Antram – Gray House

Historic Structure Assessment Report

Roger Williams National Memorial

National Park Service
Department of the Interior
Providence, RI

September 2014 (Revised March 2015)

Cover Photos by HPTC, July 2014

Historic Structure Assessment Report

Antram-Gray House

282 North Main Street
Providence, Rhode Island

Project Agreement
between the
Roger Williams National Memorial
and
National Park Service
Historic Preservation Training Center

Project #: 212925a

Provide Historic Structure Assessment Report
for the
Antram-Gray House

July-September 2014
(Revised March 2015)

Submitted by:
Historic Preservation Training Center (HPTC)
Office of Learning and Development
Workforce, Relevancy and Inclusion Directorate
U.S. Department of the Interior, National Park Service
Frederick, MD

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Table of Contents

Appendices

PREFACE

The Antram-Gray House Historic Structure Report, completed in 1981 by Andrea Gilmore of the than-named North Atlantic Region Historic Preservation Center, is a thorough documentation of the history and treatment of the Antram-Gray House. It includes an Editor's Note in Chapter 5 which mentions that additional work had been accomplished, for the initial NPS occupation of the building, since the HSR had been completed. This additional information was included in additional Appendices added to the HSR (Appendix J). This Appendix records the preservation treatment carried out based on the HSR by the Historic Preservation Center (no other record of this work has been located).

Similar to the sequence of events which overcame the initial publishing of the HSR this Historic Structure Assessment Report (HSAR) has likewise been intercepted by the completion of preservation maintenance activities by the successor group to the Historic Preservation Center, the Northeast Region's Historic Architecture, Conservation and Engineering (HACE). The final draft of this HSAR was transmitted to the park on September 24, 2014. It had been known since the beginning of the HSAR project that preservation maintenance treatment was forthcoming but since there was not a final scope of work (at that time) it was decided to follow-through with the HSAR with the hopes it might assist in providing some direction to that effort.

Work was completed by HACE during the late summer of 2014 on the exterior of the house. Their work has been documented in a 2-page report "Completion Report for Antram-Gray House"; this was transmitted to HPTC by the ROWI Site Manager on December 1, 2014. An additional document, "Antram-Gray House Structural Needs assessment", also by HACE, was transmitted on December 29, 2014.

The park has requested that HPTC update the September 2014 HSAR by incorporating the preservation maintenance treatments recorded in these two documents as well as those visible in a series of photographs taken in March 2015. HPTC will provide an updated Chapter 4 Condition Assessment and Chapter 5 Recommended Treatment as an Addendum to the September 2014 HSAR as well as a revised version of the September 2014 HSAR. A Class D Cost Estimate will be provided for those remaining items listed in the POOR Condition Prioritized Maintenance Deficiency Summary Table of the Addendum.

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PART 1

Purpose

The scope of work for this project is the preparation of a Historic Structure Assessment Report for the Antram-Gray House [List of Classified Structures ID 040008, HS001] at Roger Williams National Memorial. The report is needed to document the buildings' character-defining features and existing conditions based on limited archival research and physical investigations. The Historic Structure Assessment Report will also provide recommended treatments to return the building to good condition as described by National Park Service Facility Management Software System definitions and provide a preservation maintenance plan based on a ten year cycle. Special emphasis will be placed on condition assessment of the exterior envelope including door and window schedules, historic and modern framing systems, and interior historic fabric.

Overview

Roger Williams National Memorial (ROWI) requested the services of the Historic Preservation Training Center (HPTC) a unit of the Directorate of Workforce, Relevancy and Inclusion, Learning & Development Branch of the US National Park Service, to undertake a condition assessment of the historic Antram–Gray House. It was determined through a preliminary on-site meeting in early May 2014 that a Historic Structure Assessment Report (HSAR) would be beneficial to the park. The HSAR is used in planning the short and long term preservation maintenance of the building, the park's only historic building, and establishing a project stream in PMIS utilizing various NER fund sources.

Through later telephone conference calls a scope of work and time frame was agreed upon. A preliminary template scope of work was circulated to the park in June. It was revised into a preliminary draft project agreement by mid-June. The Direct Charge Authorization (DCA) was approved June 18, 2014.

HPTC then circulated the Draft Project Agreement to the park on July 1, 2014. Review, comments and revisions were completed via email and telephone conferences within a two week period. The Final Project Agreement was circulated in early July with final signatures being affixed during the site visit and the field work for the condition assessment, July 14 – 17, 2014.

Scope and Objectives

The primary work tasks shall consist of the preparation of the Historic Structure Assessment Report (HSAR). It shall be prepared in accordance with the NPS *Director's Order No. 28 (DO-28)* and the *NPS Cultural Resource Management Guidelines (NPS-28)* and *The Secretary of the Interior's Standards for the Treatment of Historic Properties* (1995).

- All work performed shall comply with applicable laws, regulations and NPS policies and guidelines;
- Level of Documentary Research shall be: **Limited,** as defined by Chapter 2, NPS-28;
- Level of Physical Investigation: **Limited,** as defined by Chapter 2, NPS-28. NOTE: this level of investigation was selected as destructive investigation of historic fabric is not feasible part of this project due to occupancy and use of structure.

The objectives of the HSAR are to provide baseline documentation for the building prior to the execution of future preservation maintenance and/ or rehabilitation. The HSAR will identify and document the character-defining features of the structure, provide a limited building chronology, describe the condition of the building based of the Building Feature Master List, provide a prioritized list of maintenance deficiencies and recommend treatment strategies that best preserve the extant architectural materials and character-defining features. The HSAR will also identify recommended future planning studies which are not part of the scope of work based on the results of the condition assessment.

Illustration 60. Antram-Gray House: East Facade Circa 1940.

According to the NPS *Historic Structure Report*, this ca 1940 image is the earliest known photo of the Antram-Gray House.

Methodology

This condition assessment project relies on previously completed assessments and visual observation during the site visits. The National Park Service *CA (Condition Assessment) Job Plan – Building 4100* was used to guide the project. Also the *Uniformat II Condition Assessment Survey Inspection Guidance – 4100 Buildings* was used for the inspection component where more than visual observation was required. Window and exterior door survey forms were prepared based on the inspection guidance and use to record individual window assessment notes along with extensive field photography.

HPTC conducted a feature inventory and condition assessment. Project tasks included the following steps:

1. Development of prototypical *Building Feature Master List* (Chapter 4 and Appendix B),
2. Field research and documentation,
3. Inspection and condition assessment,
4. Development of the report for the documentation and planned implementation of the recommended stabilization/ preservation and preservation maintenance treatments.

The HPTC senior historical architect and staff historical architect conducted the inspection and assessment during field visits to the site in August 2014. An established building feature master list is used as a guide for conducting the inspection and assessment, and for preparing recommended treatments.

The condition assessment survey is part of a larger administrative process known throughout the federal government as the asset management process or the *Facilities Condition Assessment Survey*[1]. The NPS and other federal agencies apply this process to their historic structure portfolio in an effort to determine their condition, inform the management process, develop cost estimates to repair deficiencies, and maintain them in good condition.

The condition assessment process includes establishing a Building Feature Master List. This list is derived from *UNIFORMAT II* as developed and widely adopted by the federal government for use in the asset management process[2] and the *Standard Guide for Property Condition Assessments:*

[1] Establishes the overall condition of an asset through the development of the asset's replacement cost and the calculation of the total deferred maintenance cost. Periodic inspections determine their current condition and cost to correct any deficiencies. It is desirable that condition assessment surveys be based on generally accepted methods and standards consistently applied.
[2] *Uniformat II Work Breakdown Structure (WBS) (Rev 02.13.08).*

Baseline Property Condition Assessment Process.[3] The list is used as the guideline for the inspection and condition assessment.

Once identified, the building features are assessed using Qualitative Condition Ratings to determine if they are in *Good, Fair, or Poor* condition. They are also assigned a Maintenance Deficiency Rating of *Critical, Serious, or Minor*; this allows for development of immediate, short and long term treatment strategies.

This report uses these industry-wide standards for the assessment criterion. The methodology used to determine building system features as well as the NPS system to identify and document character-defining features are included in the appendices. Definitions of the previously listed terminology are derived from the NPS asset management process and adopted for use for this project. Definitions are provided in Chapter 3 and detailed more thoroughly in Appendix A.

Development of recommended treatments is based on the maintenance deficiencies and condition ratings of the features and their significance as character-defining features. All recommended treatments meet *The Secretary of the Interior's Standards for the Treatment of Historic Properties*. All treatments are intended for general execution by trained historic preservation maintenance professionals.

An early image of the Antram-Gray House (ca. 1963) at its original location on the corner of North Main and Smith Street. In the foreground is the foundation for the under construction St. John's parish house. *Figure 1.41 from the Cultural Landscape Report*.

[3] *ASTM E-2018-01, ASTM International, West Conshohocken, PA*

Historic Structure Assessment Report

Results of the feature inventory, feature description and condition assessment are compiled into this report. Work tasks are prioritized according to condition rating and maintenance deficiencies. All recommended treatment decisions for preservation and rehabilitation are recorded in the report.

The recommended treatment determinations are arranged in similar prioritized order with the most deficient features requiring the highest levels of intervention at the top of the list. Treatments address all the building features through to simple housekeeping and maintenance tasks.

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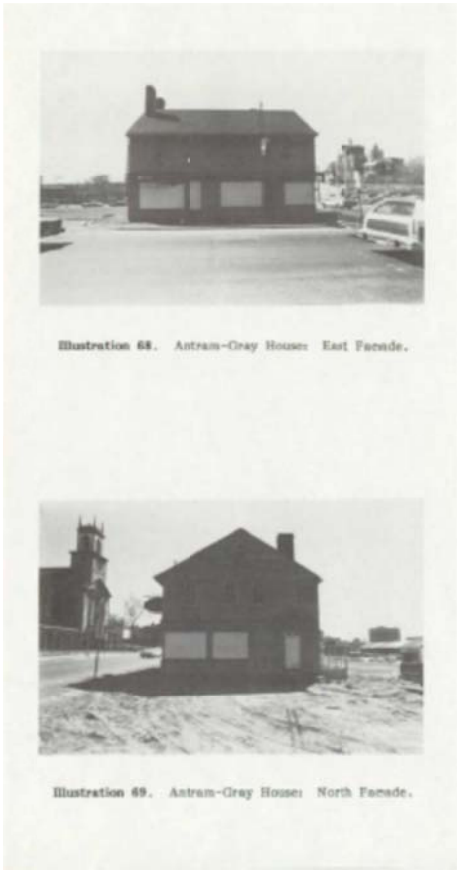
<td> 
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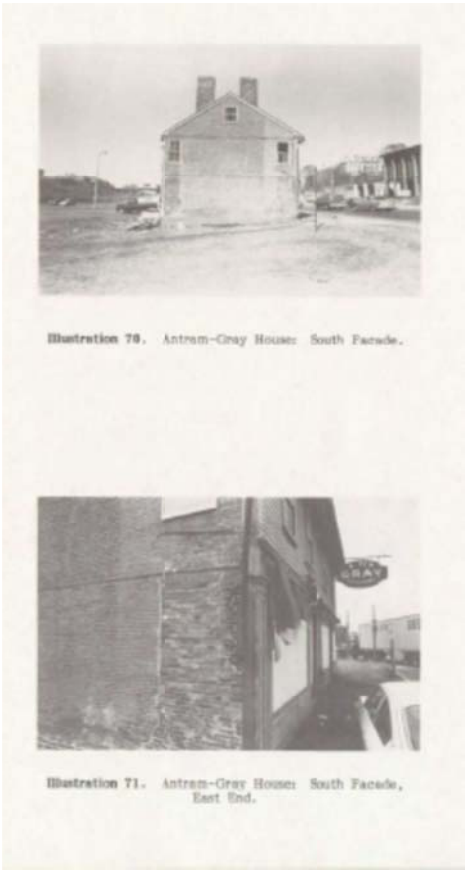
<td> 
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<td>HSR[4] Illustrations Nos. 68 and 69, ca. 1970.</td>
<td>HSR Illustrations Nos. 70 and 71, ca. 1970</td>
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<td colspan="2">These photos show the house on its original site, prior to its relocation.</td>
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</table>

[4] *Antram-Gray House Historic Structure Report, by Andrea M. Gilmore, North Atlantic Historic Preservation Center, National Park Service, Boston, MA, 1981.*

Project Participants:

Roger Williams National Memorial

Jennifer Smith, Site Manager
John McNiff, Park Ranger - Interpretation
Ron Castillo, Maintenance Worker

Historic Preservation Training Center

Mark Slater, Project Historical Architect
Tom Vitanza, Sr. Historical Architect

References

Building Specific References

Historic Structures Report, The Antram-Gray House, Roger Williams National Memorial, Providence, Rhode Island. By Andrea M. Gilmore. Boston: National Park Service, 1981.

Cultural Landscape Report for Roger Williams National Memorial, Providence, Rhode Island. By John Auwaerter and Karen Cowperthwaite; George Curry Project Director, State University of New York, College of Environmental Science and Forestry. Boston: Olmstead Center for Landscape Preservation, National Park Service, 2010.

Documentation

HABS drawings, *William Antram House, Providence, Rhode Island*. HABS Survey number: RI-381; Library of Congress Call Number: HABS RI,4-PROV, 16-, six (6) sheets. NPS eTic file # 435/ 25,001. May 1974.

NPS drawing, *New Location and Foundation Plan for the William Antram House, Providence, Rhode Island.* NPS eTic file #: 435/ 25002, June 5, 1974 one (1) sheet.

NPS drawings, *Renovations Antram Gray House, Construction Drawings, Roger Williams National Memorial, Providence, Rhode Island*. By Richard White, Architect, Boston. NPS drawing set #: 435/ 81410, dated July 30, 1976; five (5) sheets.

NPS drawing, *Replacement of Ell at Antram-Gray House, Roger Williams, NM*. By George Stephen, R. White and Peter Woodbury. NPS Drawing set # 435/ 81414, one (1) sheet.

National Park Service References

Site Visit Trip Report, Antram-Gray House, Roger Williams National Memorial prepared by NPS Historic Preservation Training Center, Senior Historical Architect, Thomas A. Vitanza, RA, AIA, dated August 12, 2014.

National Park Service Preservation Briefs:

Preservation Brief No. 4, "Roofing for Historic Buildings." Lee H. Nelson, FAIA. February 1978.

Preservation Brief No. 9, "The Repair of Historic Wooden Windows." John H. Myers. 1981.

Preservation Brief No. 10, "Exterior Paint Problems on Historic Woodwork." Kay D. Weeks and David W. Look, AIA. September 1982.

Preservation Brief No. 16, "The Use of Substitute Materials on Historic Building Exteriors." Sharon C. Park, AIA. September 1988.

Preservation Brief No. 17, "Architectural Character: Identifying the Visual Aspects of Historic Buildings as an Aid to Preserving Their Character." Sarah M. Sweetser and Lee H. Nelson, FAIA. 1982.

Preservation Brief No. 18, "Rehabilitating Interiors in Historic Buildings." H. Ward Jandl. October 1988.

Preservation Brief No. 21, "Repairing Historic Flat Plaster – Walls and Ceilings." Marylee MacDonald. October 1989.

Preservation Brief No. 24, "Heating, Ventilating, and Cooling Historic Buildings: Problems and Recommended Approaches." Sharon C. Park, AIA. October 1991.

Preservation Brief No. 28, "Painting Historic Interiors." Sara B. Chase. June 1992.

Preservation Brief No. 35, "Understanding Old Buildings: The Process of Architectural Investigation." Travis. C. McDonald, Jr. September 1994.

Preservation Brief No. 39, “Holding the Line: Controlling Unwanted Moisture in Historic Buildings.” Sharon C. Park, AIA. October 1996.

Preservation Brief No. 43, “The Preparation and Use of Historic Structure Reports.” Deborah Slaton, NPS Heritage Preservation Services, April 2005.

Preservation Brief No. 47, “Maintaining the Exterior of Small and Medium Size Historic Buildings.” Sharon C. Park, FAIA, NPS Heritage Preservation Services, June 2007.

National Park Service Publications:

The Secretary of the Interior Standards for the Treatment of Historic Properties with Standards and Guidelines for Preserving, Rehabilitating, Restoring & Reconstructing Historic Buildings, by Kay D. Weeks and Anne E. Grimmer, U.S. Department of the Interior, National Park Service, Cultural Resource Stewardships and Partnerships, Heritage Preservation Services, Washington, D.C., 1995 – NPS, Heritage Preservation Services .

Uniformat II Work Breakdown Structure (WBS) (Rev 04.19.07) developed by the National Institute of Standards and Technology (NIST), the American Society of Testing Materials (ASTM) the American Institute of Architects (AIA), the General Services Administration (GSA), and the Construction Specification Institute (CSI). See NIST report *UNIFORMAT II Elemental Classification for Building Specifications, Cost Estimating, and Cost Analysis*.

General References

Standard Practice in Sheet Metal Work, National Association of Sheet Metal Contractors, Pittsburgh, PA, 1929. (Reprint by the Sheet Metal & Air Conditioning Contractors National Association, Vienna, VA. 1991)

Window Preservation Standards, John Leeke and Amy McAuley, Window Preservation Standards Collaborative, Charleston, SC, 15 July 2013

End of Part 1

PART 2

Resource Information

The following information is used to identify the Antram-Gray House building. The date of construction, National Register status and period of significance, and the building number were gathered through various primary and secondary sources (see footnotes throughout following context and chronology sections for citations). The current and intended uses and the intended treatment are derived from the Cultural Landscape Report.

Administrative Data

Preferred Structure Name	Antram-Gray House
Address	282 North Main Street, Providence, RI
Park	Roger Williams National Memorial (ROWI)
NPS Region	Northeast
Administrative Unit	Roger Williams National Memorial (435)
Structure State	Rhode Island
NPS Structure Number	001
IDLCS Number	040008
Park Asset Number	TBD
Date of Construction	ca. 1730

Cultural Resource Data

National Register of Historic Places[1]	
Title	Antram-Gray House
Other Name	William Antram House (HABS)
Status	Determined Eligible
Date	1996
Address	282 North Main Street, Providence, RI
National Historic Landmark	No
Significance	State/ Local
NR Period of Significance	TBD
NR Criteria	A – associative with events & C – distinctive characteristics of a type, period or method of construction (early building type)
NR Information System No.	NA

[1] *Information from IDLCS database.*

Documentation

HABS File Number	RI-381
Given Address	935 ½ Smith Street (prior to relocation)
LOC Call Number	HABS RI, 4-PROV, 16-
Contents	6 Sheets of Drawings

Management Data Summary

Current Use:

Basement: Maintenance office and storage, restrooms, shower, kitchenette, general storage; connection to maintenance shed at exterior [staff use only].

First Floor: Visitor Contact (Visitor Center) (interpretive displays, ranger station, book sales area), and two restrooms.

Second Floor: Multiple staff offices (administrative offices), restroom, general meeting area/ library/ copy center [staff use only].

Attic: Storage for non-archival park files and interpretive media (display materials) [staff use only].

Intended Use: The recently completed *Cultural Landscape Report for Roger Williams National Memorial (CLR)* prepared for the NPS Olmstead Center for Landscape Preservation by the State University of New York, College of Environmental Science and Forestry (2010), points out*,"… the inadequacy of the Antram-Gray House as the site's visitor center and park offices…",* and, *"The NPS has long recognized the inadequacy of the building for these uses."*

Several long range options are presented in the CLR for future consideration. In the meantime, the NPS indicates proposed use to be much the same with possible lessening the burden of the administrative offices in the building, also moving off-site the non-essential storage.

Intended Treatment: Preservation maintenance of all exterior building components (historic and non-historic) with preservation of identified historic features and all character-defining features.

Overview of Recommended Treatments: Further definition of treatments will be found in Part 5 of this report. Following is a summary of the most important prioritized treatments (see also Part 4 Intro and all Part 4 Building Feature Master List component assessments).

The following definitions are used in the Recommended Treatment section:

> **Emergency Stabilization** (1 year or less) identifies condition and maintenance deficiencies that meet the definition of Critical; the feature poses an imminent threat or is likely to fail within one year.
>
> **Short Term** constitutes repairs that need to be executed within 1 to 3 years due to condition deficiencies of features.
>
> The **Intermediate Term** will represent repairs that need to be made within 3 to 5 years due to condition deficiencies of the features.
>
> The definition of **Long Term** indicates repairs that need to be executed within at least 5 to 10 years due to condition deficiencies of building features. *See Chapter 3 for Standards, Guidelines and Definitions*.

Beyond that a category for programming in the out years, 10 years and beyond to a 50 year threshold, should be identified in a cyclical preservation maintenance plan (not part of the HSAR project).

Emergency Stabilization:

Repair and/ or upgrade one-hour fire resistant rated wall enclosure at maintenance shed (interior wall finish over west elevation of house); determine if ceiling needs to be upgraded to have a one-hour fire resistant rating (current materials do not warrant a fire resistance rating). Working with Fire Protection Engineers or local fire department, determine if both assemblies should be upgraded to 2 hour fire resistant rating.

Determine fire separation/ protection needs for interior space between basement and first floor level.

Short Term:

Create project to conduct comprehensive HABS Level 1 documentation of the house and immediate grounds (LIDAR scanning recommended) including CAD layering of all building system locations and underground utility systems (as-built drawings) as there are no up-to-date “as-built” drawings of the Antram-Gray House; HABS documentation no longer reflects the actual built condition of the structure.

Create project to implement non-destructive evaluation of timber frame of building. This may incorporate thermal imaging or other remote sensing program to ascertain condition of heavy timbers without extensive dismantling of current building exterior or interior finishes. WASO office

components (HPTC and HABS) could undertake this project with additional funding from NER/ ROWI.

Create project to update 1980 Historic Structure Report. Development of scope of work is part of the project planning process. This HSAR will fulfill aspects of those requirements (see NPS-28 for HSR outline).

Exterior – Continue preservation maintenance activities for significant building features (character-defining features) with park or regional staff. Tasks may be required to prevent additional deterioration to the building. These tasks include but are not limited to: continued temporary protection or repair to historic windows listed in Poor or Fair condition not treated during FY14; implement preservation maintenance projects focused on point source moisture control and reduction of thermal losses and gains through windows; consult with local authorities or NPS specialists to determine if lightning protection system would be beneficial; provide vented and screened chimney caps at all chimneys (in lieu of sealed chimneys); repair weather-stripping at all exterior doors; test, scope, map, clean and/ or repair and monitor underground exterior drainage system for roof water drainage system; continue cyclical preservation maintenance on all exterior envelope building components (prep, repair/ replace, paint, etc.).

Interior – Continue preservation housekeeping and janitorial routines; reduce storage loads in various rooms to allow for free circulation of air; and begin structural monitoring program of building frame (investigate, design and implement) - this would be in addition to the single crack monitor currently in place in the northwest stair enclosure of the building.

Create project to design and upgrade fire resistant rated enclosure in maintenance shed from one (1) hour to two (2) hour enclosure to comply with building codes (IEBC). Begin program with park and/ or regional staff to clean interior windows with mildewcide (re: Lysol Mold & Mildew Blaster) spray to remove visible mildew growth; where possible install interior storm window covers for winter months; begin program to coordinate HVAC control units located throughout the building – interior temperature and humidity monitoring devices should be set-up throughout the building to collect an annual cycle on interior climate data (to be compared to exterior data) to be compared to national standards for temperature and humidity levels to prevent mold, mildew and dew point condensation within wall cavity of timber frame structure (as insulation and vapor permeability values are unknown).

Intermediate Term:

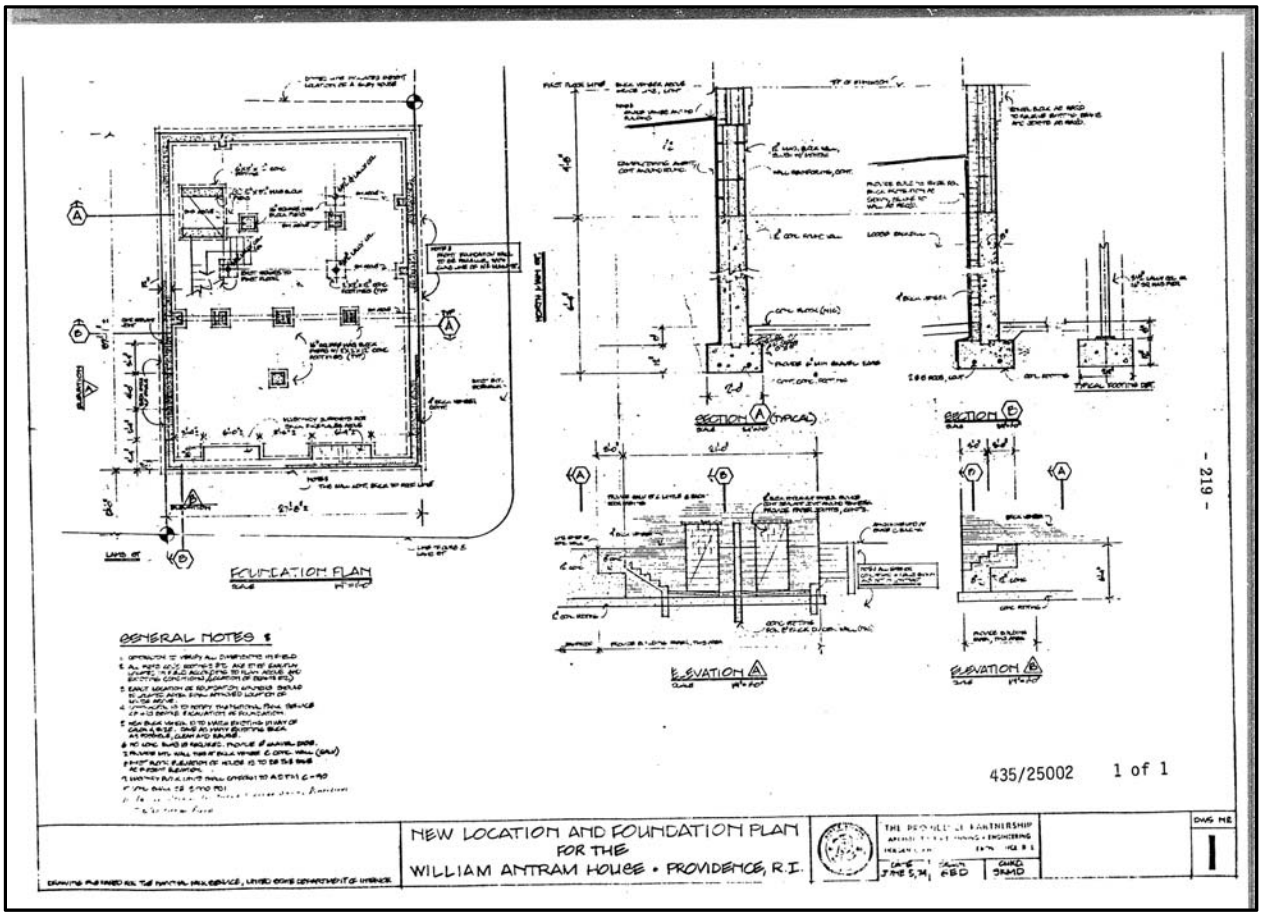
Exterior – More intensive building repairs may be required to achieve rehabilitation and achieve a building status of Good Condition. Cyclical maintenance or repair/ rehab projects may be required to accomplish the following tasks which include but are not limited to: installation of lightning protection system if recommended by professional specialists; examination, stabilization and repair of structural building frame; make interim repairs to fiberglas shingle roof to prevent leaks into interior spaces ; plan for eventual renovations of exterior hardscape pathways and approaches to the park and the Antram-Gray House; investigation along building perimeter to determine foundation conditions and extent of building drainage system.

Interior – Conduct structural investigation of historic building frame; conduct rehabilitation of roof frame (strengthen rafter supports and connections at rafter plate); phased renovations of building interior may include removal of first floor interior finishes to allow complete structural evaluation of historic (and non-historic) structural elements of building frame [should be coordinated with any planned renovation of first floor exhibit spaces]; establish load limits and occupancy recommendations for 2nd and 3rd floor spaces; continue removal of excess furniture, equipment and files from 2nd and 3rd floors to comply with draft floor load limitations (reposition furniture according to plan); determine fire separation requirements for basement spaces as related to long-term preservation of historic house frame; replace/ upgrade temporary interior storm window covers so all windows have a vented storm cover for winter season usage; continue preservation maintenance of all extant windows and exterior window features; prep, repair and paint all exterior wooden components of the house and shed.

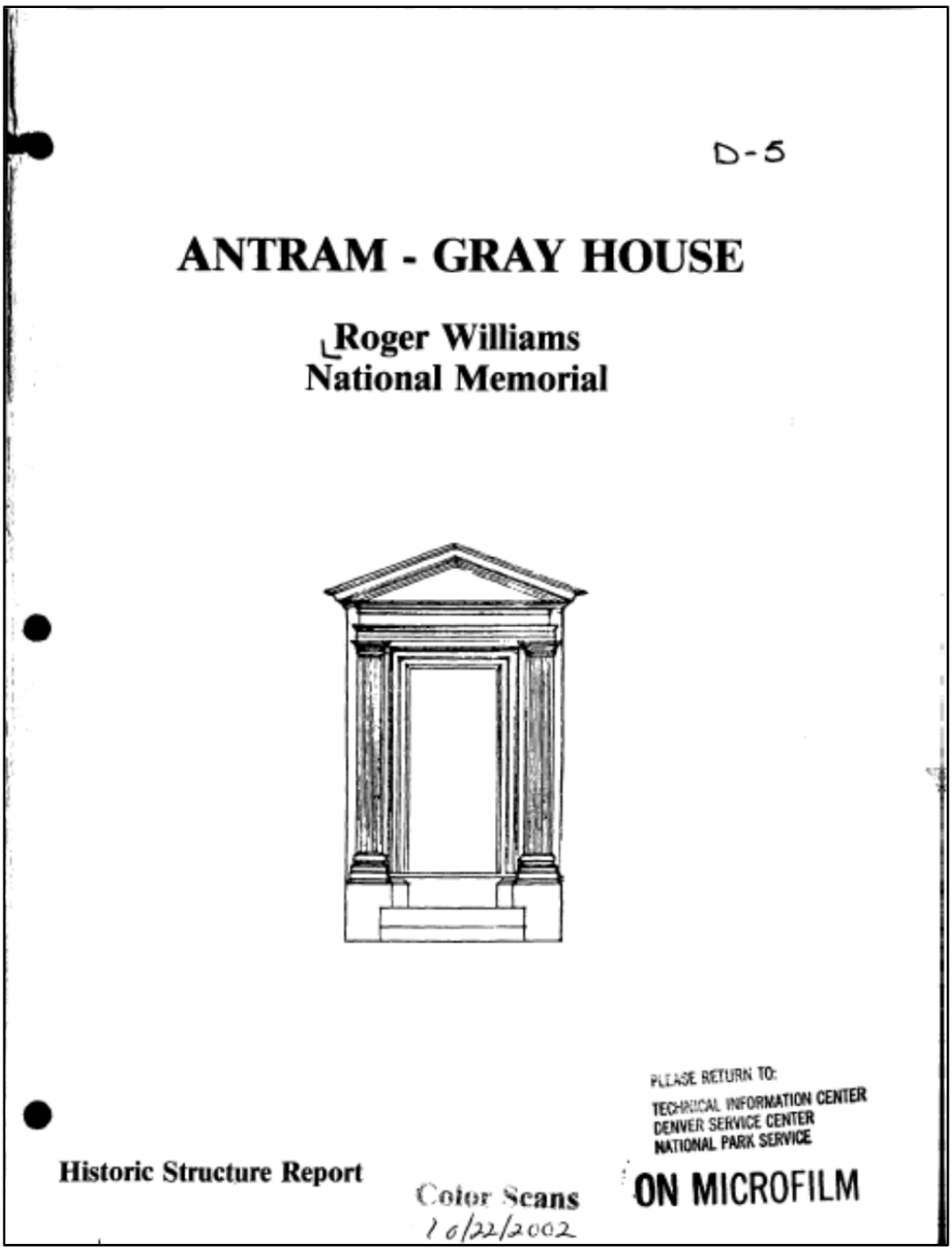
Long Term:

Exterior – Continued preservation of character-defining features, development and execution of overall preservation maintenance cyclic maintenance plan with continued preservation maintenance. More intensive building repairs may be required to achieve rehabilitation and achieve a building status of Good condition. These tasks include but are not limited to: stabilization and repair of structural building frame (if required); rehabilitation of internal roof frame; rehabilitation of roof covering (from three-tab shingle to more appropriate wood shingle (or wood shingle replica); renewal of limewash on south gable brick masonry wall with selected minor repair to failed joint work; preservation maintenance of all exterior masonry including chimneys; rehabilitation of east and north elevation storefront windows to originally intended more traditional double-hung wood window units as per 1981 HSR.

Interior - Preservation of character-defining features, development and execution of overall rehabilitation plan with continued preservation maintenance and housekeeping. More intensive building repairs may be required to achieve rehabilitation and achieve a building status of Good condition. These tasks include but are not limited to: repair/ replace extant building frame and building support systems; permanent solution to sloping of floors areas; enhanced interpretation of historic character-defining features (building frame, historic architectural woodwork, cabinet work and trim) through removal of modern non-sympathetic interior finishes and exhibits and exposure of historic interior features.



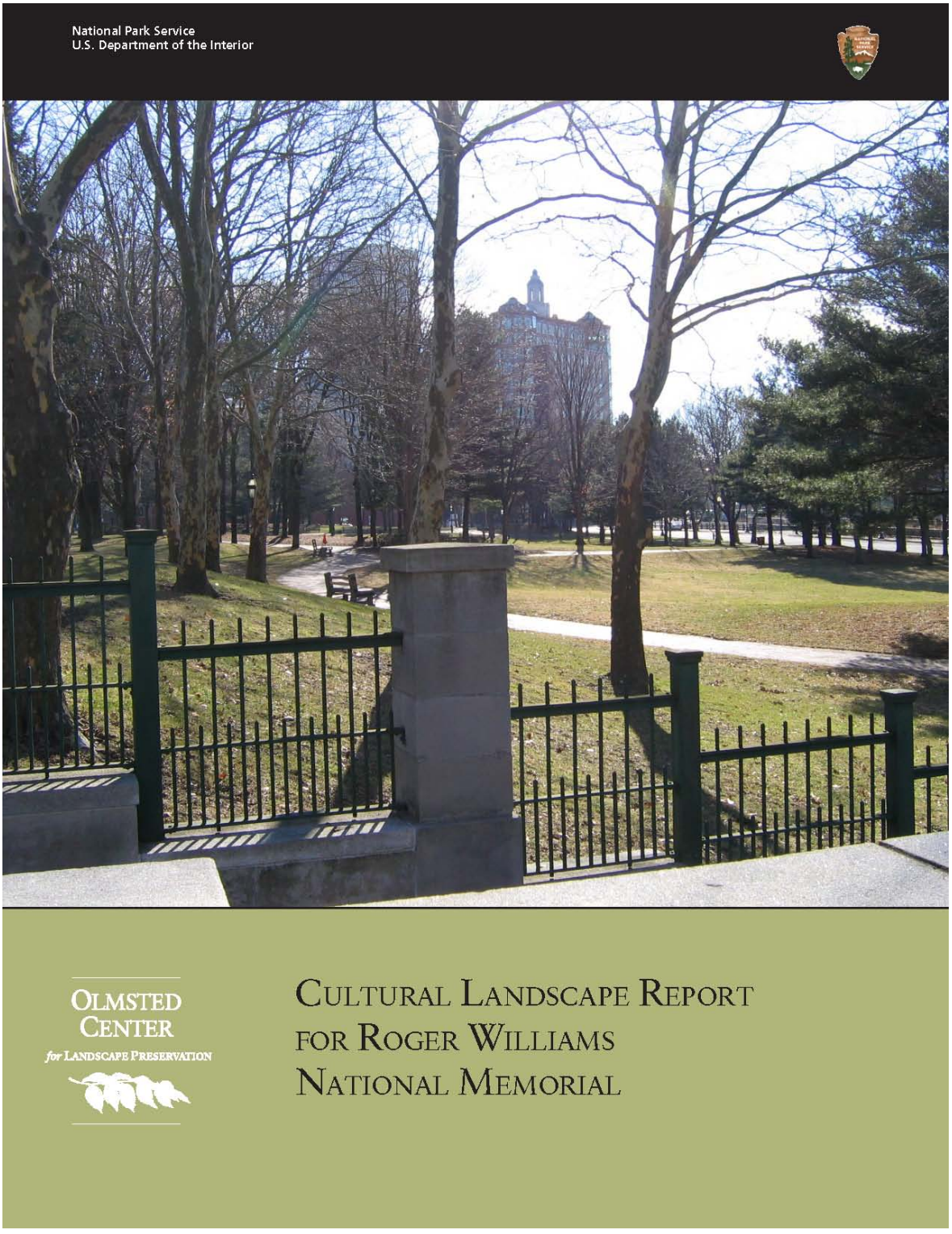
1974 NPS drawing for New Location and Foundation Plan for the William Antram House (Antram-Gray House), 435/ 25002.



Much of the institutional knowledge of the early history of the Antram-Gray House is captured in the 1981 NPS *Historic Structure Report,* [NPS document number ROWI, 435-D5 (DSC-eTic). While thorough for its time it does not present an adequate description of the building frame components, their method of fabrication, or an indication of original (or evolution of) exterior cladding materials. An update to the HSR is one of the recommended management tasks made by this HSAR.

Brief Chronology of NPS Stewardship

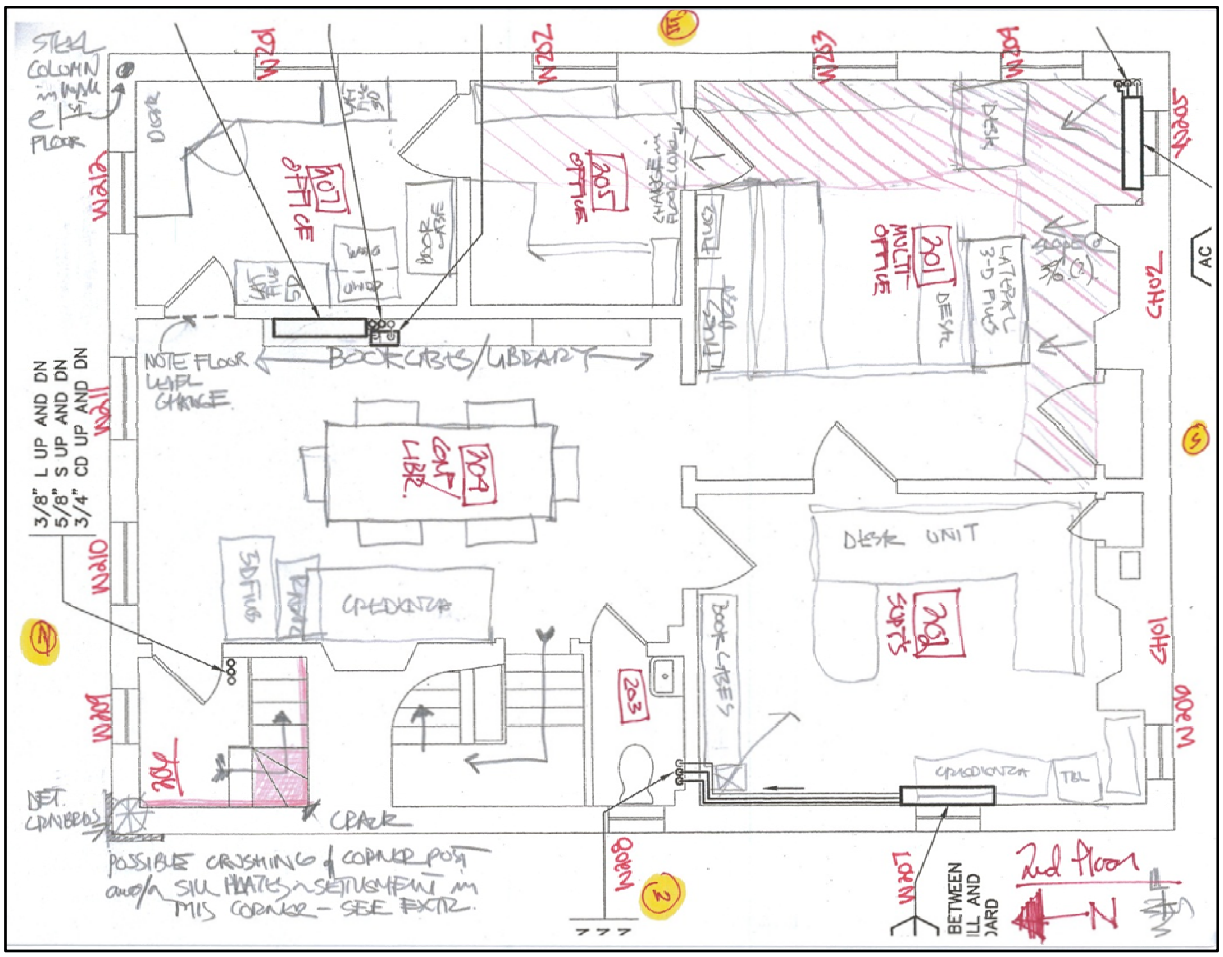
- 1974 NPS acquires building as part of Roger Williams National Memorial
- 1974 HABS Drawings
- 1974 Relocation Drawing for New Foundation
- 1974-75 Relocation of Building
- 1976 Renovation drawings [DSC]
- 1976-79 Phase 1 Renovations implemented (exterior and first floor renovation to accommodate park offices, an area for interpretive display, and public restrooms) [NOTE construction drawings are available, specifications have not been located.]
- 1980 NPS completes landscaping between AGH and the Bernon Grove
- 1981 NPS Historic Structure Report (Intro to HSR notes, "… the NPS is contemplating expanding its interpretive program at RWNM. This expansion would require the moving of park offices to the second floor of the AGH, to create additional space for interpretive displays on the first floor. The purpose of the HSR was to study and document the evolution of the AGH. *Special attention was given to the documentation of the architectural fabric of the second floor, since this area may be altered significantly if adaptively reused for park offices*". (emphasis by HSAR)
- 1982-84 Phase 2 Renovations implemented (see pages 227-8 in the HSR for detailed description of work and phasing)
- 1988 Replacement of Ell (Shed) original reconstructed shed (1974) was replaced with a new shed
- 1999-2001 Renovations, BCB Report (preservation maintenance to exterior building features, new roof covering installed, sheet metal chimney caps installed, extensive repairs to brick south gable end to relieve structural bulging)
- PMIS 70861: Replace Air Conditioning System at AGH - installation of split-system fan coil units currently in-situ; project completed 2007, warranty expired mid-2008. HPTC unable to locate contractor, NPS contract, or any staff at NER familiar with this project. Note the description of the project is significantly different than that which was installed. Project drawings available at park.
- PMIS13720: Repairs & Painting, Exterior AGH – work completed between 1999 and 2002. See Completion Report by Northeast Cultural Resource Center, Building Conservation Branch (now the Historic Architecture, Conservation & Engineering Center - HACE).



PMIS 53765: Develop a Memorial Cultural Landscape Report with Treatment Recommendations – work completed between 2007 and 2010 by the State University of New York for the NPS Olmsted Center for Landscape Preservation.

PMIS184488: Repair & Paint Exterior of AGH (HACE) - cyclical exterior preservation maintenance following up on 2001 project. Project underway at time of HSAR, August – September 2014.

PMIS212925 Prepare Historic Structure Assessment Report (HPTC) – Justification - The Antram-Gray House, a relocated 18th century building, is the Memorial's highest priority asset with a score of 100. It houses the park visitor center, library, and staff offices. In the last 2-3 years, park staff has noticed new cracks in the structure's interior walls, window casings pulling away from wall fabric, and increased uneven floor surfaces. Park management is also concerned with load issues on the second floor and in the attic. The development of an HSAR including treatment recommendations related to the building's future maintenance and preservation will serve as justification for related funding requests as warranted.



Example of HPTC field notes taken as part of HSAR project (July 2014).

Summary of Findings

The **exterior** of the Antram-Gray House building achieves an **Overall Quality Condition Rating** of **FAIR** and an overall **Maintenance Deficiency Priority Rating** categorized as **Serious**.

> The **Overall Quality Condition Rating** of **FAIR** achieved by the exterior indicates the feature(s) generally provides an adequate level of service to operations, but the feature requires more than routine maintenance attention. This rating also indicates that cyclic maintenance or repair/rehabilitation work may be required in the future.
>
> The **Maintenance Deficiency Priority Rating** of **Serious** achieved by the exterior indicates a deteriorated condition that if not corrected within 1 to 3 years will result in the failure of the feature; or, a threat to the health and/or safety of the user may occur within 1 to 3 years if the ongoing deterioration is not corrected; or, there is ongoing deterioration of adjacent or related materials and/or features as a result of the feature's deficiency.

The **interior** of the Antram-Gray House building achieves an **Overall Quality Condition Rating** of **GOOD** and an overall **Maintenance Deficiency Priority Rating categorized as Minor.**

> **The Overall Quality Condition Rating** of **GOOD** achieved by the interior indicates that routine maintenance should be sufficient to maintain the current condition; and/or, a cyclic maintenance or repair/rehabilitation project is not specifically required to maintain the current condition or correct deficiencies [with a few noted exceptions].
>
> **The Maintenance Deficiency Priority Rating** of **Minor** achieved by the interior indicates standard preventative maintenance practices and preservation methods have not been followed; or, there is reduced life expectancy of affected adjacent or related materials and/or systems within 3 to 5 years and beyond; or, there is a condition with a long term impact within 3 to 5 years and beyond.

See Part 4, Condition Assessment Survey, for complete building feature component assessment.

Physical Description

Overview of Building: The following description of the Antram-Gray House is from the Historic Structure Report Introduction:

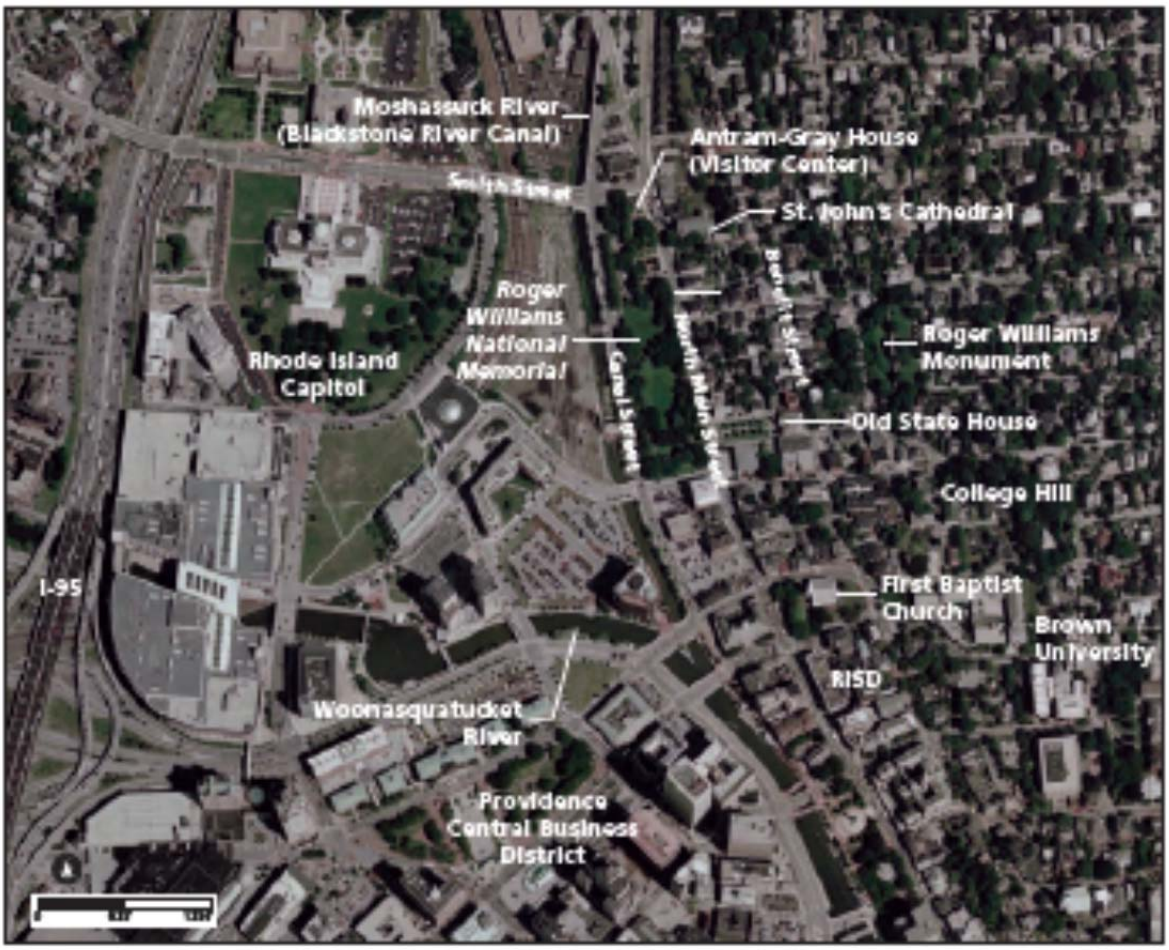
The Antram -Gray House is located at the corner of North Main and Smith Streets in Providence, Rhode Island. It is an early 18th-century structure with a late 18th-century addition. The original, north portion of the house was built ca. 1730 on the west -- or water -- side of North Main Street, a very early road originally called Towne Street. This portion of the house is one of the few structures in Providence that survive from the city's earliest period of commercial and maritime development.

The original portion of the Antram-Gray House is a simple wood-frame structure of 2-1 / 2 stories, with a gable roof. The ridge of the roof runs north -south; the primary, east elevation faces North Main Street. This portion of the house is two bays wide and four bays deep.

The plan of the ca.-1730 portion of the house is atypical for early 18th-century Rhode Island houses. Most noteworthy is the absence of fireplaces in all but the central rooms on the first and second floors, and the placement of the chimney in the slope of the gable roof, rather than on the gable end. These differences in plan suggest that it may have been built for a combined residential/commercial use, rather than a strictly residential use. As such, it is a rare example of an early 18th-century, mixed-use structure.

The ca.-1798 addition, which was built onto the south side of the ca.-1730 house, doubled its size. The addition also is 2-1/2 stories, with a gable roof. Like the ca.-1730 portion of the house, the addition is of wood-frame construction, except for the south wall, which is of brick. Two chimneys are incorporated into the south wall. The addition is two bays wide and four bays deep.

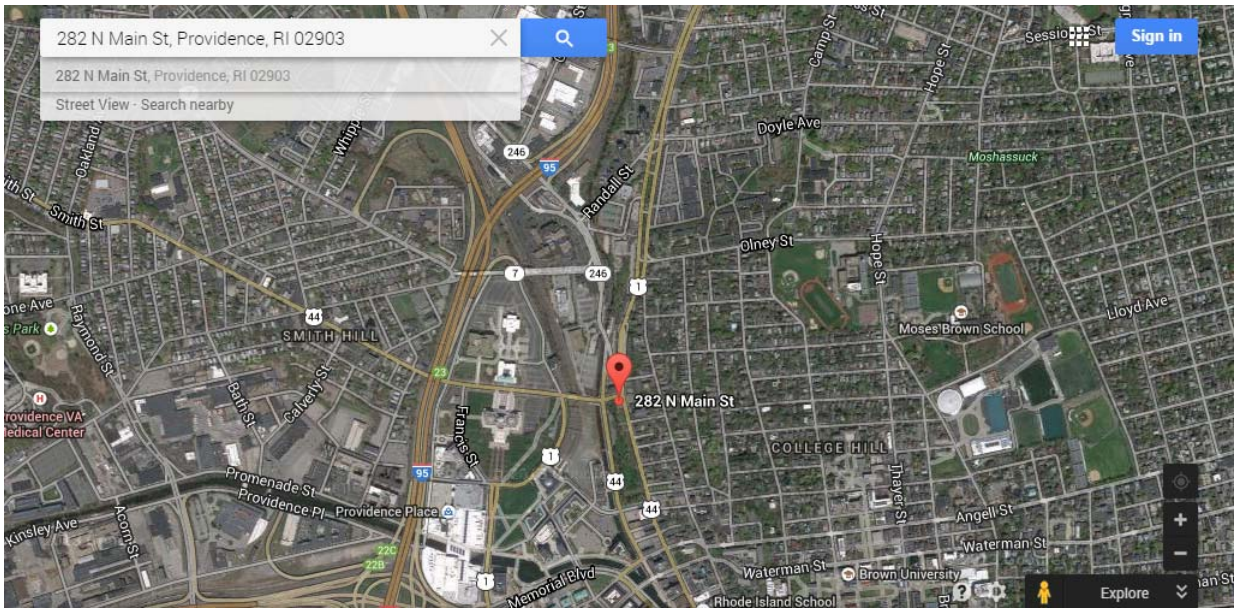
The Antram - Gray House was acquired by the National Park Service in 1974 as part of the Roger Williams National Memorial. The memorial is located at the foot of College Hill in Providence, Rhode Island. It consists of 4.56 acres. It is bounded on the north by Smith Street, on the south by Lonsdale Street, on the east by North Main Street, and on the west by Canal Street. The Antram - Gray House is located at the northeast corner of the site.



Aerial view, from CLR, of Roger Williams National Memorial showing its context in downtown Providence. (NASA aerial, c.2007, reproduced from Google Earth, annotated by SUNY ESF.)

North Elevation at Smith Street, July 2014.

East Elevation at North Main Street, July 2014.



Google Earth map location of Antram-Gray House at 282 North Main Street, Providence, RI. (August 2014)

South Gable End at Memorial Park Plaza Entry, May 2014.

West Elevation with Shed Seen from Canal Street, May 2014.

The HSR goes on to fully describe the architectural characteristics in later sections of the report, not repeated here.

It should be noted that various descriptions of the building exist in other primary documents: the National Register Nomination, the Historic Structure Report and the CLR report. These are listed in the reference section of Part 1 of this report.

Character-Defining Features (CDFs)

Each historic building is unique with its own identity and its own distinctive character. Character refers to all of the visual aspects and physical features that comprise the appearance of every historic building. Character-defining features (CDF) include the overall shape of a building, its materials, craftsmanship, decorative details, interior spaces and features, as well as the various aspects of its site and environment. Identifying and preserving a building's character-defining features is essential.

Character-defining features are defined in the National Park Service *Cultural Resources Management Guidelines* (NPS-28) as follows:

> A prominent or distinctive aspect, quality, or characteristic of a historic property that contributes significantly to its physical character. Structures, objects, vegetation, spatial relationships, views, furnishings, decorative details, and materials may be such features.

The first step in the process of an overall condition assessment project is to develop the list of character-defining features. In order to ascertain the important aspects of a building for future reference, an analysis of character-defining features must be recorded. These are prominent or distinctive aspects, qualities, and characteristics of a historic property that contribute significantly to its physical character as represented at the time of intervention or treatment.

The observations that follow are intended as an aid in preserving the character and other distinguishing qualities of the subject structure. It is not intended as a means of understanding the significance of the property, nor the events or people associated with the property. It is an outline of the prominent physical materials, features, and spaces important to the structure.

The process used in this assessment for determining the character-defining features was adapted from the US National Park Service *Preservation Brief No. 17 – Architectural Character: Identifying the Visual Aspects of Historic Buildings as an Aid to Preserving Their Character,* by Lee H. Nelson. This process is in accordance with *The Secretary of the Interior's Standards for the Treatment of Historic Properties* and NPS-28 *Cultural Resources Management Guidelines.*

The process of identifying CDFs has been arranged into a three-step process:

1. Identify the Overall Visual Aspects

2. Identify the Visual Character at Close Range

3. Identify the Visual Character of Interior Spaces, Features and Finishes.

This system of steps outlines a process to fully define the distinct character of the building. This basic visual characterization provides a useful tool in analyzing the building and its features, including shape, materials, craftsmanship, decorative details, interior spaces, features, site and environment. The following report segment outlines the structure and feature characteristics.

The Secretary of the Interior's Standards for the Treatment of Historic Properties embody two important goals: **1)** the preservation of historic materials and, **2)** the preservation of a building's distinguishing character. Every old building is unique, with its own identity and its own distinctive character. **Character** refers to all those visual aspects and physical features that comprise the appearance of every historic building. Character-defining elements include the overall shape of the building, its materials, craftsmanship, decorative details, interior spaces and features, as well as the various aspects of its site and environment.

The purpose of identifying the CDFs of a building is to help the owner, architect, or manager to identify those features or elements that give the building its **visual character**. These are the items (features) that should be taken into account when the structure undergoes a “treatment” in order to preserve them to the maximum extent possible.

There are different ways of understanding old buildings. They can be seen as examples of specific building types, which are usually related to a building's function, such as schools, courthouses or churches.

There are many other facets of an historic building besides its functional type, materials, construction, or style that contribute to its historic qualities or significance. Some of these qualities are feelings conveyed by the sense of time and place in buildings associated with events or people. A complete understanding of any property may require documentary research about its style, construction, function, furnishings or contents, and to obtain

knowledge about the original builder, owners, later occupants, and the evolutionary history of the building. Even though buildings may be of historic, rather than architectural significance, it is their tangible elements that embody its significance for association with specific events or persons and it is those **tangible elements** both on the exterior and interior that should be preserved.

Therefore, the approach taken in identifying character-defining features is limited **to identifying those visual and tangible aspects of the historic building.** While this may aid in the planning process for carrying out any ongoing or new use, rehabilitation or restoration of the building, this approach is not a substitute for developing an understanding about the significance of an historic building and the district in which it is located. If the various materials, features, and spaces that give a building its visual character are not recognized and preserved, then essential aspects of its character may be damaged in the process of change.

A building's character can be irreversibly damaged or changed in many ways. Examples include: inappropriate additions or alterations, removal of a distinctive porch, replacement of the window sash, alterations to masonry openings, changes to the setting around the building, changes to the major room arrangements, replacement of original materials with synthetic materials, inappropriate repointing of the brickwork, introduction of an elevator, painting previously unpainted woodwork or masonry, etc.

Building Note: exterior color scheme is not based on historic paint analysis – see HSR, Appendix E; and is not considered a CDF.

Overall Visual Aspects (Exterior)

Shape and Mass

- Rectangular massing with characteristics of colonial era architecture including the simple rectangular volume of the main block and the moderately pitched gable roof devoid of dormers;
- Reproduction shed roofed addition at west elevation to replicate historic shed addition documented in HSR.

This oblique view of the two principle facades of the house illustrates the basic shape, mass and volume of the structure.

North elevation view includes neighboring St. John's Cathedral, and the main gabled house block with smaller, plainer shed-roofed addition.

As viewed from the northwest, the basic gabled shape of the house and shed addition is evident.

West elevation viewed across park close illustrates the shed addition as a subservient feature of the main house block.

The south elevation with paired chimneys expresses the gable end of the building with the urban plaza which defines the visitor entry to the house.

View from across Main Street showing the south and east elevations, the primary gabled volume of the main block and the neighbors across Smith Street.

Roof and Related Features

- Three highly visible and massive brick masonry chimneys on the center ridge main block gable roof of building; two at the brick south gable end and one at the west slope of the roof.

The twin south gable end chimneys are primary roof features on the gabled roof.

Interior chimney near the north end of the house on the west slope of the roof.

- NOTE: Three-tab fiberglas shingle roof is not a character-defining feature.

Openings

- Character-defining openings include the windows and doors;
- Non-symmetrical placement of window and door openings on the first and second stories of the main block indicate the phased development of the structure over time (two house frames joined together);
- Reproduction 12/12, 9/9 and 6/6 paned double-hung wood windows are most prominent on the east, north and south elevations;
- Pedimented (Federal period) door surround on north elevation;
- 19th century first-floor store front (openings) at the east and north elevations.

This view of the four bays of the east elevation of the house with its uneven spacing of the windows illustrates the predominant use of openings to define the elevations. The juxtaposition of residential and commercial openings on different floor levels illustrates changes over time in the use of the building.

The forced symmetry of the four bays of the north elevation may be seen here at the 2nd floor level. The introduction (and retention) of the store front openings presents the changed use of the building over time in the history of Providence, RI. The over scaled colonial style pediment entry contrasts with the modernity of the plate glass windows of the commercial era.

Projections

- Projecting eaves at primary elevations (east and west);

Detail of projecting simple boxed cornice along the east eave, partially obscured by hanging "yankee" gutter. Its profile is detailed in the HSR and HABS drawings.

The eaves project on both the east and west elevations of the building but are flush at the gable ends. The east elevation overhang is more prominent than the west.

Trim and Secondary Features

- The traditional colonial style detailing and use of wood clapboarding. The painted clapboards are used as siding material on the east, north and west elevations (as well as the shed addition) and have a distinct horizontal pattern (Note: extant clapboards are smooth whereas traditional clapboards would likely have planning marks on surface);
- The use of simple trim around window openings and the linear detailing of band boards on the exteriors also contribute to the building's character;
- Traditional colonial era detailing w/ use of highly finished materials (clapboarding, pilasters, simple window frame exterior trim);
- Use or architectural trim to protect outside corners (corner boards);
- Engaged paneled pilasters to enhance storefronts;
- Wide undecorated band board separating the first and second stories;
- The pedimented federal period door surround on the north elevation;
- Brick south elevation (c.1798) laid in common American common bond with fourth course headers (except in gable end where they are 5th or 6th course).

Overview of south brick gable end and east elevation illustrates several of the secondary features and trim components.

North and west elevations also carry several of the character-defining features mentioned above.

Trim and details are evident at the principal elevations.

The pedimented door surround is the architectural highlight of the building.

Setting

- Former industrial/ residential quarter has evolved over time into an urban location in commercial center of Providence, RI.

The Antram-Gray House dominates the northeast corner of the super block which makes up the park lands for Roger Williams National Memorial, and shows off its colonial style features in its massing and volume. The Rhode Island State Capital building looms in the distance across the Blackstone River Canal from the park.

A modern building (St. John's Parish House) across North Main Street helps define the current neighborhood as one of mixed uses.

2. Visual Character at Close Range (Exterior)

Materials

- Wood clapboard exteriors with traditional wood corner-board detailing, water-table, eave rake boards, fascia (band) board, and exterior door & window opening surrounds, also wood window sash and doors;
- Wood pediment and entablature on north elevation;
- Brick south gable end (representing c.1798 changes to building) with lime wash finish and bond pattern detailing with brick chimney stacks;
- Large sheet glass store front windows and doors in east and north elevation representing historic commercial use of building;
- Fiberglas tab-type shingles have been used for the roof covering (this is a non-historic CDF).

Traditional use of clapboard and wood trim are seen in 2nd floor elevations with the various projecting ledges, corner-boards, etc., indicative of this type of layered wood framed construction.

Brick materials are used in the south gable end of the house; the smoother texture of this material is in contrast to more textured appearance of lapped clapboards with projecting trim.

Large plate glass windows dominate 1st floor building elevations at the street level create discontinuous appearance of building.

Traditional clapboard and wood trim detailing were used to recreate the shed addition when it was enlarged (from the 1975 shed footprint) in the late 1980's.

Craft Details

- Exterior architectural woodwork including historic (c.1798) pedimented north elevation door with fluted engaged pilasters, exterior corner-boards, gable rake boards and base boards;
- Single and double (paired) engaged pilasters at east elevation storefront with horizontal floor-level-marking frieze (band) board;
- Boxed cornice/ projecting eaves at east and west elevation (obscured by hanging gutters) with simple classical molding profiles;
- Brick south gable end laid in common American style bond with 4th course headers (except in gable where they are 5th or 6th course) and with soldier course jack-arched masonry lintels over window openings and a distinguished projecting three course belt (or band) course to demarcate the interior floor levels (each belt course consists of a central course of headers sandwiched between a row of stretcher bricks). Ground level belt course obscured by modern planter box.

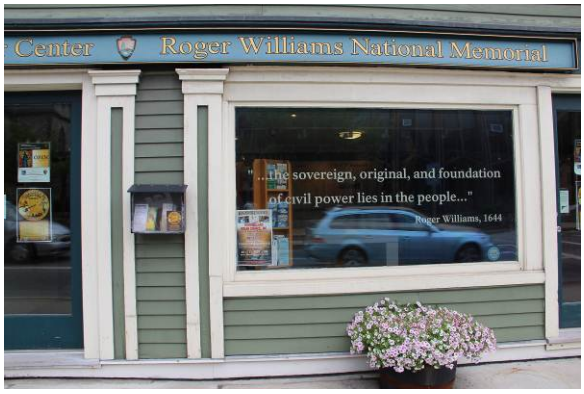
Elements of this late 18th C. pediment are hand planed and constructed using detailed concealed joinery techniques.

The triangular pediment supported by fluted doric style pilasters is the oldest surviving exterior architectural feature found on the Antram-Gray House.

Late 19th- early 20th C. fascia board ties together later 20th C. storefront detailing.

This lower case detailing also dates to the 2nd generation of storefronts as per the HSR.

Double engaged pilaster marks end of storefront at south end of east elevation. All detailing is late 19th – early 20th C.



Paired pilaster mark approximately the two phases of construction which constitute the main block of the house.

Window west elevation with projecting wood sill and jambs and 20th C. reproduction cornice.

South elevation window with jack-arched lintel over wood header and projecting wood sill and east elevation with integrated lintel and projecting wood sill.

Common American bond pattern in 5th course repeat with slightly recessed mortar joints and lime wash finish.

Detail of projecting triple course brick water table on south elevation.

3. Interior Visual Character

Prominent Individual Spaces

The plan of the Antram-Gray House is comprised of several spaces that are important to the function of the building which has changed significantly over time (as detailed in the 1981 NPS Historic Structure Report).

Some of these areas are considered to be individually important spaces that define the interior character of the building due to their configuration, function, or architectural features. These are located on the 2nd floor of the house as the historic 1st floor plan no longer exists. Prominent spaces include the various individual chambers and staircases as well as the large central space.

- NOTE: All interior spaces have been manipulated over the course of time and do not represent historic use and/ or configurations;
- Large Visitor Contact space of 1st floor does not respect timber frame layout of structure;
- 2nd floor room layout still follows historic pattern and largely respects layout of timber frame construction including large central north room (R204).

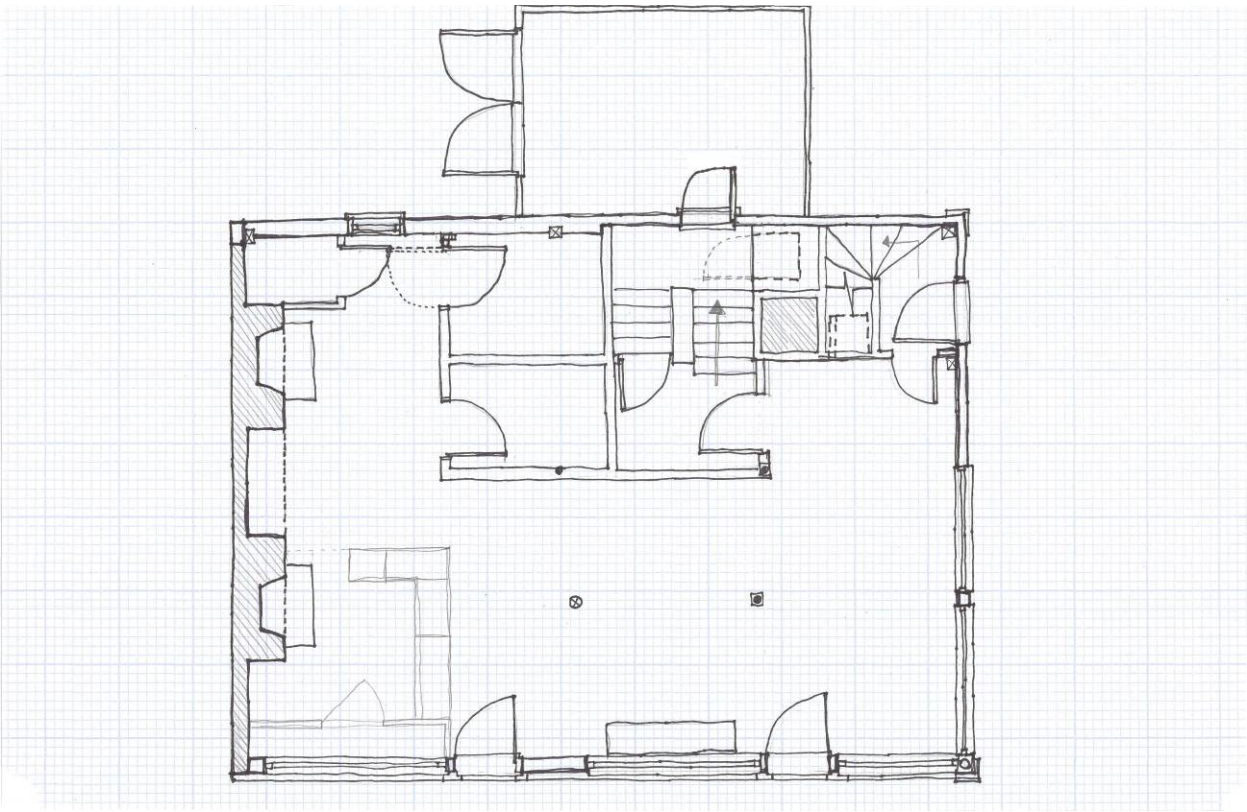
Related Spaces and Sequence of Spaces

Basement: non-historic space – added in 1975 as part of house relocation.

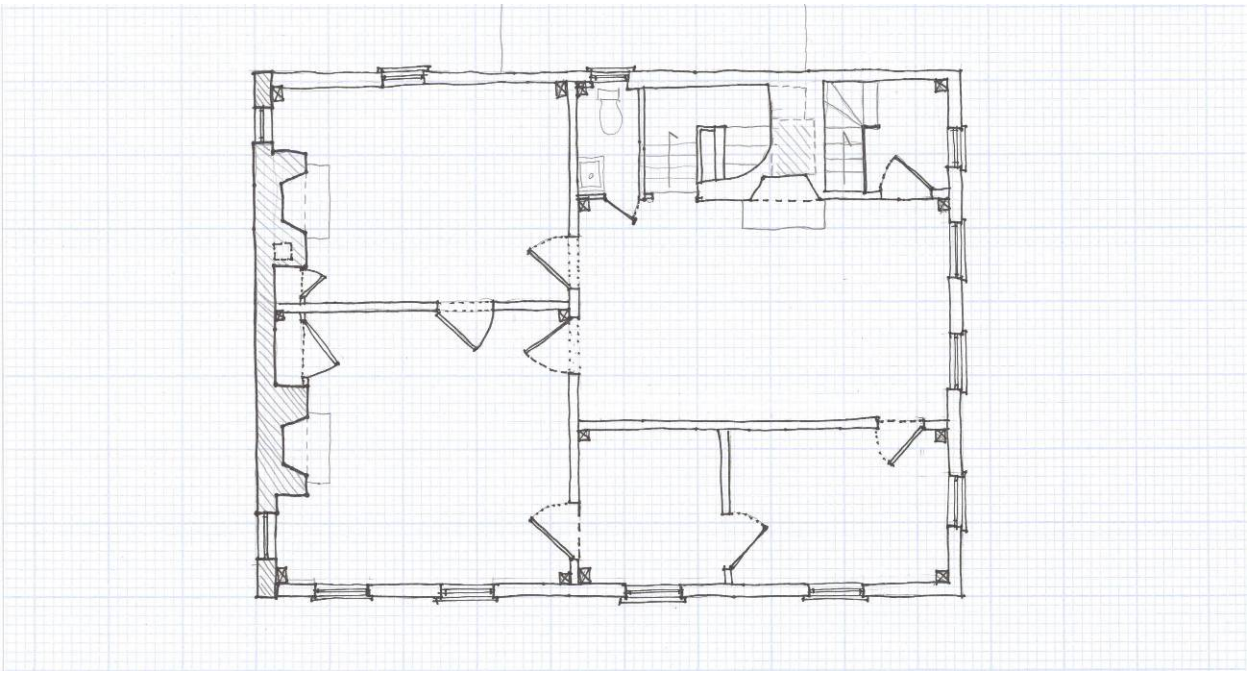
First Floor:
- Chimney cores are located in historic locations relative to remainder of interior spaces;
- Vertical circulation (stairs) are located in historic locations although configuration of stairs have been changed;
- Large centrally located Visitor Contact area defines the first floor plan.

Second Floor:
- Access to 2nd and 3rd floor via enclosed stair cases;
- Room to room communication via interior doorways;
- Circulation through large central work space on 2nd floor (R204) to access individual perimeter rooms and stair case to attic.

Attic
- Historic configuration of 3rd floor representing its former use as domestic spaces is largely intact according to 1981 NPS HSR.



Antram-Gray House First Floor Plan showing large central Visitor Contact area.
HPTC HSAR Sketch 1, not to scale.



Antram-Gray House, Second Floor Plan showing room layout based on timber frame layout (corner posts indicated).
HPTC HSAR Sketch 2, not to scale.

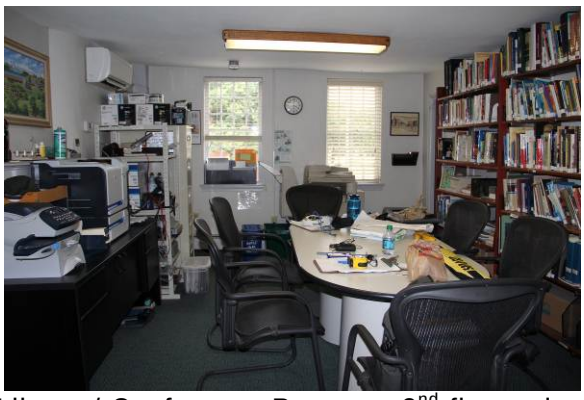
Interior Features

The Antram-Gray House has several notable interior decorative features that help to define the interior visual character. These features are as follows:

- Exposed elements of the heavy timber frame (gunstock and beaded edge posts) exposed in various corners of house;
- Exposed beaded corner beams at some exterior wall locations;
- Architectural woodwork including fireplaces and over-mantles, built-in closets, some remnants of interior trim as detailed in HSR;
- Some (historic) interior paneled doors and hardware;
- North end winder stair [ST02] structure (risers & treads;
- Double-hung wood windows are representative of historic windows.

Visitor Contact area looking south. Note 19th C turned post in photo center ground.

Visitor Contact area looking north, plate glass windows look out to North Main Street on east elevation.



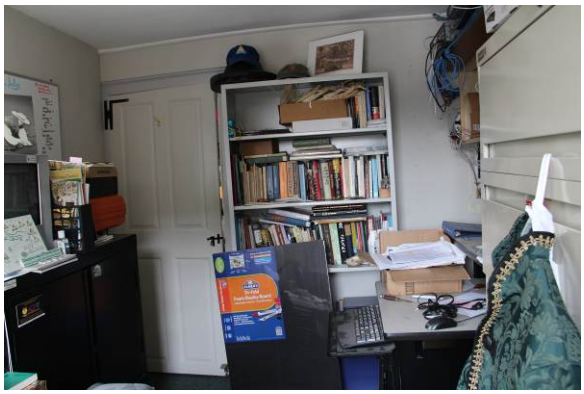
Library/ Conference Room on 2nd floor, view to north exterior wall with W210 (l) and W211 (r). Bookcases along interior partition between R204 and R205/206.

Library/ Conference room (R204) with view to south and historic interior doors and trim of rooms in south end of building.

2nd floor southeast corner chamber (office) with fireplace over mantle, paneled closet door, and exposed corner post (painted gray) at brick south gable wall of building; W205 in corner.

2nd floor southwest chamber (office) with corner closet, fireplace over mantle and exposed corner post (painted gray) along brick south gable wall; W206 in corner.

Corner posts exposed at each interior corner along north wall, W212 in center.



Connecting panel door between R2020 and R205 along east elevation.

Building Note: Many of these features are obscured by the current interpretive display materials and use of the spaces as administrative offices. Efforts should be made to reinterpret the important architectural features of the Antram-Gray House most notably the significant 18th and 19th C. architectural woodwork and the original features of the heavy timber frame.

Surface Materials and Finishes

Although the building has experienced considerable modifications in the intervening years of NPS ownership, some of the character-defining interior fabric has been retained, including the finishes found in the attic.

Historic interior plaster (c.1798) and winder stair between 2nd and attic floors, chimney shaft to left of image.

Historic floor boards in attic, HSR indicates may date to c.1798.

Unpainted (repaired) interior wall surface of south gable wall from attic.

View of roof rafters pinned at ridge with replacement roof sheathing and supplemental bracing to support roof frame.

Exposed Structure

The attic of the house retains an exposed structure which contributes to the character and utilitarian function of this space. Structural elements include rafters, rafter plates, etc.

(Non - CDF[1]) Features

These are non-sympathetic features that eventually should be replaced with materials more closely representing the period of significance as defined in park planning documents.

Storefronts: The NPS HSR notes (pg. 220) the original renovation drawings completed in 1976 indicatet the removal of the c.1920 storefronts from the east and north facades of the house and their replacement with smaller windows more appropriate to the 18th century. However, the long usage of the building by the Gray Jewelry Company prompted a change in plans, such that the storefronts were retained. A re-evaluation of this decision is inherent in the suggestions made by the recent Cultural Landscape Report and through any new planning documents (i.e.; updated National Register).

Interior Interpretive Displays: Several of the last remaining historic character-defining features of the interior are obscured by interpretive display panels and cases. In the future, if these were to be redesigned, it would be beneficial to the public's greater understanding of the historicity of the building that new interpretation include these character-defining features being part of the display and not be covered by them.

Historic fireplace partially visible behind visitor contact desk and east of book sales shelves (arrow). Other significant architectural woodwork is completely hidden behind interpretive panels at north elevation.

[1] *Use of the non-historic CDF designation indicates material is recognized for its visual presence but it does not represent a historic material for the building.*

Fiberglas Shingle Roofs: The HSR points out the house was once covered by a wood shingle roof. The current three-tab style fiberglas shingle roof could easily be replaced if such a change fits within the period of significance. Flashing details associated with brick chimneys could also be changed to be more historically accurate.

East Elevation at North Main Street. Fiberglas shingle roof lacks texture and color of traditional character-defining wood shingle roof.

West Elevation from park grounds. Visual prominence of fiberglas shingle roof is inappropriate for a historic house representing the earliest settlement of Providence time period.

Detail of modern smooth factory-finished clapboards.

Horizontal pattern of clapboard is a character-defining feature.

Clapboards: It is not clear if the type and size of clapboard used on the exterior of the AGH is appropriate to the period in time it is supposed to represent. The HSR does not state that nail holes were examined to determine the exposure (width to the weather) of the original clapboards when the building was moved in the mid-1970's. This could be undertaken as an additional study but would require removal of a significant area of exterior siding in order to do so.

Photo from HABS collection[2] of a similarly aged New England structure shows texture, pattern and sizes of exterior architectural components including horizontal clapboards (bottom of photo) and wood shingle roof. All exterior architectural features exhibit hand crafted methodology no longer extant at the Antram-Gray House.

End of Character-Defining Features section.

[2] *HABS Survey, Frank O. Branzetti, Photographer, June 9, 1941, Interior Details, Shingles & Clapboards on Original House, In Attic; Perez Lincoln House, 123 North Street (moved from original location), Hingham, Plymouth County, MA; HABS; Library of Congress Call Number: HABS MASS, 12-HING, 12—5.*

PART 3

Introduction

The Antram-Gray House is listed on the National Register of Historic Places. As such, treatment philosophies should be based on the most appropriate treatment standards, **Preservation** and **Rehabilitation**, as defined by *The Secretary of the Interior's Standards for the Treatment of Historic Properties.*

Following are synopsized definitions of these two standards:

Preservation is appropriate "*when the property's distinctive materials, features, and spaces are essentially intact and thus convey the historic significance without extensive repair or replacement; when depiction at a particular period of time is not appropriate; and when a continuing or new use does not require additions or extensive alterations. Prior to undertaking work, a documentation plan for Preservation should be developed.*"[1]

Rehabilitation is appropriate "*when repair and replacement of deteriorated features are necessary; when alterations or additions to the property are planned for a new or continued use; and when its depiction at a particular period of time is not appropriate. Prior to undertaking work, a documentation plan for Rehabilitation should be developed."* [2]

Additional language concerning these two treatments and derived from the Secretary of the Interior and the National Park Service will be found in *Appendix A, Preservation Standards and Guidelines.*

Stabilization

Another form of Preservation is **Stabilization**. While not one of the formally defined treatment standards, it is a common management technique used to prevent the ultimate and untimely loss of a historic structure when treatment is not immediately possible. The following definition is presented as part of the **Guidelines for Preservation** in the *Secretary's Standards.*

"Deteriorated portions of a historic building may need to be protected thorough preliminary stabilization measures until additional work can be

[1] *The Secretary of the Interior Standards for the Treatment of Historic Properties with Standards and Guidelines for Preserving, Rehabilitating, Restoring & Reconstructing Historic Buildings*.
[2] Ibid

undertaken. ***Stabilizing*** may include structural reinforcement, weatherization, or correcting unsafe conditions. Temporary stabilization should always be carried out in such a manner that it detracts as little as possible from the historic building's appearance. Although it may not be necessary in every preservation project, stabilization is nonetheless an integral part of the treatment Preservation; it is equally applicable, if circumstances warrant, for the other treatments."[3]

Further definition of the concept of stabilization is found in the National Park Service Cultural Resources Management Guidelines. As part of the overall definition of the preservation philosophy known as **preservation maintenance,** stabilization is defined along with housekeeping, routine maintenance and cyclical maintenance (other types of maintenance).

Preservation maintenance: action to mitigate wear and deterioration of a historic property without altering its historic character by protecting its condition, repairing when its condition warrants with the least degree of intervention including limited replacement in-kind, replacing an entire feature in-kind when the level of deterioration or damage of materials precludes repair, and stabilization to protect damaged materials or features from additional damage. Types of preservation maintenance are: [4]

- **Housekeeping:** the removal of undesirable deposits of soil in ways that minimize harm to the surfaces treated, repeated at short intervals so that the gentlest and least radical methods can be used.

- **Routine maintenance:** usually consists of service activities such as tightening, adjusting, oiling, pruning, etc.

- **Cyclic maintenance:** maintenance performed less frequently than annually; usually involves replacement or at least mending of material.

- **Stabilization:** action to render an unsafe, damaged, or deteriorated property stable while retaining its present form.

[3] Ibid.
[4] National Park Service Office of Policy: NPS-28, Cultural Resource Management Guideline (Appendix A), available at http://www.nps.gov/history/history/online_books/nps28/28appena.htm, accessed on August 31, 2013.

Condition Assessment Standard Definitions

Introduction

The following standard condition assessment definitions are based on those outlined by the National Park Service (NPS). NPS uses an industry-based condition assessment tool known as the Asset Management Process which has been adopted for use by HPTC for this project.

Overall Qualitative Condition Ratings

Good

This rating indicates that:

- Routine maintenance should be sufficient to maintain the current condition; and/or
- A cyclic maintenance or repair/rehabilitation project is not specifically required to maintain the current condition or correct deficiencies.

Fair

This rating indicates that:

- The feature generally provides an adequate level of service to operations, but
- The feature requires more than routine maintenance attention.

This rating also indicates that cyclic maintenance or repair/rehabilitation work may be required in the future.

Poor

This indicates that the feature is in need of immediate attention. This rating also indicates that:

- Routine maintenance is needed at a much higher level of effort to meet significant safety and legal requirements;
- Cyclic maintenance should be scheduled for the current year and/or
- A special repair/rehabilitation project should be requested consistent with the building owner's requirements, priorities, and long term management objectives.

Maintenance Deficiency Priority Ratings (5 Year Rating Period)

Listed as "Priority Ratings" on the *Feature Inventory Condition Assessment Tables,* these ratings are based on the condition rating of each feature and a priority rating was established. These priority ratings indicate either a critical, serious, or minor deficiency priority rating.

a) Critical – (Emergency / Immediate)

- This rating defines an advanced state of deterioration which has resulted in the failure of a feature or will result in the failure of a feature if not corrected within 1 year***;*** or
- There is accelerated deterioration of adjacent or related materials or systems as a result of the feature's deficiencies if not corrected within 1 year***;*** or
- There is an immediate threat to the health and/or safety of the user; or
- There is a failure to meet a legislated requirement.

b) Serious – (Immediate / Short Term)

- This rating defines a deteriorated condition that if not corrected within 1 to 3 years will result in the failure of the feature; or
- A threat to the health and/or safety of the user may occur within 1 to 3 years if the ongoing deterioration is not corrected; or
- There is ongoing deterioration of adjacent or related materials and/or features as a result of the feature's deficiency.

c) Minor – (Short Term / Long Term)

- This rating indicates standard preventative maintenance practices and preservation methods have not been followed; or
- There is reduced life expectancy of affected adjacent or related materials and/or systems within 3 to 5 years and beyond; or
- There is a condition with a long term impact within 3 to 5 years and beyond.

For the purposes of this report, these definitions were rigidly adhered to as a way to qualitatively assess the current condition of the Antram-Gray House.

End of Part 3

PART 4

Introduction

This part of the Historic Structure Assessment Report describes the current condition (July - August 2014) of the architectural fabric of the *Antram-Gray House* (AGH)[1]. It identifies maintenance deficiencies of the building's features as described in the building feature master list (Appendix B) and this part of the report. Along with a written description of the observed conditions, an overall quality condition rating and a maintenance deficiency priority rating are provided for each substantially separate building feature.

The ASTM reference standard for *Baseline Property Condition Assessment Process* (ASTM E2018) has been adopted for use by the Historic Preservation Training Center (HPTC) for this project along with the previously mentioned NPS FMSS Uniformat II methodology. Inspection of the referenced structure was completed utilizing the current guidelines in conjunction with the National Park Service *Facility Condition Assessment Survey* as described in Part 1 of this report.

Overview of Treatment

The Antram-Gray House was extensively documented by the National Park Service in the 1980s with the production of an HSR and the earlier HABS drawings[2]. Previous administrative research has indicated "that it is difficult to locate NPS site-related records that document ongoing stewardship work at the site"[3]. Records previously maintained at the regional office have been recently transferred to the HACE offices in Lowell, MA (FY2013).

No systematic maintenance records have been located for any treatments that were carried out after the interventions of the late 1970s – early 1980s but it can be assumed the building was in Good condition after those projects were completed. Preservation work completed in the late 1990s - early 2000s is documented in a report, *Antram-Gray House Rehabilitation Completion Report*[4], by the former North Atlantic Region's Building Conservation Branch in 2001. While it is likely there has been site-based on-going cyclical maintenance work taking place since 2001 it is unclear what may have been accomplished. A request to the regional office resulted in a list which included only capital investment type projects (see Part 2 for list)

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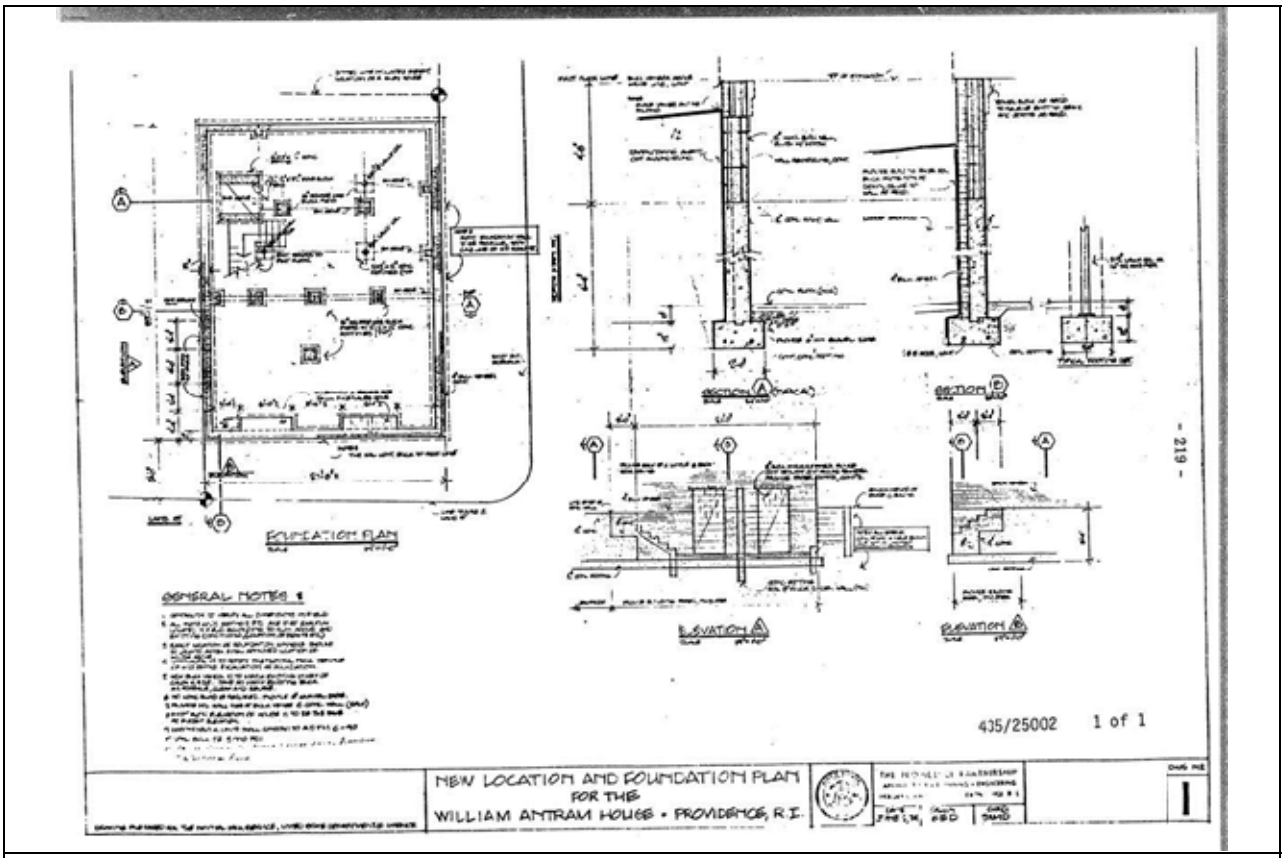
[1] *Plans are underway for the final HSAR to incorporate work currently underway (Q4 FY14).*
[2] *See Part 1 for list of references and Part 2 for Brief Chronology*
[3] *Email from Senior Regional Archivist to HPTC Project Architect, dated 7/30/14*
[4] *Not in DSC eTic database for park, will be transmitted with HSAR.*

such as the installation of the HVAC system and the current repair and repaint project.

This HSAR project did not include the task of researching the park's maintenance history and it is likely such records exist at the local level or in the regional storage facility (now managed by the HACE). As a result of minimal cyclical repair projects many of the exterior building features are in Fair or Poor condition as they are approaching the end of their service life. Many building features and components repaired 14 years ago are now also in Fair condition due to localized deterioration. Several research-based tasks seem not to have been commissioned by the NPS since its stewardship of the building began in 1974, and this lack of information is categorized as Poor when related to a specific building feature. This would include a structural analysis of the building's historic timber frame, up-to-date documentation of the building, and more comprehensive understanding of the building's internal systems and how they have been integrated (or not) into the building over the last 35 years. As suggested in the CLR it is time for a re-evaluation of how the building is treated and used by the NPS if it is to survive as a representative example of colonial architecture.



An early treatment of the Antram-Gray House was its relocation and the construction of a new foundation ca. 1974-75.

Site Visits

The field assessment site visit took place in mid-July. Following is a summary of the Itinerary as described in the Site Visit Trip Report distributed to the Site Manager in mid-August with minor revisions in early September. The site visit consisted of two full days on-site with a half-day at the beginning and end of the travel period. The weather was seasonally hot and humid and cooperated mid-week by providing an intense rain storm and cold front passing over Providence; it produced heavy rainfall totaling about 2-3 inches in a few hours.

A kick-off meeting was held with park staff and logistics for the week were discussed. The Uniformat II building inspection checklist was revised to more appropriately reflect the building features of the Antram–Gray House. As the condition assessment is focusing on the exterior features, window and door schedule survey forms were also prepared for use. Jennifer Smith, Site Manager, took HPTC architects thru the building pointing out the park's primary concerns with visible maintenance deficiencies. She also pointed out the sloping floors on the 2nd level and cracked plaster at the interior corner of the rear staircase, and discussed the staff's concerns about potential over-loading of the 2nd and 3rd floors of the building.

HPTC staff also perused non-archival park files to locate an accurate floor plan of the first floor – this was located in the attic flat files (a drawing by the Harpers Ferry Center used to layout the interpretive materials in the Visitor Center – 1st floor of the building).

John McNiff, long-time (over 18 years) Park Ranger, briefed HPTC architects on his concerns about the perceived deterioration of the building structure and stresses on it. Several hours were devoted to investigating the historic timber frame of the building wherever it is visible; for most of it is well concealed behind interior walls, ceilings and floors. The HSAR project was conceived as a limited investigation type project as it would not be possible to repair any modern finishes removed in order to investigate the historic frame; so visual investigation was at the top of the list of tasks to be accomplished.

Prior to departure from the site a brief telephone conference call was held between the ROWI Site Manager and the park's new Superintendent Meghan Kish (New Bedford Whaling NHP & ROWI) to discuss site observations, conditions observed, and priorities. It was also mentioned that the NER preservation team from HACE would be working in the park in mid-to-late August. The Site Manager had not yet received a scope of work.

Summary of the Findings (September 2014)

The **exterior** of the Antram-Gray House building achieves an **Overall Quality Condition Rating** of **FAIR** and an overall **Maintenance Deficiency Priority Rating** categorized as **Serious**.

> The **Overall Quality Condition Rating** of **FAIR** achieved by the exterior indicates the feature(s) generally provides an adequate level of service to operations, but the feature requires more than routine maintenance attention. This rating also indicates that cyclic maintenance or repair/rehabilitation work may be required in the future.
>
> The **Maintenance Deficiency Priority Rating** of **Serious** achieved by the exterior indicates a deteriorated condition that if not corrected within 1 to 3 years will result in the failure of the feature; or, a threat to the health and/or safety of the user may occur within 1 to 3 years if the ongoing deterioration is not corrected; or, there is ongoing deterioration of adjacent or related materials and/or features as a result of the feature's deficiency.

The **interior** of the Antram-Gray House building achieves an **Overall Quality Condition Rating of GOOD** and an overall **Maintenance Deficiency Priority Rating categorized as Minor.**

> **The Overall Quality Condition Rating** of **GOOD** achieved by the interior indicates that routine maintenance should be sufficient to maintain the current condition; and/or, a cyclic maintenance or repair/rehabilitation project is not specifically required to maintain the current condition or correct deficiencies [with a few noted exceptions].
>
> **The Maintenance Deficiency Priority Rating** of **Minor** achieved by the interior indicates standard preventative maintenance practices and preservation methods have not been followed; or, there is reduced life expectancy of affected adjacent or related materials and/or systems within 3 to 5 years and beyond; or, there is a condition with a long term impact within 3 to 5 years and beyond.

The following table provides an overview of the major building feature categories and their associated condition assessment ratings.

Summary of Condition Assessment Ratings			**Major Headings**		
UNIFORMAT II Outline Data				**Condition Assessment**	
Cate-gory	**Topic**	**Code**	**Subtopic**	**Condition Rating**	**Deficiency Rating**
A	**Substructure:** This system includes all work below the lowest floor construction and the enclosing elements required to form a basement.				
A10	Foundations				
	A1010	Standard Foundations: below grade, or substantially below grade foundation systems.		GOOD	Minor
	A1030	Foundation Drainage: directly associated with draining the foundation. This category does not include storm drainage piping for site. It does include drain pipe or drain tile at foundation or basement for specific purposes of draining each. Assemblies include excavations, hand-shaped bottoms, gravel, compacted backfill, and drain pipe or tiles.			
		Foundation Drainage		POOR	Minor
	A2020	Basement Walls: construction assembly which constitutes the basement level wall system. [See A1010 – Standard Foundations].			
		Basement Walls		GOOD	Minor
B	**Shell:** This system includes all structural decks and supports within basement and above grade.				
B10	Superstructure				
	B1010	Floor Construction: wood frame construction supporting interior floors – joists, subfloor, etc. All materials considered.			
		Floor Construction - Overall		FAIR	Serious
	B101001	Structural Frame: includes wood posts and beams used to create structural frame of building.			
		Structural Frame - Overall		FAIR	Serious
	B1020	Roof Construction: wood frame construction supporting roof decks and coverings, includes dormers if applicable.			
		Roof Construction - Overall		FAIR	Serious
B20	Exterior Envelope		Exterior facing including all vertical and horizontal exterior closures.		
	B2010	Exterior Walls – all materials associated with exterior wall construction, including soffits.			
		Exterior Walls - Overall		FAIR	Minor
	B2020		Exterior Windows[5]	POOR	Critical
	B2030		Exterior Doors[6]	FAIR	Minor
B30	Roof System				
	B3010	Roof Coverings - This system includes all waterproof roof coverings together with required trim and insulation, together with roof penetrations.			

[5] Windows may be sorted two ways: by window type or by floor, elevation or section of the building; includes all windows located in exterior walls.
[6] Doors may be sorted two ways: by door type or by floor, elevation or section of the building; includes all doors located in exterior walls.

		Roof Coverings - Overall	FAIR	Minor
	B3010-4	Flashing & Trim – All flashings associated with the roof, i.e.: eave, gable, valley, ridge, step, etc.		
		Flashing & Trim - Overall	FAIR	Minor
	B3010-5	Gutters & Downspouts	FAIR	Serious

C	**Interiors:** Construction which takes place inside the exterior wall or skin. Does not include interior structural walls (see section B: Superstructure).			
C10	Interior Construction[7]			
	C1010-2	Maintenance Shed Interior Walls/ Ceilings	POOR	Critical
	C1010-1	Main Block Interior Walls/ Ceilings	FAIR	Minor

D	**Services**			
D10	Conveying		NA	NA
D20	Plumbing		NR	NR
D30	HVAC		POOR	Serious
D40	Fire Protection Systems		NR	NR
D50	Electrical		NR	NR
	D5090-4	Lightning Protection	POOR	Serious

G	**Building Site**			
G20	Site Improvements			
	G2090-1	Pedestrian Paving (Accessibility)	POOR	Serious
	G2090-2	Maintained Landscapes (Fences)	FAIR	Serious
G90	Other Site Work			
	G9087	Site Drainage & Vegetation	FAIR	Serious

Condition Assessment Notes:

In addition to the standard defined ratings (Chapter 3) HPTC has employed three (3) additional rating markers for this project:

NA: Not Applicable – building or system element is not extant as a component feature.

NR: Not Rated - the feature was not rated by the HPTC HSAR team as it was included in the scope of work for one of the contractor consultants.

NIR: Not Individually Rated – The feature(s) was rated as a total system; i.e., D50 Electrical. The individual features as derived from Uniformat Work Breakdown Structure: D5010 – Electrical Service & Distribution, D5020 – Lighting and Branch Wiring, and D5030 – Communications and Security were not rated because they were non-extant.

[7] *Basement was not included as it is not part of historic structure.*

Summary of Critical and Serious Maintenance Deficiencies:

The most critical maintenance deficiencies as documented during the July 2014 field work and presented in the Chapter 4 Building Feature Master List Individual Condition Assessments includes:

- C10 Lack of proper fire separation between maintenance shed (with flammable storage) and the historic house [fire resistance rating of interior wall and ceiling coverings in shed; penetrations through wall] [lack of auto-closing fire door]. Type X gypsum board offers 1 hour fire separation if properly maintained; the ceiling construction is ½ inch gypsum board, if built according to NPS drawing, and does not achieve a 1 hour rating[8] according to International Building Code;
- B20 Extremely deteriorated exterior non-historic windows with failing structural joints, loss of paint, rotted sills and frames, and other deficiencies;
- B20 Lack of interior/ exterior storm windows to alleviate condensation on interior, infiltration of particulate matter, and exposure of window sash to weather on the exterior;
- D50 Lack of lightning protection system on the building;
- D30 Lack of coordinated (holistic) interior control system for building HVAC system;
- B10 Capped and unvented brick masonry chimney shafts;
- B30 Undersized roof drainage components allowing point source moisture intrusion into the building;
- B20 Deterioration and paint failure on the exterior siding and architectural woodwork including historic north elevation door frontispiece;
- C10 Use of house basement as maintenance office and storage area with lack of fire separation between basement and rest of house [open stair case with non-fire rated interior doors, wall and ceiling enclosures][lack of fire rated enclosure in basement (dropped ceiling)];
- B10 Possible over-stressing (weight) and deterioration of buildings historic post and beam structure with no means of assessment;
- B10 Lack of load limits for second and third floor storage and office areas;
- B10 Lack of proper bearing of rafters and supplemental supports on rafter plate or other load-bearing structural member associated with the roof frame;
- G20 Accessible visitor route from parking to Visitor Center does not meet current NPS policy guidelines for universal accessibility;
- G90 Lack of adequate foundation and site drainage, improperly repaired roof drainage downspouts into underground drainage system;
- B30 Edge damage to shingle roof at deteriorated cornice returns;
- C10 Rehabilitation treatment of building interior which compromises historic character-defining features rather than incorporating them into visitor experience.

[8] The park responded with the following note on C10: The shed walls have a base of ½ gypsum board – additional ½ gypsum board added to wall between Shed and AGH (house) (? 2004). Penetrations are through addition.

Typical deteriorated exterior window condition, July 2014.

Accelerated deterioration of exterior window components, July 2014.

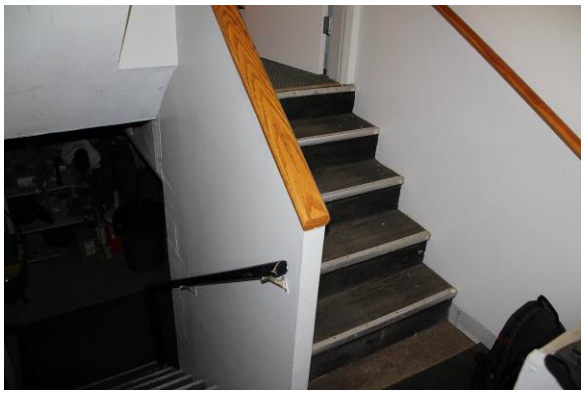
Penetrations in shed ceiling negate any fire separation offered by rated materials. According to NPS construction drawing it is ½ inch gypsum board; this assembly does not achieve a 1 hour fire resistant rating.

Penetrations through Type X wall board (1 hour fire rated material) are deficiencies in the fire resistant rated enclosure of the maintenance shed and void the 1 hour rating.

Possible over-stressing of historic post and beam structure due to overloading of interior spaces.

Office system furniture contributes to poor placement of staff within 2nd floor rooms.

Open stair between floors; also functions as main egress from basement offices.



Non fire rated enclosure between basement and first floor.

Historic rafters without supplemental supports or proper bearing at rafter plate.

Previous supplemental bracing may not be adequate/ appropriate for historic roof frame and bearing capacity of roof system.

Typical non-historic replica interior window condition with interior storm window frame.

Condition of exterior painted surfaces, July 2014.

Capped and sealed chimneys at south gable elevation.

Southwest chimney (CH03) with furnace flue hood and sheet metal cap over chimney opening.

Deteriorated exterior building features at north elevation door.

Deteriorated storefront window frame at east elevation.

Improper installation of downspout connection to underground drainage system (may be a temporary repair).

Both building downspouts discharge entire roof water output into planted bed adjacent to historic south brick gable. It is unclear if there is an underground drainage line or foundation waterproofing in this vulnerable area.

Building Feature Master List

The Building Feature Master List Outline (Appendix B) is the overall guide used in the condition assessment of the structure. The category, topic, code and subcode nomenclature is derived from current industry standard condition assessment systems adopted by the NPS, which, in turn, utilize the format and structure of the *Uniformat* system used by many facility management industry leaders.

Successful use of this system for this type, size, and age of historic structure has been demonstrated in the NPS. The American Society for Testing and Materials (ASTM) Standard E 2018-01, *The Standard Guide for Property Condition Assessments: Baseline Property Condition Assessment Process*[9] was also utilized to organize and implement this assessment.

Refer to Chapter 1 for a description of this methodology. The outline used for this project has been tailored to fit the building component features of the subject historic structure [Antram-Gray House].

Condition Assessment Reports

Immediately following this section are the individual building feature condition assessment reports in Chapter 4. They are organized according to the Building Feature Master List Outline as per Appendix B and not in prioritized order.

Prioritized recommended treatments that support *The Secretary of the Interior's Standards for the Treatment of Historic Properties* are found in Chapter 5.

End of Part 4: Condition Assessment Survey - Introduction

[9] ASTM E-2018-01, ASTM International, West Conshohocken, PA.

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	A10	**Foundations –** This system includes all work below the lowest finished floor level construction (usually slab-on-grade).	
		A1010	**Standard Foundations** – Continuous footings, spread footings, grade beams, foundation walls, pile caps and column piers.

Constructed in 1974 of masonry block units with a concrete slab floor the foundation has a brick veneer in certain above grade areas visible to the public. The foundation is visible mainly on the west elevation with a few courses exposed on the north elevation. See construction drawing 435/ 25002 for details. Basement interior appears dry with no water penetration issues. It appears as if a damp-proofing material was called for on the drawing but the detailed notes are illegible on the drawing.

The shed addition was constructed in 1988, according to NPS documents, of 10 inch block on a poured 10” x 20” footing.

No foundation drainage system is indicated on the drawing (A1010-3).

The roof drainage system is considered under section B30 and the site drainage is considered under section G90.

Exposed portions of foundation at north elevation.

Exposed portions of foundation at west and shed elevations.

 Detail of brick veneer at north elevation.	 Detail of brick and block construction at west elevation at intersection with shed addition.
A1010-1	Standard Foundations (House)
Qualitative Condition Rating	GOOD
Maintenance Deficiency Rating	Minor

	A1010-5	**Chimney Foundations**
Masonry supports are called for on the 1974 Foundation Plan; they are constructed from the same masonry block units as the exterior foundation wall. See building features numbers B102099-1 and -2 for additional information re: the masonry chimney structures.		
A1010-5		**Chimney Foundations**
Qualitative Condition Rating		GOOD
Maintenance Deficiency Rating		Minor

	A103006	**Foundation Drainage (System)**
According to the 1974 Foundation Plan, a building drainage system is not indicated. It is unknown if one has since been added; excavation would be required to determine. The roof drainage system (gutters and downspouts) are described as part of the roof system (section B30).		
A103006		**Foundation Drainage**
Qualitative Condition Rating		UNKNOWN (POOR)
Maintenance Deficiency Rating		Serious

End of Part A10: Foundations

	B10	**Superstructure**	
	B1010		**Floor Construction:** this includes all construction of floor framing systems including joists, subfloor, insulation, decking, etc.

Floor frame systems not inspected as part of this assessment as they are inaccessible without removal of interior or exterior finishes. See *Historic Structure Report* for detailed survey, mapping and analysis of wood floor frame systems.

Documentation of the framing systems are found in the HSR and partially in the Historic American Building Survey (HABS) drawings. There are plans for the 2nd and attic story, but no plan has been produced for the 1st floor frame except for a partial reflected ceiling plan included in the 1974 HABS drawings (Sheet 2) which were made prior to the building relocation. A plan showing how the building's first floor frame was reconstructed has not been located. It can be seen from the basement that supplemental framing is used to help support some of the remaining historic timbers.

At that time (1974 - 1981) the exposed structural frame systems were found to be in fair condition. During the field work for this HSAR (July 2014) there is noticeable sloping of the second floor in certain areas as documented by field sketches included with this report.

Supplemental framing is clearly seen alongside white painted historic floor joists.

Historic joists (white) are seen sandwiched between modern framing members installed when 1st floor was renovated (see also plywood sub floor system).

B1010	Floor Construction – Overall (Main Block)
Qualitative Condition Rating:	FAIR
Maintenance Deficiency Rating:	Serious

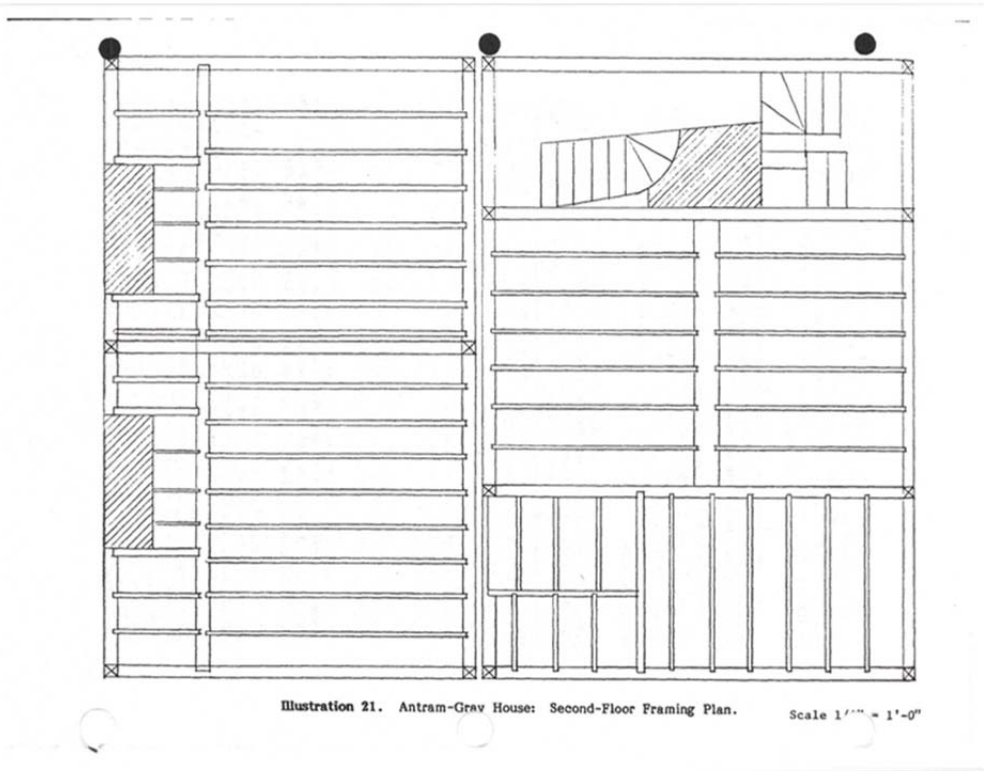


Illustration 21. Antram-Gray House: Second-Floor Framing Plan. Scale 1/4" = 1'-0"

HSR plans of 2nd and 3rd floor frames, no photographs are available for these systems as they are concealed by interior finish systems.

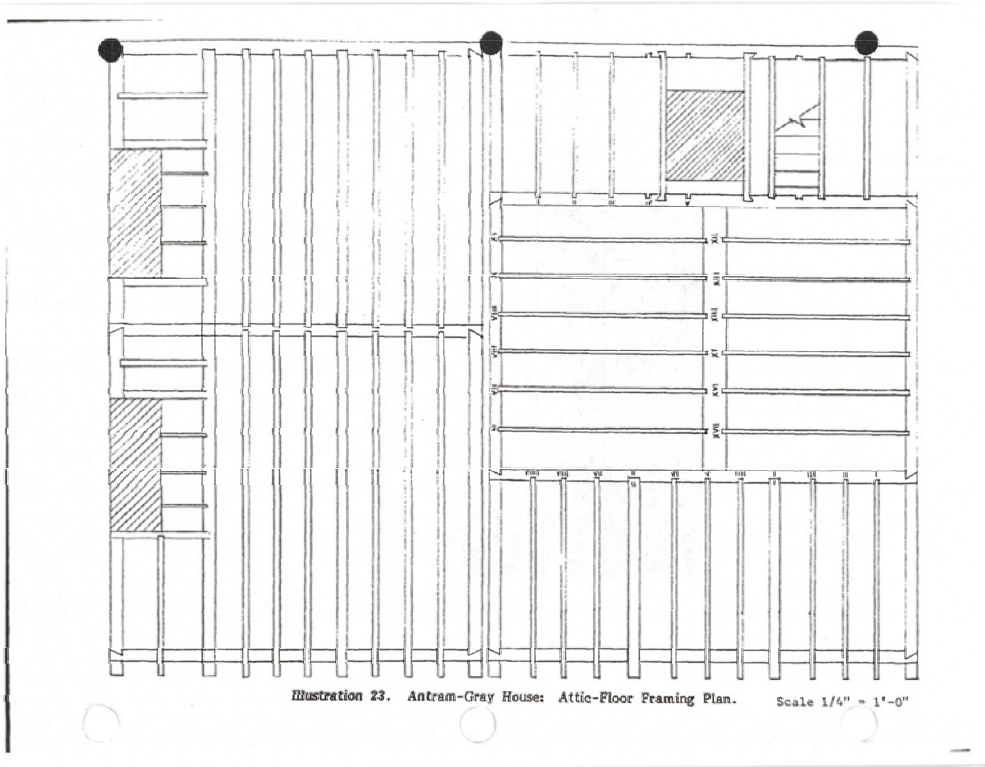
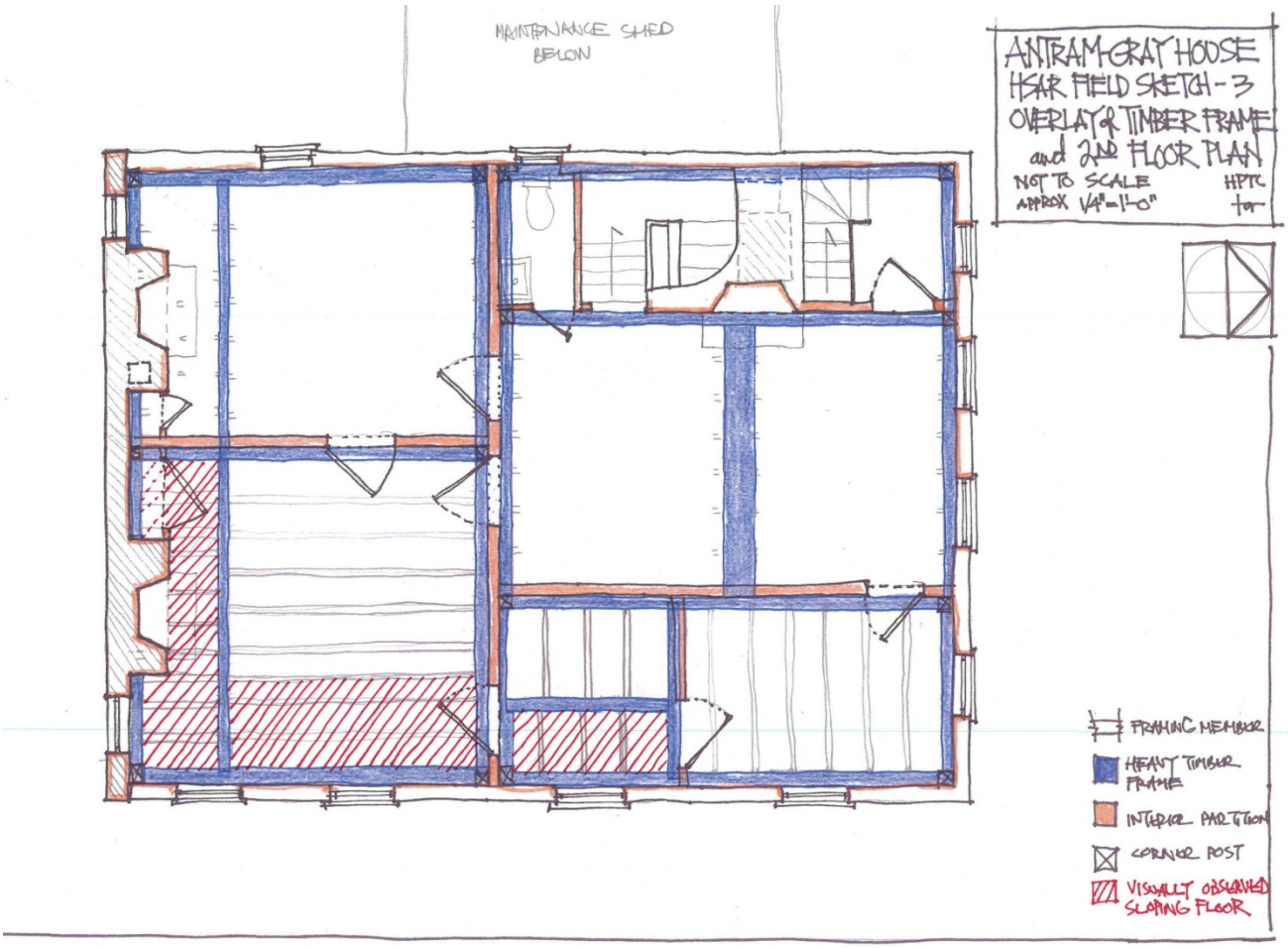


Illustration 23. Antram-Gray House: Attic-Floor Framing Plan. Scale 1/4" = 1'-0"



This sketch plan (not to scale) illustrates areas of visually observed sloping floor (red hash lines) overlaid on the2nd floor; these spaces are currently occupied by staff offices. In this plan the interior walls are illustrated by the orange wall lines and the heavy timber frame is illustrated by the blue lines. Not all frame members are shown, only those in the areas occupied by sloping floors.

B1010-1-1	1st Floor
Qualitative Condition Rating:	GOOD
Maintenance Deficiency Rating:	Minor

B1010-1-2	2nd Floor
Qualitative Condition Rating:	FAIR
Maintenance Deficiency Rating:	Serious

B1010-1-3	Attic Floor
Qualitative Condition Rating:	FAIR
Maintenance Deficiency Rating:	Serious

		B101001	Structural Frame - Overall

Similarly to the description of the floor frame and roof frame, the vertical elements of the structural system (the corner posts and diagonal braces) are only partially documented by the HSR, they are not captured in the 1974 HABS documentation. At the time of the HSR the system was found to be in good condition.

Elements of the vertical framing system may be seen in the house interior, mainly partially exposed corner posts and two exposed vertical posts in the Visitor Contact space on the first floor. Components of this system were not inspected as part of this assessment as they are inaccessible without removal of interior or exterior finishes.

Metal column is used in lieu of original wood corner post in the visitor contact area.

19th C turned post is primary structural support in building frame.

Beaded gunstock corner post and beaded floor plate beams are visible in the north entrance vestibule area (R106).

Beaded gunstock column visible on 2nd floor is part of primary structural system (structural frame).

B101001	Structural Frame - Overall
Qualitative Condition Rating:	GOOD
Maintenance Deficiency Rating:	Minor

View of interior crack at historic plaster wall within enclosure of northwest winder stair. Crack may be associated with deterioration of the northwest corner post or perhaps crushing of the sill plates as this area exhibits deterioration of exterior cladding and corner-boards.

Avongard style crack monitor installed by ROWI maintenance staff, July 2014. Park should monitor on a monthly basis and record any movement from initial setting on chart provided with monitor. Changes in movement may indicate cyclical, seasonal or steady movement over time and will assist in future treatment recommendations.

B101001a	Main Block - North
Qualitative Condition Rating:	FAIR
Maintenance Deficiency Rating:	Serious

B101001b	Main Block - South
Qualitative Condition Rating:	FAIR
Maintenance Deficiency Rating:	Serious

B101001c	Shed
Qualitative Condition Rating:	GOOD
Maintenance Deficiency Rating:	Minor

	B1020		**Roof Construction:** this includes all construction of roof framing systems including rafters, plates, sheathing or decking, insulation, etc.

Roof frame systems not inspected as part of this assessment as they are only partially accessible without removal of interior or exterior finishes. See *Historic Structure Report* for detailed survey, mapping and analysis of wood roof frame system.

Documentation of the framing systems are found in the HSR and partially in the Historic American Building Survey (HABS) drawings (Sheet 2) prior to the 1st phase of renovations.

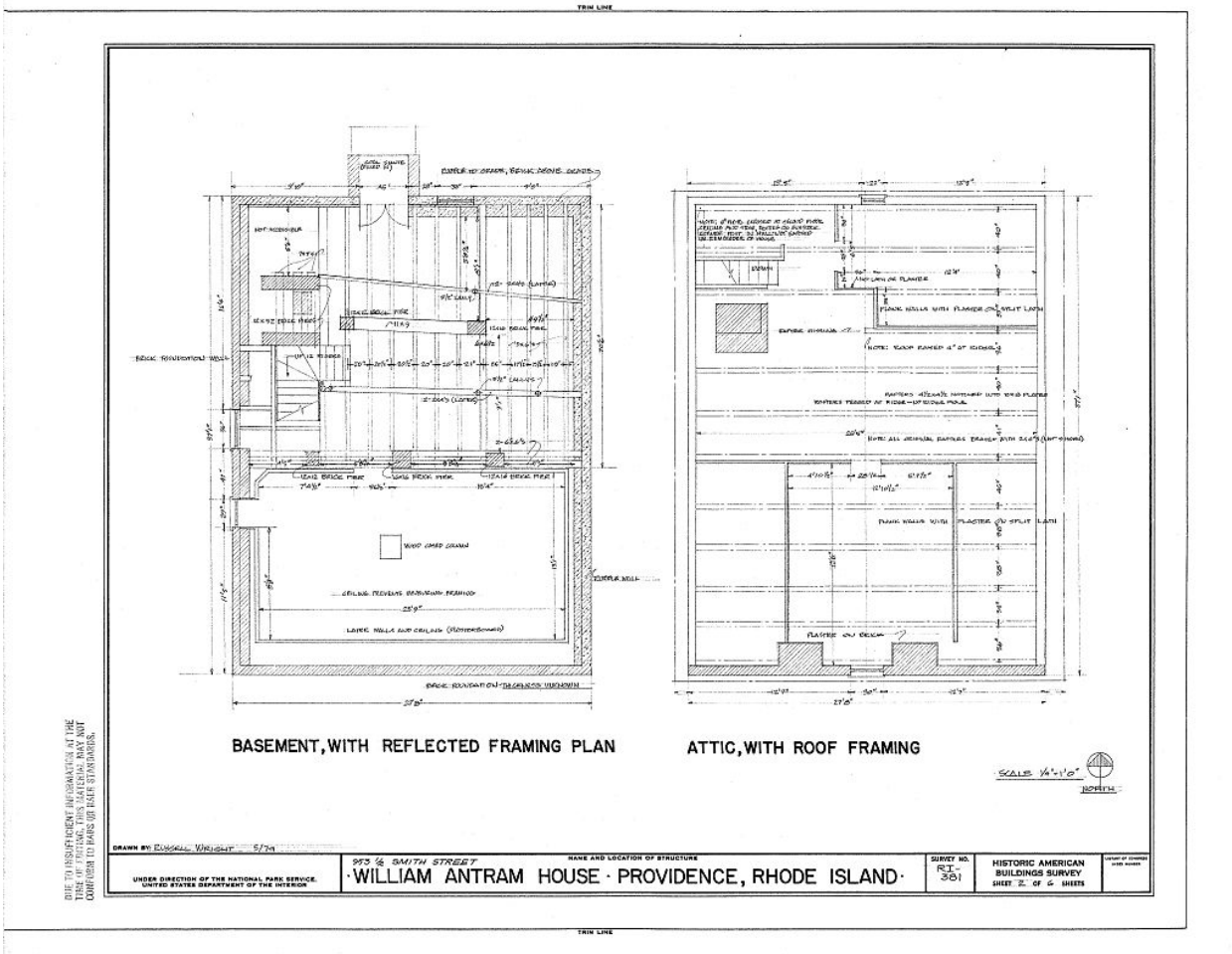
At that time (1974 - 1981) the exposed structural frame systems were found to be in fair condition. During the field work for this HSAR (July 2014) it was noticed that several rafter pairs (and their supplemental supports) are not in contact with the rafter plate as would be expected.

View of supplemental framing (lighter colored wood) installed along-side historic rafters. Note the roof sheathing has been replaced with modern materials.

Area around chimney CH03 which has been reframed as part of a renovation project. Plywood has been used as the roof sheathing and substrate for the exterior three-tab shingle roof.

Historic rafters bear on bolster at interior post (or bearing wall) location [photo left]; rafter plate [photo right] bears on rafter plate, as is to be expected.

Supplemental joist do not bear on any structural member at the bottom and therefore do not really assist in distribution of roof load to rafter plate; they are false supplemental members.



Sheet 2 of the HABS drawings show the attic roof framing plan as it was in 1974; supplemental framing members have been added but not recorded in any of the NPS materials available at this time.

B1020	Roof Construction – Overall
Qualitative Condition Rating:	FAIR
Maintenance Deficiency Rating:	Serious

B1020	Roof Construction – Main Block Gable
Qualitative Condition Rating:	FAIR
Maintenance Deficiency Rating:	Serious

B1020	Roof Construction – Shed
Qualitative Condition Rating:	GOOD
Maintenance Deficiency Rating:	Minor

		B102099	Other Roof Construction (Chimneys)

There are three (3) chimneys that are part of the Antram-Gray House. CH01 and CH02 are built into the south gable brick wall and are part of it structurally as well as functionally. CH01 is on the west slope of the gable roof and CH02 is on the east side of the ridge line. CH01 (west) contains the contemporary furnace flue which exist the roof in a hooded sheet metal fluepipe.

CH03 exits the roof on the west slope of the roof and is located south of the north gable wall of the house. It has a three course corbelled belt three courses from the top.

All three chimneys are laid in common bond with no exposed headers. All three chimneys are built with slightly corbelled tops (3 to 5 courses). All three chimneys are capped with sheet metal (lead coated copper according to the BCB report); and all three are unvented.

At CH01, which contains the furnace flue, only the furnace flue is vented; the remainder of the flues are blocked. While it is unknown what type of treatment the chimneys have received on the interior (they are all blocked and non-functional) they are un-rendered brick and exposed to the weather.

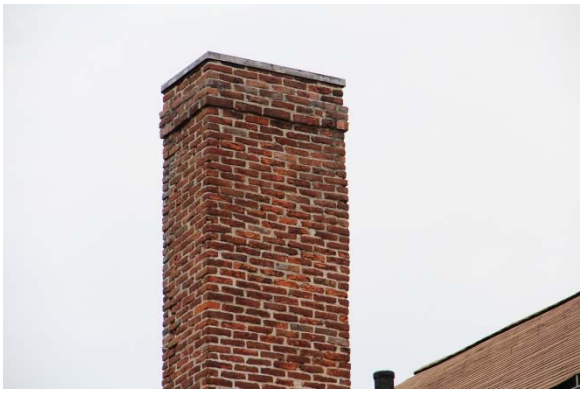
The capping of unused masonry chimneys is not a best practice as it traps moist air in the unused chimney cavities (which were intended to have hot air dry them from the interior when in use) eventually leading to accelerated deterioration of the chimney features from the interior due to trapped interior moisture and high moisture levels.

While repointed in 2000-01, all three chimneys show some level of deteriorated bricks with sheared off (or exfoliated) faces making them more prone to rapid deterioration. CH03 also indicates erosion of the mortar joints at the northwest corner. Other chimneys show areas of deteriorated mortar in selected locations.

CH01 from the north

CH02 from the north

CH03 in background with CH01 and Ch02 from the south.



CH03 from the south

CH03 from the north

View shows areas of spalled brick faces (lighter orange areas) indicating areas of brick deterioration possibly derived from capped chimney and trapped interior moisture of exposed brick chimney shafts. Sheet metal cap is evident at top of chimney. If this cap is vented – it appears as if it may be held slightly off masonry – it does not allow for a free-flowing passive exchange of air as required to properly vent an unused chimney stack.

B102099	Other Roof Construction (Chimneys)
Qualitative Condition Rating:	POOR
Maintenance Deficiency Rating:	Serious

End of Part B10: Superstructure

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	B20	**Exterior Envelope**	
	B2010		**Exterior Walls**

The exterior envelope of the building is in generally good condition. Both the house and the shed are sheathed with wood clapboarding except the south gable wall of the house which is brick masonry. If constructed according to NPS drawings and specifications, the clapboard walls are painted cedar materials. Edge grain is preferable but flat grain was observed on the building (not as high quality). The existing clapboards are clearly modern materials as they are factory made. There is no indication of hand crafting that would have been seen in the colonial era or up through the mid-19th century.

The wall construction is specified by the NPS renovation drawings and if built accordingly it is cedar clapboards over either ½ inch plywood or original sheathing boards if they were retained during the previous renovation projects. Plywood was called for on the shed and on the renovation drawings where repairs were to have been made.

The entire exterior of the building was prepped and painted in 2000 as part of the latest exterior renovation project; and is undergoing a similar prep, repair, prime and repaint project the summer of FY14. Documentation by the Northeast Region's Historic Architecture Conservation and Engineering Center (HACE) team.

Minor areas of clapboard deterioration were noted in the July 2014 evaluation. The architectural trim was however in far worse condition with significant areas of deterioration and general deferred maintenance deficiencies.

North elevation with exterior clapboarding in good condition.

Detail lower panel under storefront showing exposed modern foundation painted red and siding in fair condition.

<table>
<tr>
<td> 

West elevation shed with matching clapboard in good condition.</td>
<td> 
Detail individually deteriorated clapboard on north gable end, second floor level.</td>
</tr>
<tr>
<td> 
Dirt and light mildew seen on west and north elevations of building and shed (darker colors area).</td>
<td> 
Spilt and rotted clapboards adjacent to storefront trim on north elevation. Many of the clapboards are spongy but appear to be in good condition and still support paint.</td>
</tr>
<tr>
<td> 
Overview of brick south gable end.</td>
<td> 
Minor spalling of brick surfaces; renewal of lime wash will protect these raw edges. Rising damp may be caused by adjacent garden bed, seen in lower courses.</td>
</tr>
<tr><td>B2010</td><td>Exterior Walls - Overall</td></tr>
<tr><td>Qualitative Condition Rating:</td><td>FAIR</td></tr>
<tr><td>Maintenance Deficiency Rating:</td><td>Minor</td></tr>
</table>

B2010-1	Main Block
Qualitative Condition Rating:	FAIR
Maintenance Deficiency Rating:	Minor

B2010-2	Shed Addition
Qualitative Condition Rating:	GOOD
Maintenance Deficiency Rating:	Minor

B201008	Exterior Soffits - Overall
Qualitative Condition Rating:	FAIR
Maintenance Deficiency Rating:	Minor

B201008-1	Main Block
Qualitative Condition Rating:	FAIR
Maintenance Deficiency Rating:	Minor

B201008-2	Shed Addition
Qualitative Condition Rating:	FAIR
Maintenance Deficiency Rating:	Minor

		B201099	Exterior Architectural Trim

The exterior of the house is highlighted by the traditional use of architectural trim, some utilitarian and other an expression of the architectural style. The utilitarian trim consists of the corner boards, the fascia board, the bottom band board (baseboard or plinth), the eave rake boards, and the window and door trim – these function primarily to keep water out of the building enclosure system. Other more decorative architectural trim consists of the pedimented doorway, the engaged pilasters, the cornice and cornice returns, and the quarterboards.

Deteriorated window trim at north elevation.

Deteriorated corner boards at northwest corner.

Proximity of earth and sidewalk to lower wood elements favors deterioration due to water infiltration and saturation. Flashing detail at exterior baseboard will prevent seepage into wall cavity.

NPS park quarter-boards are faded and decals are peeling.

<table>
<tr><td> 
Exterior architectural trim at engaged pilaster capitals shows signs of deterioration.</td><td> 
Typical deteriorated exterior window trim and sill.</td></tr>
<tr><td> 
Fascia board on east and north elevations requires closer inspection to determine type of repairs required other than standard prep and repaint.</td><td> 
Adjoining planter bed may be contributing to deterioration of south and west elevations of building unless it has a waterproofing liner; HSAR team was unable to assess conditions below grade in any areas.</td></tr>
<tr><td>B201099</td><td>Exterior Architectural Trim</td></tr>
<tr><td>Qualitative Condition Rating:</td><td>FAIR</td></tr>
<tr><td>Maintenance Deficiency Rating:</td><td>Serious</td></tr>
</table>

	B2020		Exterior Windows

B20 – Exterior Closure (Envelope): Window systems (frames, sills, sash, and operating system) were noted to be in generally poor condition with extreme deterioration in several of the window sashes and sills. Window sash and frames exhibit typical deterioration for units exposed directly to the weather; there are no extant exterior storm windows on the building. Also, many window sash are difficult to access on the interior thereby making detailed inspection (and maintenance) problematic.

Several sashes also exhibit signs of periodic wetting on the interior (likely from the heavy driving rains). Whenever moisture penetrates thru a sash frame it is a good indication of wood sash components and window glazing in very poor condition. There are a few broken window panes scattered across the building, this is not considered serious deficiencies.

Following this summary is a detailed description of the various window types illustrated by typical or extraordinary conditions encountered during the site visit.

B2020	Exterior Windows - General
Qualitative Condition Rating:	POOR
Maintenance Deficiency Rating:	Serious

Window Types

The Antram-Gray House has a variety of window types which make up the exterior fenestration. This section will present the window types and describe typical and extraordinary maintenance deficiencies encountered during the exterior condition assessment in July, 2014.

There are a total of 20 exterior window openings containing a total of 35 window units (sashes and frame). There are a number of double hung and fixed plate glass windows (storefronts).

There are four (2) basic window types with variations of each type. These have been recognized as six (6) basic categories.

Type Nomenclature

Type A: Double hung (12/12)
Type B: Double hung (9/9)
Type C: Double hung (6/6)
Type D: Fixed plate glass (storefronts)

Brief Description of Window Types

Type A: Modern 20th century reproduction 12/12 double hung painted wood window with plastic interior tracking system (spring loaded); simple interior trim package (some with no interior trim), modern sash-lock hardware, no weather-stripping other than plastic jamb tracks, single weight glass; outfitted with magnetic type interior storm covers, these were not in use at the time of the field work (stored in basement). Exterior consists of simple wood sill with projecting jambs and lintel (on the 2nd floor incorporated into the box cornice).

Type B: Same as Type A but with 9/9 sashes.
Type C: Same as Type A but with 6/6 sashes.

Type D: Large laminated safety glass storefront windows fixed in place; HSR dates the installation of the storefront windows to the 19th century. The extant windows have been replaced in the mid-to-late 20th century. They have simple exterior and interior trim. The Safety Glazing Council Certificate (SGCC) indicates the glass meets ANSI Z.97.1 for Safety Glazing Materials used in Buildings.

Overview of Window Types

The following photographic narrative is intended to be representative of all maintenance deficiencies found at the Antram-Gray House in July 2014. The following window schedule offers more details per each window unit. It is understood that all windows will receive preservation maintenance in Aug/ Sept 2014 and treatment will be documented in a Historic Structure Treatment Record by the Northeast Region.

Detail W210 (12/12) Type A window and W 209 (9/9) type B window on north elevation. Both windows are rated Fair and have sills with reglet cuts, no interior storms and many typical exterior maintenance deficiencies (peeling paint, loss of glazing, no weather-stripping, no interior storm window, condensation, mildew, dirt). Projecting window frame headers (lintels) are covered with lead-coated copper flashing installed by the NPS in 1999-2000 exterior rehabilitation project. July 2014.

W301, Type C (6/6) window, south elevation with deteriorated exterior flush sill condition. July 2014.

W206, Type A (12/12) window, south elevation with deteriorated lower sash unit and exterior projecting sill and jambs (frame). July 2014.

W208: exterior security grate is rusted and requires detachment from building to further inspect window sill and frame.

W104: supplemental air-conditioner is propped into window frame using lumber shims on exterior; window exhibits signs of advanced deterioration.

Typical deteriorated exterior projecting wood sill at clapboard siding. July 2014.

Typical deteriorated exterior projecting wood sill at masonry wall. July 2014.

Typical interior condensation seen in July 2014.

Extreme deterioration of exterior sill and jambs. July 2014

View of typical spring loaded plastic jamb liners which function also as weather-stripping. Metal frame (interior stop position) is for interior storm (not installed)

View of plastic jamb lining with sash in lifted position, note lack of weather-stripping at bottom of sash.

Underside of sash frame showing double mortise and tenon (finger-jointing) connection technology (see circle).

Interior / exterior view of window sills with lack of sash steps on exterior and metal interior storm window frame.

Interior upper sash frame with loss of paint and saturated wood due to water intrusion at window panes due to poor condition of exterior glazing at window.

View of peeling paint on interior window sash due to similar water infiltration conditions.

View of lead-coated copper window flashing as seen from attic window.

Exterior window frame with mildew, dirt and failing paint system.

D104 – poor sill repair technique.

B2020-1E	Exterior Windows - East
Qualitative Condition Rating:	POOR
Maintenance Deficiency Rating:	Serious

B2020-1N	Exterior Windows - North
Qualitative Condition Rating:	POOR
Maintenance Deficiency Rating:	Serious

B2020-1W	Exterior Windows - West
Qualitative Condition Rating:	POOR
Maintenance Deficiency Rating:	Serious

B2020-1S	Exterior Windows - South
Qualitative Condition Rating:	POOR
Maintenance Deficiency Rating:	Serious

Window Schedule Notes:	KEY (Sash Operations)	KEY (Weather-stripping)	KEY (Sash Hardware)	KEY (Storm Unit)
1. Air infiltration noticeable (particulate matter deposited at interior sill).	S = spring balance	M = metal	M – modern	Y = yes
2. Wood sill w/ reglet undercut.	F = fixed	P = plastic	H – historic	N = no
3. Wood sill flush to exterior wall.	N = non-operable	C = caulked shut	D – dual	G = insul glass
4. Wood sill without reglet undercut.		I – incomplete	R – "restored"	O = not installed
5. Concealed on interior by interpretive panels.		? - inaccessible		M=magnetic
6. Exterior security grate.				
7. Water penetrates through sash unit				
8. Condensation/ mildew noted at interior.				
9. Condensation/ mildew/ dirt noted on exterior.				
10.				

	Type	#of Sash/ Open'g	Elevation	Room #	Total # of Sash Frames	Sash Operations	Sash Hardware	Weather-stripping	Extr Security Grate	Extr Shutter		Interior Storm				NOTES	Condition			Deficiency		
																	Good	Fair	Poor	Critical	Serious	Minor
Sash Unit																						
WINDOWS: FIRST FLOOR LEVEL																						
101	D	1	E	101	1	F	0	0	N	N		G						X			X	
102	D	1	E	101	1	F	0	0	N	N		G						X			X	
103	D	1	E	101	1	F	0	0	N	N		G						X			X	
104	A	2	W	101	2	S	M	P	N	N		O				1,7,9		X			X	
107	D	1	N	101	1	F	0	0	N	N		G				5			X		X	
108	D	1	N	101	1	F	0	0	N	N		G				5			X		X	

	Type	#of Sash/ Open'g	Elevation	Room #	Total # of Sash Frames	Sash Operations	Sash Hardware	Weather-stripping	Extr Security Grate	Extr Shutter		Interior Storm				NOTES	Condition			Deficiency		
																	Good	Fair	Poor	Critical	Serious	Minor
Sash Unit																						
WINDOWS: SECOND FLOOR LEVEL																						
201	A	1	E	206	2	S	M	P	N	N		M/O						X			X	
202	A	1	E	205	2	S	M	P	N	N		M/O						X			X	
203	A	1	E	201	2	S	M	P	N	N		M/O						X			X	
204	A	1	E	201	2	S	M	P	N	N		M/O						X			X	
205	A	1	S	201	2	S	M	P	N	N		M/O							X	X		
206	A	1	S	202	2	S	M	P	N	N		M/O							X	X		
207	A	1	W	202	2	S	M	P	N	N		M/O							X		X	
208	B	1	W	203	2	S	M	P	Y	N		M/O						X			X	
209	A	1	N	ST02	2	S	M	P	N	N		M/O							X		X	
210	A	1	N	204	2	S	M	P	N	N		M/O							X		X	
211	A	1	N	204	2	S	M	P	N	N		M/O							X		X	
212	A	1	N	206	2	S	M	P	N	N		M/O							X		X	

	Type	#of Sash/ Open'g	Elevation	Room #	Total # of Sash Frames	Sash Operations	Sash Hardware	Weather-stripping	Extr Security Grate	Extr Shutter		Interior Storm				NOTES	Condition			Deficiency		
																	Good	Fair	Poor	Critical	Serious	Minor
Sash Unit																						
WINDOWS: ATTIC (THIRD) FLOOR LEVEL																						
301	C	1	S	-	2	S	M	P	N	N		O						X			X	
302	C	1	N	-	2	S	M	P	N	N		O						X			X	

	B2030		Exterior Doors

First Floor Door Schedule:

D101 – visitor entrance, east elevation (north end)
D102 – visitor entrance, east elevation (south end)
D103 – staff entrance, north elevation
D104 – communicating 2 hour fire rated door between house and maintenance shed, west elevation
D105 – exterior metal doors at shed, south elevation of shed

The Antram-Gray House has a series of exterior doors as outlined. They were individually assessed as part of this project. Notes are included in the photographic narrative. Each door should be inspected as part of an overall door schedule preservation protocol.

B2030	Exterior Doors – Overall Rating
Qualitative Condition Rating:	FAIR
Maintenance Deficiency Rating:	Minor

D102, east elevation, south end.

D101, east elevation, north end.


East elev. doors w/ temporary access ramp for wheelchair access (ADA non-compliance).

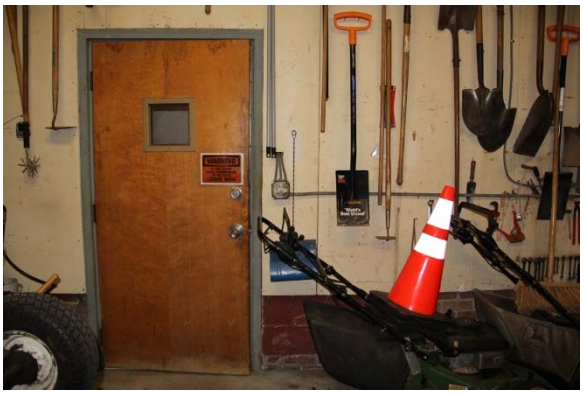
Interior view east elevation door; doors are c. 1990s.

Doors D101 and D102 are painted wood framed doors with large insulated glass panels; they date from the late 1990's and contain Best system locking hardware, weather-stripping and self-closing hinges. They are considered to be in Good condition, with the exception of not meeting ADAAB design guidelines for access into a public building. The temporary ramp does not bring them into compliance.

North elevation door with historic door surround; D103 is a modern panel door.

Detail D103; showing bronze weather-stripping at jamb and lintel.

D104 threshold between house and maintenance shed; door is delaminating at the base and weather-stripping is rabbeted into door; this likely voids any fire rating the door may have had from the factory. No UL rating was found on the door.



D104 from maintenance shed; this is most likely a 2 hour rated fire door with a fire glass viewing window in a metal frame; note deterioration at base of door.

 D105 south elevation maintenance shed, this pair of doors is painted metal.	 Interior D105 double doors with self-closing hinges and aluminum threshold within a painted metal frame.

B2030-1E	1st Floor East
Qualitative Condition Rating:	FAIR
Maintenance Deficiency Rating:	Minor

B2030-1N	1st Floor North
Qualitative Condition Rating:	FAIR
Maintenance Deficiency Rating:	Minor

B2030-1W	1st Floor West
Qualitative Condition Rating:	FAIR
Maintenance Deficiency Rating:	Minor

End of Part B20 - Exterior Envelope

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	B30	**Roof System**	
		B3010	**Roof Coverings**

According to the 2001 BCB Report (see Part 2) the current roof was installed ca. 1999-2001. “The existing roof cover was stripped and replaced with new 15 lb. roofing felt and 25 year warranty three tab fiberglas Class A roof shingles. Ice and Watershield (a waterproofing underlayment material) was applied to the sheathing extending three feet up all eaves and the main ridge”. A vented ridge vent was used to help vent the attic space, it Is not known if this existed prior to the BCB project. The roof is about ½ through its expected service life (2025).

		B3010-1	Main Block

Minor shingle uplift was noted at the northeast corner. According to park staff the building has no active leaks.

West elevation of house and shed roofs.

View of east elevation roof.

Details uplifted shingles at northeast corner over cornice return.

Oblique view of uplifted shingles at northeast cornice return – lead coated copper flashing may prevent leaks in this area.

B3010-1	Main Block
Qualitative Condition Rating:	GOOD
Maintenance Deficiency Rating:	Minor

		B3010-2	Shed Addition
See Main Block Roof Covering description and photos. The shed roof likely dates to the same time as the house on the main roof.			
 View of shed roof from west elevation with exhaust fan (from bathrooms) on roof; also shows simple exterior trim and matching shingle roofs.		 South elevation of shed depicts gutter and downspout installation at southwest corner, also simple rake board trim.	
B3010-2		Shed Addition	
Qualitative Condition Rating:		GOOD	
Maintenance Deficiency Rating:		Minor	

		B3010-4	Flashing & Roof Trim
According to the 2001 BCB report the chimneys received new base flashing and counter flashing as part of the aforementioned reroofing project. 20 ounce lead-coated copper was used for the flashing. The methodology of leaving exposed flanges around the perimeter of the chimney base flashing is unusual and unfamiliar to the HSAR team. Chimney caps are discussed in section B102099 – Chimneys; but the treatment of capping masonry chimneys with unvented caps is not considered a best practice in the masonry preservation field. Chimneys were visually inspected via binoculars and telephoto camera lenses and an assumption is being made that the chimney caps seen in the photos are unvented. Roof trim is limited to the exposed rake boards at the eaves and the cornice which is concealed by the hanging V gutter. All exterior architectural woodwork is experiencing degradation of the exterior paint and should be considered in Fair condition with certain localized areas in Poor condition (shed trim). The BCB report indicates that a substantial portion of the exterior trim was replaced as part of the project including the south elevation rake boards which were replaced with vertical grain eastern white pine or cedar.			

CH03 seen from the southwest with exposed step flashing; plumbing vent stack and bathroom exhaust hood seen in foreground.

CH03 seen from the northwest. Vented ridge line is seen at top of roof.

CH01 seen from the south with view of step counter-flashing and cap on chimney CH02.

CH01 seen from the northwest; all roof penetrations are on the west side of the roof leaving a clean appearance for the street elevation (east). Chimney caps are seen on both south gable chimneys in this view.

South gable chimneys with caps as seen from the northeast.

South gable chimneys seen from the east; Exposed flashing flange at base of chimneys is unusual application of base flashing.

 West elevation of maintenance shed showing low slope shingle roof, hanging V gutter and deteriorated fascia board behind gutter.	 Enhanced view of deteriorated fascia board behind hanging gutter.
B3010-4a	Flashing & Trim - Main Block
Qualitative Condition Rating:	GOOD (not leaking)
Maintenance Deficiency Rating:	Minor

B3010-4	Flashing & Trim - Shed Addition
Qualitative Condition Rating:	FAIR
Maintenance Deficiency Rating:	Minor

		B3010-5	Roof Drainage System - Gutters & Downspouts

The roof drainage system (gutters and downspouts) appears to be performing at maximum capacity, as there is evidence of chronic overflowing at certain locations, and would benefit from a rainfall intensity drainage capacity load analysis. Several sections of the gutters are not properly hung and have rotated forward so they may no longer carry rain water; this could be winter storm damage as there are no snow birds (snow slide prevention devices) on the roof. The discharge from the roof is limited as there are only two downspouts. Note also the design of the gutters, intentionally replicating a colonial style gutter, is limiting in the amount of water it can carry; downspouts may be over capacity.

The BCB report indicates the gutter was reconstructed in 1999-2001 as part of the overall exterior rehabilitation project at the Antram-Gray House. It says the new (replacement) gutters were constructed of western red cedar and hung on the existing roof hangers; a new lead coated copper (LCC) gutter liner was also installed. New 3” diameter plain round LCC downspouts were installed.

View of V-shaped hanging gutter and concealed box cornice and cornice return on building at south east corner of house. Note triangular area of infill flashing above cornice return; likely originally wood (in circle).

View of similar detail at southwest corner of house.

Downspout at southeast corner of building, going into an underground drain line. Connection with drainage boot pipe should be above grade level .

Similar condition at southwest corner of building.

General slope of site is away from southwest corner of house.

General slope of sidewalk is towards the south elevation of the house along North Main Street.

Single gutter run at shed with downspout.

Downspout daylights at base of building.

B3010-5a	G&D – Main Block
Qualitative Condition Rating:	FAIR
Maintenance Deficiency Rating:	Serious

B3010-5b	G&D - Shed Addition
Qualitative Condition Rating:	FAIR
Maintenance Deficiency Rating:	Serious

B3010-5c	G&D Drainage - Overall
Qualitative Condition Rating:	UNKNOWN (POOR)
Maintenance Deficiency Rating:	Serious

End of Part B30 – Roof System

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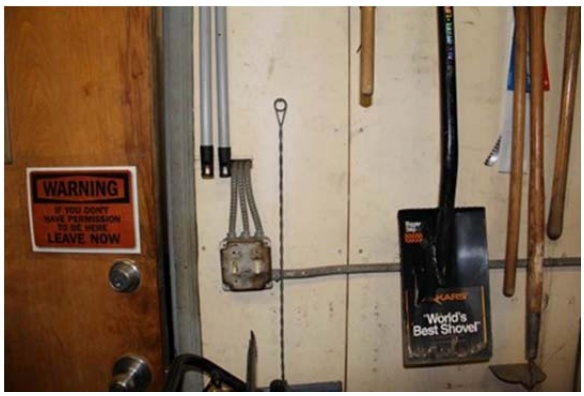
	C10	Interior Construction – Shed

Interior finishes, in general, were not part of the HSAR project scope of work as defined in the project agreement. However, casual observations in the maintenance shed revealed the lack of proper fire separation between the maintenance shed (with flammable storage) and the historic house [fire resistance rating of interior wall and ceiling coverings in shed; penetrations through wall surfaces] [lack of auto-closing fire door]. The Type X gypsum board used to cover the vertical wall would offer 1 hour fire separation if properly maintained; given horizontal penetrations through the wall it has no warrantable fire rating. The ceiling construction is ½ inch gypsum board if built according to NPS drawing and offers virtually no fire separation (1/2 inch gypsum is rated by the IBC[1] as a 15 minute fire resistance rating). A fire in the maintenance shed could cause the exterior materials of the house to combust rather quickly. Information taken from National Gypsum website; http://nationalgypsum.com/resources/faqs/gypboard.htm#a2 And the International Building Code, 2012.

Unsealed vertical penetrations in shed ceiling (around ducted vent) negate any fire separation offered by rated materials. According to NPS construction drawing it is ½ inch gypsum board; not a fire resistant rated product.



Unsealed horizontal penetrations through Type X wall board (1 hour fire resistant rated material) (at conduit penetrations into wall and other locations) are deficiencies in the fire rated enclosure of the maintenance shed. Penetrations negate any fire resistant rating of the materials.

C10	Interior Construction – Shed
Qualitative Condition Rating:	POOR
Maintenance Deficiency Rating:	Critical

[1] 2012 International Building Code, Section 722.6.2.2 (Table 722.6.2(1).

	C10	Interior Construction – House

The interior deficiencies brought to the attention of the HSAR team are manifestations of stress issues directly related to the frame of the building so are covered in Part B of the Condition Assessment – Superstructure. The main structure of the building is not generally visible on the interior of the building and was last observed during the 1981 HSR and subsequent renovation project (see Part 2). It is due for a more detailed non-destructive forensic assessment and evaluation.

The deficiencies are briefly noted as follows:

- Sloping floors at 2nd floor level as documented in B1010 Superstructure – Floor Construction;
- Interior cracking in historic plaster as documented in B1010 Superstructure – B101001 – Structural Frame-Overall.

Interior finishes, in general, were not part of the HSAR project scope of work as defined in the project agreement.

Interior use and loading of the spaces is also of concern. While not specifically a building feature or component its use does affect the interior structure. Casual observation notes general over-crowding and potential over-loading of the interior spaces of the Antram-Gray House.

Typical office load on 2nd floor of house.

Possible over-loaded conditions at 2nd floor – all heavy loads are placed around perimeter of room where structure is usually located lessening the chances of structural failure.

Typically system furniture require large footprint of area to accommodate single occupant and is not always suited to a historic building with small room configurations.

System furniture does not allow optimum placement of furniture in structure.

Non-archival storage in north attic space (finished area), looking south.

Non-archival storage in attic, looking north in finished attic space into unfinished attic space at south end.

Storage along knee walls transfers load to exteriorframe of building, view along east wall, north end of building.

View along west wall of finished space at north end of building, attic level.

C10	Interior Construction
Qualitative Condition Rating:	FAIR
Maintenance Deficiency Rating:	Serious

End of Part C10 – Interiors

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	D	Services

Building services typically include all utilities and service systems within a building envelope. For a complete list of all Uniformat II section D Services, refer to the *CA Job Plan – Building 4100* or the *Condition Assessment Survey Inspection Guidance 4100 Buildings*. The Uniformat II Level II headings are provided here (D10, D20, etc.) to give an overview of all components within the Level I title – D - Services. It was not part of the scope of work to assess the building systems as part of this HSAR. Notes that were made have been transcribed here for future informational purposes. All systems were in working order at the time of the field visit in July 2014.

	D10	Conveying

Not applicable to this building; no conveying systems.

D10	Conveying
Qualitative Condition Rating:	NA
Maintenance Deficiency Rating:	NA

	D20	Plumbing

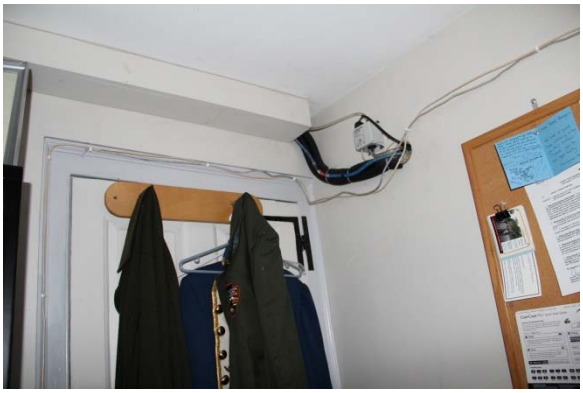
Domestic water supply and sewer; City of Providence.

D20	Plumbing
Qualitative Condition Rating:	NR
Maintenance Deficiency Rating:	NR

	D30	HVAC

Heating – gas furnace (city) with circulating hot water baseboard heater units.

Cooling – new Mitsubishi split fan-coil units and 1 window unit at W104 in the book sales area. This project recently completed by the NPS apparently has no documentation. The HSAR found 90% completed drawings at the park but upon further research with the regional office have not been able to locate the contract package, warranties, or as-built drawings. The system was installed without regard to the historic building's interior fabric Or character-defining features. Each unit is individually controlled allowing the creation of microclimates throughout the building. HSAR team experienced high humidity levels on exterior resulting in heavy condensation on window interiors during site visit.

Exterior placement of cooling equipment detracts from overall appearance of the site and ambience of the park close. See G2090 for discussion of synthetic colonial style fence around cooling equipment, which is in poor condition.	
 Fenced area to west of primary architectural feature of north elevation contains condensing units for Mitsubishi split system.	 Condensing units and electrical disconnect boxes held in side yard area adjacent to primary architectural feature of the north elevation. Note storage of excess building supplies in plain view of visitors.
 Exposed condensate lines associated with interior HVAC units.	 HVAC unit in-situ with exposed power and condensate lines.
D30	HVAC
Qualitative Condition Rating:	POOR
Maintenance Deficiency Rating:	Serious

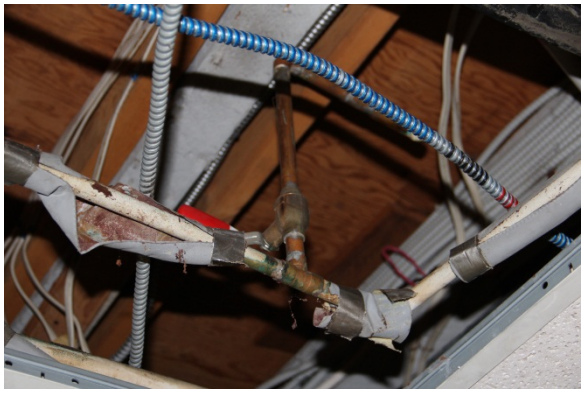
	D40	Fire Protection Systems
Newly renovated in 2010-11; not reviewed for this project.		

D40	Fire Protection Systems
Qualitative Condition Rating:	NR
Maintenance Deficiency Rating:	NR

	D50	Electrical
Not reviewed for this project.		

Previous installation of electrical lines and other communications systems paid no regard to labeling of wiring or attachment to National Register eligible historic framing materials.

Casual observation reveals a number of electrical code violations and the concealed wiring above the dropped ceiling of the basement work areas.



Plumbing, electrical, communications and alarm system lines all held within interstitial space above basement dropped ceiling.

Previous generations of detectors are still in-situ above the dropped ceiling. It is unclear if these are meant to be functional or if they are operable.

D50	Electrical
Qualitative Condition Rating:	NR
Maintenance Deficiency Rating:	NR

	D5090	**Other Electrical Systems**	
		D5090-4	Lightning Protection System

D50 – Electrical: There is not a Lightning Protection System on the building (usually a critical/ serious level deficiency). This may not be necessary due to the urban location with several buildings in close proximity being of a higher elevation (and likely with lightning protection systems). It is noted as a deficiency until an analysis may be made of the surrounding areas and localized conditions.

D5090-4	Lightning Protection System
Qualitative Condition Rating:	POOR
Maintenance Deficiency Rating:	Serious

End of Part D - Services

G	**Building Site**	
	G20	Site Improvements
	G2090-1	Pedestrian Paving (Accessibility)

Observations of pedestrian paving conditions and deficiencies during site visits of July, 2014. Accessibility deficiencies are the subject on an on-going design project to provide corrections to address the deficiencies. Reference ROWI *PMIS 205465 – Architectural Design for Accessibility Improvements*; HPTC is providing design assistance and the design project is scheduled for completion in March 2015.

Overall condition of paving materials is Good with only minor areas where paving is out of alignment or has been disrupted or disturbed. The overall Condition rating and Deficiency Rating is based on the question of accessibility not being provided.

Sloped ramp from parking area to North Main Street entrances.

North Main Street and sidewalk as it passes by the front of the Antram-Gray House.

Route from visitor parking area to entrance of Antram-Gray house via sloped brick pathways and ramp.

Staircase adjacent to ramp; able bodied option for traveling to Antram-Gray House entrance on North Main Street.

Threshold condition at visitor entrance to Antram-Gray House from North Main Street sidewalk; destination at end of accessible route is not accessible.

Temporary ramp used to allow visitor access for wheelchairs into Antram-Gray House. (Does not meet ABAAS guidelines).

Smith Street and sidewalk showing inaccessible entrance.

Accessible entry into maintenance shed via sloped driveway.

G2090-1a	Pedestrian Paving - Accessibility
Qualitative Condition Rating:	POOR
Maintenance Deficiency Rating:	Serious

	G2090-2	Maintained Landscapes (Fences)

Observations of site drainage conditions and deficiencies during site visits of July, 2014. Synthetic fence surrounding HVAC equipment found to be in POOR condition. It is not firmly anchored to the site, the gate does not properly function and it is structurally compromised in some manner not discernible to the HSAR team – requires further inspection.

Fence at northwest corner of House.

Plastic fence components do not properly operate and are not secure.

G2090-2	Maintained Landscapes (Fences)
Qualitative Condition Rating:	FAIR
Maintenance Deficiency Rating:	Serious

	G90	Other Site Work
	G9087	Site Drainage & Vegetation

Observations of site drainage conditions and deficiencies during site visits of July, 2014. Site has generally positive drainage away from immediate building footprint. Overall the site has positive drainage. Surface drainage problems exist with site drains backing-up or certain low areas flooding during heavy rains (as reported by staff); this was not experienced by HSAR team during site visit.

Positive drainage at pedestrian pathways to front entrance.

Minimal drainage along North Main Street sidewalk and building.

Positive drainage along Smith Street elevation and in front yard area.

Positive drainage at maintenance shed alcove, southwest corner of building.

Vegetation in planter box at base of south gable wall of building. It is not known if the below grade sections of this wall have been waterproofed.

View of south gable end after rainstorm, note wetting pattern of brick; all water drains into planter bed at base of wall (where corn is growing).

Topography of land on western edge of site as it slopes away from the building with the exception of the burmed area where there is a grove of trees (part of the NPS landscape design).

Drainage swale on west side of property directs site drainage away from generally elevated building site through a drainage swale incorporated into the site topography.

 Vegetation in close proximity to wood elements of building along north elevation.	 Northeast corner of building where vegetation is overgrown and blocking air movement around wood components. .
G9087	Site Drainage & Vegetation
Qualitative Condition Rating:	FAIR
Maintenance Deficiency Rating:	Serious

End of Part G – Building Site

Summary of Condition Assessment Ratings[1]				**Expanded Table**	
UNIFORMAT II Outline Data				**Condition Assessment**	
Cate-gory	**Topic**	**Code**	**Subtopic**	**Condition Rating**	**Deficiency Rating**
A	**Substructure:** This system includes all work below the lowest floor construction and the enclosing elements required to form a basement.				
A10	Foundations				
	A1010	Standard Foundations: below grade, or substantially below grade foundation systems.			
		A1010-1	House	GOOD	Minor
		A1010-5	Chimney Foundations	GOOD	Minor
	A1030	Foundation Drainage: directly associated with draining the foundation. This category does not include storm drainage piping for site. It does include drain pipe or drain tile at foundation or basement for specific purposes of draining each. Assemblies include excavations, hand-shaped bottoms, gravel, compacted backfill, and drain pipe or tiles.			
		A103006	Foundation Drainage	POOR	Minor
	A2020	Basement Walls: construction assembly which constitutes the basement level wall system. [See A1010 – Standard Foundations].			
		A2020-1	Construction	GOOD	Minor
		A2020-2	Moisture Protection	Unknown	Minor
		A2020-3	Insulation	Unknown	Minor
B	**Shell:** This system includes all structural decks and supports within basement and above grade.				
B10	Superstructure				
	B1010	Floor Construction: wood frame construction supporting interior floors – joists, subfloor, etc. All materials considered.			
		B1010-1	Main Block - Overall	FAIR	Serious
		B1010-1-1	1st Floor	GOOD	Minor
		B1010-1-2	2nd floor	FAIR	Serious
		B1010-1-3	Attic floor	FAIR	Serious
	B101001	Structural Frame: includes wood posts and beams used to create structural frame of building.			
		B101001a	Main Block – North	FAIR	Serious
		B101001b	Main Block - South	FAIR	Serious
		B101001c	Shed	GOOD	Minor
	B1020	Roof Construction: wood frame construction supporting roof decks and coverings, includes dormers if applicable.			
		B1020-1	Main Block Gable	FAIR	Serious
		B1020-2	Shed Addition	GOOD	Minor
	B102099	Chimney Construction: includes chimney caps		POOR	Serious

[1] Summary Ratings as of August 2014. Updated Summary ratings are provided in HSAR Addendum (March 2015).

B20	Exterior Envelope		Exterior facing including all vertical and horizontal exterior closures.		
	B2010		Exterior Walls – all materials associated with exterior wall construction, including soffits.		
		B2010-1	Main Block	FAIR	Minor
		B2010-2	Shed Addition	GOOD	Minor
		B201008	Exterior Soffits	FAIR	Minor
		-1	Main Block	FAIR	Minor
		-2	Shed Addition	POOR	Serious
		B201099	Extr. Architectural Trim	FAIR	Serious
	B2020	Exterior Windows - *includes all windows located in exterior walls.*			
		B2020-1E	East	POOR	Critical
		B2020-1N	North	POOR	Critical
		B2020-1W	West	POOR	Critical
		B2020-2E	South	POOR	Critical
	B2030	Exterior Doors – *includes all doors located in exterior walls of building*			
		B2030-1E	1ST Floor East	FAIR	Minor
		B2030-1N	1st Floor North	FAIR	Minor
		B2030-1W	1st Floor West	FAIR	Minor
B30	Roof System				
	B3010	Roof Coverings - This system includes all waterproof roof coverings together with required trim and insulation, together with roof penetrations.			
		B3010-1	Main Block	FAIR	Minor
		B3010-2	Shed Addition	GOOD	Minor
	B3010-4	Flashing & Trim – All flashings associated with the roof, i.e.: eave, gable, valley, ridge, step, etc.			
		B3010-4a	Main Block	GOOD	Minor
		B3010-4b	Shed Addition	FAIR	Minor
	B3010-5	Gutters & Downspouts			
		B3010-5a	Main Block	FAIR	Serious
		B3010-5b	Shed Addition	FAIR	Serious
		B3010-5c	Drainage	POOR	Serious

C	**Interiors:** Construction which takes place inside the exterior wall or skin. Does not include interior structural walls (see section B: Superstructure).				
C10	Interior Construction[2]		Overall	FAIR	Minor
		C1010-1	Main Block	FAIR	Minor
		C1010-2	Shed Addition	POOR	Critical
	C1020		Interior Doors	NR	NR
	C1030	Fittings – most commonly used specialty items: built-in cabinets, casework, fireplace surrounds, wainscot, etc. Inventory of interior furnishings not completed for this project – see HSR for details.			

[2] *Basement was not included as it is not part of historic structure.*

C20	Stairs			GOOD	Minor
	C2010	Stair Construction – all items associated with interior and exterior stairs. A flight of stairs is considered to be all the treads and risers with landings required to travel room one level to another.			
	C2020	Stair Finish: materials associated with stair finish.		GOOD	Minor

C30	Interior Finishes[3]				
	C3010		Wall Finishes: finishes applied to interior wall surfaces.	GOOD	Minor
	C3020		Floor Finishes: finishes applied to interior floor surfaces.	GOOD	Minor
	C3030		Ceiling Finishes: finishes applied to interior ceiling surfaces.	GOOD	Minor

D	**Services**				
D10	Conveying			NA	NA
D20	Plumbing			NR	NR
	D2040	Plumbing – Rain Water Drainage (underground transport and removal of rainwater discharged from downspouts – Roof drainage system) – note gutters and downspouts are not included in this subsystem (see B301005).			
D30	HVAC - heating, ventilating and air-conditioning system			POOR	Critical
D40	Fire Protection Systems - (Fire alarm systems are included in D50 Electrical).			NR	NR
D50	Electrical			NR	NR
	D509004		Lightning Protection	POOR	Critical

G	**Building Site**			
G20	Site Improvements			
	G2090	Pedestrian Paving (Accessibility)	POOR	Critical
	G2090	Pedestrian Paving (Fences)	FAIR	Serious
G90	Other Site Work			
	G9087	Site Drainage & Vegetation	FAIR	Serious

Condition Assessment Notes:

In addition to the standard defined ratings (Chapter 3) HPTC has employed three (3) additional rating markers for this project:

NA: Not Applicable – building or system element is not extant as a component feature.

NR: Not Rated - the feature was not rated by the HPTC HSAR team as it was included in the scope of work for one of the contractor consultants.

[3] *Interior finishes may be assessed using a room-by-room methodology resulting in an interior room finish schedule or by section of the building in a more general way.*

NIR: Not Individually Rated – The feature(s) was rated as a total system; i.e., D50 Electrical. The individual features as derived from Uniformat Work Breakdown Structure: D5010 – Electrical Service & Distribution, D5020 – Lighting and Branch Wiring, and D5030 – Communications and Security were not rated because they were non-extant.

Author's Note: an updated Summary Condition Table will be provided in the HSAR Addendum, March 2015. It will include all improvements made in September – November 2014.

End of Prioritized Summary Table

End of Part 4: Condition Assessment

PART 5

Introduction

The following recommended treatments are intended to repair, maintain and/ or preserve the character-defining features of the Antram-Gray House with the least degree of intervention while elevating the Facility Condition Index ratings to "Good." These treatments include limited replacement in-kind as defined by *The Secretary of the Interior's Standards for the Treatment of Historic Properties*. Appendix A of this report contains definitions of various preservation treatments.

Recommended Treatments for Rehabilitation

The recommended treatment of the Antram-Gray House includes preservation of character-defining features, maintenance, and possible removal of non-sympathetic modern materials. The interiors will be preserved in their rehabilitated condition, and the possibility for improved contemporary use exists (shifting functional locations, exposing historic character-defining features), while preserving historic building fabric to the greatest extent possible.

Of the four recognized NPS treatment standards, only **Rehabilitation** includes an opportunity to make possible an efficient contemporary use through alterations and additions and allows for the adaptive-reuse of the space[1] while preserving the character-defining features.

Therefore, the recommended overall treatment on which all other recommended treatments are based, is **Rehabilitation** as defined by *The Secretary of the Interior's Standards*.

This standard includes the replacement in-kind of selected missing character-defining features, or, if they have been detached and retained, the reinstallation of the historic materials. It encourages preservation maintenance of extant character-defining features and allows for the removal, or future reversal, of non-sympathetic (modern) treatments, materials and finishes.

Similar to the rehabilitation of the exterior, rehabilitation of the interior allows for the removal, or future reversal, of non-sympathetic treatments, materials, and finishes. Retention and preservation maintenance of remaining historic character-defining features and materials is encouraged.

[1] *The Secretary of the Interior's Standards for the Treatments of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring & Reconstructing Historic Buildings*, 63.

Where materials have been removed, the NPS *Guidelines for Rehabilitating Historic Buildings* calls for the replacement feature to be compatible with the remaining character-defining features of the historic building and the introduction of "compatible substitute materials."[2] Re-erection or re-installation of salvaged components is also encouraged within this treatment.

Incremental changes over the past few decades to functions housed within the building have resulted in numerous potentially unsafe conditions. Components of the electrical, plumbing and possibly heating systems have been incrementally changed over time. Installation of modern building systems, or partial upgrades to older systems, has not kept up with contemporary building codes (except for recent changes in life /safety facilities and the contemporary cooling system's electrical component).

A professional reference standard for most historic building protection systems is found in NFPA 909: *Code for the Protection of Cultural Resource Properties*[3] (2013); this standard consists of a comprehensive protection program. Areas addressed include fire prevention, fire protection management, security, emergency preparedness, and inspection, testing, and maintenance of protection systems. The code also covers ongoing operations and rehabilitation and acknowledges the need to preserve culturally significant and character-defining building features and sensitive, and often irreplaceable collections, as well as to provide continuity of operations. An additional standard, NFPA 914: *Code for Fire Protection of Historic Structures* (2010) focuses more specifically on the principles and practices of fire safety for historic structures and for those who operate use or visit them.

[2]Standards & Guidelines, 63.
[3] National Fire Protection Association (NFPA), Standard 909 - Code for the Protection of Cultural Resource Properties. Quincy, MA. 2013.

Prioritized Maintenance Deficiency Summary Table

The following table places in priority order those building features with the highest level of maintenance deficiency. Starting with the rating of Poor/ Critical and following through to Good/ Minor in reverse order the list presents a path to good condition and lessening of the maintenance burden. It is followed by the Recommended Treatments for Rehabilitation section.

This hierarchical list divides the recommended treatments into three basic groupings based on the overall condition ratings of Good, Fair, and Poor; the NPS definitions of which are found in Chapter 3. The maintenance deficiency rating is based on the existing condition of the feature and its predicted remaining service life based on rates of deterioration.

The general preservation philosophy integrated into the condition assessment report is best represented by the following:

It is better to preserve than to repair;
Better to repair than to restore;
Better to restore than reconstruct.

It is ordinarily better to retain genuine old work of several periods,
rather than arbitrarily to "restore" the whole, by new work,
to its aspect at a single period.[4]

[4] The Advisory Board on National Parks, Historic Sites, Buildings, and Monuments policy statement (1936) included in the NPS Cultural Resources Management Guideline, Introduction, page 2 (Section 3. Stewardship), Release No. 5, 1997; first written by French archeologist Adolphe-Napoleon Didron (*Bulletin Archeologique*, Vol. 1, 1839). Also referenced in *How Buildings Learn* by Stewart Brand (London: Penguin Books, 1994), 94.

Prioritized Maintenance Deficiency Summary Table[5] - Rehabilitation					
UNIFORMAT II Outline Data				Condition Assessment	
Cate-gory	Topic	Code	Subtopic	Condition Rating	Deficiency Rating
POOR					
C10	Interior Construction	C1010-2	Shed Addition Walls (Not Fire Rated)	POOR	Critical
B20	Exterior Envelope	B2020-1E	Exterior Windows - East	POOR	Critical
B20	Exterior Envelope	B2020-1N	Exterior Windows – North	POOR	Critical
B20	Exterior Envelope	B2020-1W	Exterior Windows - West	POOR	Critical
B20	Exterior Envelope	B2020-2E	Exterior Windows - South	POOR	Critical
D	Services	D509004	Lightning Protection	POOR	Critical
D	Services	D30	HVAC	POOR	Critical
B10	Superstructure	B102099	Chimney Stacks – Construction (Caps)	POOR	Serious
B30	Roof System	B3010-5c	Gutters & Downspouts Drainage	POOR	Serious
B20	Exterior Envelope	B201008-2	Soffits - Shed Addition	POOR	Serious
G20	Site Improvements	G2090-1	Pedestrian Paving (Accessibility)	POOR	Serious
A10	Foundation	A103006	Foundation Drainage	POOR	Minor
A20	Basement Walls	A2020-2	Moisture Protection	POOR *Unknown*	Minor
A20	Basement Walls	A2020-3	Insulation	POOR *Unknown*	Minor

[5] Prioritized Maintenance Deficiency Summary Table as of August 2014. Updated priorities for maintenance deficiencies are provided in the HSAR Addendum (March 2015).

FAIR					
Cate-gory	Topic	Code	Subtopic	Condition Rating	Deficiency Rating
B10	Superstructure	B1010-1-2	2nd Floor Frame	FAIR	Serious
B10	Superstructure	B1010-1-3	Attic Floor Frame	FAIR	Serious
B10	Superstructure	B101001a	Structure Main Block – North Frame	FAIR	Serious
B10	Superstructure	B101001b	Structure Main Block – South Frame	FAIR	Serious
B10	Superstructure	B1020-1	Roof Frame - Main Block Gable	FAIR	Serious
B20	Exterior Envelope	B201099	Exterior Architectural Trim	FAIR	Serious
B30	Roof System	B3010-5a	Gutters & Downspouts Main Block	FAIR	Serious
B30	Roof System	B3010-5b	Gutters & Downspouts Shed Addition	FAIR	Serious
G90	Site Improvements	G9087	Site Drainage & Vegetation	FAIR	Serious
G20	Site Improvements	G2090-2	Pedestrian Paving (Fences)	FAIR	Serious
B20	Exterior Envelope	B2010-1	Exterior Walls - Main Block	FAIR	Minor
B20	Exterior Envelope	B201008-1	Soffits - Main Block	FAIR	Minor
C10	Interior Construction	C1010-1	Main Block Walls – basement not included	FAIR	Minor
B30	Roof System	B3010-4b	Flashing & Trim - Shed Addition	FAIR	Minor
B20	Exterior Envelope	B2030-1E	Exterior Doors - 1ST Floor East	FAIR	Minor
B20	Exterior Envelope	B2030-1N	Exterior Doors - 1st Floor North	FAIR	Minor
B20	Exterior Envelope	B2030-1W	Exterior Doors - 1st Floor West	FAIR	Minor
B30	Roof System	B3010-1	Roof Covering - Main Block	FAIR	Minor

GOOD					
Cate-gory	Topic	Code	Subtopic	Condition Rating	Deficiency Rating
A10	Foundation	A1010-1	House Foundation	GOOD	Minor
A10	Foundation	A1010-5	Chimney Foundations	GOOD	Minor
A20	Foundation	A2020-1	Basement Wall Construction	GOOD	Minor
B10	Superstructure	B1010-1-1	1st Floor Frame	GOOD	Minor
B10	Superstructure	B101001c	Shed Structure	GOOD	Minor
B10	Superstructure	B1020-2	Roof Frame - Shed Addition	GOOD	Minor
B20	Exterior Envelope	B2010-2	Exterior Walls - Shed Addition	GOOD	Minor
B30	Roof System	B3010-2	Roof Covering - Shed Addition	GOOD	Minor
B30	Roof System	B3010-4a	Flashing & Trim- Main Block	GOOD	Minor
C20	Stairs	C2010	Stair Construction	GOOD	Minor
C20	Stairs	C2020	Stair Finishes	GOOD	Minor
C30	Interior Finishes	C3010	Wall Finishes	GOOD	Minor
C30	Interior Finishes	C3020	Floor Finishes	GOOD	Minor
C30	Interior Finishes	C3030	Ceiling Finishes	GOOD	Minor

NOT RATED					
Cate-gory	Topic	Code	Subtopic	Condition Rating	Deficiency Rating
D	Services	D40	Fire Protection Systems	NR	NR
D	Services	D50	Electrical	NR	NR
D	Services	D20	Plumbing	NR	NR

NOT APPLICABLE					
Cate-gory	Topic	Code	Subtopic	Condition Rating	Deficiency Rating
D	Services	D10	Conveying	NA	NA

Recommended Treatments Summary Table: Rehabilitation[6]

The condition assessment and limited fabric investigation of the Antram-Gray House determined that some features were found to be in a state of considerable deterioration or non-functional (**poor**). This rating indicates these features will need to be repaired or replaced which is recognized within the definition of preservation maintenance. Other remaining features were noted with moderate to low levels of deterioration (**fair or good**) and should be repaired and/ or maintained using traditional preservation techniques rather than replaced; unless they are determined to be non-sympathetic fabric in which case exchanging them for more traditional materials is recommended (windows, roof covering, siding). Other features were found to be in good condition (**good**) and should continue to be maintained.

At the time of this report (Sept 2014), some features, components and/ or systems will require wholesale replacement. In order to restore the character-defining features of the Antram-Gray House, some of the more imposing non-sympathetic treatments should be replaced with more appropriate and compatible components. It is also noted that a rehabilitation/ preservation maintenance project has taken place since the field work but before the completion of the HSAR. The scope of that project, undertaken by the NER HACE team, is not defined. An update to this HSAR will be completed in FY15 and/or supplemented with project documentation by the HACE team.

Two of the building service systems, specifically HVAC and Lightning Protection are assigned a rating of Poor as they are in need of assessment and/ or revisions, or risk management determination of need. Other building services systems were not included in this HSAR.

All building systems should be holistically reviewed with a goal being to remove all archaic system components (wiring, piping) etc., which fill the interstitial spaces above dropped ceilings and in vertical wall chases to eliminate certain hazard situations. All noted code violations should be immediately corrected. As such, these systems requiring further assessment are reported as Not Rated (NR).

The following recommended treatments contribute to the overall rehabilitation of the building and represent the type of repair that will slow or reverse the rate of deterioration for the assigned feature. Interior

[6] *See Chapter 3 - Standards, Guidelines and Definitions for description of terminology based on the NPS Asset Management Process (AMP) Facility Management Program (FMP) protocol nomenclature.*

treatments are independent of exterior treatments. The outcome of these tasks is protection of the feature, repair of the feature, or replacement of the feature in an effort to return the feature, and the structure, to good condition.

Antram-Gray House

Rehabilitation – Recommended Treatments Summary Table[7]					
UNIFORMAT II Outline Data				Condition Assessment	
Cate-gory	Topic	Code	Subtopic	Condition Rating	Deficiency Rating
POOR					
C10	Interior Construction	C1010-2	Shed Addition Walls (Not Fire Rated)	POOR	Critical
Interior wall and ceiling construction of the maintenance shed should be repaired to meet code requirements for a minimum of a 1 hour fire rated enclosure/ separation between the house and shed (a 2 hour fire rating should be considered). This would match the fire rating of the door between the house interior and the shed. Numerous holes in the wall and ceiling surfaces void the fire rated enclosure. An additional layer of gypsum board may be required at the ceiling to achieve this rating. Reference local building codes, the International Existing Building Code, or the National Gypsum web site for information on repairing damaged gypsum wallboard to restore the fire rating qualities of the assembly: http://nationalgypsum.com/resources/tech-talk-firerated.htm					
B20	Exterior Envelope	B2020-1E	Exterior Windows - East	POOR	Critical
B20	Exterior Envelope	B2020-1N	Exterior Windows – North	POOR	Critical
B20	Exterior Envelope	B2020-1W	Exterior Windows - West	POOR	Critical
B20	Exterior Envelope	B2020-2E	Exterior Windows - South	POOR	Critical
All exterior windows in the Antram-Gray House are non-historic replica windows. All are past their expected service life and should be replaced with high-quality wood windows which replicate, to the greatest extent possible, the character-defining features of the historic window sash.					

[7] Recommended Treatments Summary table as of August 2014. An updated Recommended Treatments section is provided in the HSAR Addendum (March 2015).

As an interim step, repairs should be made to exterior window sill and frame components and all extant windows sash should be cleaned, prepped and repainted (including reglazing) All repair work should be in accordance with the National Window Preservation Standards Collaborative or NPS Preservation Brief # 9, The Repair of Historic Wooden Windows. Planning for replacement windows should include strategies for the introduction of either exterior or interior protective storm units (or a combination of both given primary architectural elevations, etc.).

D	Services	D509004	Lightning Protection	POOR	Serious

Consult with a local electrical engineer or fire protection engineer (or NPS fire protection specialist) with specialty in lightning protection systems (certified by Underwriters Laboratory [UL]) to determine risk analysis and ROI of installation of independent lightning protection system.

The building currently does not have a lightning protection system. A permanent UL-rated lightning protection system should likely be installed on the extant roof system in a demountable manner to allow for eventual replacement of the roof surfaces, flashing and underlying components. Design features should include exposed downlead cables and the use of minimally-sized air terminals (government points). Penetrations through the roof covering should not be allowed. Submittals should be required from installers and include the proposed layout plan for installation for review by project architects.

Layout should be approved by either a Registered Architect or a Professional Engineer familiar with the installation of lightning protection systems on historic buildings.

The professional standard for lightning protection systems may be obtained from the National Fire Protection Association (NFPA) *Standard 780 – Standard for the Installation of Lightning Protection Systems*. (www.nfpa.org)

Additional commercial information re: lightning protection systems is available at http://www.ipclp.com/html/contact.html

D	Services	D30	HVAC	POOR	Critical

Re-evaluation of HVAC control system should be completed in conjunction with establishment of interior climate set points and determination of

interior window treatment (replacement interior storm windows) or replacement of existing windows with sash that contain insulated glass lites (see also B20 Exterior Envelope, B2020 Windows). These need to be based on base documentation including recordation of interior climate conditions over a year-long period; collection of exterior climate data is also required. An uncontrolled interior environment may eventually lead to dew point condensation issues within the wall cavities leading to accelerated deterioration of the historic frame of the building. Relocation of exterior cooling components to an area remote from the house should also be a consideration. The current positioning detracts from the overall appearance of the site and the ambience (visitor experience) of the immediate park grounds.					
B10	Superstructure	B102099	Chimney Stacks – Construction (Caps)	POOR	Serious
Unvented chimney caps: Provide passive ventilation at existing capped chimneys; may require in-situ manipulation of existing materials; or replace with custom designed screened and vented chimney cap (non-corrosive materials) in conjunction with chimney flashing and repointing repairs. HPTC SrHA is available to provide design sketches upon request.					
B30	Roof System	B3010-5c	Gutters & Downspouts Drainage	POOR	Serious
Determine status of underground drainage system. Scoping and mapping may be required. Size, condition and location to be recorded and assessed for capacity and free-flow; also discharge to daylight (outlet) is within NPS policy parameters. [See A103066, A2020-2, A2020-3].					
B20	Exterior Envelope	B201008-2	Soffits - Shed Addition	POOR	Serious
Exterior soffit boards appear to be rotted behind gutter on west elevation. Determine extent of repair and repair/ replace in kind. Consider use of synthetic material in this location for replacement of soffit. Increase top of wall soffit ventilation if possible (further fabric investigation required).					
G20	Site Improvements	G2090-1	Pedestrian Paving (Accessibility)	POOR	Serious
Accessibility improvements are underway with *PMIS # 205465, Architectural Design for Accessibility Improvements*. These improvements are derived from the study by the National Accessibility Study conducted at					

ROWI in January 2013.					
A10	Foundation	A103006	Foundation Drainage	POOR	Minor
Determine status of underground foundation waterproofing system. Excavation, scoping and mapping may be required. Excavation should be coordinated with other architectural fabric investigation tasks re: moisture protection and exterior insulation.					
A20	Basement Walls	A2020-2	Moisture Protection	POOR *Unknown*	Minor
Determine if basement walls have received exterior moisture protection (see also foundation drainage). Excavation should be coordinated with other architectural fabric investigation tasks re: foundation drainage and exterior insulation.					
A20	Basement Walls	A2020-3	Insulation	POOR *Unknown*	Minor
Determine if basement walls have been insulated (exterior or interior) [see A2020-2].					

FAIR					
Cate-gory	Topic	Code	Subtopic	Condition Rating	Deficiency Rating
B10	Superstructure	B1010-1-2	2nd Floor Frame	FAIR	Serious
Load limits need to be determined for 2nd floor rooms/ functions. A structural engineer/ historical architect is required to make this determination and evaluate usage and loading of space. Fabric removal may be required to determine condition of historic framing members and verification of existence of supplemental framing. Documentation of supplemental framing should be made at this time. Use of non-destructive evaluation is encouraged but results may be limited due to site conditions.					
B10	Superstructure	B1010-1-3	Attic Floor Frame	FAIR	Serious
See B1010-1-2.					
B10	Superstructure	B101001a	Structure Main Block – North Frame	FAIR	Serious
In conjunction with above structural investigation and evaluation a similar project should be undertaken to evaluate the vertical members of the building frame (the corner posts, intermediate posts and braces). Similarly to the horizontal members of the building frame, these vertical members will need to be exposed to determine their condition. Some are partially visible on the interior, but others (corner posts), are completely concealed and will likely require partial disassembly of the building exterior to gain access for inspection and evaluation. Use of non-destructive evaluation is encouraged but results may be limited due to site conditions.					
B10	Superstructure	B101001b	Structure Main Block – South Frame	FAIR	Serious
See B101001.					
B10	Superstructure	B1020-1	Roof Frame - Main Block Gable	FAIR	Serious
Additional supplemental bracing may be required at various rafter locations as there is a lack of proper bearing between rafters, supplemental rafters,					

and bearing plates at the top of the structural wall frame. A historical architect or structural engineer should be used to make this evaluation.					
B20	Exterior Envelope	B201099	Exterior Architectural Trim	FAIR	Serious
Significant exterior architectural trim is in danger of being lost if preservation maintenance and carpentry is not executed in the near future; this is especially true at the north elevation federal period door surround (oldest extant material on exterior of building according to NERO HSR). Repair the historic materials with traditional wood repair techniques retaining the maximum amount of historic fabric. Special attention (repair/ replace) should be given to NPS quarter-boards on east and west elevations as these are particularly unsightly.					
B30	Roof System	B3010-5a	Gutters & Downspouts Main Block	FAIR	Serious
Gutter liners were not accessible for review; they should be annually inspected from a ladder or lift and repairs made as necessary. Test gutters and downspouts to determine flow capacity and outlet. Perform rainfall intensity roof drainage system calculations to determine proper gutter sizing and location and number of downspouts. Gutters may need to be replaced and additional downspouts added based on these calculations.					
B30	Roof System	B3010-5b	Gutters & Downspouts Shed Addition	FAIR	Serious
Gutter liners were not accessible for review; they should be annually inspected from a ladder or lift and repairs made as necessary to the LCC sheet metal liner and the wood gutter members.					
G20	Site Improvements	G2090-2	Pedestrian Paving (Fences)	FAIR	Serious
The fence needs to be repaired/ replaced with a more traditional colonial style fence. Fence posts and gates are not in good working order and should be repaired/ replaced.					

G90	Site Improvements	G9087	Site Drainage & Vegetation	FAIR	Serious
Vegetation needs to be cut back at the north elevation so it does not encroach on the building exterior. Site drainage hardscape should be located, tested and assessed for functionality. Underground drain lines need to be scoped and mapped for future reference. Drain lines which back up in heavy rains may be undersized or have a blockage; this may be be determined by the above treatment.					
B20	Exterior Envelope	B2010-1	Exterior Walls - Main Block	FAIR	Minor
Conduct preservation maintenance to exterior components as per NPS Preservation Briefs (referenced). Deteriorated wooden members should be repaired/ replaced with high quality rot-resistant material (synthetic materials may be considered in locations not easily accessible, i.e.; rake boards, upper story trim, etc.). Each elevation of the building may require differing levels of repair due to their solar exposure and local climatic conditions. Cyclical maintenance should be determined using the solar factor as an indicator; i.e., west more frequently than east and north, etc. As along range plan, replacement of sawn and sanded clapboards with more authentic hewn or roughly sawn materials (reference other similarly dated buildings in Providence for evidence of materials, sizes and manufacturing techniques used) may be considered as a means to return some “period” character to the exterior of the building. The south gable wall of the house is brick masonry with a lime wash finish (being reapplied summer of 2014). This wall should be annually inspected for loose and open mortar joints that would require repairs. New or reopened cracks should be monitored.					
B20	Exterior Envelope	B201008-1	Soffits - Main Block	FAIR	Minor
NIR: included with other exterior architectural features.					
C10	Interior Construction	C1010-1	Main Block Walls – basement not included	FAIR	Minor
Reference recommendations made re: B1010 Superstructure for question of possible overloading of building frame by interior use and function.					

Crack monitor located in northwest corner stair on historic plaster interior walls should be recorded regularly to determine if movement is cyclical or continuing.					
B30	Roof System	B3010-4b	Flashing & Trim - Shed Addition (Fascia)	FAIR	Minor
Fascia board at west elevation needs further investigation to determine if it needs to be repaired/ or replaced. Use of a synthetic wood material may be appropriate at this location.					
B20	Exterior Envelope	B2030-1E	Exterior Doors - 1ST Floor East	FAIR	Minor
B20	Exterior Envelope	B2030-1N	Exterior Doors - 1st Floor North	FAIR	Minor
B20	Exterior Envelope	B2030-1W	Exterior Doors - 1st Floor West	FAIR	Minor
An exterior door survey and schedule should be developed to document and monitor the condition of the exterior doors (as listed above). Special attention should be given to accessibility (where required), weather-stripping, hardware condition and exterior condition. Long range planning should determine type of door used at north entrance and replace contemporary 8 panel door with more historically appropriate door. Maintenance shed doors need to be repainted using a rust inhibiting primer and finish coats as per manufacturer's specifications.					
B30	Roof System	B3010-1	Roof Covering - Main Block	FAIR	Minor
Inspection should be made of the roof surface at the southeast and northeast cornice returns as it appears to be lifted in these areas. Drip edges and base flashing should also be inspected to determine it is in good working order. Access requires a lift or tall extension ladder; all four corners should be inspected as part of a general roof surface inspection.					
End of Recommended Treatments					

Class C Cost Estimate Information

This Appendix [C] describes the estimating products and services to be prepared for Class C (Conceptual) Construction Cost Estimate[8]. The following estimate submittals are considered Class C estimates:

A. General Management Plans (GMP)[9]
B. Condition Assessments Cost (CAC) estimates using FMSS and CESS[10]2
C. Preliminary cost estimates used for project initiation and entry into the Project Management Information System (PMIS)
D. Pre Design (PD) programming estimates are used for development of project scope and preliminary validation of PMIS Estimate
E. Schematic Design (SD) concept estimates for comparing design alternatives for use in Value Analysis studies during the early stage in the Schematic Design Phase)

Class C (Conceptual) Construction Cost Estimating

Class C Construction Cost Estimates are referred to as *conceptual* estimates by the design and construction industry. These estimates are generally prepared without a fully defined scope of work. They are general in nature, representative of broad based vision rather than focused on specific details and require a great deal of interpretation and assumptions on the part of the estimator to fill in the blanks between programmed elements. Class C estimates are generally used for: feasibility studies, development of project scope and program, establishing preliminary budgets, and selecting from among alternative design types.

The Class C Construction Cost Estimates is a *conceptual* cost estimate based on a combination of detailed installation analysis, typical assembly costs and some lump sum or square footage costs derived from similar projects.

[8] The following introductory text is taken from the Cost Estimating Requirements Handbook, National Park Service, February, 2011. Accessed @ http://www.nps.gov/dscw/upload/CostEstimatingHandbook_2-3-11.pdf
[9] DO-2 has established a need for a Class D estimating guide to be developed for GMP estimates. It is presented here as a general introduction to NPS Cost Estimating procedures.
[10] FMSS (Facility Management Software System) and CESS (Cost Estimating Software System) – systems created and maintained by the facility Management Program Division of the National Park Service to manage the maintenance requirements of NPS facilities (Assets).

Class C Construction Cost Estimating Accuracy

Class C Construction Estimates are generally prepared with little if any formal design documents and often without a fully defined scope of work. This lack of detail requires that a high level of skill and careful estimating judgment is employed during the development of conceptual costs.

The generally accepted industry accuracy range of Class C Construction Cost Estimates is -30% to +50%.

With this as the accepted accuracy a $1,000,000.00 Class C Construction Cost Estimate would have an accepted range of $700,000.00 to $1,500,000.00.

Class C Construction Cost Estimate Mark-ups and Design Contingencies

The cost information used to prepare Conceptual Class C cost estimates may be a combination local costs obtained through detailed research, and/or be derived from sources other than park/ project specific cost data. Complete design details are likely not available to precisely define every aspect of the work and some design elements may still change somewhat, or be eliminated, while others may need to be added.

[Among these are Location Adjustments, Design Contingency and General Conditions. There are many general conditions, one in particular relates to the use of historic buildings.]

Historic Preservation Factor: If the project involves additions or repairs to historic structures, or is in close proximity to historical or cultural sites, it may be necessary to apply a Historic Preservation Factor to account for unknown, or unidentified costs associated with protecting and/or matching the historical fabric of the resource.

1. At the Class C Construction Cost Estimate level, few of these impacts are typically quantified for most projects, so it is appropriate to apply a mark-up factor to allow for the associated costs. A range of 0-10% is not uncommon.

2. For many new construction and other non-historical projects it is common for this mark-up factor to be zero (0). For purely historical preservation/restoration projects all of these costs should be included in the direct cost items.

The *NPS Cost Estimating Requirements Handbook* offers a clear overview of the background and purpose of the NPS cost estimating system.

Chapter 1: Introduction addresses Background, Purpose, Application and Cost Management Policies. Technical and administrative requirements are presented for the development, preparation, documentation and submittal of construction cost estimates during the project life cycle of a NPS construction project's pre-planning/ pre-design, schematic design, design development and construction document preparation phases.

NOTE: After a review of these requirements it is clear the level of the following information does not meet the requirements of a Class C Cost estimate but falls into the category of pre-planning / pre-design information.

To obtain a Class C Cost Estimate for any project careful adherence to the *NPS Cost Estimating Requirements Handbook, Appendix C – Class C Construction Cost Estimates* is necessary. It outlines the need for preparation of a Basis of Estimate Statement.

> Basis of Estimate Statement All cost estimates must have a clearly defined Basis of Estimate Statement that describes in detail, exactly what construction scope of work the estimate represents, as well as the information and assumptions that were relied on to develop the estimate. The Basis of Estimate should list what items are specifically included in the estimate and what if any items are specifically excluded. . It should also highlight major changes relative to previous estimates for the same project. This information will readily allow for the future identification of any significant changes in project programming or unintentional "scope creep".

HPTC Class C Cost Estimates

HPTC will undertake to prepare a Class C Cost Estimate for the Recommended Treatments in this Historic Structure Assessment Report with the presumption the work will be accomplished by skilled NPS artisans with experience in historic preservation construction methodologies. Each line item task will be independently estimated; this creates an inflation factor when added together as many cost efficiencies are achieved when conceived as a project vs. individual line items. A cost estimate prepared by the HPTC Woodcrafting or Carpentry team will yield different results based on this factor. It is often best for a park to work from both resources and arrive at a mutually agreeable scope of work and cost estimate with HPTC before finalizing any PMIS documents.

End of Part 5

Antram – Gray House

Addendum
Historic Structure Assessment Report

Roger Williams National Memorial
Providence, RI

National Park Service
Department of the Interior

March 2015

Cover Photos by ROWI (Jennifer Smith), March 2015

Addendum
Historic Structure Assessment Report

Antram-Gray House

282 North Main Street
Providence, Rhode Island

Project Agreement
between the
Roger Williams National Memorial
and
National Park Service
Historic Preservation Training Center

Project #: 212925a

Provide Historic Structure Assessment Report
for the
Antram-Gray House

March 2015

Submitted by:
Historic Preservation Training Center (HPTC)
Office of Learning and Development
Workforce and Inclusion Directorate
U.S. Department of the Interior, National Park Service
Frederick, MD

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Addendum Table of Contents

Addendum Appendices

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PART 1

Purpose

The scope of work for this project was the preparation of a Historic Structure Assessment Report for the Antram-Gray House [List of Classified Structures ID 040008, HS001] at Roger Williams National Memorial. The report was needed to document the buildings' character-defining features and existing conditions based on limited archival research and physical investigations. The Historic Structure Assessment Report provided recommended treatments to return the building to good condition as described by National Park Service Facility Management Software System definitions and provide a preservation maintenance plan based on a five year cycle. Special emphasis was placed on condition assessment of the exterior envelope including door and window schedules, historic and modern framing systems, and interior historic fabric. This initial phase was been surpassed by a preservation maintenance project; this led to an updated HSAR with an Addendum.

Overview Update

The Antram-Gray House Historic Structure Report, completed in 1981 by Andrea Gilmore of the than-named North Atlantic Region Historic Preservation Center, is a thorough documentation of the history and treatment of the Antram-Gray House. It includes an Editor's Note in Chapter 5 which mentions that additional work had been accomplished, for the initial NPS occupation of the building, since the HSR had been completed. This new information was included in additional Appendices added to the HSR (Appendix J). This Appendix records the preservation treatment carried out based on the HSR by the Historic Preservation Center (no other record of this work has been located).

Similar to the sequence of events which overcame the initial publishing of the HSR this Historic Structure Assessment Report (HSAR) has likewise been intercepted by the completion of preservation maintenance activities by the successor group to the Historic Preservation Center, the Northeast Region's Historic Architecture, Conservation and Engineering (HACE). The final draft of this HSAR was transmitted to the park on September 24, 2014. It had been known since the beginning of the HSAR project that preservation maintenance treatment was forthcoming but since there was not a final scope of work (at that time) it was decided to follow-through with the HSAR with the hopes it might assist in providing some direction to that effort.

Exterior preservation maintenance tasks were completed by HACE during the late summer-early autumn of 2014 on the exterior of the house. Their work has been documented in a 2-page report “Completion Report for Antram-Gray House”; this was transmitted to HPTC by the ROWI Site Manager on December 1, 2014. An additional document, “Antram-Gray House Structural Needs Assessment”, also by HACE, was transmitted on December 29, 2014.

The park has requested that HPTC update the September 2014 HSAR by incorporating the preservation maintenance treatments recorded in these two documents as well as those visible in a series of photographs taken in March 2015. The park also provided a marked-up copy of the final draft HSAR with other editorial comments; these have been incorporated into the updated HSAR (Revised March 2015). HPTC will provide an updated Chapter 4 Condition Assessment and Chapter 5 Recommended Treatment as part of an Addendum to the September 2014 HSAR as well as the revised version of the September 2014 final report. A Class D Cost Estimate will be provided for those remaining items listed in the POOR Condition Prioritized Maintenance Deficiency Summary Table of the Addendum.

End of Addendum Part 1, Project Overview

PART 2

Photographic Narrative

The following photographs were provided by the ROWI Site Manager in March 2015. They depict the current condition of the exterior of the Antram-Gray House as the result of the recently completed preservation maintenance project by the Northeast Region HACE team.

East Elevation at North Main Street. March 2015.

East Elevation at North Main Street. July 2014.

Northeast elevations, corner of Main and Smith Streets. March 2015.

North elevation at Smith Street with view of Maintenance Shed at the west elevation of the house. March 2015.

Northwest elevation with raised gardens, fence enclosure, and Maintenance Shed at northwest corner. March 2015.

West elevation with Maintenance Shed Addition. March 2015.

West and south (brick) elevations. March 2015.

South elevation. March 2015.

South and East elevations. March 2015.

Management Data Summary

Current Use:

Basement: Maintenance office and storage, restrooms, shower, kitchenette, general storage; connection to maintenance shed at exterior [staff use only].

First Floor: Visitor Contact (Visitor Center) (interpretive displays, ranger station, book sales area), and two restrooms.

Second Floor: Multiple staff offices (administrative offices), restroom, general meeting area/ library/ copy center [staff use only].

Attic: Storage for non-archival park files and interpretive media (display materials) [staff use only].

Intended Use: The recently completed *Cultural Landscape Report for Roger Williams National Memorial (CLR)* prepared for the NPS Olmstead Center for Landscape Preservation by the State University of New York, College of Environmental Science and Forestry (2010), points out*,"… the inadequacy of the Antram-Gray House as the site's visitor center and park offices…",* and, *"The NPS has long recognized the inadequacy of the building for these uses."*

Several long range options are presented in the CLR for future consideration. In the meantime, the NPS indicates proposed use to be much the same with possible lessening the burden of the administrative offices in the building, also moving off-site the non-essential storage.

Intended Treatment: Preservation maintenance of all exterior building components (historic and non-historic); this includes preservation of the identified historic features and all character-defining features.

Overview of Recommended Treatments: Further definition of treatments will be found in Part 5 of this report. Following is a summary of the prioritized recommended treatments (see also Part 4 Intro and all Part 4 Building Feature Master List component assessments).

The following definitions are used in the Recommended Treatment section:

> **Emergency Stabilization** (1 year or less) identifies condition and maintenance deficiencies that meet the definition of Critical; the feature poses an imminent threat or is likely to fail within one year.
>
> **Short Term** constitutes repairs that need to be executed within 1 to 3 years due to condition deficiencies of features.
>
> The **Intermediate Term** will represent repairs that need to be made within 3 to 5 years due to condition deficiencies of the features.
>
> The definition of **Long Term** indicates repairs that need to be executed within at least 5 to 10 years due to condition deficiencies of building features. *See Chapter 3 for Standards, Guidelines and Definitions*.

Beyond that a category for programming in the out years, 10 years and beyond to a 50 year threshold, should be identified in a cyclical preservation maintenance plan (not part of the HSAR project).

Emergency Stabilization Treatment:

Repair and/ or upgrade one-hour fire resistant rated wall enclosure at maintenance shed (interior wall finish over west elevation of house); determine if ceiling needs to be upgraded to have a one-hour fire resistant rating (currently materials do not warrant a fire resistance rating). Working with Fire Protection Engineers or local fire department, determine if both assemblies should be upgraded to 2 hour fire resistant rating to match the door between the shed and the house.

Determine fire separation/ protection needs for interior space between basement and first floor level.

Short Term Treatments:

General:

Create project to conduct comprehensive HABS Level 1 documentation of the house and immediate grounds (LIDAR scanning recommended) including CAD layering of all building system locations and underground utility systems (as-built drawings) as there are no up-to-date “as-built” drawings of the Antram-Gray House; 1974 HABS documentation on record no longer reflects the actual built condition of the structure.

Create project to implement non-destructive evaluation of timber frame of building. This may incorporate thermal imaging or other remote sensing program to ascertain condition of heavy timbers without extensive dismantling of current building exterior or interior finishes. WASO office components (HPTC and HABS) could undertake this project with additional funding from NER/ ROWI. If possible, coordinate with ongoing HFC project to remodel interior first floor space; take advantage of opportunity to remove interior finishes and capture documentation of historic heavy timber frames of building as part of interp project.

Create project to update 1980 Historic Structure Report. Development of scope of work is part of the project planning process. This HSAR will fulfill aspects of those requirements (see NPS-28 for HSR outline).

Exterior – Continue preservation maintenance activities for significant building features (character-defining features) with park or regional staff. Tasks may be required to prevent additional deterioration to the building.

These tasks include but are not limited to:

- implement preservation maintenance projects focused on point source moisture control and reduction of thermal losses and gains through windows;
- consult with local authorities or NPS specialists to determine if lightning protection system would be beneficial;
- provide vented and screened chimney caps at all chimneys (in lieu of sealed chimney structures);
- repair weather-stripping at all exterior doors;
- test, scope, map, clean and/ or repair and monitor underground exterior drainage system for roof water drainage system;
- continue regular cyclical preservation maintenance on all exterior envelope building components (prep, repair/ replace, paint, etc.).

Interior – Continue preservation housekeeping and janitorial routines; reduce storage loads in various rooms to allow for free circulation of air; and begin structural monitoring program of building frame (investigate, design and implement) - this would be in addition to the single crack monitor currently in place in the northwest stair enclosure of the building.

Create a project to design and upgrade fire resistant rated enclosure in maintenance shed from one (1) hour to two (2) hour enclosure to comply with building codes (International Existing Building Code – IEBC).

Begin program with park or regional staff to:

- where necessary install interior storm window covers;
- coordinate HVAC control units located throughout the building – interior temperature and humidity monitoring devices should be set-up throughout the building to collect an annual cycle on interior climate data (to be compared to exterior data) to be compared to national standards for temperature and humidity levels to prevent mold, mildew and dew point condensation within wall cavity of timber frame structure (as insulation and vapor permeability values are unknown), and condensation on interior window glass.

Intermediate Term Treatments:

Exterior – More intensive building repairs may be required to achieve rehabilitation and achieve a building status of Good Condition. These tasks include but are not limited to:

- installation of lightning protection system if recommended by professional specialists;
- examination, stabilization and repair of structural building frame;
- complete interim repairs to fiberglas shingle roof to prevent leaks into interior spaces;
- plan for eventual renovations of exterior hardscape pathways and approaches to the park and the Antram-Gray House;
- investigate along building perimeter to determine foundation conditions and extent of building drainage system.

Interior – Tasks include but are not limited to:

- conduct structural investigation of historic building frame (professional licensed structural engineer recommended);
- conduct rehabilitation of roof frame (strengthen rafter supports and connections at rafter plate) based on structural investigation;
- planned phased renovations of building interior may include removal of first floor interior finishes to allow complete structural evaluation and documentation of historic (and non-historic) structural elements of building frame [should be coordinated with any planned renovation of first floor exhibit spaces];
- working with a licensed structural engineer establish load limits and occupancy recommendations for 2nd and 3rd floor spaces;
- continue removal of excess furniture, equipment and files from 2nd and 3rd floors to comply with draft floor load limitations (reposition furniture according to placement plan);
- working with a Fire Protection Engineer determine fire separation and material resistance rating requirements for basement spaces as related to long-term preservation of historic house frame and visitor safety;
- replace/ upgrade temporary interior storm window covers so all windows have a vented storm cover for seasonal usage;
- working with park and/ or regional staff continue preservation maintenance of all recently repaired extant windows and exterior window features.

Long Term Treatments:

Exterior – Continued preservation of character-defining features, development and execution of overall preservation maintenance cyclic maintenance plan with continued preservation maintenance. More intensive building repairs may be required to achieve rehabilitation and achieve a building status of Good condition.

These tasks include but are not limited to:

- stabilization and repair of structural building frame (if required); rehabilitation of internal roof frame;
- rehabilitation of roof covering (from three-tab fiberglas shingle to more appropriate wood shingle (or wood shingle replica);
- preservation maintenance of all exterior masonry including chimneys;
- rehabilitation of east and north elevation storefront windows to originally intended more traditional double-hung wood window units as per 1981 HSR (see Non-CDF Features section in HSAR, pg 2.32).

Interior - Preservation of character-defining features, development and execution of overall rehabilitation plan with continued preservation maintenance and housekeeping. More intensive building repairs may be required to achieve rehabilitation and achieve a building status of Good condition.

These tasks include but are not limited to:

- repair/ replace extant building frame and building support systems; permanent solution to sloping of floors areas;
- enhanced interpretation of historic character-defining features (building frame, historic architectural woodwork, cabinet work and trim) through removal of modern non-sympathetic interior finishes and exhibits and exposure of historic interior features (see Non-CDF Features section in HSAR, pg 2.32).

Summary of Findings

The **exterior** of the Antram-Gray House building achieves an **Overall Quality Condition Rating** of **FAIR** and an overall **Maintenance Deficiency Priority Rating** categorized as **Serious**.

> The **Overall Quality Condition Rating** of **FAIR** achieved by the exterior indicates the feature(s) generally provides an adequate level of service to operations, but the feature requires more than routine maintenance attention. This rating also indicates that cyclic maintenance or repair/rehabilitation work may be required in the future.
>
> The **Maintenance Deficiency Priority Rating** of **Serious** achieved by the exterior indicates a deteriorated condition that if not corrected within 1 to 3 years will result in the failure of the feature; or, a threat to the health and/or safety of the user may occur within 1 to 3 years if the ongoing deterioration is not corrected; or, there is ongoing deterioration of adjacent or related materials and/or features as a result of the feature's deficiency.

The **interior** of the Antram-Gray House building achieves an **Overall Quality Condition Rating** of **GOOD** and an overall **Maintenance Deficiency Priority Rating categorized as Minor.**

> **The Overall Quality Condition Rating** of **GOOD** achieved by the interior indicates that routine maintenance should be sufficient to maintain the current condition; and/or, a cyclic maintenance or repair/rehabilitation project is not specifically required to maintain the current condition or correct deficiencies [with a few noted exceptions].
>
> **The Maintenance Deficiency Priority Rating** of **Minor** achieved by the interior indicates standard preventative maintenance practices and preservation methods have not been followed; or, there is reduced life expectancy of affected adjacent or related materials and/or systems within 3 to 5 years and beyond; or, there is a condition with a long term impact within 3 to 5 years and beyond.

See Part 4, Condition Assessment Survey in Historic Structure Assessment Report Addendum (March 2015), for updated building feature component assessment.

End of Part 2, Summary Resource Information

PART 4

Condition Assessment Ratings

The *Summary of Condition Assessment Ratings – Expanded Table* presents the overall condition findings for the Antram-Gray House. Prepared for the September 2014 Historic Structure Assessment Report it has been updated for this Addendum.

Author's Note: this updated table is based on reports provided by the park of work accomplished in September – November 2014 and copies of written documents. The documents provided for review are:

Completion Report for Antram-Gray House by Senior Exhibit Specialist, Historic Architecture, Conservation and Engineering, NPS Northeast Region, transmitted 12/29/14.

Antram-Gray House Structural Needs Assessment, by Senior Exhibit Specialist, Historic Architecture, Conservation and Engineering, NPS Northeast Region, transmitted 11/25/14.

They are included in Appendix F for review.

A return site visit by HPTC has not been made.

Summary of Condition Assessment Ratings				Expanded Table	
UNIFORMAT II Outline Data				Condition Assessment	
Cate-gory	Topic	Code	Subtopic	Condition Rating	Deficiency Rating
A	**Substructure:** This system includes all work below the lowest floor construction and the enclosing elements required to form a basement.				
A10	Foundations				
	A1010	Standard Foundations: below grade, or substantially below grade foundation systems.			
		A1010-1	House	GOOD	Minor
		A1010-5	Chimney Foundations	GOOD	Minor
	A1030	Foundation Drainage: directly associated with draining the foundation. This category does not include storm drainage piping for site. It does include drain pipe or drain tile at foundation or basement for specific purposes of draining each. Assemblies include excavations, hand-shaped bottoms, gravel, compacted backfill, and drain pipe or tiles.			
		A103006	Foundation Drainage	POOR	Minor
	A2020	Basement Walls: construction assembly which constitutes the basement level wall system. [See A1010 – Standard Foundations].			
		A2020-1	Construction	GOOD	Minor
		A2020-2	Moisture Protection	Unknown	Minor
		A2020-3	Insulation	Unknown	Minor
B	**Shell:** This system includes all structural decks and supports within basement and above grade.				
B10	Superstructure				
	B1010	Floor Construction: wood frame construction supporting interior floors – joists, subfloor, etc. All materials considered.			
		B1010-1	Main Block - Overall	FAIR	Serious
		B1010-1-1	1st Floor	GOOD	Minor
		B1010-1-2	2nd floor	FAIR	Serious
		B1010-1-3	Attic floor	FAIR	Serious
	B101001	Structural Frame: includes wood posts and beams used to create structural frame of building.			
		B101001a	Main Block – North	FAIR	Serious
		B101001b	Main Block - South	FAIR	Serious
		B101001c	Shed	GOOD	Minor
	B1020	Roof Construction: wood frame construction supporting roof decks and coverings, includes dormers if applicable.			
		B1020-1	Main Block Gable	FAIR	Serious
		B1020-2	Shed Addition	GOOD	Minor
	B102099	Chimney Construction: includes chimney caps		POOR	Serious

B20	Exterior Envelope		Exterior facing including all vertical and horizontal exterior closures.		
	B2010		Exterior Walls – all materials associated with exterior wall construction, including soffits.		
		B2010-1	Main Block	GOOD	Minor
		B2010-2	Shed Addition	GOOD	Minor
		B201008	Exterior Soffits	GOOD	Minor
		-1	Main Block	GOOD	Minor
		-2	Shed Addition	GOOD	Minor
		B201099	Extr. Architectural Trim	GOOD	Minor
	B2020	Exterior Windows - *includes all windows located in exterior walls.*			
		B2020-1E	East	GOOD	Minor
		B2020-1N	North	GOOD	Minor
		B2020-1W	West	GOOD	Minor
		B2020-2E	South	GOOD	Minor
	B2030	Exterior Doors – *includes all doors located in exterior walls of building*			
		B2030-1E	1ST Floor East	FAIR	Minor
		B2030-1N	1st Floor North	GOOD	Minor
		B2030-1W	1st Floor West	GOOD	Minor
B30	Roof System				
	B3010	Roof Coverings - This system includes all waterproof roof coverings together with required trim and insulation, together with roof penetrations.			
		B3010-1	Main Block	FAIR	Minor
		B3010-2	Shed Addition	GOOD	Minor
	B3010-4	Flashing & Trim – All flashings associated with the roof, i.e.: eave, gable, valley, ridge, step, etc.			
		B3010-4a	Main Block	GOOD	Minor
		B3010-4b	Shed Addition	FAIR	Minor
	B3010-5	Gutters & Downspouts			
		B3010-5a	Main Block	FAIR	Serious
		B3010-5b	Shed Addition	FAIR	Serious
		B3010-5c	Drainage	POOR	Serious

C	**Interiors:** Construction which takes place inside the exterior wall or skin. Does not include interior structural walls (see section B: Superstructure).				
C10	Interior Construction[1]		Overall	FAIR	Serious
		C1010-1	Main Block	FAIR	Serious
		C1010-2	Shed Addition	POOR	Critical
	C1020		Interior Doors	NR	NR
	C1030	Fittings – most commonly used specialty items: built-in cabinets, casework, fireplace surrounds, wainscot, etc. Inventory of interior furnishings not completed for this project – see HSR for details.			

[1] *Basement was not included as it is not part of historic structure.*

C20	Stairs			GOOD	Minor
	C2010	Stair Construction – all items associated with interior and exterior stairs. A flight of stairs is considered to be all the treads and risers with landings required to travel room one level to another.			
	C2020	Stair Finish: materials associated with stair finish.		GOOD	Minor

C30	Interior Finishes[2]				
	C3010		Wall Finishes: finishes applied to interior wall surfaces.	GOOD	Minor
	C3020		Floor Finishes: finishes applied to interior floor surfaces.	GOOD	Minor
	C3030		Ceiling Finishes: finishes applied to interior ceiling surfaces.	GOOD	Minor

D	**Services**			
D10	Conveying		NA	NA
D20	Plumbing		NR	NR
	D2040	Plumbing – Rain Water Drainage (underground transport and removal of rainwater discharged from downspouts – Roof drainage system) – note gutters and downspouts are not included in this subsystem (see B301005).		
D30	HVAC - heating, ventilating and air-conditioning system		POOR	Critical
D40	Fire Protection Systems - (Fire alarm systems are included in D50 Electrical).		NR	NR
D50	Electrical		NR	NR
	D509004	Lightning Protection	POOR	Critical

G	**Building Site**			
G20	Site Improvements			
	G2090	Pedestrian Paving (Accessibility)	POOR	Critical
	G2090	Pedestrian Paving (Fences)	GOOD	Minor
G90	Other Site Work			
	G9087	Site Drainage & Vegetation	FAIR	Serious

[2] *Interior finishes may be assessed using a room-by-room methodology resulting in an interior room finish schedule or by section of the building in a more general way.*

Condition Assessment Notes:

In addition to the standard defined ratings (Chapter 3) HPTC has employed three (3) additional rating markers for this project:

NA: Not Applicable – building or system element is not extant as a component feature.

NR: Not Rated - the feature was not rated by the HPTC HSAR team as it was included in the scope of work for one of the contractor consultants.

NIR: Not Individually Rated – The feature(s) was rated as a total system; i.e., D50 Electrical. The individual features as derived from Uniformat Work Breakdown Structure: D5010 – Electrical Service & Distribution, D5020 – Lighting and Branch Wiring, and D5030 – Communications and Security were not rated because they were non-extant.

Summary of Critical and Serious Maintenance Deficiencies:

Maintenance deficiencies rated as Critical or Serious have been summarized in the following list. This list is derived from the updated Condition Assessment Summary Table, March 2015. Information for this update was provided by the park as described at the beginning of this section.

- C10 Lack of proper fire separation between maintenance shed (with flammable storage) and the historic house [fire resistant rating of interior wall and ceiling coverings in shed; penetrations through wall] [lack of auto-closing fire door]. Type X gypsum board offers 1 hour fire separation if properly maintained; the ceiling construction is ½ inch gypsum board, if built according to NPS drawing, and does not achieve a 1 hour rating[3] according to International Building Code;
- D50 Lack of lightning protection system on the building;
- D30 Lack of coordinated (holistic) interior control system for building HVAC system;
- B20 Lack of interior/ exterior storm windows to alleviate condensation on interior, infiltration of particulate matter, and exposure of newly maintained window sash to weather on the exterior (related to HVAC control);
- G20 Accessible visitor route from parking to Visitor Center does not meet current NPS policy guidelines for universal accessibility (design project to be completed in April 2015);
- B10 Capped and unvented brick masonry chimney shafts;
- B30 Undersized roof drainage components allowing water to overflow downspouts in certain weather events;
- A10 Lack of adequate foundation and site drainage, improperly repaired roof drainage downspouts into underground drainage system;
- C10 Use of house basement as maintenance office and storage area with lack of fire separation between basement and rest of house [open stair case with non-fire rated interior doors, wall and ceiling enclosures][lack of fire rated enclosure in basement (dropped ceiling)];
- B10 Possible over-stressing (weight) and deterioration of buildings historic post and beam structure with no means of assessment;
- B10 Lack of load limits for second and third floor storage and office areas;
- B10 Lack of proper bearing of rafters and supplemental supports on rafter plate or other load-bearing structural member associated with the roof frame (may be loading exterior building frame with eccentric load patterns);
- B30 Edge damage to shingle roof at deteriorated cornice returns (may allow water and/or ice damming moisture into attic spaces);
- C10 Rehabilitation treatment of building interior which compromises historic character-defining features rather than incorporating them into visitor experience.

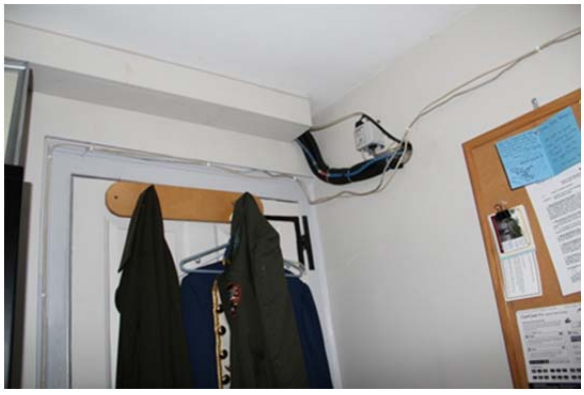
[3] The park responded with the following note on C10: The shed walls have a base of ½ gypsum board – additional ½ gypsum board added to wall between Shed and AGH (house) (? 2004). Penetrations are through addition.

C10: Penetrations in shed ceiling negate any fire resistant separation offered by rated materials. According to NPS construction drawing it is ½ inch gypsum board; this assembly does not achieve a 1 hour fire resistant rating.

C10: Penetrations through Type X wall board (1 hour fire resistant rated material) are deficiencies in the fire rated enclosure of the maintenance shed and void the 1 hour fire resistant rating.

C10: Open stair between floors; also functions as main egress from basement offices.

C10: Non fire rated enclosure between basement and first floor.



D30: Lack of coordinated HVAC system has led to surface mounted system throughout interior; condensate lines exposed in 2nd floor office.

D30/ B20: Condensation on interior of window glass in summer indicates high interior humidity levels and use of uninsulated glass in windows.

B10: Possible over-stressing of historic post and beam structure due to overloading of interior spaces.

B10: Modular office system furniture contributes to poor placement of staff within 2nd floor rooms; does not allow for flexibility.

B10: Historic rafters without supplemental supports or proper bearing at rafter plate.

B10: Previous supplemental bracing may not be adequate/ appropriate for historic roof frame and bearing capacity of roof system.

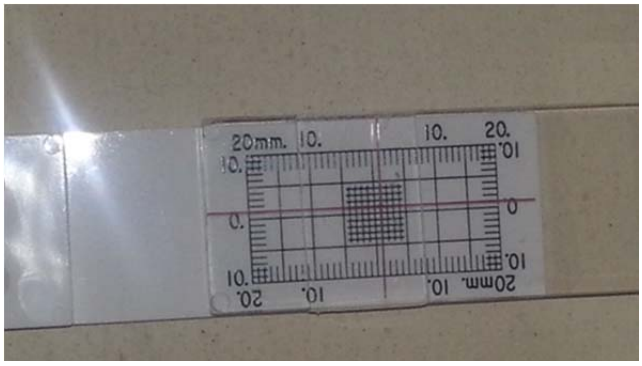
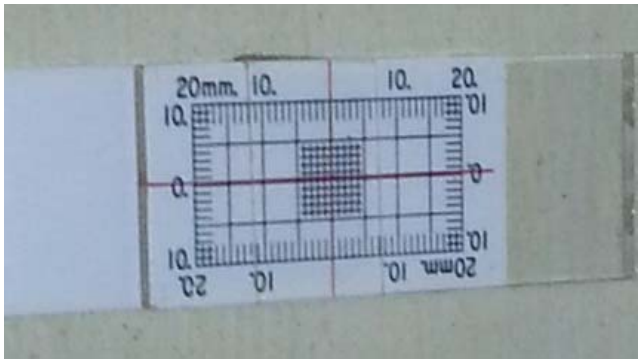
B10: Capped and sealed chimneys at south gable elevation.

B10: Southwest chimney (CH03) with furnace flue hood and sheet metal cap over chimney opening.

A10: Improper installation of downspout connection to underground drainage system.

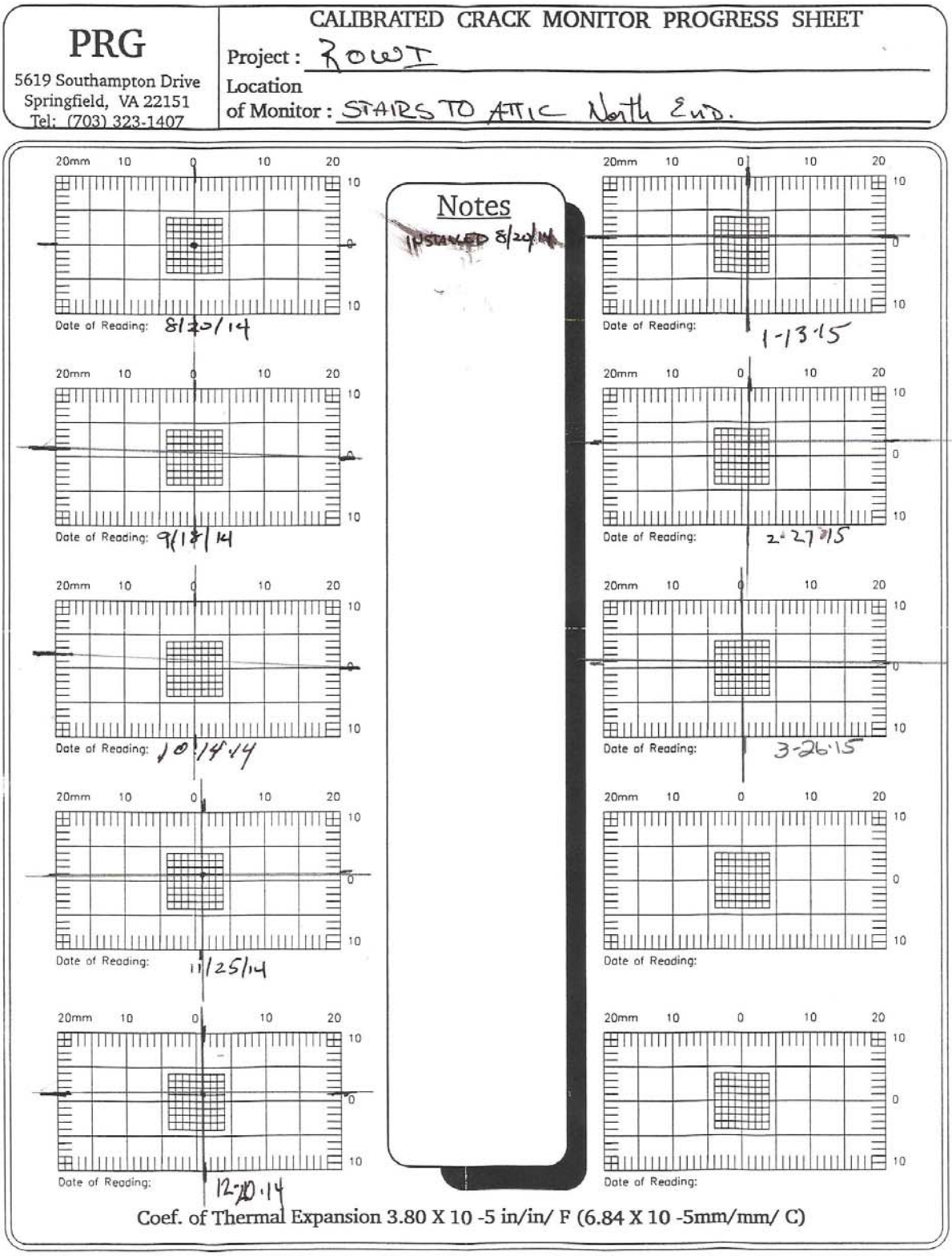
A10: Building downspouts discharge entire roof water output into plant bed adjacent to historic south brick gable. It is unclear if there is an underground drainage line or foundation waterproofing in this vulnerable area.

Crack Monitoring[4]

	A simple Avongard Crack Monitor was installed in the interior stairwell in August 2014. It is epoxied to the interior plaster in two locations. The vertical crack seen in the photo is thought to have been created by differential settlement and outward thrust of the roof frame on the exterior wall frame and possible crushing of the corner post in the southwest corner of ST02 R106 Vestibule, as seen in HPTC Field Sketch-1.
	Detail of Avongard Crack Monitor after 6 months of installation, March 31, 2015. Target has moved laterally and longitudinally since installation approximately 10mm along each axis. Additional movement was observed at Feb. 27, 2015 reading, +10.mm laterally (east) it has since returned to the above location.
	Detail of crach monitor shortly after installation, August 20, 2014. Target fully centered on crosshairs.

Use of a simple crack monitor has allowed documentation of movement about a central axis. Minimal cyclical movement has been observed to date. Seven (7) month progress sheet is seen on following page.

[4] Crack monitor chart updates and photos of crack monitors in-situ are courtesy of ROWI Park ranger John McNiff.


PRG
5619 Southampton Drive
Springfield, VA 22151
Tel: (703) 323-1407
CALIBRATED CRACK MONITOR PROGRESS SHEET
Project : ROWI
Location of Monitor : STAIRS TO ATTIC North End.
Notes
ISSUED 8/20/14
20mm 10 0 10 20
Date of Reading: 8/20/14
Date of Reading: 9/18/14
Date of Reading: 10/14/14
Date of Reading: 11/25/14
Date of Reading: 12-20-14
Date of Reading: 1-13-15
Date of Reading: 2-27-15
Date of Reading: 3-26-15
Date of Reading:
Date of Reading:
Coef. of Thermal Expansion 3.80 X 10 -5 in/in/ F (6.84 X 10 -5mm/mm/ C)

End of Part 4: Condition Assessment

PART 5

Introduction

The following recommended treatments are intended to repair, maintain and/ or preserve the character-defining features of the Antram-Gray House with the least degree of intervention while elevating the Facility Condition Index ratings to "Good." These treatments include limited replacement in-kind as defined by *The Secretary of the Interior's Standards for the Treatment of Historic Properties*. Appendix A of this report contains definitions of various preservation treatments.

Recommended Treatments for Rehabilitation

The recommended treatment of the Antram-Gray House includes preservation of character-defining features, maintenance, and possible removal of non-sympathetic modern materials. The interiors will be preserved in their rehabilitated condition, and the possibility for improved contemporary use exists (shifting functional locations, exposing historic character-defining features), while preserving historic building fabric to the greatest extent possible.

Of the four recognized NPS treatment standards, only **Rehabilitation** includes an opportunity to make possible an efficient contemporary use through alterations and additions and allows for the adaptive-reuse of the space[1] while preserving the character-defining features.

Therefore, the recommended overall treatment on which all other recommended treatments are based, is **Rehabilitation** as defined by *The Secretary of the Interior's Standards*.

This standard includes the replacement in-kind of selected missing character-defining features, or, if they have been detached and retained, the reinstallation of the historic materials. It encourages preservation maintenance of extant character-defining features and allows for the removal, or future reversal, of non-sympathetic (modern) treatments, materials and finishes.

Similar to the rehabilitation of the exterior, rehabilitation of the interior allows for the removal, or future reversal, of non-sympathetic treatments, materials, and finishes. Retention and preservation maintenance of remaining historic character-defining features and materials is encouraged.

[1] *The Secretary of the Interior's Standards for the Treatments of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring & Reconstructing Historic Buildings*, 63.

Where materials have been removed, the NPS *Guidelines for Rehabilitating Historic Buildings* calls for the replacement feature to be compatible with the remaining character-defining features of the historic building and the introduction of "compatible substitute materials."[2] Re-erection or re-installation of salvaged components is also encouraged within this treatment.

Incremental changes over the past few decades to functions housed within the building have resulted in numerous potentially unsafe conditions. Components of the electrical, plumbing and possibly heating systems have been incrementally changed over time. Installation of modern building systems, or partial upgrades to older systems, has not kept up with contemporary building codes (except for recent changes in life /safety facilities and the contemporary cooling system's electrical component).

A professional reference standard for most historic building protection systems is found in NFPA 909: *Code for the Protection of Cultural Resource Properties*[3] (2013); this standard consists of a comprehensive protection program. Areas addressed include fire prevention, fire protection management, security, emergency preparedness, and inspection, testing, and maintenance of protection systems. The code also covers ongoing operations and rehabilitation and acknowledges the need to preserve culturally significant and character-defining building features and sensitive and often irreplaceable collections, as well as to provide continuity of operations. An additional standard, NFPA 914: *Code for Fire Protection of Historic Structures* (2010) focuses more specifically on the principles and practices of fire safety for historic structures and for those who operate use or visit them.

[2]Standards & Guidelines, 63.
[3] National Fire Protection Association (NFPA), Standard 909 - Code for the Protection of Cultural Resource Properties. Quincy, MA. 2013.

Prioritized Maintenance Deficiency Summary Table

The following table places in priority order those building features with the highest level of maintenance deficiency. Starting with the rating of Poor/ Critical and following through to Good/ Minor in reverse order the list presents a path to good condition and lessening of the maintenance burden. It is followed by the Recommended Treatments for Rehabilitation section.

This hierarchical list divides the recommended treatments into three basic groupings based on the overall condition ratings of Good, Fair, and Poor; the NPS definitions of which are found in Chapter 3. The maintenance deficiency rating is based on the existing condition of the feature and its predicted remaining service life based on rates of deterioration.

The general preservation philosophy integrated into the condition assessment report is best represented by the following:

It is better to preserve than to repair;
Better to repair than to restore;
Better to restore than reconstruct.

It is ordinarily better to retain genuine old work of several periods,
rather than arbitrarily to "restore" the whole, by new work,
to its aspect at a single period.[4]

[4] The Advisory Board on National Parks, Historic Sites, Buildings, and Monuments policy statement (1936) included in the NPS Cultural Resources Management Guideline, Introduction, page 2 (Section 3. Stewardship), Release No. 5, 1997; first written by French archeologist Adolphe-Napoleon Didron (*Bulletin Archeologique*, Vol. 1, 1839). Also referenced in *How Buildings Learn* by Stewart Brand (London: Penguin Books, 1994), 94.

Prioritized Maintenance Deficiency Summary Table[5] - Rehabilitation					
UNIFORMAT II Outline Data				Condition Assessment	
Cate-gory	Topic	Code	Subtopic	Condition Rating	Deficiency Rating
POOR					
C10	Interior Construction	C1010-2	Shed Addition Walls and Ceiling (Not Fire Rated)	POOR	Critical
D50	Services	D509004	Lightning Protection	POOR	Critical
D30 B20	Services Extr Envelope	D30 B2020	HVAC Condensation	POOR	Critical
G20	Site Improvements	G2090-1	Pedestrian Paving (Accessibility)	POOR	Critical
B10	Superstructure	B102099	Chimney Stacks – Construction (Caps)	POOR	Serious
B30	Roof System	B3010-5c	Gutters & Downspouts Drainage	POOR	Serious
A10	Foundation	A103006	Foundation Drainage	POOR	Minor
A20	Basement Walls	A2020-2	Moisture Protection	POOR *Unknown*	Minor
A20	Basement Walls	A2020-3	Insulation	POOR *Unknown*	Minor

[5] Prioritized Maintenance Deficiency Summary Table revised for HSAR Addendum. Information for this update was provided by the park as described at the beginning of Part 2 of this report.

FAIR					
Cate-gory	Topic	Code	Subtopic	Condition Rating	Deficiency Rating
B10	Superstructure	B1010-1-2	2nd Floor Frame	FAIR	Serious
B10	Superstructure	B1010-1-3	Attic Floor Frame	FAIR	Serious
B10	Superstructure	B101001a	Structure Main Block – North Frame	FAIR	Serious
B10	Superstructure	B101001b	Structure Main Block – South Frame	FAIR	Serious
B10	Superstructure	B1020-1	Roof Frame - Main Block Gable	FAIR	Serious
C10	Interior Construction	C1010	Load-bearing historic timber frame	FAIR	Serious
B30	Roof System	B3010-5a	Gutters & Downspouts Main Block	FAIR	Serious
B30	Roof System	B3010-5b	Gutters & Downspouts Shed Addition	FAIR	Serious
G90	Site Improvements	G9087	Site Drainage & Vegetation	FAIR	Serious
B30	Roof System	B3010-4b	Flashing & Trim - Shed Addition	FAIR	Minor
B30	Roof System	B3010-1	Roof Covering - Main Block	FAIR	Minor
B20	Exterior Envelope	B2030	Exterior Doors	FAIR	Minor

GOOD					
Cate-gory	Topic	Code	Subtopic	Condition Rating	Deficiency Rating
A10	Foundation	A1010-1	House Foundation	GOOD	Minor
A10	Foundation	A1010-5	Chimney Foundations	GOOD	Minor
A20	Foundation	A2020-1	Basement Wall Construction	GOOD	Minor
B10	Superstructure	B1010-1-1	1st Floor Frame	GOOD	Minor
B10	Superstructure	B101001c	Shed Structure	GOOD	Minor
B10	Superstructure	B1020-2	Roof Frame - Shed Addition	GOOD	Minor
B20	Exterior Envelope	B2010-1	Exterior Walls - Main Block	GOOD	Minor
B20	Exterior Envelope	B201008-1	Soffits - Main Block	GOOD	Minor
B20	Exterior Envelope	B201008-2	Soffits - Shed Addition	GOOD	Minor
B20	Exterior Envelope	B201099	Exterior Architectural Trim	GOOD	Minor
B20	Exterior Envelope	B2010-2	Exterior Walls - Shed Addition	GOOD	Minor
B20	Exterior Envelope	B2020-1E	Exterior Windows - East	GOOD	Minor
B20	Exterior Envelope	B2020-1N	Exterior Windows – North	GOOD	Minor
B20	Exterior Envelope	B2020-1W	Exterior Windows - West	GOOD	Minor
B20	Exterior Envelope	B2020-2E	Exterior Windows - South	GOOD	Minor
B20	Exterior Envelope	B2030-1E	Exterior Doors - 1ST Floor, East	GOOD	Minor
B20	Exterior Envelope	B2030-1N	Exterior Doors - 1st Floor, North	GOOD	Minor
B20	Exterior Envelope	B2030-1W	Exterior Doors - 1st Floor, West	GOOD	Minor
B30	Roof System	B3010-2	Roof Covering - Shed Addition	GOOD	Minor
B30	Roof System	B3010-4a	Flashing & Trim- Main Block	GOOD	Minor
C20	Stairs	C2010	Stair Construction	GOOD	Minor

C20	Stairs	C2020	Stair Finishes	GOOD	Minor
C30	Interior Finishes	C3010	Wall Finishes	GOOD	Minor
C30	Interior Finishes	C3020	Floor Finishes	GOOD	Minor
C30	Interior Finishes	C3030	Ceiling Finishes	GOOD	Minor
G20	Site Improvements	G2090-2	Pedestrian Paving (Fences)	GOOD	Minor

NOT RATED					
Cate-gory	Topic	Code	Subtopic	Condition Rating	Deficiency Rating
D	Services	D40	Fire Protection Systems	NR	NR
D	Services	D50	Electrical	NR	NR
D	Services	D20	Plumbing	NR	NR

NOT APPLICABLE					
Cate-gory	Topic	Code	Subtopic	Condition Rating	Deficiency Rating
D	Services	D10	Conveying	NA	NA

Recommended Treatments Summary Table: Rehabilitation[6]

The condition assessment and limited fabric investigation of the Antram-Gray House determined that some features were found to be in a state of considerable deterioration or non-functional (**poor**). This rating indicates these features will need to be repaired or replaced which is recognized within the definition of preservation maintenance. Other remaining features were noted with moderate to low levels of deterioration (**fair or good**) and should be repaired and/ or maintained using traditional preservation techniques rather than replaced; unless they are determined to be non-sympathetic fabric in which case exchanging them for more traditional materials is recommended (windows, roof covering, siding). Other features were found to be in good condition (**good**) and should continue to be maintained.

At the time of the original HSAR report (September 2014), some features, components and/ or systems required wholesale replacement. In order to restore the character-defining features of the Antram-Gray House, some of the more imposing non-sympathetic treatments should be replaced with more appropriate and compatible components. It is also noted that a rehabilitation/ preservation maintenance project has taken place since the field work but before the completion of the HSAR. The scope of that project, undertaken by the NER HACE team, has been defined and is documented by a Completion Report (see Appendix F).

Two of the building service systems, specifically HVAC and Lightning Protection are assigned a rating of Poor as they are in need of assessment and/ or revisions, or risk management determination of need. Other building services systems were not included in this HSAR.

All building systems should be holistically reviewed with a goal being to remove all archaic system components (wiring, piping) etc., which fill the interstitial spaces above dropped ceilings and in vertical wall chases to eliminate certain hazard situations. All noted code violations should be immediately corrected. As such, these systems requiring further assessment are reported as Not Rated (NR).

The following recommended treatments contribute to the overall rehabilitation of the building and represent the type of repair that will slow or reverse the rate of deterioration for the assigned feature. Interior treatments are independent of exterior treatments.

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[6] *See Chapter 3 - Standards, Guidelines and Definitions for description of terminology based on the NPS Asset Management Process (AMP) Facility Management Program (FMP) protocol nomenclature.*

The outcome of these tasks is protection of the feature, repair of the feature, or replacement of the feature in an effort to return the feature, and the structure, to good condition.

Antram-Gray House

Rehabilitation – Recommended Treatments Summary Table					
UNIFORMAT II Outline Data				Condition Assessment	
Cate-gory	Topic	Code	Subtopic	Condition Rating	Deficiency Rating
POOR					
C10	Interior Construction	C1010-2	Shed Addition Walls and Ceiling (Not Fire Rated)	POOR	Critical

Interior wall and ceiling construction of the maintenance shed should be repaired to meet code requirements for a minimum of a 1 hour fire rated enclosure/ separation between the house and shed (a 2 hour fire rating should be considered). This would match the fire rating of the door between the house interior and the shed. Numerous penetrations (both horizontal and vertical) in the wall and ceiling surfaces void the fire resistant rated enclosure. An additional layer of gypsum board may be required at the ceiling to achieve this rating.

Reference local building codes, the International Existing Building Code, or the National Gypsum web site for information on repairing damaged gypsum wallboard to restore the fire rating qualities of the assembly: http://nationalgypsum.com/resources/tech-talk-firerated.htm

and the International Building Code, 20

D50	Services	D509004	Lightning Protection	POOR	Serious

Consult with a local electrical engineer or fire protection engineer (or NPS fire protection specialist) with specialty in lightning protection systems (certified by Underwriters Laboratory [UL]) to determine risk analysis and ROI of installation of independent lightning protection system.

The building currently does not have a lightning protection system. A permanent UL-rated lightning protection system should likely be installed on the extant roof system in a demountable manner to allow for eventual replacement of the roof surfaces, flashing and underlying components. Design features should include exposed downlead cables and the use of minimally-sized air terminals (government points). Penetrations through the roof covering should not be allowed. Submittals should be required from installers and include the proposed layout plan for installation for review by project architects.

Layout should be approved by a Registered Architect, a Professional Engineer, or a Fire Protection Engineer familiar with the installation of lightning protection systems on historic buildings.

The professional standard for lightning protection systems may be obtained from the National Fire Protection Association (NFPA) *Standard 780 – Standard for the Installation of Lightning Protection Systems*. (www.nfpa.org)

Additional commercial information re: lightning protection systems is available at http://www.ipclp.com/html/contact.html

D30 B20	Services Extr. Envelope	D30 B2020	HVAC Condensation	POOR	Critical

Re-evaluation of HVAC control system should be completed in conjunction with establishment of interior climate set points and determination of interior window treatment (replacement interior storm windows) or replacement of existing windows with sash that contain insulated glass lites (see also B20 Exterior Envelope, B2020 Windows). This decision needs to be made using base documentation including recordation of interior climate conditions over a year-long period; collection of exterior climate data is also required. An uncontrolled interior environment may eventually lead to dew point condensation issues within the wall cavities leading to accelerated

deterioration of the historic frame of the building.

Relocation of exterior cooling components to an area remote from the house should also be a consideration. The current positioning detracts from the overall appearance of the site and the ambience (visitor experience) of the immediate park grounds.

G20	Site Improvements	G2090-1	Pedestrian Paving (Accessibility)	POOR	Serious

Accessibility improvements are underway with *PMIS # 205465, Architectural Design for Accessibility Improvements*. These improvements are derived from the study by the National Accessibility Study conducted at ROWI in January 2013. Final design documents are expected in March 2015; reference drawing set # 435/ 127171-A, Accessibility Improvements, February 27, 2015.

B10	Superstructure	B102099	Chimney Stacks – Construction (Caps)	POOR	Serious

Unvented chimney caps: Provide passive ventilation at existing capped chimneys; may require in-situ manipulation of existing materials; or replace with custom designed screened and vented chimney cap (non-corrosive materials) in conjunction with chimney flashing and repointing repairs.

B30	Roof System	B3010-5c	Gutters & Downspouts Drainage	POOR	Serious

Determine status of underground drainage system. Scoping and mapping may be required. Size, condition and location to be recorded and assessed for capacity and free-flow; also discharge to daylight (outlet) is within NPS policy parameters. [See A103066, A2020-2, A2020-3].

A10	Foundation	A103006	Foundation Drainage	POOR	Minor

Determine status of underground foundation waterproofing system. Excavation, scoping and mapping may be required. Excavation should be coordinated with other architectural fabric investigation tasks re: moisture protection and exterior insulation.

A20	Basement Walls	A2020-2	Moisture Protection	POOR *Unknown*	Minor
Determine if basement walls have received exterior moisture protection (see also foundation drainage). Excavation should be coordinated with other architectural fabric investigation tasks re: foundation drainage and exterior insulation.					
A20	Basement Walls	A2020-3	Insulation	POOR *Unknown*	Minor
Determine if basement walls have been insulated (exterior or interior) [see A2020-2].					

FAIR					
Cate-gory	Topic	Code	Subtopic	Condition Rating	Deficiency Rating
B10	Superstructure	B1010-1-2	2nd Floor Frame	FAIR	Serious
Load limits need to be determined for 2nd floor rooms/ functions. A structural engineer/ historical architect is recommended to make this determination and evaluate usage and loading of space. Fabric removal may be required to determine condition of historic framing members and verification of existence of supplemental framing. Documentation of supplemental framing should be made at this time. Use of non-destructive evaluation is encouraged but results may be limited due to site conditions.					
B10	Superstructure	B1010-1-3	Attic Floor Frame	FAIR	Serious
See B1010-1-2.					
B10	Superstructure	B101001a	Structure Main Block – North Frame	FAIR	Serious
In conjunction with above structural investigation and evaluation a similar project should be undertaken to evaluate the vertical members of the building frame (the corner posts, intermediate posts and braces). Similarly to the horizontal members of the building frame, these vertical members will need to be exposed to determine their condition. Some are partially visible on the interior, but others (corner posts), are completely concealed and will likely require partial disassembly of the building exterior to gain access for inspection and evaluation. Use of non-destructive evaluation is encouraged but results may be limited due to site conditions.					
B10	Superstructure	B101001b	Structure Main Block – South Frame	FAIR	Serious
See B101001.					
B10	Superstructure	B1020-1	Roof Frame - Main Block Gable	FAIR	Serious
Additional supplemental bracing may be required at various rafter locations as there is a lack of proper bearing between rafters, supplemental rafters, and bearing plates at the top of the structural wall frame. A historical architect or structural engineer should be engaged to make this evaluation.					

C10	Interior Construction	C1010-1	Load-bearing historic timber frame	FAIR	Serious
Reference recommendations made re: B1010 Superstructure for question of possible overloading of building frame by interior use and function. Crack monitor located in northwest corner stair on historic plaster interior walls should be recorded regularly to determine if movement is cyclical or continuing.					
B30	Roof System	B3010-5a	Gutters & Downspouts Main Block	FAIR	Serious
Gutter liners were not accessible for review; they should be annually inspected from a ladder or lift and repairs made as necessary. Test gutters and downspouts to determine flow capacity and outlet. Perform rainfall intensity roof drainage system calculations to determine proper gutter sizing and location and number of downspouts. Gutters may need to be replaced and additional downspouts added based on these calculations.					
B30	Roof System	B3010-5b	Gutters & Downspouts Shed Addition	FAIR	Serious
Gutter liners were not accessible for review; they should be annually inspected from a ladder or lift and repairs made as necessary to the LCC sheet metal liner and the wood gutter members.					
G90	Site Improvements	G9087	Site Drainage & Vegetation	FAIR	Serious
Vegetation needs to be cut back at the north elevation so it does not encroach on the building exterior. Site drainage hardscape should be located, tested and assessed for functionality. Underground drain lines need to be scoped and mapped for future reference. Drain lines which back up in heavy rains may be undersized or have a blockage; this may be be determined by the above treatment.					
B30	Roof System	B3010-4b	Flashing & Trim - Shed Addition (Fascia)	FAIR	Minor
Fascia board at west elevation needs further investigation to determine if it needs to be repaired/ or replaced. Use of a synthetic wood material may be appropriate at this location.					

B20	Exterior Envelope	B2030	Exterior Doors	FAIR	Minor
An exterior door survey and schedule should be developed to document and monitor the condition of the exterior doors (as listed in original HSAR). Special attention should be given to accessibility (where required), weather-stripping, hardware condition and exterior condition. Long range planning should determine type of door used at north entrance and replace contemporary eight-panel door with more historically appropriate door.					
B30	Roof System	B3010-1	Roof Covering - Main Block	FAIR	Minor
Inspection should be made of the roof surface at the southeast and northeast cornice returns as it appears to be lifted in these areas. Drip edges and base flashing should also be inspected to determine it is in good working order. Access requires a lift or tall extension ladder; all four corners should be inspected as part of a general roof surface inspection.					

B20	Exterior Envelope	B2010-1	Exterior Walls - Main Block	GOOD	Minor
As a long range plan, replacement of sawn and sanded clapboards with more authentic hewn or roughly sawn materials (reference other similarly dated buildings in Providence for evidence of materials, sizes and manufacturing techniques used) may be considered as a means to return some “period” character to the exterior of the building. The south gable wall of the house is brick masonry with a lime wash finish (being reapplied summer of 2014). This wall should be annually inspected for loose and open mortar joints that would require repairs. New or reopened cracks should be monitored. Conduct preservation maintenance to recently repaired exterior components as per NPS Preservation Briefs (referenced). Deteriorated wooden members should be repaired/ replaced with high quality rot-resistant material (synthetic materials may be considered in locations not easily accessible, i.e.; rake boards, upper story trim, etc.). Each elevation of the building may require differing levels of repair due to their solar exposure and local climatic conditions. Cyclical maintenance should be determined using the solar factor as an indicator; i.e., west more frequently than east and north, etc.					

End of Part 5

End of Addendum HSAR.

Addendum Appendices G & H follow.