The Rock House

Historic Structure Report

Fall 2011

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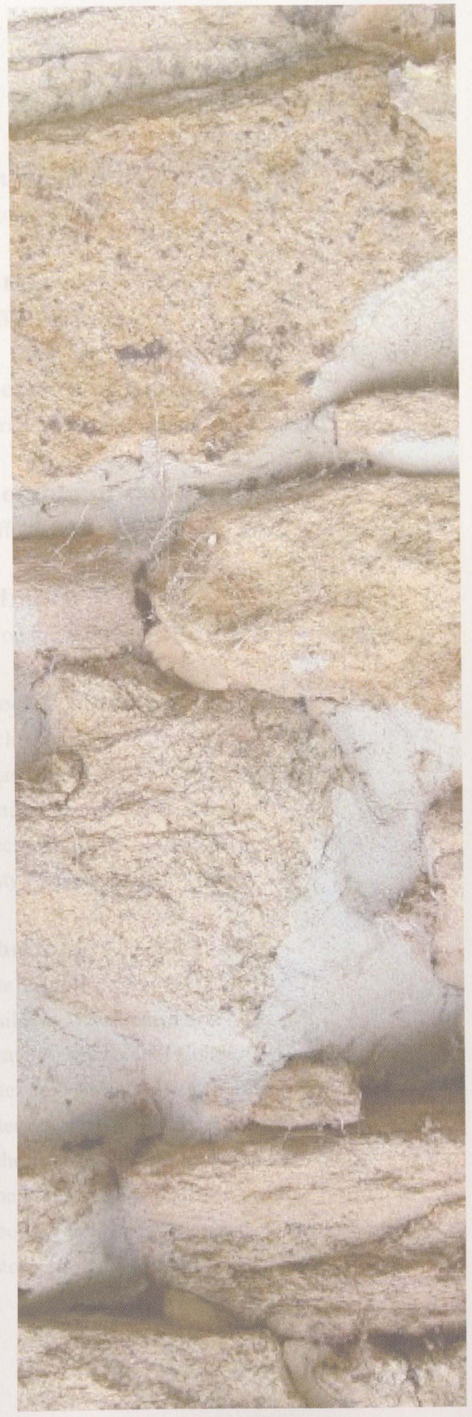
Forward

This study was conducted by students of the Masters of Historic Preservation program at the University of Georgia enrolled in the Building Materials Conservation course. This project spanned the course of one semester, between August and December of 2011, under the direction of Professor Scott Messer. We hope that the information provided proves beneficial to all persons and organizations involved in the preservation of the Rock House. The Rock House is a rare cultural resource in Georgia.Through proper materials conservation the Rock House will remain a tangible resource to those seeking a window into the past.

This study analyzed historic records, past and current physical conditions, and preservation approaches suitable for the Rock House. We have proposed a list of preservation objectives and work recommendations, which highlight the needs of the site. Currently, additional historical information is needed to develop an historically accurate interpretation plan for the site's public use.



Project Data

Resource Name
"The Rock House"

Location
McDuffie County, GA.

Ownership of Resource
The Wrightsboro Foundation of Thomson Georgia

Ownership of Land Parcel
McDuffie County, GA

Landmark Status
Listed on the National Register of Historic Places

Project Participants

- Kyle Campbell
- Sean Dunlap
- Emily Laborde
- Becky Powers
- Caty Rushing

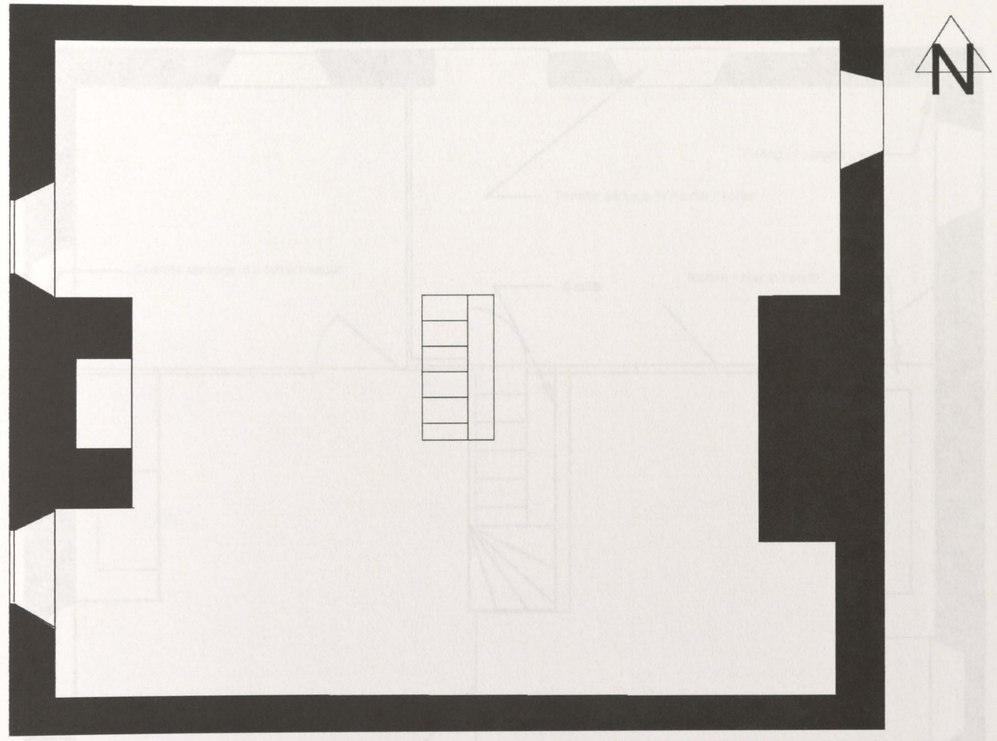
Methodology

- Site Visits
- Building Measurements
- Visual Assessment of Conditions
- Literature Review/ Historic Record Research
- Interviews
- Adherence to NPS Preservation Brief 43, "The Preparation and Use of Historic Structure Reports", and David Arbogast's "How to Write a Historic Structure Report"

Developmental History

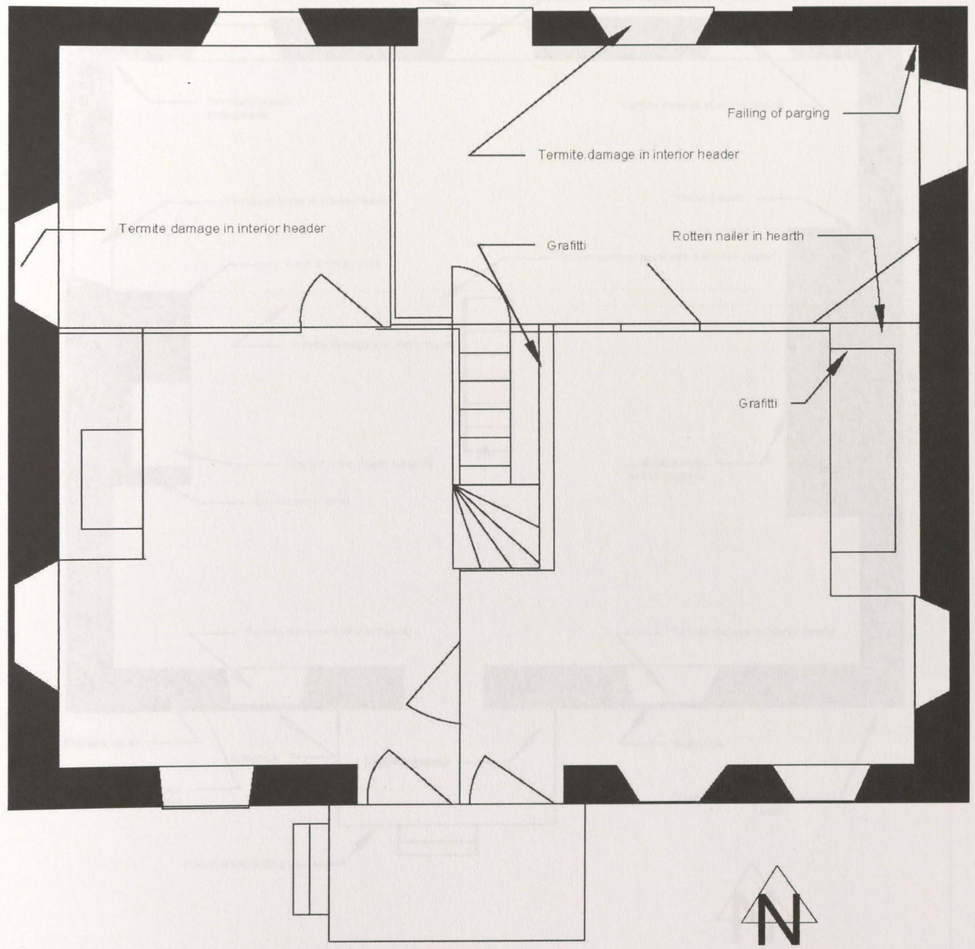
Developmental History
Floor Plans

Basement



Developmental History
Floor Plans

Main Floor



Developmental History
Floor Plans

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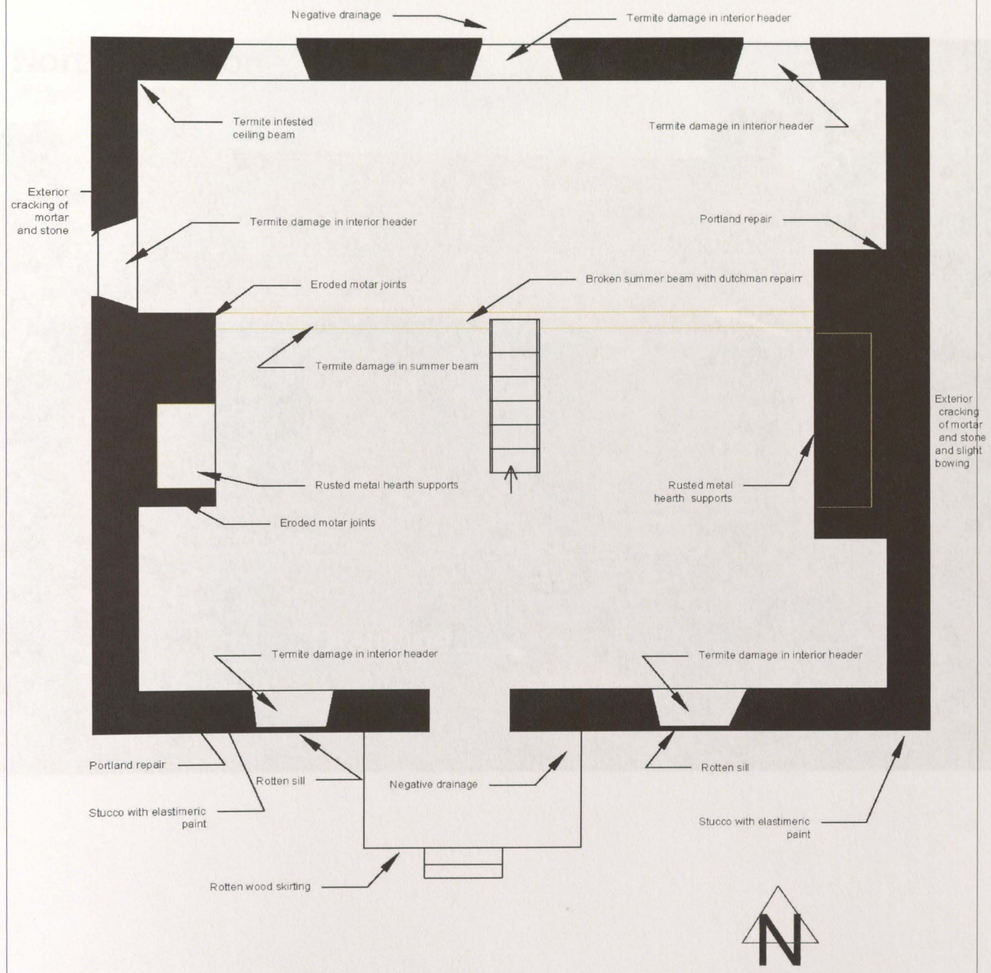
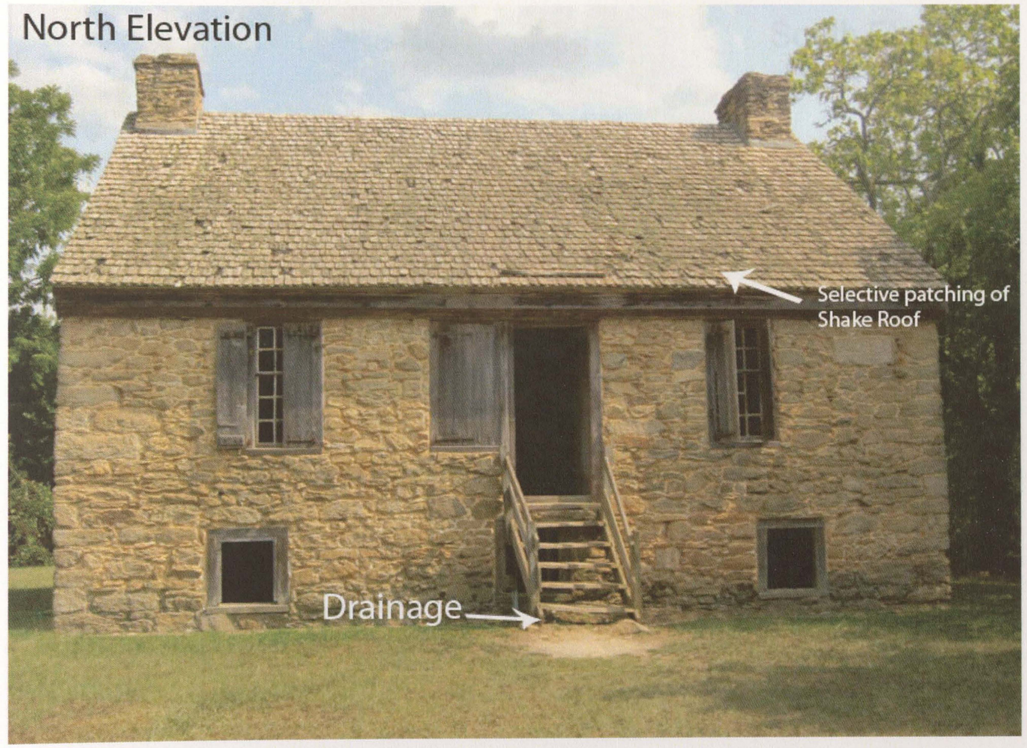


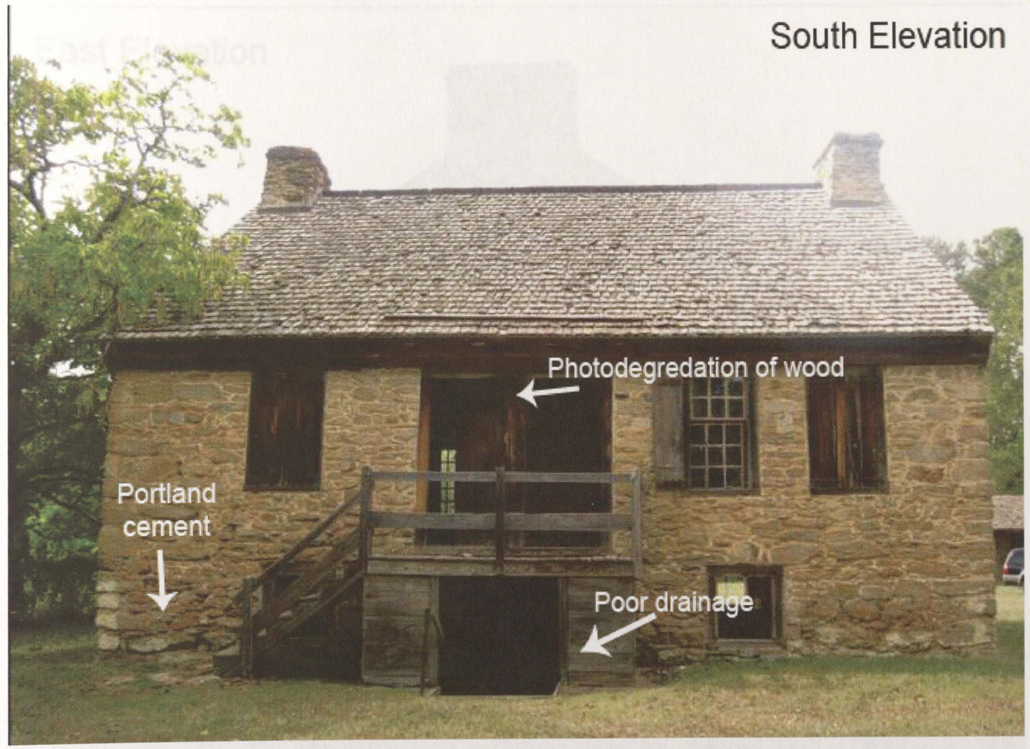
Developmental History
Elevations

North Elevation



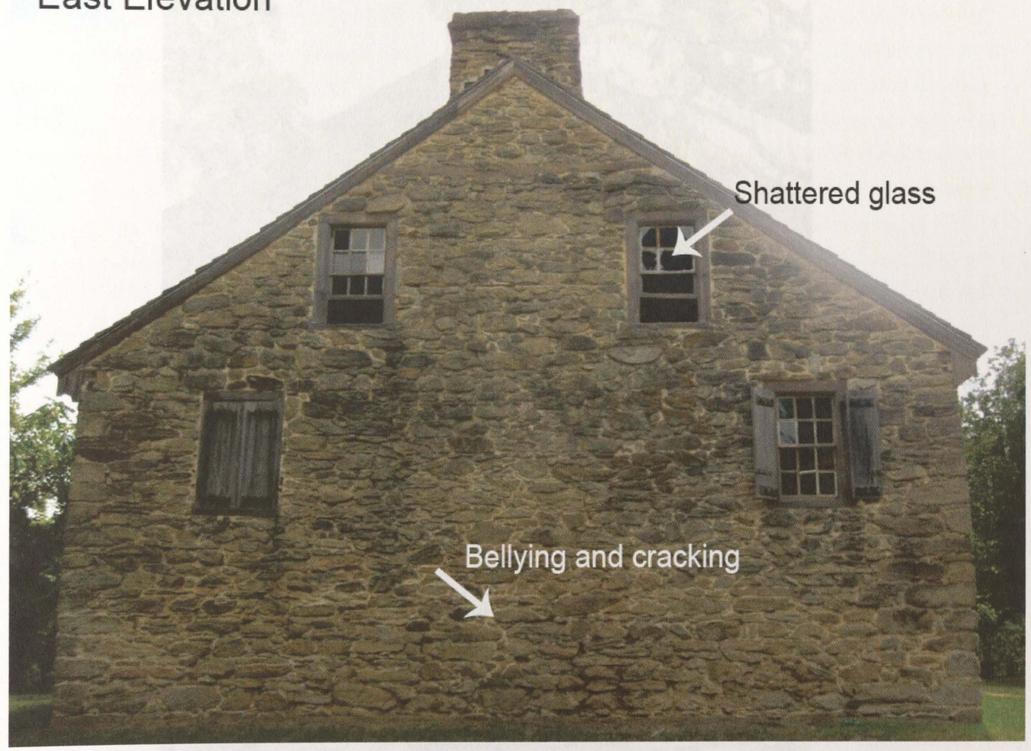
Developmental History
Elevations

South Elevation

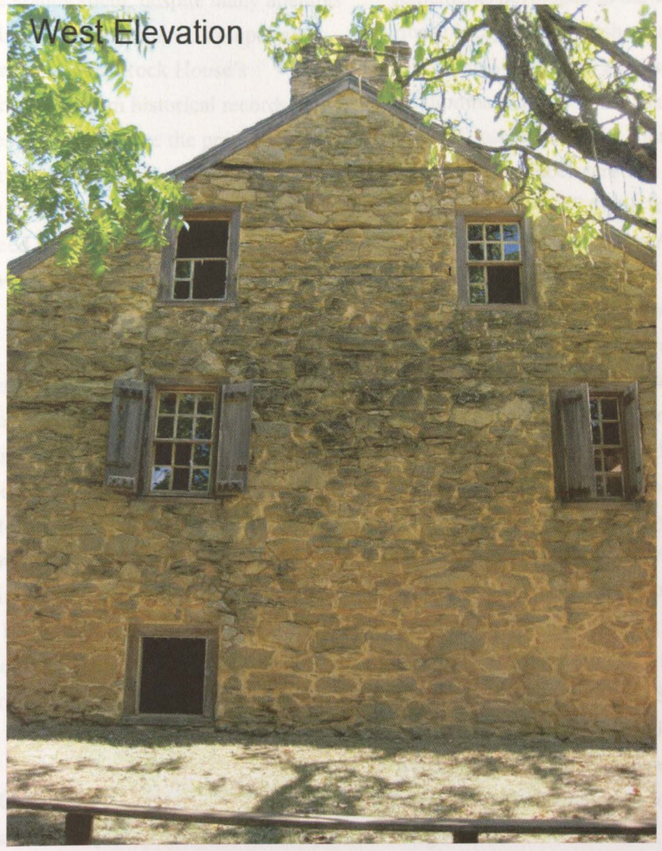


Developmental History
Elevations

East Elevation



Developmental History
Elevations


West Elevation

Developmental History
Historic Background

Introduction

The Rock House of McDuffie County, Georgia is an enigma of the past. With an origin largely unknown, the Rock House stands silent, despite many attempts to speak on its behalf. Yet, documents pinpointing the approximate date of the Rock House's construction are absent from historical records. All involved parties appear to agree the property, upon which the Rock House currently rests, belonged to Thomas Ansley by 1786, with documented proof coming from deed records. However, the question of by whom and when the Rock House was constructed remains widely unknown.

Several theories and speculations exist as to the origins of the Rock House.[1] Was it Thomas Ansley who built the Rock House? Or did Ansley commission Scottish indentured servants to build it under the watchful eye of expert stone mason, William Manson in the late 1700s? Or was it Thomas Galphin, the famous South Carolinian, who was known for his fortified trading posts on the Southern frontier? Or was it some mixture of these scenarios? Unfortunately, these questions remain unanswered.

Area and Context

The Rock House currently rests on a small, county owned parcel in rural McDuffie County, GA.

Driving through the area today, one can barely tell that the region was an established settlement from the late 1700s until the turn of the 20th century. Two settlements developed in the vicinity of the Rock House location: Wrightsboro and Friendsboro. The origins of Wrightsboro are also currently debated; the dominant theory states that a Quaker man by the name of Joseph Maddock founded the settlement. It is said that Maddock wrote to Governor Wright of Georgia around 1767 to ask for land that had been recently ceded by the Native Americans to start a Quaker Community. Maddock was trying to flee the North Carolinian Governor Tyrone's oppressive rule. Wright accepted, and granted Maddock and his Quakers 12,000 acres for settlement. Thus, the settlement was named, Wrightsboro, in honor of the gift. Although, referred to as a Quaker community, census records found only 1 in 5 settlers were Quakers. Thomas Ansley and his family were among the non-Quaker settlers who established Wrightsboro. Ansley was an opportunist and took the chance to move with a group that would establish a stable community and gain protection from the Native Americans. Sixty-two families total, including Ansley's, made the trek to establish Wrightsboro and each received a land grant of 200 acres, along with a one-acre lot within the town of Wrightsboro.

Friendsboro was another Quaker settlement founded shortly after Wrightsboro. Friendsboro was started

1 Wilson, Epp, "A New Look at an Old House."

Developmental History
Historic Background

by Orkney Island-native, stone mason, and sea captain William Manson. Manson also petitioned Governor Wright for land to settle with indentured servants from Scotland. Governor Wright again agreed. Friendsboro may have been a plantation rather than a proper town. However, attacks from Native Americans and other hardships proved too burdensome for the settlement to survive, past one year.[2]

Rock House Origin Theories

Numerous origin theories exist for the construction of the Rock House. Several of these theories are briefly mentioned in the sections to follow. Without documented proof of construction, the year the Rock House was built and the builder, are impossible to prove.

Thomas Ansley

Historians have generally assumed that Thomas Ansley built the Rock House after his arrival to the Wrightsboro settlement in 1768, and began construction between 1782 and 1785. Though, once again, no historical records to date have proven this to be the case. This assumption is based on Ansley's confirmed ownership of the property, upon which the Rock House is sited, in 1785, and his subsequent deeding of that property (with no mention of a structure) to his family members.

If Ansley did in fact build the Rock House, the structure is unusual in comparison to other structures of the time and place. Ansley, however, was a successful political leader and planter; therefore in comparison to other houses in the Quaker community, Ansley's house may have been more pretentious and more permanent. A study completed by architect Norman Askins in 1979, places the Rock House as having its "prototype in the British stone cabins found in the New Jersey/Pennsylvania region."[3] Although, Ansley's residence is more substantial in comparison to these stone cabin prototypes. An explanations may come from the structure's close proximity to the Savannah Road, a major trading route during the eighteenth century.

In keeping with the back country code of hospitality, Ansley may have extended lodging to travelers of the Savannah Road. At the time it was common for a house to become recognized as a landmark on a heavily traveled road and the Rock House house may have been recognized for its castle-like construction.[4]

Another house in McDuffie County similar in plan to the Rock House is the Bowdre-Rees House. The Bowdre-Rees house built in 1806, had a small, unheated guest room added to board road travelers. Although there is no evidence to support this idea,

2 Wilson.

3 Askins, 10.
4 Askins, 11.

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"it is very possible that Ansley operated an inn out of the house. He was well equipped with supplies and it seems hardly possible for him to have ignored this opportunity."[5] The two south facing rooms on the principal floor were the major living spaces in the house. Based on the size of the fireplace, one would presume that the southeast room was the sitting room or hall. The space to its left, the southwest room would have normally been the parlor. Both south rooms vie for importance since both are approximately the same size and both have a door facing the front of the house. "The original room, arrangement would have somewhat compartmentalized the family's quarters for maximum privacy, reserving the east side of the house's first floor for guests."[6]

George Galphin

New details have emerged suggesting how the South Carolinian George Galphin first acquired 40,000 acres, and then agreed to let 12,000 acres go towards the founding of Wrightsboro. This would substantiate why a man of questionable morals like Galphin (multiple wives, illegal trader) would have a square named after him by the Quakers in the Wrightsboro settlement.[7]

Additionally, this gives weight to the frontier trading post history, if Galphin owned the land before the settlement. The Rock House's placement along the Savannah Road, a known trading route for Native Americans and early settlers, and its double doors on the north façade enhance the validity of this theory.

William Manson

William Manson's potential role in the construction of the Rock House should not be discounted either. We learn from William Bartram's Travels accounts of Manson's skill as a stone mason.[8] The Friendsboro community, containing indentured servants from the same Orkney Islands as Manson, might have been as skilled in stone construction as Mason. Therefore, it is possible that the Rock House was built by servants of the community. The rationale for this theory stems from the architecture of the Orkney Islands, which still have buildings similar in construction and design to the Rock House. Combine this observation with the proximity, and skilled hands of Friendsboro, and we arrive at yet another plausible theory.

Construction History

There are no documents supporting the Rock House's date of construction. Additionally, property records between 1817 and 1844 do not exist for McDuffie County, thus making the date of construction more difficult to confirm. According to deed records, the property where the Rock House is

5 Norman Askins Study, 11.
6 Askins, 37.
7 Wilson, Epp, "A New Look at an Old House."
8 Wilson.

Developmental History
Historic Background

sited was owned by Thomas Ansley in 1785. However, the Rock House's existence does not definitively appear within historical record until 1875.

Deed Records and the Physical Site of the Rock House

In 1798, Ansley deeded 330 acres of land to his son Abel.[9] In the 1977 study done for the state of Georgia's Department of Natural Resources, the Rock House was determined to be within these 330 acres. Abel Ansley and his wife occupied the land prior to the deed transfer because they appear in the tax digests of Wilkes County in 1792 paying taxes on 328 acres. "It is thought that Ansley allowed each of his children to set up housekeeping after their marriages on sections of his property, deeding the land to them after a few years."[10]

Abel Ansley willed all of his land and specified that the plantation on which he lived could not be divided until after the death of his widow, Lydia Morris Ansley. She did not die until late 1838, and it is assumed she remained at the Rock House until then. Ansley's plantation was divided in 1839 into three sections, going to his two daughters and two sons. It is most likely that one of the daughters inherited the house because they could have immediately sold the house to another person, according to the deed records the land was ceded to Timothy Granade and subsequently to Nicholas Bacon. Bacon ran a farm while he owned the Rock House and the 622 acres surrounding it. The Bacon estate stayed intact after Bacon's death until the sale of his entire estate in 1887 to Mrs. Effie Johnson and her sons. The Johnson's land had neighbored the Bacon lands on the north, and upon purchase, merged the Bacon land with their land holdings.

Earliest Recorded Accounts of the Rock House

The earliest recorded account of the Rock House is 1875. Within the McDuffie County newspaper archives, there is an account of the "Great Cyclone" of 1875. The storm made its way through the county, after destroying two large properties; the tornado reached the third house it encountered, the Rock House. At this time, Mrs. N.C. Bacon who then living in the Rock House, was next in the path of the storm. The house withstood the winds and only lost its windows. However, the wooden cookhouse, corncrib, cotton gin, and a giant old oak in the nearby Ansley family cemetery were destroyed. The Rock house was one of only a few buildings to survive the storm, testament to the excellent craftsmanship of the structure.[11]

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9 Ken Thomas. The Rock House. State of Georgia DNR. Historic Preservation Section. Atlanta GA 1974. Pg 7.

10 Askins, 37.

11 http://files_usgwarchives.net/ga/McDuffie/history/tornado.txt

Developmental History
Historic Background

Recorded Ownership Post-Ansely Family

The Johnsons purchased the Rock House from the Bacons in 1887.[12] Despite his wife's protests, in 1921, B.F. Johnson decided to cover the house in cement to preserve the crumbling mortar and placed a tin roof over the remaining oak shingles.[13] The following description of the house written in 1933, after Mr. Johnson's death, describes the conditions during this time. "It has three stories and two very large chimneys. Part of the interior walls are sealed with wide plank and part are unsealed showing the rough rock wall. The sills of the house are mortised together with wooden pins and the few nails used are square cut and were forged by hand in a blacksmith shop. It was the home of Mr. Bacon's family for many years. It is now occupied by Negro tenants."[14]

After Mr. Johnsons' death, the Rock House was no longer used as a rental for tenant farmers. An Explorer Scout Troop then assumed the Rock House between 1938-1950. After 1950, the house was abandoned.[15] One may assume that during the abandonment period of 1950-1966 is when the majority of vandalism occurred.

Then in 1965, the Wrightsboro Quaker Community Foundation was created, and its mission included the objective to preserve the Rock House and the heritage of the Quaker colony in Georgia. In 1966, the heirs of Benjamin Johnson deeded the Rock House to the Foundation.

Unfortunately, accounts of vandalism continued for several years despite the Rock House's new ownership by the Wrightsboro Foundation. Between the years of 1966-1970, there were several records of vandalism: "All interior wood except for one piece of siding was stripped from the house; someone set a fire on the first floor; and deer hunters used the house as a hunting cabin. With shutters, doors, and steps gone, the porch sagged, weather penetrated to the interior and cows bedded on the ground floor."[16]

12 Thomas, 59.
13 Thomas, 60.
14 Thomas, 6.
15 Thomas, 6.

16 Askins, 15.

Developmental History
Historic Background

Time Line of Renovations through the 1970s

After several years of ownership the Wrightsboro foundation began repairing and restoring the Rock House in preparation for the Centennial of McDuffie County. "The foundation, with the help of the Thomson Jaycees, was able to erect a fence surrounding the property. They added a septic tank, an electric pump (which was later stolen), a new tin roof, and ran an electric line to the yard. The repairs were completed under the auspices of Mr. Hammond Reid of Dearing, Georgia, who replaced the stolen interior walls and stairway which vandals had heisted in the preceding years."[17] Mr. Reid used paneling from a Columbia County farmhouse, circa 1805, for the interior replacement. During this time, the outside walls of the house were re-stuccoed and "[t]he inside fireplaces were cemented as were the windowsills to prevent further decay."[18]

The restoration and repairs enabled the Rock House to be ready for public view in October of 1970 to celebrate the McDuffie County Centennial. "Shortly thereafter on December 29, 1970 it was entered on the National Register of Historic Places."[19] Securing a place on the National Register, the Rock House earned the attention of Jimmy Carter, then the governor of Georgia. Carter's ancestor, Wiley Carter, married Anna Ansley, daughter of Abel and Lydia Ansley in 1821. Jimmy Carter's support led to "early restoration efforts and extensive research done by Ken Thomas that was then published in 1977."[20] In 1974, the State of Georgia, under the Georgia Heritage Trust Program acquired the Rock House. Vandalism to the Rock House and its site continued even after Ken Thomas completed his extensive research study and Mr. Reid's renovation in 1970. In an effort to restore the deteriorating Rock House, the Historic Preservation Division of Georgia funded another in depth study of the Rock House to determine the best preservation treatment. At this time it was determined that the Rock House was one of the earliest stone construction houses remaining in Georgia and that it should be restored back to its eighteenth century appearance.[21]

Norman Askin's Renovations in the 1980s

Norman Askins, an architect from Atlanta, led the team in the renovation of the Rock House in 1979. The architectural section of Mr. Askins study goes through each section of the house, documenting "evidence" of what existed in the house upon examination and what changes they made to the structure.

17 Thomas, 7.
18 Thomas, 7.
19 Thomas, 7.
20 Askins, 15.
21 Askins, 39.

Developmental History
Historic Background

(For location references to the following section see Developmental History: Floor Plans 6-7)

Interior Staircase

The rebuilt interior staircase in the center of the main floor is the most obvious change in the interior of the structure. Formally a winding stair was situated to the right of the fireplace in the Southeast corner of the house. Mr. Askins determined that the original stair would have been a box stair located in the center of the main floor, ascending into the garret above. He cites that this type of stairway is seen almost universally in mid-eighteenth century houses of the Delaware Valley, and that they were popular in Georgia and other rural areas of the South.[22] According to Askins the staircase was "taken from a local structure, altered, and reinstalled in the Rock House in the recent past."[23]

Interior Hardware

All of the interior hardware was recreated during the Askins restoration as well. In his recommendation section he cites that,

> "only antique or custom made, hand-forged iron hardware should be used in the interior of the house. Since antique hardware is often comparably priced with fine reproductions, eighteenth century hardware should be used where possible. It is possible that hardware made in the Wrightsboro area had a Germanic flair as is common in contemporary hardware seen in the Delaware Valley and event the Shenandoah Valley of Virginia which was settled by the Scottish-Irish and Germans. A reputable source for antique and hand-made reproduction is: Monroe Coldren of West Chester, Pennsylvania."[24]

Electrical System

An electrical system was introduced into the interior of the Rock House in order to use the house as a house museum. Wiring was concealed whenever possible, and track lighting was installed on the ceiling of the main floor rooms.

Cellar

The Askins Team restored the cellar floor to its original level after the archeological study was completed and installed a new cellar stair based on the historical precedent. The Askins Team also removed the wooden posts supporting the main summer beam and installed a steel jack to add stabilization. The team removed a bowed joist adjacent to east chimney mass and installed a new joist to match the original. The renovation team also installed new ceiling joists in the southeast corner of the cellar to replace those which were cut during the insertion and removal of the winding corner staircase (for more information please see ***interior stair***).[25]

Main Floor Interior Walls

22 Askins, 45.
23 Askins, 42.
24 Askins, 53.
25 Askins, 55.

Developmental History
Historic Background

During the renovation, modern plaster was removed; walls were re-stuccoed as needed, and whitewashed. The interior windowsills were restored by removing the cement-wash and installing new single-board pine sills "based on the historical precedent."[26] Modern interior partition walls were removed and replaced with new partition walls. The interior doors were replaced with new board and batten doors. Non-original narrow board flooring was removed and antique pine flooring was discovered and repaired. The team also replaced missing portions of original molded baseboards to match the original.

Upper Half Story

The team removed non-original floorboards and replaced them with new, wide, heart pine boards (beaded on the reverse side) to match original flooring and secured the boards with reproduction flooring nails. A cross wall, and all the board sheathing from the walls and ceiling were removed.

Roof

The Rock House has a regular side gable roof. During the renovation, asphalt shingles were removed and all of the original round butt shingles and rose head nails were retained for display in the future. The deteriorated roof lath was replaced; new flashing was installed at the chimney and roof ridge; new 4"x 24" round butt cypress shingles were installed 8" from the weather to match the existing starter course of 4" x 18" square butt shingles, and the ridge was combed.[27]

Cornice

Askins' team reconstructed missing portions of bed molding on the South elevation and patched related mortise pockets with crown molding. They restored missing and or deteriorated portions of cornice on the north elevation.

Windows

Window frames were replaced with new frames based on documented evidence. The team fortunately discovered three original frames on the main floor of the south façade. The western most window frame had survived unaltered, confirming the exact size of the original sash. The Askins Team assumed that "8" x 10" glass was used in the sash, as is the case with an overwhelming majority of coeval buildings.[28] The north and south facades of the Rock House had 6/9 double-hung windows. While, the east and west façades were fitted with 6/6 double-hung. The cellar windows were replaced simultaneously, however since the Askins renovation, all of the cellar windows have been destroyed, inhibiting our ability to determine what type of replacement windows were used in the cellar.

26 Askins, 55.

27 Askins, 60.

28 Askins, 46.

Developmental History
Historic Background

Barge Boards

New barge boards (decorative wood panels placed within a structure's projecting gable ends) were installed based on surviving evidence and were constructed of antique heart pine.

Doors

Cellar and north door frames were removed. The original south door frame was restored. New wood sills were installed to replace deteriorated sills. New board and batten doors with wrought iron strap hinges were installed.

Stonework

The parging was removed from the original fieldstone exterior walls, returning the exterior to its original appearance.

Rock House Status in 2012

Since the 1979-1981 renovation completed by Norman Askins, the Rock House was returned back to the Wrightsboro Foundation due to budget cuts within the State of Georgia. In present day, the Rock House is used for special events and can be rented from the Wrightsboro Foundation by anyone. There have also been a number of non-sponsored events at the Rock House in recent years. The evidence of these parties is left behind along with more damage done to the house.[29] The strurture is rapidly deteriorating.

29 Conversation with Elizabeth Vance Sept. 2012.

Developmental History
Building Description

(For location references to the following section see Developmental History: Floor Plans 6-7)

Overview

This assessment of the Rock House examines the existing conditions of the building and its components. This includes both the original stonewalls, and the interior partitions and finishes introduced in the 1979-1981 "restoration" and alterations made in between. The building has undergone generations of rehabilitations and is layered with multiple histories of materials. The only remaining original components of the building are the exterior stonewalls and the summer beam supporting the first floor.

Please refer to the Developmental History: Historic Background section for a more in depth chronology of the Rock House's evolution.

Scope of Assessment

The assessment was completed using visual inspections of the building and its components and through minimally invasive testing of surfaces and materials. No significantly evasive tests were completed.

Foundation

The load bearing masonry foundation ranges from 10-14" thick walls made of varying sizes of rough-faced fieldstone of gneiss and granite with a high lime mortar mix on top of original red clay mortar.

There are slightly darker colored ashlar stone quoins on each corner. The footing system is simply placed on the ground 24 inches under ground level. The original stones are structurally sound with minor cracks and mold issues.

Exterior Siding

The stone masonry structure appears to have been sand blasted to remove a preexisting Portland cement covering, which has left some areas of damage to the original stone. It is unclear of the date of such sandblasting.

Roof

The moderately pitched side gabled roof has wood shingles over modern sheathing. It displays post and beam braced frame construction with queen posts. There is evidence of a second queen post that has been removed. There is plywood attached to the rafters beneath the shingles that were added in 1981.

Developmental History
Building Description

The exterior roof has a vent ridge, what seems to be flashing around the chimney bases and a drip edge over the South porch. There are closed eaves with a 1" overhang.

Windows

The original windows were 9/6 double-hung on the north and south elevations and 6/6 on the east and west elevations. Wooden jack arches, that appear original, support the rough openings on the main floor and lower level. All of the glass is new in the structure and is either greatly damaged or missing. Each window has a wood window shelf and lintel extending out 8-10".

The lower floor has nine windows total and all have a 8" deep stool created by the wall thickness. The north elevation has three windows in total but only one has glass. The east and west facades of the lower level have two square windows, also with glass missing and the south façade has two windows.

Doors

The central entrance on the north elevation is 36" wide and shares a window on the left with a stool. Original window sills have been replaced with new wood and wrought iron hardware. The double doors on the south entrance lead to rooms 3 and 4. The door swings mirror each other and are constructed with modern wood. All doors are false replicas of the originals with replicas of period hardware.

Floors

The floor systems still contain some original tongue and groove pine floorboards in the main floor in the northern rooms from the wall out to eight boards. Modern boards are used throughout the rest of the house on both floors. The subterranean cellar floor is pounded dirt.

The floor system supporting the main floor consists of modern 8" floor joists supported by timber beams spaced every 5'. The floor joists from the interior north facade extending out to the 8th board appear to be original. A modern floor system has been placed in at 8" boards. The upper floors are modern tongue and groove wood. The east-west summer beam is considered original and is moderately sagging. A jack located in the center of the room supports the sagging summer beam. This sag creates a noticeable deflection in the first floor slanting toward the center of the house. The floor joists in the upper half story are straight sawn.

Wall Systems and Coverings

The main floor is partitioned into four rooms, with a single width of vertical boards dividing the north and south. The east and west rooms are partitioned with a stud wall with horizontal boards. The interior walls on the main level are covered with thick plaster and white lime wash. Graffiti and defects of the wall cladding are abundant.

Developmental History
Building Description

Walls in the lower level are exposed rough granite without any evidence of being plastered over. Nailer blocks of timber have been set into the wall at roughly 48" above the floor potentially for the purpose of hanging utensils, but appear to have little evidence of having ever been used.

The upper half story flooring system has modern sawed timber and has been partially partitioned with vertical wood boards.

Framing

The framing in the attic and roof is a braced frame system with queen posts.

Fireplaces and Chimneys

There are two interior end chimneys flush with the east and west elevations. There is a stone hearth, previous to the 1979-1981 reconstruction under modern poured concrete. The east chimney shares three fireboxes, one in the cellar, and two on the main floor in Room 1 and 2 (see floor plan on page 40). The corner fireplace is located in the southeast corner of Room 1 and finished with plaster. The chimney in Room 2, is 8' wide and 2' deep and is constructed with two, possibly original, horizontal timber lintels spanning the full breadth of the chimney mass which resemble the nailer blocks in the basement in size. The chimney on the west elevation has a firebox on the lower lever and in Room 3 of the main floor. Both chimneys have been partially rebuilt, which is indicated by the minimal

evidence of use in the firebox. The exterior of the chimneys is granite ashlar, both lacking a cap with an open flue.

Shutters

There are shutters on all windows on the main floor with recreated wrought iron hardware. None of the shutters are original. Shutter are missing on both north and south façade windows.

Porch

There is a porch leading into the main floor on the South façade that has six steps leading up on the west side with a 36" high rail. The porch was re-built and placed according to archaeological evidence.

Stairs

There are stairs in the basement leading up towards the north elevation of Room 1 ostensibly placed where the original stairs were located. The cutout stringers are 7" rise and 8" tread with 22" in width and begin 42" from the south entrance.

The stairs leading to the upper-half-story are partitioned on three sides and open up into Room 3. The upper staircase is placed directly above the lower staircase. The stairs are 36" wide and radiate with 5 winders in a 3' squared area. The stairs are compsoed of solid boards with closed risers.

Hardware and Nails

A few original hand wrought iron nails are still remaining in the house in various places. The majority of the nails used for construction are modern machine cut nails. A few hand wrought nails have been made to replicate the originals. Hardware such as iron shutter dogs and iron drive pintels on recreated doors are also replications.

Developmental History
Building Description

Furnishings
The house does not have any type of furnishings other than a commercial floor mat on the interior floor of the north entrance.

Utilities
An electrical system was installed in 1981. The system is currently in an inoperable state. Integral copper portions have been harvested by vandals along with all bulbs and other significant parts of a functioing electrical system.

Security System
There is no current security system in place but there is a strong need for one. There is a wooden latch on the inside of the south entrance, which is not currently used.

Developmental History
Conditions Assessment

(For location references to the following section see Developmental History: Floor Plans 6-7)

Overview

The conditions assessment of the Rock House examines the existing conditions of the stucture and its components. This includes the original stone walls and the interior partitions and finishes introduced in the 1979-1981 restoration project.

(Please refer to the Developmental History: Historic Background section, for an in depth chronology of the Rock House's evolution.)

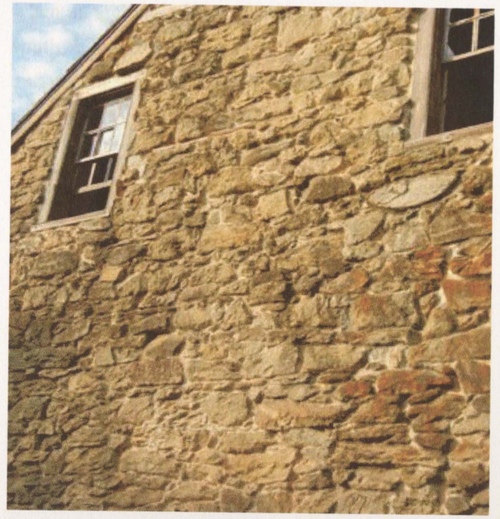
Scope of Assessment

The assessment was completed through a visual inspection of the building and its components. Minor invasive testing of surfaces and materials were completed.

Site

The roof of the Rock House does not have gutters, causing rainfall to drain towards the foundation of the building. The site's surrounding grade pitches toward the building causing the cellar to show signs of water infiltration and ponding.

The water drainage on the south facade has impared the cellar entrance retaining walls,



and caused the south cellar windows to rot. Previous attempts to drain excess water from the cellar are evident, with the placement of drain pipes in the corners of the basement. However, the system is not successful since the floor is not graded to move water towards the drains.

Exterior Masonry

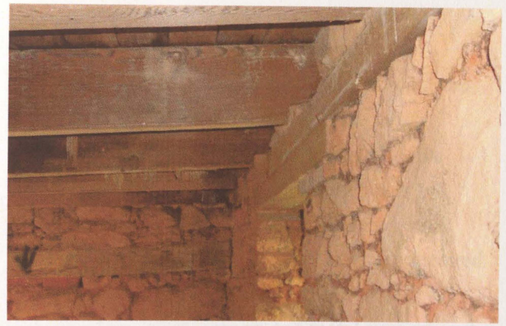
The 10-14" thick walls are constructed of rubble stone with quoins on the corners. The majority of the walls are straight, with the exception of a significant bow in the middle of the east wall with noticeable cracks in the mortar and through some stones. The bowed area is indicated by a noticable amount of biotic growth on the upper surface of the bulge. The exposed masonry was covered in stucco

in the 1920s. The stucco was later removed in the 1978-1981 Askins restoration. At this time, the exterior masonry was then repointed using a lime based mortar. The repointing is in good shape and shows only a few signs of repair on the southwest corner of the building that were completed with Portland cement.

Interior Masonry

Basement

The rubble stone basement walls have been repointed only on the chimney support walls. The east chimney's left corner shows a definite slant to the left and has cement repointing placed over the original



clay mortar. It is unclear at this point, whether this slant was an original feature of the wall or if it has shifted over time.

Fireplaces

The fireplace on the west wall is missing its key stone, but it has been missing since at least the 1960s when an archival photo was taken. The mortar on the southwest corner of the fire place has been eroded and will need repointing. The stone work above the west wall window is showing signs of settling and cracking due to termite damage in the window header (discussed in ***Framing***), and the cracks are expressed through to the exterior as well.

The large fireplace hearths were replaced during the Askins renovation and show signs of cracking due to rusting of the metal plates installed behind. The fireplace boxes themselves (especially the east chimney) show signs of settling and repairs made to the inside of the flu. The chimneys do not have caps on them which allows water to run down the inside of the structure.

First Floor

The first floor interior walls were re-stuccoed during the Askins renovation with Portland cement. In room 1, the east wall stucco has begun to deteriorate and expose a thick layer of lime putty. A chemical reaction, caused by the application of the portland cement, has been pulling lime out of the original stone wall mortar mix.

Attic

The attic walls are roughly finished, with what appears to be a more recent and thicker repointing completed with modern cement.

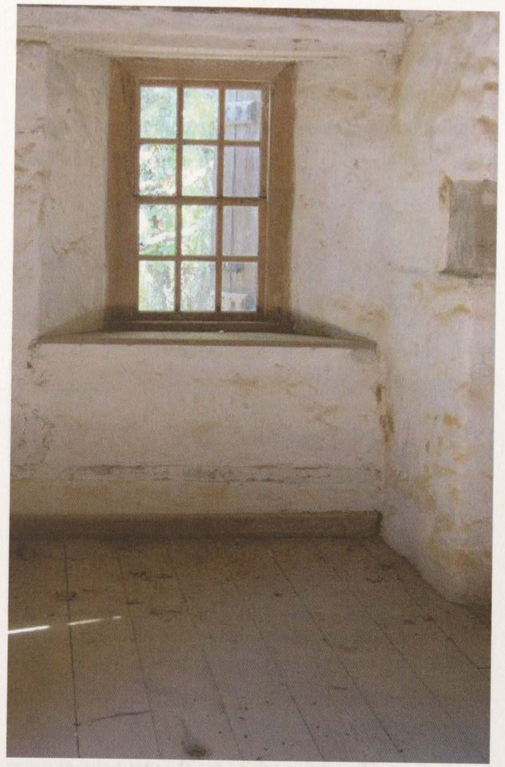
Framing

Basement

The wooden headers of all the basement windows show signs of termite damage with the most significant damage being in the west wall. This damage is also evident in some of the joists supporting the first floor in the northwest corner. The first floor main support beam has been repaired with a large splice and metal bracket but still sags significantly. It now sits on one metal support post and the screw jack has not been used in many years.

First Floor

The first floor sags toward the main support beam running parallel to the north wall of the building. However, the floors appear to be in generally good condition. The flooring appears to be relatively new



except for a small section in the northwest corner which appears to be older, more narrow wood. The interior partitions from the Askins restoration, and are in good shape. There seems to be no major structural issues with any of them.

The large, wooden fireplace lintels are scorched and a large amount of wood is missing on the back side of each one. With no caps on the chimneys to keep the moisture out, or fires to dry them they are

susceptible to rot.

The ceiling in room 1 shows signs of paint between the joists that suggests it is older than the Askins restoration.

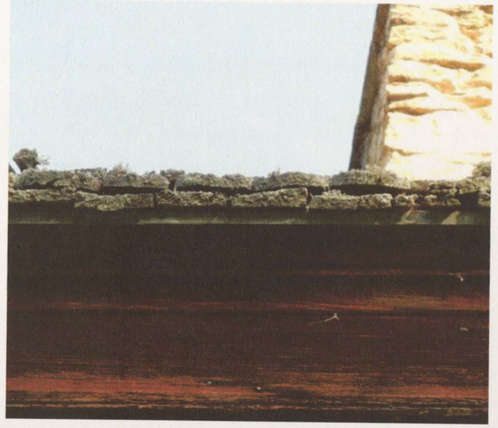
The window sill next to the north door in room 1 is loose and has termite damage. The north right window header and the west right window header also have termite damage.

Attic

The attic floor is wide tongue and groove boards that appear to be similar except for three in the southeast quadrant of the attic that display circular saw marks. The brace roof structure is in good shape with older wood shingle nailer boards still in place. These are covered with plywood for the current roof and show signs of moisture leakage. The roof structure shows signs of both straight and circular cut marks, suggesting the roof structure is a replacement.

Roof

The roof is sheathed in wood shingles that show signs of failure. Missing, cupped, and broken shingles appear across the roof surface on both the front and the rear of the building.



At this time we are unable to tell if there are fur strips under the shingles or tar paper on the plywood. The current shingles also appear to be too narrow to provide adequate off set of the joints. There is also a low overhanging tree rubbing against the roof on the southwest corner of the building.

Utilities

Currently the building's electrical system is inoperable. The track lighting is broken and missing pieces.

Recommendations

Recommendations

Goal

Our goal is to take proactive steps to secure and preserve the Rock House, as it stands now, so that future interpretation and restoration work can be addressed when funding is available. The most effective course of action is to "mothball" the building where by it will be secured from further damage and vandalism, ventilated to prevent material degradation, and consistently monitored.

Overview

Each system within the rock house has been assessed and the steps for preservation and repair have been identified within this report.

The items listed as Priority 1 in each system's section should be addressed before the building is mothballed.

These steps have been ranked into the following categories:

- *Priority 1: Immediate action should be taken.*
- *Priority 2: Should be addressed in the near future, start planning now.*
- *Priority 3: Issues that should be addressed in the future but are not critical.*

Recommendations

Mothballing

Until consensus can be reached on an action plan for the site, the building should stabilized and mothballed. Mothballing allows the building to be secured so that no further damage occurs from vandalism and halts any further deterioration. This is an accepted and appropriate treatment for an historic resource and grant funding for stabilization and mothballing should be pursued.

Key Actions Needed to Mothball a Building

1. Secure the building and its component features to reduce vandalism or break-ins.
2. Provide adequate ventilation to the interior.
3. Develop and implement a maintenance and monitoring plan for protection.

Mothballing will negate the need for a costly caretaker's residence and allow fundraising for the preservation of the structure to remain the focus. Once the building has been properly secured, a daily rotation of monitoring and inspection should be set up utilizing appropriate, interested parties and law enforcement. For more information please see Appendix C (National Park Preservation Brief 31 Service http://www.nps.gov/hps/tps/briefs/brief31.htm.)

Site

Priority 1

- Cut back tree limbs coming in contact with the roof.

Priority 2

- Regrade around the foundation to establish positive drainage so that water flows away from the structure.
- Install french drain around the base of the building to remove water trying to work its way under the foundation wall.

Priority 3

- Conduct a comprehensive archeological survey of the site using a trained archeologist.

Recommendations

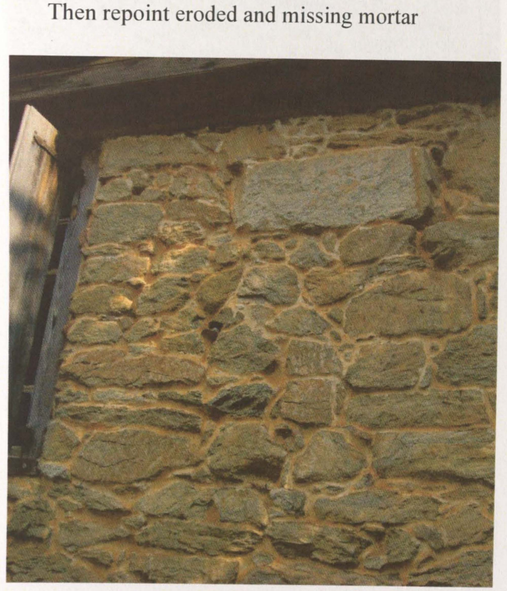
Masonry

Priority 1

- Install crack monitors on the east and west exterior cracks to check and monitor for movement.
- Install bracing and replace the lintel in the west basement window to support sagging masonry.
- Install chimney caps to keep rain out of the chimneys and eliminate source of moisture.

Priority 2

- Remove loose interior stucco.
- Appropriately asses the historic mortar mixture. Then repoint eroded and missing mortar



segments around the basement fireplaces with the appropriate motar mixture.

Priority 3

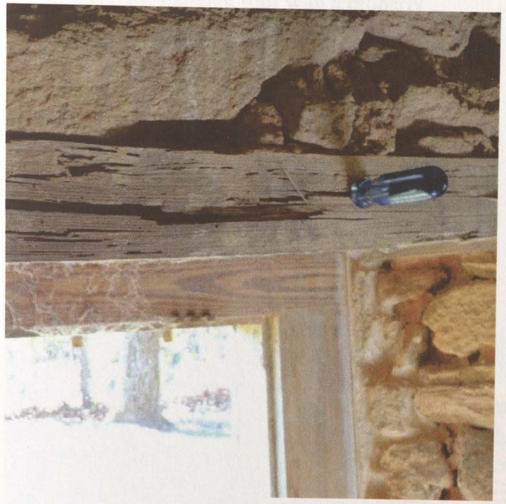
- Check interior basement floor drains for proper function and repair as needed.
- Grade basement floor to divert any water that seeps into the basement, into drains and away from the foundation walls.
- Assess metal hearth supports for corrosion (expansion due to rust) and replace as needed.

Recommendations

Framing

Priority 1

- Inspect for active termite and powder post beetle activity.
- Replace structurally compromised rotten window sills and termite/ beetle damaged headers and beams.



Priority 2

- Assess the main beam and screw jack support to see if it is structurally sound for the weight of future visitors and can be used to level out the first floor.

Priority 3

- Work to level the floor using the existing jack if possible. If this is not possible, brace and support the main beam to level out the floor.
- Remove graffiti and repair vandalism.

Recommendations

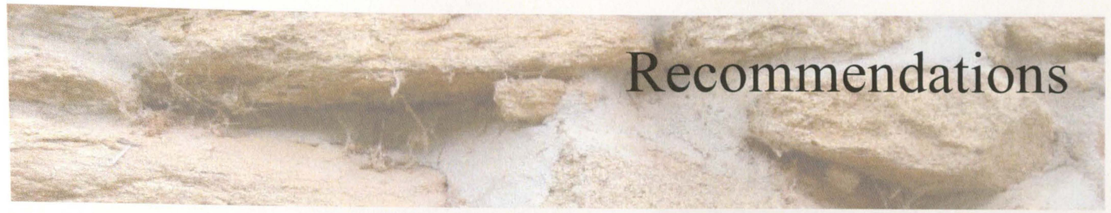
Roof

Priority 1

- Assess the roof and identify necessary repairs.
- Repair the roof before significant leaks occur that may damage other parts of the structure.

Priority 2

- Replace the existing roof with a properly ventilated wooden shingle roof.



Recommendations

Windows and Doors

Priority 1

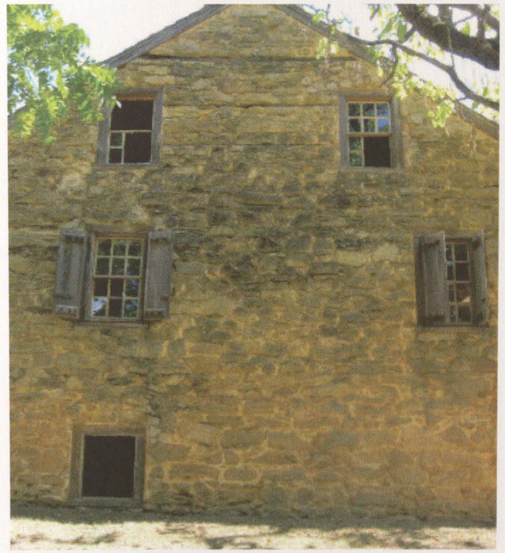
- Lock and secure all doors and windows with stable locking mechanisms. Close and lock all window shutters already in place.

Priority 2

- Repair/ replace missing and or broken doors with historically accurate materials.
- Remove and replace all broken window glass

Priority 3

- Continuously secure all windows and doors when the house is not in use.



Electrical System

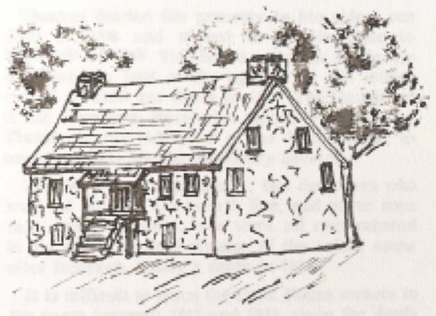
Priority 1:

- Remove the existing wiring/ fixtures/ conduit, while retaining the primary feed and panel.

Appendix

Appendix A
Rock House Brochure

Tourism brochure circa 1976



THE
ROCK HOUSE
c.1785

Here's Hist

By Pearl Baker

The oldest house in McDuffie County, the Old Rock House, was built by Thomas Ansley between 1782 and 1785.

Thomas Ansley was born in New Jersey, the son of William, an English weaver by trade. He was baptized in the Old Tennant Presbyterian church in 1737, and married Rebecca Cocke in 1760, in Monmouth, N.J.

He, his brothers Benjamin and William and their families, traveled south around 1765, and lived for a short time in Hillsboro, N.C. It was here that he met Joseph Maddock, the Quaker leader, and came to Georgia with the Quakers in 1768. William Ansley moved to South Carolina, and later to Lincoln County.

It has never been proved that the Ansleys were Quakers, but they were closely associated with them, and both Thomas and Benjamin received town lots in Wrightsboro, when the town was founded.

During the Revolution, Thomas served as a forager and drover for the Army and was given bounty grants for his services, by the State. He applied for other tracts, and eventually owned around 4500 acres in Wilkes and Richmond counties. The part of Wilkes in which he lived became Warren County in 1793, and McDuffie in 1870.

He built his house after the fashion of the ones he had known in New Jersey, with inside chimneys and other details common to these houses. This has been verified by an historical architect. It had a basement room, with a large fireplace, where it is believed the family cooked its meals. On the next floor are two large rooms, two a little smaller, and a "birthing" or sick-room, where ailing members of the group could be cared for, but still be out of the way. This room has a most unusual corner fireplace. The two larger rooms have fireplaces capable of burning six foot logs.

The top floor, reached by a narrow, winding staircase, contains two loft rooms, and were apparently finished much later than the rest of the house.

Family tradition states that when the house

Appendix A
Rock House Brochure

tory of Old Rock House

was built, entry was achieved by a ladder, which could be drawn up into the house, in times of trouble such as Indian attacks; the present porches are a later addition. The Rock walls of the house are twenty-four inches thick of fieldstone, and give a truly fortress-like appearance.

Thomas deeded the property to his eldest son Abel in 1798 and moved to a site close to Maddock's Creek. This house no longer exists. He died here in 1809 at the age of 72. His widow stayed on until her death in 1814. The Daughters of the American Revolution placed a marker for Thomas in the side yard of the Rock House, to commemorate his Revolutionary Service.

Thomas left a large family; two daughters who married into the Duckworth line, and seven sons (one was a stepson), who were all remembered in his will. The final division of the estate came after Rebekah Ansley's death in 1814.

It is difficult to trace the Rock House owners in the years between 1817 and 1844, since the deeds for this period have been lost. However, due to the efforts of Ken Thomas of the Department of Natural Resources, in Atlanta, we find that Abel Ansley's legatees sold the Rock House tract to Nicholas C. Bacon in 1845. He lived here until his death in 1873, and his widow subsequently sold the property to Mrs. Effie Rees Johnson and her two sons, Benjamin and Joel. Benjamin bought out their shares in 1892, and retained ownership until his death in 1938, although he never lived here, but rented it out to tenants. It was he who had the outside of the house cemented over, to prevent the more-than-century old mortar from crumbling away.

In 1965, the two daughters of Mr. Johnson deeded the house and one acre of land over to the Wrightsboro Foundation, for restoration and preservation. It was in very poor shape due to neglect and vandalism; all the interior wooden partitions had been ripped out, the windows broken and great holes punched in the chimneys and rock walls. The porch roof was hanging down over the doors like a drooping eyelid.

The first thing the Foundation did, was to put up a fence, with the labor being donated by the Thomson Jaycees. A well and pump (which were promptly stolen) were installed, and a septic tank put in place. Electricity was run to the house. Extensive work was done on the interior by Mr. Hammond Reid, who mended the walls, and replaced the missing partitions with material from an 1805 farm house in Columbia County, which was being torn down.

In 1970, in preparation for the McDuffie Centennial, a new shingle roof was put on the house and it was painted on the outside. On Dec. 29, 1970, the structure was placed on the National Register of Historic Sites.

Since the Architecture and construction of the house were so unique, the Georgia Heritage Trust was contacted by the Foundation, and they took possession of the place in December, 1974. It was believed that they could restore the house more accurately, and protect it from vandalism, which has plagued the Foundation since acquiring the property.

These plans were helped greatly by Govenor Jimmy Carter, whose ancestors have ties with the old house. His ancestor Wiley Carter married Anna Ansley, daughter of Abel and Lydia, in 1821, and it is due to his interest that the Georgia Heritage Trust became involved.

Unfortunately, the Foundation's plans were not to develop. Due to a recession, and shortage of money, Gov. Carter's successor, Gov. Busbee, cancelled this, and some 50 other historic sites. Late in 1975, the Foundation was given back the house, on a yearly lease, and with the aid of a small grant from the state in early 1975 has painted the house inside and out, and replaced the gate, which had been torn down by vandals. The Old Rock House was placed on the Tour of Homes, part of the Bicentennial Celebration in April 1976.

The legislature has voted to deed back the house to the Foundation. It has been painted inside and out by Wrightsboro Foundation.

The home of President Jimmy Carter's ancestors, the structure gains additional recognition.

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31
Mothballing Historic Buildings

Sharon C. Park, AIA

A NOTE TO OUR USERS: The web versions of the Preservation Briefs differ somewhat from the printed versions. Many illustrations are new, captions are simplified, illustrations are typically in color rather than black and white, and some complex charts have been omitted.

When all means of finding a productive use for a historic building have been exhausted or when funds are not currently available to put a deteriorating structure into a useable condition, it may be necessary to close up the building temporarily to protect it from the weather as well as to secure it from vandalism. This process, known as mothballing, can be a necessary and effective means of protecting the building while planning the property's future, or raising money for a preservation, rehabilitation or restoration project. If a vacant property has been declared unsafe by building officials, stabilization and mothballing may be the only way to protect it from demolition.

This building has been successfully mothballed for 10 years because the roof and walls were repaired and structurally stabilized, ventilation louvers added, and the property maintained. Photo: NPS files.

This Preservation Brief focuses on the steps needed to "de-activate" a property for an extended period of time. The project team will usually consist of an architect, historian, preservation specialist, sometimes a structural engineer, and a contractor. Mothballing should not be done without careful planning to ensure that needed physical repairs are made prior to securing the building. The steps discussed in this Brief can protect buildings for periods of up to ten years; long-term success will also depend on continued, although somewhat limited, monitoring and maintenance. For all but the simplest projects, hiring a team of preservation specialists is recommended to assess the specific needs of the structure and to develop an effective mothballing program.

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A vacant historic building cannot survive indefinitely in a boarded-up condition, and so even marginal interim uses where there is regular activity and monitoring, such as a caretaker residence or non-flammable storage, are generally preferable to mothballing. In a few limited cases when the vacant building is in good condition and in a location where it can be watched and checked regularly, closing and locking the door, setting heat levels at just above freezing, and securing the windows may provide sufficient protection for a period of a few years.
Boarding up without adequate ventilation and maintenance has accelerated deterioration of this property.

But if long-term mothballing is the only remaining option, it must be done properly. This will require stabilization of the exterior, properly designed security protection, generally some form of interior ventilation--either through mechanical or natural air exchange systems--and continued maintenance and surveillance monitoring.

Comprehensive mothballing programs are generally expensive and may cost 10% or more of a modest rehabilitation budget. However, the money spent on well-planned protective measures will seem small when amortized over the life of the resource. Regardless of the location and condition of the property or the funding available, the following 9 steps are involved in properly mothballing a building:

Documentation
1. Document the architectural and historical significance of the building.
2. Prepare a condition assessment of the building.
Stabilization
3. Structurally stabilize the building, based on a professional condition assessment.
4. Exterminate or control pests, including termites and rodents.
5. Protect the exterior from moisture penetration.
Mothballing
6. Secure the building and its component features to reduce vandalism or break-ins. 7. Provide adequate ventilation to the interior.
8. Secure or modify utilities and mechanical systems.
9. Develop and implement a maintenance and monitoring plan for protection.
These steps will be discussed in sequence below. Documentation and stabilization are critical components of the process and should not be skipped over. Mothballing measures should not result in permanent damage, and

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so each treatment should be weighed in terms of its reversibility and its overall benefit.

Documentation

Documenting the historical significance and physical condition of the property will provide information necessary for setting priorities and allocating funds. The project team should be cautious when first entering the structure if it has been vacant or is deteriorated. It may be advisable to shore temporarily areas appearing to be structurally unsound until the condition of the structure can be fully assessed. If pigeon or bat droppings, friable asbestos or other health hazards are present, precautions must be taken to wear the appropriate safety equipment when first inspecting the building. Consideration should be given to hiring a firm specializing in hazardous waste removal if these highly toxic elements are found in the building.

Documenting and recording the building

Documenting a building's history is important because evidence of its true age and architectural significance may not be readily evident. The owner should check with the State Historic Preservation Office or local preservation commission for assistance in researching the building. If the building has never been researched for listing in the National Register of Historic Places or other historic registers, then, at a minimum, the following should be determined:

The overall historical significance of the property and dates of construction;

The chronology of alterations or additions and their approximate dates; and,

Types of building materials, construction techniques, and any unusual detailing or regional variations of craftsmanship.

Old photographs can be helpful in identifying early or original features that might be hidden under modern materials. On a walk-through, the architect, historian, or preservation specialist should identify the architecturally significant elements of the building, both inside and out.

Documenting a building's history and assessing its condition provide information to set priorities for stabilization and repair, prior to mothballing. Photo: NPS files.

By understanding the history of the resource, significant elements, even though deteriorated, may be spared

the trash pile. For that reason alone, any materials removed from the building or site as part of the stabilization effort should be carefully scrutinized and, if appearing historic, should be photographed, tagged with a number, inventoried, and safely stored, preferably in the building, for later retrieval.

A site plan and schematic building floor plans can be used to note important information for use when the building is eventually preserved, restored, or rehabilitated. Each room should be given a number and notations added to the plans regarding the removal of important features to storage or recording physical treatments undertaken as part of the stabilization or repair.

Because a mothballing project may extend over a long period of time, with many different people involved, clear records should be kept and a building file established. Copies of all important data, plans, photographs, and lists of consultants or contractors who have worked on the property should be added to the file as the job progresses. Recording actions taken on the building and identifying where elements that have been removed are stored will be helpful in the future.

The project coordinator should keep the building file updated and give duplicate copies to the owner. A list of emergency numbers, including the number of the key holder, should be kept at the entrance to the building or on a security gate, in a transparent vinyl sleeve.

Preparing a condition assessment of the building

A condition assessment can provide the owner with an accurate overview of the current condition of the property. If the building is deteriorated or if there are significant interior architectural elements that will need special protection during the mothballing years, undertaking a condition assessment is highly recommended, but it need not be exhaustive.

A modified condition assessment, prepared by an architect or preservation specialist, and in some case a structural engineer, will help set priorities for repairs necessary to stabilize the property for both the short and long-term. It will evaluate the age and condition of the following major elements: foundations; structural systems; exterior materials; roofs and gutters; exterior porches and steps; interior finishes; staircases; plumbing, electrical, mechanical systems; special features such as chimneys; and site drainage.

Buildings seriously damaged by storms or deterioration may need to be braced before architectural evaluations

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can be made. Photo: John Milner Architects. Photo: NPS files

To record existing conditions of the building and site, it will be necessary to clean debris from the building and to remove unwanted or overgrown vegetation to expose foundations. The interior should be emptied of its furnishing (unless provisions are made for mothballing these as well), all debris removed, and the interior swept with a broom. Building materials too deteriorated to repair, or which have come detached, such as moldings, balusters, and decorative plaster, and which can be used to guide later preservation work, should be tagged, labeled and saved.

Photographs or a videotape of the exterior and all interior spaces of the resource will provide an invaluable record of "as is" conditions. If a videotape is made, oral commentary can be provided on the significance of each space and architectural feature. If 35mm photographic prints or slides are made, they should be numbered, dated, and appropriately identified. Photographs should be cross-referenced with the room numbers on the schematic plans. A systematic method for photographing should be developed; for example, photograph each wall in a room and then take a corner shot to get floor and ceiling portions in the picture. Photograph any unusual details as well as examples of each window and door type.

Loose or detached elements should be identified, tagged and stored, preferably on site. Photo: NPS files

For historic buildings, the great advantage of a condition assessment is that architectural features, both on the exterior as well as the interior, can be rated on a scale of their importance to the integrity and significance of the building. Those features of the highest priority should receive preference when repairs or protection measures are outlined as part of the mothballing process. Potential problems with protecting these features should be identified so that appropriate interim solutions can be selected. For example, if a building has always been heated and if murals, decorative plaster walls, or examples of patterned wall paper are identified as highly significant, then special care should be taken to regulate the interior climate and to monitor it adequately during the mothballing years. This might require retaining electrical service to provide minimal heat in winter, fan exhaust in summer, and humidity controls for the interior.

Stabilization

Stabilization as part of a mothballing project involves correcting deficiencies to slow down the deterioration of the building while it is vacant. Weakened structural members that might fail altogether in the forthcoming years must be braced or reinforced; insects and other pests removed and discouraged from returning; and the building protected from moisture damage both by weatherizing the exterior envelope and by handling water

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run-off on the site. Even if a modified use or caretaker services can eventually be found for the building, the following steps should be addressed.

Structurally stabilizing the building

While bracing may have been required to make the building temporarily safe for inspection, the condition assessment may reveal areas of hidden structural damage. Roofs, foundations, walls, interior framing, porches and dormers all have structural components that may need added reinforcement.

Interior bracing which will last the duration of the mothballing will protect weakened structural members. Photo: John Milner Architects.

Structural stabilization by a qualified contractor should be done under the direction of a structural engineer or a preservation specialist to ensure that the added weight of the reinforcement can be sustained by the building and that the new members do not harm historic finishes. Any major vertical post added during the stabilization should be properly supported and, if necessary, taken to the ground and underpinned.

If the building is in a northern climate, then the roof framing must be able to hold substantial snow loads. Bracing the roof at the ridge and mid-points should be considered if sagging is apparent. Likewise, interior framing around stair openings or under long ceiling spans should be investigated. Underpinning or bracing structural piers weakened by poor drainage patterns may be a good precaution as well. Damage caused by insects, moisture, or from other causes should be repaired or reinforced and, if possible, the source of the damage removed. If features such as porches and dormers are so severely deteriorated that they must be removed, they should be documented, photographed, and portions salvaged for storage prior to removal.

If the building is in a southern or humid climate and termites or other insects are a particular problem, the foundation and floor framing should be inspected to ensure that there are no major structural weaknesses. This can usually be done by observation from the crawl space or basement. For those structures where this is not possible, it may be advisable to lift selective floor boards to expose the floor framing. If there is evidence of pest damage, particularly termites, active colonies should be treated and the structural members reinforced or replaced, if necessary.

Controlling pests

Pests can be numerous and include squirrels, raccoons, bats, mice, rats, snakes, termites, moths, beetles, ants,

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bees and wasps, pigeons, and other birds. Termites, beetles, and carpenter ants destroy wood. Mice, too, gnaw wood as well as plaster, insulation, and electrical wires. Pigeon and bat droppings not only damage wood finishes but create a serious and sometimes deadly health hazard.

If the property is infested with animals or insects, it is important to get them out and to seal off their access to the building. If necessary, exterminate and remove any nests or hatching colonies. Chimney flues may be closed off with exterior grade plywood caps, properly ventilated, or protected with framed wire screens. Existing vents, grills, and louvers in attics and crawl spaces should be screened with bug mesh or heavy duty wire, depending on the type of pest being controlled. It may be advantageous to have damp or infected wood treated with insecticides (as permitted by each state) or preservatives, such as borate, to slow the rate of deterioration during the time that the building is not in use.

Regrading has protected this masonry foundation wall from excessive damp during its 10-year mothballing. Note the attic and basement vents, temporary stairs, and interpretive sign. Photo: NPS files.

Securing the exterior envelope from moisture penetration

It is important to protect the exterior envelope from moisture penetration before securing the building. Leaks from deteriorated or damaged roofing, from around windows and doors, or through deteriorated materials, as well as ground moisture from improper site run-off or rising damp at foundations, can cause long-term damage to interior finishes and structural systems. Any serious deficiencies on the exterior, identified in the condition assessment, should be addressed.

To the greatest extent possible, these weatherization efforts should not harm historic materials. The project budget may not allow deteriorated features to be fully repaired or replaced in-kind. Non-historic or modern materials may be used to cover historic surfaces temporarily, but these treatments should not destroy valuable evidence necessary for future preservation work. Temporary modifications should be as visually compatible as possible with the historic building.

Roofs are often the most vulnerable elements on the building exterior and yet in some ways they are the easiest element to stabilize for the long term, if done correctly. "Quick fix" solutions, such as tar patches on slate roofs, should be avoided as they will generally fail within a year or so and may accelerate damage by trapping moisture. They are difficult to undo later when more permanent repairs are undertaken. Use of a tarpaulin over a leaking roof should be thought of only as a very temporary emergency repair because it is

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often blown off by the wind in a subsequent storm.

If the existing historic roof needs moderate repairs to make it last an additional ten years, then these repairs should be undertaken as a first priority. Replacing cracked or missing shingles and tiles, securing loose flashing, and reanchoring gutters and downspouts can often be done by a local roofing contractor. If the roof is in poor condition, but the historic materials and configuration are important, a new temporary roof, such as a lightweight aluminum channel system over the existing, might be considered. If the roofing is so deteriorated that it must be replaced and a lightweight aluminum system is not affordable, various inexpensive options might be considered. These include covering the existing deteriorated roof with galvanized corrugated metal roofing panels, or 90 lb. rolled roofing, or a rubberized membrane (refer back to cover photo). These alternatives should leave as much of the historic sheathing and roofing in place as evidence for later preservation treatments.

Urban buildings often need additional protection from unwanted entry and graffiti. This commercial building uses painted plywood panels to cover its glass storefronts. The upper windows on the street sides have been painted to resemble 19th century sash. Photo: NPS files.

For masonry repairs, appropriate preservation approaches are essential. For example, if repointing deteriorated brick chimneys or walls is necessary to prevent serious moisture penetration while the building is mothballed, the mortar should match the historic mortar in composition, color, and tooling. The use of hard portland cement mortars or vapor-impermeable waterproof coatings are not appropriate solutions as they can cause extensive damage and are not reversible treatments.

For wood siding that is deteriorated, repairs necessary to keep out moisture should be made; repainting is generally warranted. Cracks around windows and doors can be beneficial in providing ventilation to the interior and so should only be caulked if needed to keep out bugs and moisture. For very deteriorated wall surfaces on wooden frame structures, it may be necessary to sheathe in plywood panels, but care should be taken to minimize installation damage by planning the location of the nailing or screw patterns or by installing panels over a frame of battens. Generally, however, it is better to repair deteriorated features than to cover them over.

Foundation damage may occur if water does not drain away from the building. Run-off from gutters and downspouts should be directed far away from the foundation wall by using long flexible extender pipes equal

in length to twice the depth of the basement or crawl space. If underground drains are susceptible to clogging, it is recommended that the downspouts be disconnected from the drain boot and attached to flexible piping. If gutters and downspouts are in bad condition, replace them with inexpensive aluminum units.

If there are no significant landscape or exposed archeological elements around the foundation, consideration should be given to regrading the site if there is a documented drainage problem. If building up the grade, use a fiber mesh membrane to separate the new soil from the old and slope the new soil 6 to 8 feet (200 cm-266 cm) away from the foundation making sure not to cover up the dampcourse layer or come into contact with skirting boards. To keep vegetation under control, put down a layer of 6 mil black polyethylene sheeting or fiber mesh matting covered with a 2"-4" (5-10 cm.) of washed gravel. If the building suffers a serious rising damp problem, it may be advisable to eliminate the plastic sheeting to avoid trapping ground moisture against foundations.

Mothballing

The actual mothballing effort involves controlling the long-term deterioration of the building while it is unoccupied as well as finding methods to protect it from sudden loss by fire or vandalism. This requires securing the building from unwanted entry, providing adequate ventilation to the interior, and shutting down or modifying existing utilities. Once the building is de-activated or secured, the long-term success will depend on periodic maintenance and surveillance monitoring.

Securing the building from vandals, break-ins, and natural disasters

Securing the building from sudden loss is a critical aspect of mothballing. Because historic buildings are irreplaceable, it is vital that vulnerable entry points are sealed. If the building is located where fire and security service is available then it is highly recommended that some form of monitoring or alarm devices be used.

The first floor openings of this historic building have been filled with cinder blocks and the doors, window sash, and frames removed for safe keeping. The security metal door features heavy duty locks. Photo: NPS files.

To protect decorative features, such as mantels, lighting fixtures, copper downspouts, iron roof cresting, or stained glass windows from theft or vandalism, it may be advisable to temporarily remove them to a more secure location if they cannot be adequately protected within the structure.

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Mothballed buildings are usually boarded up, particularly on the first floor and basement, to protect fragile glass windows from breaking and to reinforce entry points. Infill materials for closing door and window openings include plywood, corrugated panels, metal grates, chain fencing, metal grills, and cinder or cement blocks. The method of installation should not result in the destruction of the opening and all associated sash, doors, and frames should be protected or stored for future reuse.

Generally exterior doors are reinforced and provided with strong locks, but if weak historic doors would be damaged or disfigured by adding reinforcement or new locks, they may be removed temporarily and replaced with secure modern doors. Alternatively, security gates in an new metal frame can be installed within existing door openings, much like a storm door, leaving the historic door in place. If plywood panels are installed over door openings, they should be screwed in place, as opposed to nailed, to avoid crowbar damage each time the panel is removed. This also reduces pounding vibrations from hammers and eliminates new nail holes each time the panel is replaced.

For windows, the most common security feature is the closure of the openings; this may be achieved with wooden or pre-formed panels or, as needed, with metal sheets or concrete blocks. Plywood panels, properly installed to protect wooden frames and properly ventilated, are the preferred treatment from a preservation standpoint.

This painted trompe l'eoil scene on plywood panels is a neighborhood-friendly device. Photo: NPS files.

There are a number of ways to set insert plywood panels into windows openings to avoid damage to frame and sash. One common method is to bring the upper and lower sash of a double hung unit to the mid-point of the opening and then to install pre-cut plywood panels using long carriage bolts anchored into horizontal wooden bracing, or strong backs, on the inside face of the window. Another means is to build new wooden blocking frames set into deeply recessed openings, for example in an industrial mill or warehouse, and then to affix the plywood panel to the blocking frame. If sash must be removed prior to installing panels, they should be labeled and stored safely within the building.

Plywood panels are usually 1/2"-3/4" (1.25-1.875 cm.) thick and made of exterior grade stock, such as CDX, or marine grade plywood. They should be painted to protect them from delamination and to provide a neater appearance.

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These panels may be painted to resemble operable windows or treated decoratively. With extra attention to detail, the plywood panels can be trimmed out with muntin strips to give a shadow line simulating multi-lite windows. This level of detail is a good indication that the building is protected and valued by the community.

If the building has shutters simply close the shutters and secure them from the interior. If the building had shutters historically, but they are missing, it may be appropriate to install new shutters, even in a modern material, and secure them in the closed position. Louvered shutters will help with interior ventilation if the sash are propped open behind the shutters.

There is some benefit from keeping windows unboarded if security is not a problem. The building will appear to be occupied, and the natural air leakage around the windows will assist in ventilating the interior. The presence of natural light will also help when periodic inspections are made. Rigid polycarbonate clear storm glazing panels may be placed on the window exterior to protect against glass breakage. Because the sun's ultraviolet rays can cause fading of floor finishes and wall surfaces, filtering pull shades or inexpensive curtains may be options for reducing this type of deterioration for significant interiors. Some acrylic sheeting comes with built-in ultraviolet filters.

A view showing the exterior of the Brearley House, New Jersey, in its mothballed condition Securing the building from catastrophic destruction from fire, lightning, or arson will require additional security devices. Lightning rods properly grounded should be a first consideration if the building is in an area susceptible to lightning storms. A high security fence should also be installed if the property cannot be monitored closely. These interventions do not require a power source for operation. Since many buildings will not maintain electrical power, there are some devices available using battery packs, such as intrusion alarms, security lighting, and smoke detectors which through audible horn alarms can alert nearby neighbors. These battery packs must be replaced every 3 months to 2 years, depending on type and use. In combination with a cellular phone, they can also provide some level of direct communication with police and fire departments.

If at all possible, new temporary electric service should be provided to the building. Generally a telephone line is needed as well. A hard wired security system for intrusion and a combination rate-of-rise and smoke detector can send an immediate signal for help directly to the fire department and security service. Depending on whether or not heat will be maintained in the building, the security system should be designed accordingly. Some systems cannot work below 32°F (0°C). Exterior lighting set on a timer, photo electric sensor, or a

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motion/infra-red detection device provides additional security.

Providing adequate ventilation to the interior

Once the exterior has been made weathertight and secure, it is essential to provide adequate air exchange throughout the building. Without adequate air exchange, humidity may rise to unsafe levels, and mold, rot, and insect infestation are likely to thrive. The needs of each historic resource must be individually evaluated because there are so many variables that affect the performance of each interior space once the building has been secured.

This exhaust fan has tamper-proof housing.

A mechanical engineer or a specialist in interior climates should be consulted, particularly for buildings with intact and significant interiors. In some circumstances, providing heat during the winter, even at a minimal 45° F (7°C), and utilizing forced-fan ventilation in summer will be recommended and will require retaining electrical service. For masonry buildings it is often helpful to keep the interior temperature above the spring dew point to avoid damaging condensation. In most buildings it is the need for summer ventilation that outweighs the winter requirements.

Many old buildings are inherently leaky due to loose-fitting windows and floorboards and the lack of insulation. The level of air exchange needed for each building, however, will vary according to geographic location, the building's construction, and its general size and configuration.

There are four critical climate zones when looking at the type and amount of interior ventilation needed for a closed up building: hot and dry (southwestern states); cold and damp (Pacific northwest and northeastern states); temperate and humid (Mid-Atlantic states, coastal areas); and hot and humid (southern states and the tropics).

Once closed up, a building interior will still be affected by the temperature and humidity of the exterior. Without proper ventilation, moisture from condensation may occur and cause damage by wetting plaster, peeling paint, staining woodwork, warping floors, and in some cases even causing freeze thaw damage to plaster. If moist conditions persist in a property, structural damage can result from rot or returning insects attracted to moist conditions. Poorly mothballed masonry buildings, particularly in damp and humid zones have been so damaged on the interior with just one year of unventilated closure that none of the interior

finishes were salvageable when the buildings were rehabilitated.

Portable monitors are used to record temperature and humidity conditions in historic buildings during mothballing.

The absolute minimum air exchange for most mothballed buildings consists of one to four air exchanges every hour; one or two air exchanges per hour in winter and twice that amount in summer. Even this minimal exchange may foster mold and mildew in damp climates, and so monitoring the property during the stabilization period and after the building has been secured will provide useful information on the effectiveness of the ventilation solution.

There is no exact science for how much ventilation should be provided for each building. There are, however, some general rules of thumb. Buildings, such as adobe structures, located in hot and arid climates may need no additional ventilation if they have been well weatherized and no moisture is penetrating the interior. Also frame buildings with natural cracks and fissures for air infiltration may have a natural air exchange rate of 3 or 4 per hour, and so in arid as well as temperate climates may need no additional ventilation once secured. The most difficult buildings to adequately ventilate without resorting to extensive louvering and/or mechanical exhaust fan systems are masonry buildings in humid climates. Even with basement and attic vent grills, a masonry building many not have more than one air exchange an hour. This is generally unacceptable for summer conditions. For these buildings, almost every window opening will need to be fitted out with some type of passive, louvered ventilation.

Depending on the size, plan configuration, and ceiling heights of a building, it is often necessary to have louvered opening equivalent to 5%-10% of the square footage of each floor. For example, in a hot humid climate, a typical 20'x30' (6.1m x 9.1m) brick residence with 600 sq. ft.(55.5 sq.m) of floor space and a typical number of windows, may need 30-60 sq. ft.(2.75sq.m-5.5 sq. m) of louvered openings per floor. With each window measuring 3'x5'(.9m x 1.5 m) or 15 sq. ft. (1.3 sq.m), the equivalent of 2 to 4 windows per floor will need full window louvers.

Small pre-formed louvers set into a plywood panel or small slit-type registers at the base of inset panels generally cannot provide enough ventilation in most moist climates to offset condensation, but this approach is certainly better than no louvers at all. Louvers should be located to give cross ventilation, interior doors should be fixed ajar at least 4" (10cm) to allow air to circulate, and hatches to the attic should be left open.

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Monitoring devices which can record internal temperature and humidity levels can be invaluable in determining if the internal climate is remaining stable. These units can be powered by portable battery packs or can be wired into electric service with data downloaded into laptop computers periodically. This can also give long-term information throughout the mothballing years. If it is determined that there are inadequate air exchanges to keep interior moisture levels under control, additional passive ventilation can be increased, or, if there is electric service, mechanical exhaust fans can be installed. One fan in a small to medium sized building can reduce the amount of louvering substantially.

If electric fans are used, study the environmental conditions of each property and determine if the fans should be controlled by thermostats or automatic timers. Humidistats, designed for enclosed climate control systems, generally are difficult to adapt for open mothballing conditions. How the system will draw in or exhaust air is also important. It may be determined that it is best to bring dry air in from the attic or upper levels and force it out through lower basement windows. If the basement is damp, it may be best to zone it from the rest of the building and exhaust its air separately. Additionally, less humid day air is preferred over damper night air, and this can be controlled with a timer switch mounted to the fan.

The type of ventilation should not undermine the security of the building. The most secure installations use custom-made grills well anchored to the window frame, often set in plywood security panels. Some vents are formed using heavy millwork louvers set into existing window openings. For buildings where security is not a primary issue, where the interior is modest, and where there has been no heat for a long time, it may be possible to use lightweight galvanized metal grills in the window openings. A cost effective grill can be made from the expanded metal mesh lath used by plasterers and installed so that the mesh fins shed rainwater to the exterior.

Securing mechanical systems and utilities

At the outset, it is important to determine which utilities and services, such as electrical or telephone lines, are kept and which are cut off. As long as these services will not constitute a fire hazard, it is advisable to retain those which will help protect the property. Since the electrical needs will be limited in a vacant building, it is best to install a new temporary electric line and panel (100 amp) so that all the wiring is new and exposed. This will be much safer for the building, and allows easy access for reading the meter.

Most heating systems are shut down in long term mothballing. For furnaces fueled by oil, there are two

choices for dealing with the tank. Either it must be filled to the top with oil to eliminate condensation or it should be drained. If it remains empty for more than a year, it will likely rust and not be reusable. Most tanks are drained if a newer type of system is envisioned when the building is put back into service. Gas systems with open flames should be turned off unless there is regular maintenance and frequent surveillance of the property. Gas lines are shut off by the utility company.

If a hot water radiator system is retained for low levels of heat, it generally must be modified to be a self-contained system and the water supply is capped at the meter. This recirculating system protects the property from extensive damage from burst pipes. Water is replaced with a water/glycol mix and the reserve tank must also be filled with this mixture. This keeps the modified system from freezing, if there is a power failure. If water service is cut off, pipes should be drained. Sewerage systems will require special care as sewer gas is explosive. Either the traps must be filled with glycol or the sewer line should be capped off at the building line.

Developing a maintenance and monitoring plan

While every effort may have been made to stabilize the property and to slow the deterioration of materials, natural disasters, storms, undetected leaks, and unwanted intrusion can still occur. A regular schedule for surveillance, maintenance, and monitoring should be established. The fire and police departments should be notified that the property will be vacant. A walk-through visit to familiarize these officials with the building's location, construction materials, and overall plan may be invaluable if they are called on in the future.

The optimum schedule for surveillance visits to the property will depend on the location of the property and the number of people who can assist with these activities. The more frequent the visits to check the property, the sooner that water leaks or break-ins will be noticed. Also, the more frequently the building is entered, the better the air exchange. By keeping the site clear and the building in good repair, the community will know that the building has not been abandoned. The involvement of neighbors and community groups in caring for the property can ensure its protection from a variety of catastrophic circumstances.

The owner may utilize volunteers and service companies to undertake the work outlined in the maintenance chart. Service companies on a maintenance contract can provide yard, maintenance, and inspection services, and their reports or itemized bills reflecting work undertaken should be added to update the building file.

Sidebar

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Mothballing Checklist

In reviewing mothballing plans, the following checklist may help to ensure that work items are not inadvertently omitted.

Moisture

Is the roof watertight?

Do the gutters retain their proper pitch and are they clean?

Are downspout joints intact?

Are drains unobstructed?

Are windows and doors and their frames in good condition?

Are masonry walls in good condition to seal out moisture?

Is wood siding in good condition?

Is site properly graded for water run-off?

Is vegetation cleared from around the building foundation to avoid trapping moisture?

Pests

Have nests/pests been removed from the building's interior and eaves?

Are adequate screens in place to guard against pests?

Has the building been inspected and treated for termites, carpenter ants, rodents, etc.?

If toxic droppings from bats and pigeons are present, has a special company been brought in for its disposal?

Housekeeping

Have the following been removed from the interior: trash, hazardous materials such as inflammable liquids, poisons, and paints and canned goods that could freeze and burst?

Is the interior broom-clean?

Have furnishings been removed to a safe location?

If furnishings are remaining in the building, are they properly protected from dust, pests, ultraviolet light, and other potentially harmful problems?

Have significant architectural elements that have become detached from the building been labeled and stored in a safe place?

Is there a building file?

Security

Have fire and police departments been notified that the building will be mothballed?

Are smoke and fire detectors in working order?

Are the exterior doors and windows securely fastened?

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Are plans in place to monitor the building on a regular basis?
Are the keys to the building in a secure but accessible location?
Are the grounds being kept from becoming overgrown?
Utilities
Have utility companies disconnected/shut off or fully inspected water, gas, and electric lines?
If the building will not remain heated, have water pipes been drained and glycol added?
If the electricity is to be left on, is the wiring in safe condition?
Ventilation
Have steps been taken to ensure proper ventilation of the building?
Have interior doors been left open for ventilation purposes?
Has the secured building been checked within the last 3 months for interior dampness or excessive humidity?

Maintenance Chart
1-3 months; periodic
regular drive by surveillance
check attic during storms if possible
monthly walk arounds
check entrances
check window panes for breakage
mowing as required
check for graffiti or vandalism
enter every 3 months to air out
check for musty air
check for moisture damage
check battery packs and monitoring equipment
check light bulbs
check for evidence of pest intrusion
every 6 months; spring and fall
site clean-up; pruning and trimming
gutter and downspout check
check crawlspace for pests
clean out storm drains

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every 12 months
maintenance contract inspections for equipment/utilities
check roof for loose or missing shingles
termite and pest inspection/treatment
exterior materials spot repair and touch up painting
remove bird droppings or other stains from exterior
check and update building file

Conclusion

Providing temporary protection and stabilization for vacant historic buildings can arrest deterioration and buy the owner valuable time to raise money for preservation or to find a compatible use for the property. A well planned mothballing project involves documenting the history and condition of the building, stabilizing the structure to slow down its deterioration, and finally, mothballing the structure to secure it. The three highest priorities for a mothballed building are 1) to protect the building from sudden loss, 2) to weatherize and maintain the property to stop moisture penetration, and 3) to control the humidity levels inside once the building has been secured.

While issues regarding mothballing may seem simple, the variables and intricacies of possible solutions make the decision-making process very important. Each building must be individually evaluated prior to mothballing. In addition, a variety of professional services as well as volunteer assistance is needed for careful planning and repair, sensitively designed protection measures, follow-up security surveillance, and cyclical maintenance.

In planning for the future of the building, complete and systematic records must be kept and generous funds allocated for mothballing. This will ensure that the historic property will be in stable condition for its eventual preservation, rehabilitation, or restoration.

This publication has been prepared pursuant to the National Historic Preservation Act of 1966, as amended, which directs the Secretary of the Interior to develop and make available information concerning historic properties. Technical Preservation Services (TPS), Heritage Preservation Services Division, National Park Service prepares standards, guidelines, and other educational materials on responsible historic preservation treatments to a broad public.