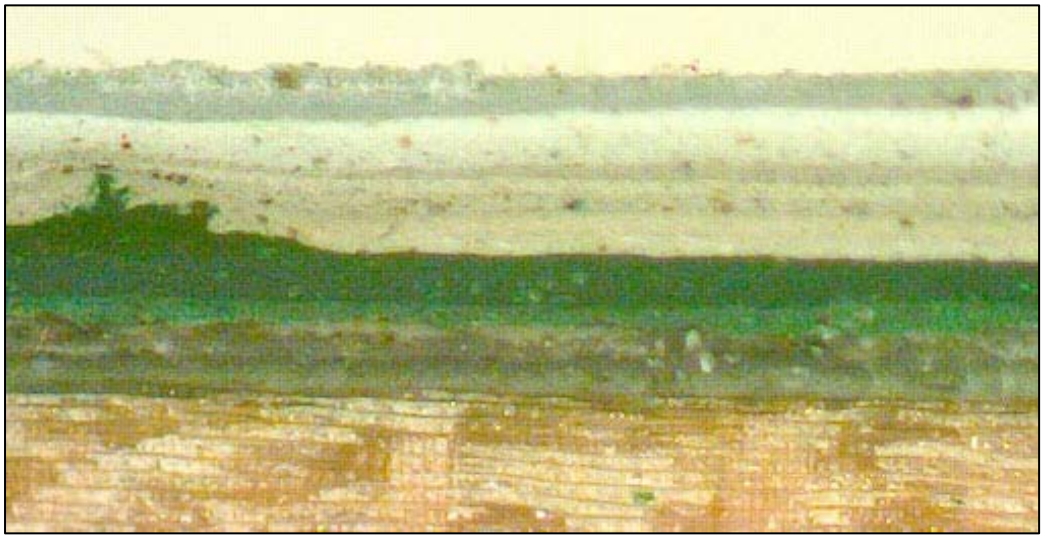


Figure 100. Farm Shed paint sample from horizontal drop siding (P011).

[8] The color swatches on this page are reproduced from digital images. For the accurate color matches see the actual Munsell color swatches provided with the original Draft HSR.

Chicken House Exterior Paint Analysis

Twenty-five exterior paint samples were taken from exterior building elements of the Chicken House. As previously discussed, the Chicken House was situated less than two feet from the Farm Shed and appeared to be constructed circa 1900 (see "Chicken House, Original Appearance"). The Chicken House served as the farmyards primary poultry house and a fenced in chicken yard extended from the south elevation of the building. There appeared to be few alterations to the Chicken House during the Roosevelt period. However, the south elevation and portions of the east elevation were extensively altered by the TRA (see "Chicken House, Alterations, 1956-1957"). Historic photographs and physical building evidence indicated that the west elevation of the building has not been significantly altered since the Roosevelt period. Exterior paint samples were taken from exterior elements that were representative of the Chicken House original materials, as well as replacement materials that would provide a comparison to the original elements. Through examination of the paint evidence it was possible to discern which elements were original and gain a better understanding of the original structure. Selected samples from original building materials are listed in Table V, which illustrates the exterior paint colors of the Chicken House from the earliest paint application to the most recent.

The first paint layer found on many of the exterior paint samples, including the west elevation drop siding, gable soffit, gable rake, and loft doorway surround, was dark green. The presence of that dark green paint layer helped determine the date of construction of the Chicken House. The first dark green paint layer on the Chicken House was similar to the dark green paint color found on the Gardener's Shed, Ice House, and Main house. In comparison with the Gardener's Shed, it appeared that third paint layer on that building matched the first paint layer on the Chicken House. As previously discussed, a contract for exterior painting at Sagamore Hill in 1901 included the poultry house, which was most likely the extant Chicken House. It appeared as though that project represented the first exterior paint application to the building. The paint analysis and documentary evidence indicated that the Chicken House was built just prior to 1901, which supported the circa 1900 date of construction.

The dark green paint layer was part of the original color scheme used on the buildings at Sagamore Hill. The subsequent paint layer on the Chicken House was indicative of the change in the exterior paint colors of all the buildings. That was a blue-gray paint color that was present on the exteriors of all the farm buildings at Sagamore Hill. As previously described, the documentary and physical evidence suggested that blue-gray paint color was applied to several outbuildings and the portions of the Main house in circa 1907. Examination of paint samples from the trim elements of the Chicken House indicated that they were also finished with the same blue-gray paint color. The Chicken House paint analysis supported the paint evidence from other farm buildings and signified a change the exterior appearance of the buildings at Sagamore Hill during Theodore Roosevelt's life time.

Examination of the exterior paint samples from the Chicken House determined that the blue-gray paint color matched Munsell Color Notation System 5PB 5/1.

Like the other farm buildings the Chicken House was apparently painted green during either the end of Roosevelt period or in the beginning of the TRA ownership. As with the Farm

Shed, the two applications of green paint were found siding, siding trim, boxed eaves and roof trim, as well as the west elevation doorway and loft doorway. Since the Chicken House and the Farm Shed were stylistically and visually related, it seems likely that the exterior paint of the two buildings was the same in 1953.

As previously described, in 1957 the TRA had several outbuildings painted gray with green window surrounds and sashes to match the color scheme of the Souvenir Shop. The Chicken House was among those buildings and the paint evidence indicated that the NPS continued that same paint scheme through the 1980s.

After the 1986 rehabilitation of the Chicken House the exterior walls and trim were painted with a medium gray color, Benjamin Moore GN-76, and the window surrounds and sashes were painted with a lighter gray color, Benjamin Moore GN-3 (see "Chicken House, Alterations, 1986"). Though the shades of gray have varied, in general an exterior gray paint color has been maintained by the NPS as representative of the Roosevelt period.

The current paint analysis determined that the exterior of the Chicken House was finished with a blue gray paint color during the Roosevelt period. It is recommended that the rehabilitation of the exterior elements of the Chicken House should include the application of the exterior gray paint color that is specified in Table VI.

TABLE V. Chicken House Exterior Elements

SAMPLE	P001, P004	P002, P003	P005	P009b, P010
ELEMENT	West elevation siding & loft door lintel	West elevation gable soffit & rake	West elevation loft door	South elevation east window lintel & sashes
SUBSTRATE	Wood	Wood	Wood	Wood
ca. 1900	dark green	dark green	resinous layer	
ca. 1907	blue gray	blue gray	gray	
	gray	gray	gray	
	green	green	green	
	green	green	green	
	light gray	light gray	putty	
ca. 1957	light gray	light gray	gray	green
	gray	gray	light gray	green
	light gray	light gray	light gray	
	light gray	light gray	off-white/lt gray	green
	off-white	off-white	off-white	
	light gray/white	light gray/white	light gray	green
	light gray	light gray		
ca. 1986	gray	gray	gray	light gray putty/lt. gray
	blue gray	blue gray	blue gray	gray
				blue gray

Table VI. Chicken House Exterior Elements
Munsell Color Notation System Number & Swatch [9]

Exterior Elements circa 1900	Munsell Color Number & Swatch
Horizontal Drop Siding, Siding Trim, Doorway Surround, Loft Doorway Surround, Boxed Eaves, Enclosed Gable Soffits & Rakes, East Gable Window Surround (The first finish layer on the loft door was a resinous coating, and the east gable sash was painted white).	 5G 2/1 (Dark Green)
Exterior Elements circa 1907	**Munsell Color Number & Swatch**
Horizontal Drop Siding, Siding Trim, Doorway Surround, Loft Doorway Surround & Door, Boxed Eaves, Enclosed Gable Soffits & Rakes, East Gable Window Surround & Sash	 5PB 5/1 (Gray)

[9] The color swatches on this page are reproduced from digital images. For the accurate color matches see the actual Munsell color swatches provided with the original Draft HSR.

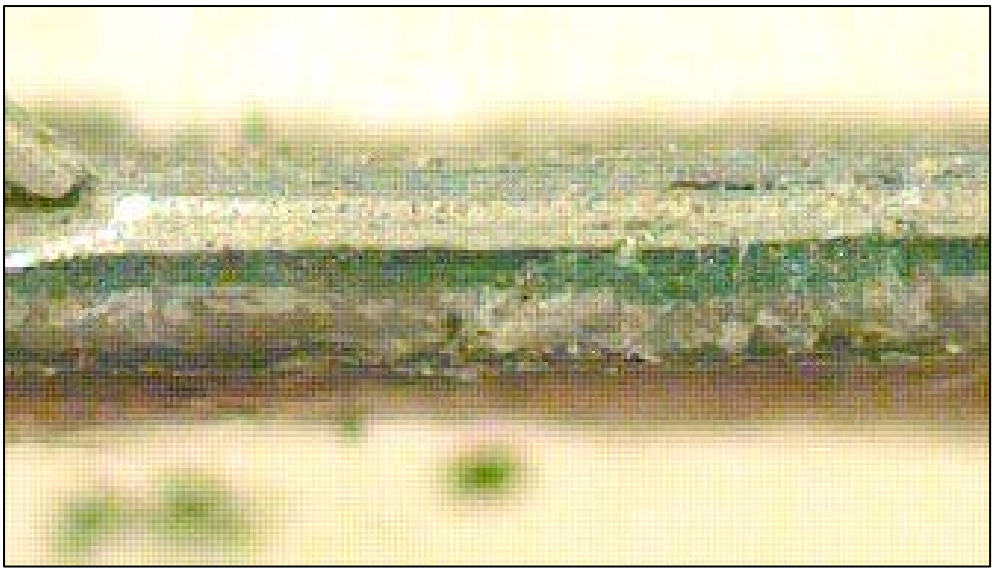


Figure 101. Chicken House horizontal drop siding (P014).

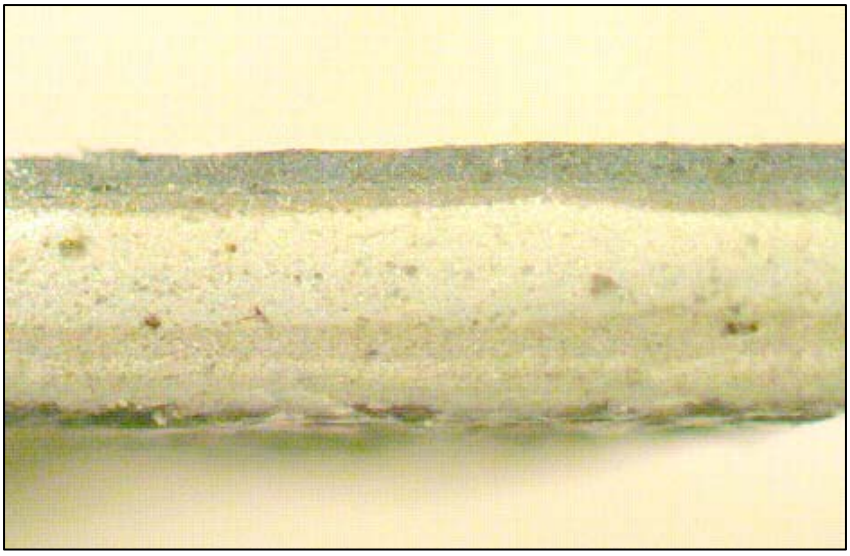


Figure 102. Chicken House replacement horizontal drop siding (P007).

Ice House Exterior Paint Analysis

Twenty-three exterior paint samples were taken from exterior building elements of the Ice House. The Ice House was constructed in circa 1885 about the time when the Main house was built and was situated east of the Main house, near the service wing (see "Ice House, Original Appearance"). There were no significant alterations to the Ice House during the Roosevelt family tenure and the 1950 photograph appeared to depict the building in its original configuration (fig. 68). The TRA converted the Ice House to restrooms in 1951, altering the appearance and function of the building. Changes were made to the original north entry doorway and a new entry doorway with a gable roof and pedimented portico was cut in to the south elevation (see "Ice House, Alterations, 1951-1953"). Exterior paint samples were taken from exterior elements that were representative of the Ice House's original materials, as well as altered and added materials that would provide a comparison to the original elements. Through examination of the paint evidence it was possible to discern which elements were original and gain a better understanding of the original structure. Selected samples from original building materials are listed in Table VII & VIII, which illustrates the exterior paint colors of the Ice House from the earliest paint application to the most recent.

Given the relationship between the Ice House and the Main house, it was not surprising to find that the earliest paint colors applied to the Ice House were similar to those on the Main house. The exterior brick walls of the Ice House had evidence of being previously painted. The paint evidence was found primarily under the eaves of the building and the paint no longer exists on most of the exterior walls. Analysis of paint samples from the walls determined that the brick had three applications of red colored paint. The red color was similar to the paint color on the exterior brick portions of the Main house. The degradation of the paint and the red color indicated that the paint layers were applied during the Roosevelt period. The most recent red paint color was matched to Munsell Color Notation System 10R 4/6, which previous research determined was the red color applied to the brick of the Main house in circa 1907.[10] There were no subsequent paint layers on the exterior brick walls.

Certain elements of the north entry doorway appeared to be original to the Ice House and the paint samples from those elements were relied on for information about the historic paint colors. Unfortunately TRA alterations removed all of the wood shingles on the sidewalls of the north entry doorway leaving no evidence of how the shingles were finished during the Roosevelt period. The elements that were not altered consisted of the entry portico soffit, and trim elements of the portico pediment. Paint evidence was also found on the rafters to either side of the north entry doorway, which were exposed and finished to match other exterior wood elements. As illustrated in Table VII analysis of paint samples from the north entry doorway elements indicated that the first paint layer was dark green. A similar dark green paint was found on the first layer of the Gardener's Shed and the second trim layer of the Main house. The paint evidence supported other evidence that these buildings were constructed at about the same time. The first dark green paint layer on the wooden elements of the Ice House was matched to Munsell Color Notation System 5G 2/1.

[10] Gilmore, Sagamore Hill NHS, Paint Study, 1984.

A second layer of dark green paint was found on top of the first layer. Again this paint layer was similar to the paint found on the wood shingles of the Main house and was also similar the third paint layer on the Gardener's Shed. The third paint application on the wooden elements of the Ice House was a gray color similar to the gray paint color found on all of the outbuildings and portions of the Main house. The current paint analysis, as well as previous research, indicated that the gray paint color was applied to the buildings at Sagamore Hill in circa 1907, which created a cohesive group of outbuilding at the estate. The gray paint color has been matched to Munsell Color Notation System 5PB 5/1.

The paint evidence indicated that there were two more applications of gray paint on the wooden elements of the Ice House. The paint finishes then transition to dark green, which the paint evidence indicated was the last paint color applied to the building before the 1951 alterations. This suggests that the dark green was applied near the end of the Roosevelt family tenure, prior to the TRA ownership.

The Ice House was converted to restrooms in 1951 and the first paint finishes on most of the added exterior elements was green. The exceptions to this were the sidewall shingles on the dormers formed by the entry doorways. These were painted yellow after the 1951 alterations. The green and yellow colors were probably "the new colors chosen by Mr. Powell" for the Main house, Ice House, and Pump House in 1953 (see "Ice House, Alterations, 1953-1963).[11]

The green and yellow paint colors were continued by the NPS until the 1984 paint study and color recommendations were implemented in 1985.[12] At that time the exterior wooden elements of the Ice House were painted gray, with the exception of the transom window sash that were still painted green. Since then the gray exterior color has been maintained on the wooden elements of the building. As previously mentioned, the exterior brick has not been painted since the Roosevelt period.

Though the Ice House does have later accretions that were not present during the Roosevelt period, it would be appropriate to treat those elements in the same manner as the extant original elements. It is therefore recommended that the exterior wooden elements be painted gray and that the exterior brick be painted red to match the circa 1907 paint colors on the Ice House that are specified in Table IX.

[11] E.W. Howell to Mrs. Kraft, March 3, 1953.
[12] The 1984 paint study by Andrea Gilmore was submitted to the Park in 1985 and presumably the exteriors of the Main house and Ice House were painted soon after that.

TABLE VII. Ice House Exterior Elements

SAMPLE	P010	P001, P003, P008	P006, P007	P005
ELEMENT	Northeast elevation exterior brick	North entry doorway portico soffit, cornice & gable molding	North entry doorway rafter on left/east side of doorway & rafter molding	North entry doorway vertical siding and door
SUBSTRATE	Brick	Wood	Wood	Wood
ca. 1885	brick red	dark green	dark green	
	brick red	dark green	gray	
ca. 1907	brick red	gray	gray	
		dark gray	gray	
		putty/lt. gray	putty	
		dark green	dark green	
ca. 1953		green green	green	gray (primer) green
		green	green	green green
		green green		green green
ca. 1985		lt. gray (primer) gray	lt. gray (primer) gray	lt. gray (primer) gray
		gray	gray	gray

TABLE VIII. Ice House Exterior Elements

SAMPLE	P013, P014, P015	P016	P018, P019	P021
ELEMENT	South entry doorway portico soffit, cornice & gable molding	South entry doorway vertical siding and door	South entry doorway rafter on left/east side of doorway & rafter molding	South entry doorway dormer sidewall shingles
SUBSTRATE	Wood	Wood	Wood	Wood
ca. 1885				
ca. 1900				
ca. 1907				
ca. 1918				
ca. 1930				
ca. 1940				
ca. 1953	green green	gray (primer) green	green	white (primer) yellow
	green	green	green	
	green	green	green	yellow
ca. 1985	lt. gray (primer) gray	lt. gray (primer) gray	lt. gray (primer) gray	lt. gray (primer) gray
	gray	gray	gray	gray

Table IX. Ice House Exterior Elements
Munsell Color Notation System Number & Swatch [13]

Exterior Elements circa 1885	Munsell Color Number & Swatch
Brick	10R 4/4 (Red) 
Exterior Elements circa 1885	**Munsell Color Number & Swatch**
North entry doorway pedimented portico: Soffit, Cornice, Pediment molding (other original elements were removed by the TRA and were not available for analysis).	5G 2/1 (Dark Green) 
Exterior Elements circa 1907	**Munsell Color Number & Swatch**
Brick	10R 4/6 (Red) 
Exterior Elements circa 1907	**Munsell Color Number & Swatch**
North entry doorway pedimented portico: Soffit, Cornice, Pediment molding (other original elements were removed by the TRA and were not available for analysis).	5PB 5/1 (Gray) 

[13] The color swatches on this page are reproduced from digital images. For the accurate color matches see the actual Munsell color swatches provided with the original Draft HSR.

Figure 103. Ice House north entry doorway portico, pediment molding (P001).

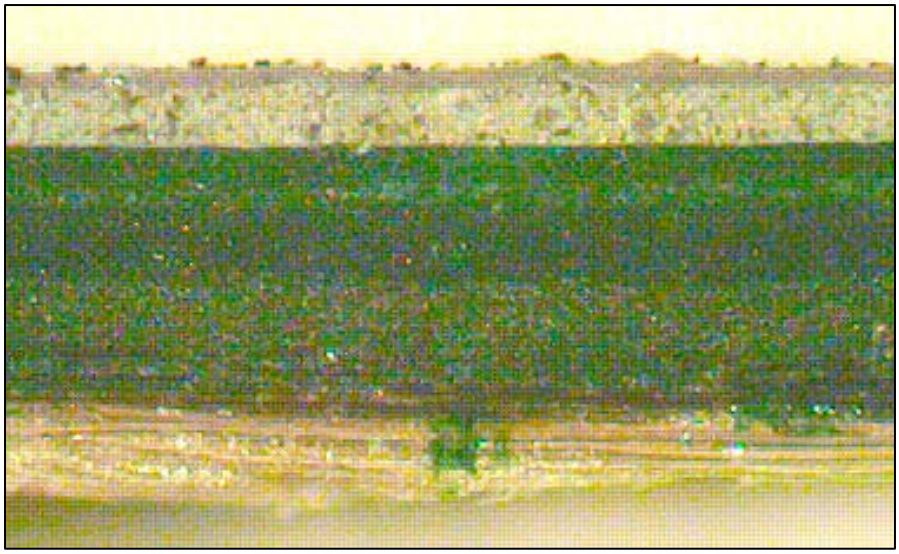


Figure 104. Ice House south entry doorway portico, pediment molding (P013).

Pump House Exterior Paint Analysis

Eight exterior paint samples were taken from exterior building elements of the Pump House. Documentary and physical evidence suggested that the southern brick section of the Pump House was constructed in circa 1905 and the adjacent northern concrete section was added soon after that. It appeared that after the northern section was added the long north-south gable roof was constructed (see "Pump House & Windmill, Original Appearance"). There appeared to be no other significant alterations to the Pump House during the Roosevelt family tenure. The TRA constructed the Hose Reel House at the abutting the north end of the Pump House in 1953. While this changed the configuration and appearance of the overall Pump House structure, it did not significantly alter the below ground sections of the building or the gable roof elements (see "Pump House & Windmill, Alterations, 1952-1953"). Exterior paint samples were taken from exterior elements that were representative of the Pump House's original materials, as well as altered and added materials that would provide a comparison to the original elements. Through examination of the paint evidence it was possible to discern which elements were original and gain a better understanding of the historic structure. Selected samples from original building materials are listed in Table X, which illustrates the exterior paint colors of the Pump House from the earliest paint application to the most recent.

The exterior wooden elements available for paint sampling were limited to elements on the south gable-end of the gable roof. There was no evidence of paint on the brick or concrete foundations, which were probably not painted. Of the elements sampled the raked cornice of the gable provided the earliest paint sample. The first paint layer on that sample was a dark green color similar to the dark green found on other outbuildings at Sagamore Hill. In this case there was only one dark green paint layer, which in comparison to other outbuilding on the site appeared to confirm the circa 1905 date of construction for this portion of the Pump House. That first dark green paint layer has been matched to Munsell Color Notation System 5G 2/1.

The subsequent paint layer on the Pump House was a gray color, which once again was similar to other outbuildings on the site. The presence of the gray paint color that was similar to the exterior finish on other farm buildings appeared to confirm that the northern concrete section and long gable roof were added to the structure after circa 1907 and during Theodore Roosevelt's life time. The gray paint color was a close match to the circa 1907 gray color used on other buildings but was more neutral, which may indicate that it was applied at a different time. At the time it's possible the color approximated that of the other buildings but was not an exact match. The gray paint color has been matched to Munsell Color Notation System 5PB 5/1.

Subsequent paint colors on the Pump House were similar to the other farm buildings. It was painted gray during most of the Roosevelt period and then green near the end of the Roosevelt or the beginning of the TRA ownership. After the Hose Reel House was constructed in 1953, the Pump House and Hose Reel House were among the buildings to be painted with the green and yellow colors picked by Mr. Powell.[14] Evidence of the green paint was found on trim elements of both the Pump House and Hose Reel House. However, the

[14] E.W. Howell to Mrs. Kraft, March 3, 1953.

yellow paint was only found on the Hose Reel House door surround. The exterior wall shingles of the Hose Reel House were replaced by the NPS and were not available for paint analysis. However, the shingles on the south gable-end of the Pump House did not show evidence of ever being painted yellow. It appeared as though the Hose Reel House was painted yellow and green but the Pump House elements either remained all green or the shingles were painted light gray and the trim was green. In either case, at sometime near the end of the TRA period the exterior shingles of the south gable-end were painted light gray and the trim remained green. That color combination was continued into the NPS ownership. The paint evidence indicated that all exterior wooden elements of the Pump House and Hose Reel House were painted gray in the 1980s and have been maintained in that color.

The current paint analysis determined that the exterior wooden elements of the Pump House were finished with a gray paint color during the Roosevelt period. It is recommended that the rehabilitation of the exterior wooden elements of the Pump House should include the application of the exterior gray paint color that is specified in Table XI.

Though the Pump House does have later accretions that were not present during the Roosevelt period, it would be appropriate to treat those elements in the same manner as the historic elements.

TABLE X. Pump House Exterior Elements

SAMPLE	P001, P007	P002	P004	P005
ELEMENT	Pump House South elevation wood shingle	Pump House South elevation raked cornice	Hose House North elevation raked cornice	Hose House door surround
SUBSTRATE	Wood	Wood	Wood	Wood
ca. 1905		dark green		
ca. 1910	red lead primer gray	gray		
	traces of gray	gray		
	green	green		
ca. 1953	green	green	green	off-white yellow
	green	green	green	green green
	light gray	green	green	green green
	gray	green	green	green
ca. 1985	putty light gray	putty light gray	light gray	light gray gray
	white primer gray	white primer gray	gray	light gray
	blue gray	blue gray	gray	gray

Table XI. Pump House Exterior Elements
Munsell Color Notation System Number & Swatch [15]

Exterior Elements circa 1905	Munsell Color Number & Swatch
South gable-end: Wooden Trim (paint evidence of other materials was removed when the building was altered).	 5G 2/1 (Dark Green)
Exterior Elements circa 1910	**Munsell Color Number & Swatch**
South gable-end: Wooden End-wall Shingles, Wooden Trim	 5PB 5/1 (Gray)

[15] The color swatches on this page are reproduced from digital images. For the accurate color matches see the actual Munsell color swatches provided with the original Draft HSR.

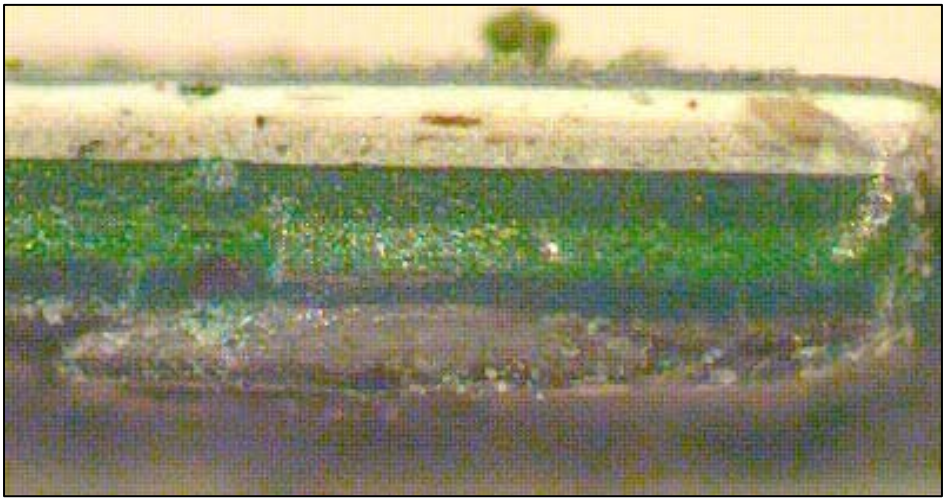


Figure 105. Pump House south gable-end rake (P001).

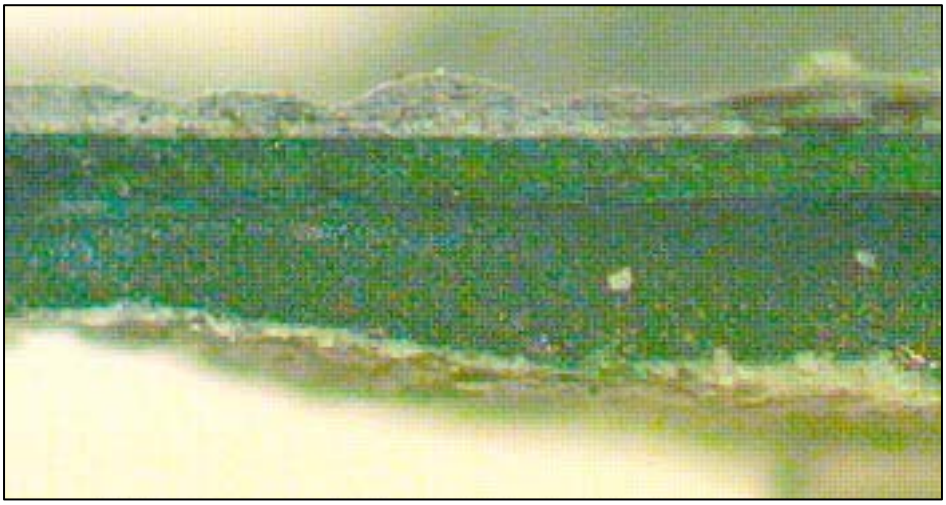


Figure 106. Hose Reel House at north end of Pump House, north gable-end rake (P004).

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