

COMMENTS ON WORK DONE ON DRAYTON HALL

C. STUART DAWSON, SR., INTERVIEWED BY C. STUART DAWSON, JR.

JANUARY 8, 1973

Mr. Dawson, Jr.: Did you ever do any work on Drayton Hall?

Mr. Dawson, Sr.: Yes, I did. The front porch fell in and I went up there and ordered out the marble for it and replaced the entire porch.

Mr. Dawson, Jr.: When did it fall in?

Mr. Dawson, Sr.: In the early part of the '30s...

Mr. Dawson, Jr.: What exactly did you do to the front porch?

Mr. Dawson, Sr.: Removed the broken stones and ordered new ones to match as near as possible and there was some of the stone that was there was called Welsh Marble-we call it limestone in this country-and when the water gets in it it will freeze. It does just like a pipe it breaks and shales off.

Mr. Dawson, Jr.: And you fixed it for Miss Charlie Drayton?

Mr. Dawson, Sr.: Yes, they were all living then, Miss Bessie, Miss Charlie and Mrs. Drayton, the three of them.

Mr. Dawson, Jr.: On that particular job all you worked on was the front porch?

Mr. Dawson, Sr.: And the cornice. The gutters had rotted or rusted.

Mr. Dawson, Jr.: On which side?

Mr. Dawson, Sr.: On the western side and some on the southern side. We renewed them. We got the section and had it made out of very fine cypress and put back up.

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Mr. Dawson, Jr.: Was that the only job you did on Drayton Hall? Did you ever do any work on it before or after that?

Mr. Dawson, Sr.: No that was the only one.

Mr. Dawson, Jr.: Did Granddaddy ever do any work out there or Dawson Engineering Company?

Mr. Dawson, Sr.: No.

Mr. Dawson, Jr.: Of the porch itself, how much was replaced?

Mr. Dawson, Sr.: Oh, at least 90 percent of it.

Mr. Dawson, Jr.: Approximately 90 percent of the front porch?

Mr. Dawson, Sr.: Yes, the floor, its marble.

Mr. Dawson, Jr.: The steps were replaced?

Mr. Dawson, Sr.: No, the steps were patched.

Mr. Dawson, Jr.: The steps were patched but were not replaced?

Mr. Dawson, Sr.: Yes.

Mr. Dawson, Jr.: Can you remember any more details?

Mr. Dawson, Sr.: Some interior stairs we got some old pine boards and replaced 2 or 3 of the steps in those secret stairs. Now then in the second room upstairs on the North they had taken a piece of wire and stuck down behind the paneling and jingled just like it might have been money and they got very excited and thought it was money but I told them I thought it was glass. So we decided not to take the paneling out of that room and look.

Mr. Dawson, Jr.: Did you replace any woodwork or do any major work on woodwork?

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Mr. Dawson, Sr.: On the main stairs some work yes. Some of the balusters down the railing.

Mr. Dawson, Jr.: You replaced them or repaired them?

Mr. Dawson, Sr.: I repaired them and put them back.

Mr. Dawson, Jr.: No work on any mantels or any work like that?

Mr. Dawson, Sr.: No.

Mr. Dawson, Jr.: Can you think of anything else?

Mr. Dawson, Sr.: We replaced some of the tile work in the Southwest tiny little room. It has a story of the Bible in tiles there in the fireplace and some of those tiles were loose. The Draytons had saved them and had them all in paper and asked me to replace those and we had quite a study to see which way they worked because I wasn't up on the Bible enough to know the continuous story that the tiles were supposed to represent but we got those back in there and that was when they had opened it to the public and the public had taken their penknives and had cut off all the mahogany work on the big drawing room around and below the cornice they had a twelve inch or fifteen inch stretch and it was the most magnificently carved mahogany and these people would jump on these chairs and tear it off and I tried to see whether I could replace any of it but I found that nobody I could find could do the carving. Now a man in Chicago said that he could replace it in a plastic like is done in a lot of mantels, its a type of wood, but they didn't want it unless it was just what it was before and while the man in Chicago said they might be able to find somebody it was very, very doubtful. I tried many many places and I couldn't find anybody that could carve it and it would be very

CONTINUED - page 4

expensive at that. All the carving would have had to have been out of 14 inch boards because this design was about 14 inches.

Mr. Dawson, Jr.: Do you know of anyone other than you or Dawson Engineering Company that did any work out there?

Mr. Dawson, Sr.: No one has ever done any work out there except me.

Mr. Dawson, Jr.: To your knowledge?

Mr. Dawson, Sr.: To my knowledge.



Jill

DRAYTON HALL

ROUTE 4, P.O. BOX 276, CHARLESTON, SOUTH CAROLINA 29407 (803) 766-0118

8 October 1976

Mr. Charles H. Drayton
57 South Battery
Charleston, SC 29401

Dear Charles:

Thank you again for alerting us to Richmond Bowens who was born at Drayton Hall circa 1910 and remained here until his mother's death in 1937. Mr. Bowens visited with us on 24 September; he is a delightful person and devoted to this place.

As per your request, I want to share his major recollections of the grounds during the first half of the 20th century with you:

1. There were rose gardens on both sides of the walk between the gate piers and the bridge over the ditch on the river-side of the house. These were circular in shape with brick borders; possibly the remnants of the ha-ha we have discovered were part of these beds.
2. There were practically no pine trees in the garden area, i.e., between the major ditch and river and between the two large ditches that run roughly perpendicular to the house. There were paths lined with azaleas running in serpentine fashion throughout this area.
3. The present column base at the river was the foundation of a sun dial located in the middle of the path to the river.
4. There were lemon trees in the garden; a pecan grove in the area of our temporary parking lot; and, bee hives were in abundance for honey.
5. There were at least a hundred sheep for the lawn. The sheep house was located between the rubble from the south flanker and the ornamental pond behind the major live oak.
6. The barn was twice as large as at present and the area around it was completely clean and used as pastures.

Mr. Drayton
8 October 1976
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7. Near the property corner posts, a quantity of oyster shell was buried — three feet west of each post and three feet deep. This was in the event something happened to the corner posts.
8. Mr. Bowens does not remember the interior of the house being painted although the exterior trim was painted white periodically.
9. There was a New Year's Day party each year for the "people" of Drayton Hall.

Again, thank you for alerting us to this source. We plan to talk with Richmond Bowens again. If you can suggest other people who could assist us in fully researching Drayton Hall, please let me know.

With all good wishes, I am

Cordially,



Dennis T. Lawson
Administrator

DTL/jm

cc: James Riddle
Fred Brinkman
Charles Duell
Frances Edmunds
Charles Lee
Frederick Nichols
John Goodman
Theodore Sande



DRAYTON HALL

ROUTE 4, P.O. BOX 276, CHARLESTON, SOUTH CAROLINA 29407 (803) 766-0118

MEMORANDUM

TO: Theodore A. Sande, Director, Professional Services, Hist. Prop.
FROM: Dennis T. Lawson, Administrator, Drayton Hall *dtl*
DATE: 9 February 1977
SUBJECT: Screening of Office/Equipment Storage Facility and Trailer

In response to the directive of the Drayton Hall Council at their meeting on 15 December 1976, and your memorandum of 17 December 1976, one hundred (100) ligustrum plants, approximately four feet in height, have been secured from Magnolia Gardens. These plants were placed in front of the relocated trailer and the office/equipment storage facility; to the side of this new structure; and, between the facility and trailer.

Ligustrum is not native to this country but has been here since the 1790s. It grows quickly, can tolerate less than the best light and water conditions, and is susceptible to few diseases. This plant material was the choice recommended by C. Norwood Hastic, our neighbor at Magnolia Gardens, who arranged in a spirit of good neighborliness for us to purchase the plants at a wholesale rate. Gurdon C. Tarbox, Director of Brook Green Gardens, was consulted as was John Goodman, National Trust Historical Landscape Architect.

The ligustrum plants were staggered in planting and will not show as a hedge. Rather, when sufficiently mature to screen the two structures they will provide a green background for the other trees in the area between them and the temporary road. When they are taller, the undergrowth can be cleared leaving only major trees; then deciduous plants can be brought in.

It is neither practical nor economical to transplant material from one section of Drayton Hall to another for several reasons:

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9 February 1977

1. Large plants cannot be transplanted. Even in moving smaller ones (four feet maximum) many are lost due to trauma whereas the ligustrum obtained had been grown with relocating in mind, roots chipped, etc. [Transplanted material calls for special watering care for which we are not equipped.]
2. Our equipment and personnel cannot move large plants as we have only shovels and two groundskeepers. We have the problem of backfilling, also, and this is, as you know, already a major problem at Drayton Hall.

It just does not seem the wisest use of staff time to relocate plants. I especially did not want to attempt the relocation of dogwood, azaleas, and redbud for I feel the color would negate the purpose of the screen.

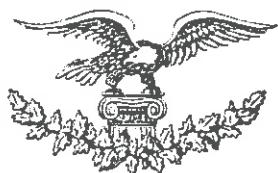
The correction of the drainage problems around the new facility and the relocated trailer and the screening project have been slow, tedious efforts. I regret the slow down of clearing undergrowth around the major trees on the avenue and the area of prime selective clearing toward the river.

I had hoped to have that area (between the house, the river, the walk to the water, and the large ditch on the north that runs roughly parallel to the walkway) selectively cleared prior to this year's growing season. Then we could map the azaleas by color and begin selectively clearing some of those deemed particularly obnoxious.

We cannot accomplish all of this by the Spring. Unless I can obtain additional laborers through the Comprehensive Employment and Training Act or another governmental program or unless we undertake a program of controlled burning under rigid supervision by proper authorities, I just do not see how we can proceed with clearing the undergrowth and trash trees any faster.

DTL/jm

cc: James Biddle
Fred Brinkman
Charles Drayton
Charles Duell
Frances Edmunds
John Goodman
Charles Lee
Frederick Nichols



National Trust for Historic Preservation

DRAYTON HALL

ROUTE 4

BOX 276

CHARLESTON, SOUTH CAROLINA 29407

(803) 766-0118

MEMORANDUM

TO: Members, Drayton Hall Council

FROM: Dennis T. Lawson, Administrator, Drayton Hall

DATE: 1 June 1977

SUBJECT: Drayton Hall Grounds Work - A Progress Report *dtl*

As promised in the Monthly Reports for March and April, a progress report on the grounds work at Drayton Hall during the first five months of 1977 is submitted.

Office Building/Equipment Storage Facility: During January one hundred (100) ligustrum were planted to screen the new structure from the drive to the temporary parking lot. The areas here and around the relocated groundskeeper's trailer were filled to correct drainage problems.

Live Oak Avenue: During January, February, and March much undergrowth and many trash trees were removed. P.O. Mead and his crew from Mead's Tree Service spent eighty-four (84) hours treating twenty-eight (28) trees on the avenue. Dead wood was removed, cavities were filled, and the trees were fed; due to this treatment, all of these trees were reclassified to a better rating. (cost: \$2,632.50.)

Removal of Dead Trees: During April J.R. Altman and five laborers from PRT spent eight (8) ten-hour (10) days at Drayton Hall. They removed practically every dead tree and stump (standing and fallen) from the live oak avenue and the edges of the lawn area. They also cleared a portion near the fire gate, hauled fill to the former location of the groundskeeper's trailer, and constructed a new road on the site of an old road to the new structure and relocated trailer. (cost: \$20,342.00 contributed by PRT.)

Clearing the Drive Edges: During April and May ten (10) young men from MacDougall Youth Correction Center spent three (3) days clearing the edges of the drive from the live oak avenue to the temporary parking lot. They were supervised by two officials from the Center and our groundskeepers. (cost: undetermined.)

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1 June 1977

Clearing the Former Trailer Location: The area where the groundskeeper's trailer was located has been selectively cleared with many trash trees removed. The area opposite across the lawn has likewise been cleared thus expanding the lawn area.

Routine Maintenance: With the return of the growing season, the regular mowing of the lawn, etc. takes considerable time as does equipment repair and maintenance, etc. The more areas cleared, the longer the maintenance takes. A truism but one we all must live with.

The River Bank: Since Members Day (15 May) the groundskeepers have cleared the river bank south of the walk to the Ashley to the large ditch that is our boundary limit in clearing. Trash trees by the hundreds and undergrowth by the tons (seemingly) have been removed.

Robert Gaskin is the mainstay in this task. Keeping the second groundskeeper's position filled is a difficult task. Thomas Jeffrey Willard labored during January but was afflicted with chronic, unwarranted, and unexplained absenteeism. He was terminated.

Due to a scarcity of applicants and the unbelievable amount of time it takes to process employees at Headquarters, the position was unfilled during February.

Richard Charles Andes labored during March but resigned to assume a more lucrative position. For the same reasons as above, the position was unfilled during April.

George Law Marshall III joined the staff in early May with the prospect of being with me all Summer. Just this week he has been accepted into the Medical University of South Carolina and his status at Drayton Hall is unclear.

Due to persistence and the good help of Lawrence P. Goldschmidt, Business Manager, Historic Properties, and his assistant, Jane Artigliere, Michael Lindsey worked as a Temporary Casual Employee for nine (9) days at the end of May.

Currently, I am awaiting the final sign-offs at Headquarters to put Michael and Austin Salley III to work for twelve (12) weeks. Drayton Hall is extremely fortunate. Due to private funding we will have these students this Summer; no other NT

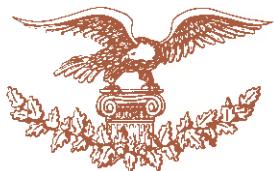
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1 June 1977

property will have student workers because of the financial situation.

I continue lobbying for Public Service Employment (PSE) participants at Drayton Hall. I have been writing and telephoning Harry W. Kluttz, Assistant for Administration of the County of Charleston, on a monthly basis since last Fall. Yesterday, Mr. Kluttz was more encouraging than he has ever been!

And the trees and ground cover just keep on growing!

cc: James C. Massey
John A. Goodman



National Trust for Historic Preservation

DRAYTON HALL

ROUTE 4

BOX 276

CHARLESTON, SOUTH CAROLINA 29407

(803) 766-0118

MEMORANDUM

TO: Drayton Hall Council

FROM: Dennis T. Lawson, Administrator, Drayton Hall *DL*

DATE: 11 July 1977

SUBJECT: Plaster Ceilings at Drayton Hall

As you know, John G. Waite of The Preservation/Design Group inspected the plaster ceilings in Drayton Hall during early May. The second floor as well as the stair hall was closed to all persons effective 3 May 1977 at his advice. In addition, the following emergency steps have been taken.

Edward Smith, Master Carpenter who has done work at Drayton Hall previously, removed those sections of the 19th century ceiling in the stair hall which were separated from the lath and in danger of falling; this action was taken to prevent damage to the stairway. The sound plaster in this area was not disturbed.

Mr. Smith also built a support to retain a portion of the decorative 18th century ceiling in the drawing room which was in danger of collapsing. A 5/8" sheet of plywood was put up to support padding which will hold the plaster in place, without applying pressure to it, until the ceiling can be stabilized. The support is held in place by 2" x 4" struts with cross braces which rests on the floor.

Current plans for stabilization of the plaster ceilings call for the work to be done during October. This work, which requires meticulous craftsmanship of the first order, will be accomplished by a team from the Restoration Workshop operated by the National Trust in consultation with a craftsman who has had previous experience in this kind of work in New York State. If feasible, a local craftsman who has done work for and with a noted restoration contractor in Charleston County will assist.

cc: James C. Massey, Vice President, Historic Properties

THE PRESERVATION/DESIGN GROUP

388 BROADWAY ALBANY, NEW YORK 12207 518 463-2276

TO: Nathaniel Neblett
FROM: J. G. Waite *JGW*
DATE: January 9, 1978
SUBJECT: Drayton Hall Ceiling Stabilization

As agreed at my January 5, 1978 meeting at Lyndhurst with Alan Kelser, the Lyndhurst restoration crew will erect temporary scaffolding for supporting the Entrance Hall ceiling, Drawing Room ceiling, and Stair Hall Soffit ceiling. They will remove unsound and damaged plaster of the Stair Hall main ceiling (undecorated).

After the ceilings have been braced, the crew will remove the existing nineteenth century floorboards in the second floor Hall, over the Entrance Hall ceiling. After the floorboards have been removed, an inspection will be made of the existing condition of the lath and keying to determine the extent of remedial action required.

The following is the sequence for the execution of the work:

1. Entrance Hall Ceiling
 - a. Support ceiling from below using plywood, carpet padding, and wood struts.
 - b. Number and carefully remove each floorboard, salvaging existing nails for reuse.
 - c. Remove all plaster debris, broken keying, and dirt using industrial vacuum cleaner and soft brushes.
 - d. Refasten lath to joists using glueblocks, fastened with epoxy and, if necessary, an intermediate structural system of aluminum angles.
 - e. Install new steel angles on each joist as shown on Shoolbred drawings.
 - f. Coat existing wood lath with approved modern bonding agent.
 - g. Install new aluminum wire mesh reinforcing and pour new layer of plaster to bond existing plaster to lath.
 - h. Reinstall floorboards with existing nails.
2. Drawing Room and Stair Hall Soffit Ceilings
 - a. Support ceiling from below using plywood, carpet padding, and wood struts.
 - b. Number and very carefully remove original floorboards in designated areas salvaging original nails for reuse.
 - c. Remove all debris using industrial vacuum cleaner.
 - d. Where the connections between the existing lath and joists have failed,

install secondary structural system of aluminum angles and mechanically connect the existing wood lath with the angles.

- e. Where the plaster has been separated from the wood lath, the upper layer of plaster over the lath should be very carefully removed and a technique and techniques similar to those recommended for the Entrance Hall ceiling should be used. This treatment is to be used only in those areas where the ceiling is damaged.
- f. Reinstall floorboards with original nails.

cc: Alan Keiser

cc: Dennis Lawson 11 Jan 78

2 March 1978

Mr. William Harleston, Director
Building Inspection Services
County of Charleston
2 Court House Square
Charleston, South Carolina 29401

Dear Mr. Harleston:

The mechanics performing the work to stabilize the 18th and 19th century decorative plaster ceilings at Drayton Hall are full time salaried employees of the National Trust for Historic Preservation. These employees are members of the Restoration Workshop of the National Trust which is located in the restored stable complex on the Lyndhurst estate in Tarrytown, New York.

These workers receive extensive on-the-job training in the safe and efficient use of traditional building techniques necessary for the correct preservation and restoration of historic buildings. They are trained to take the special care necessary when working with fragile building fabric.

The Restoration Workshop staff performs much of the major maintenance and capital development preservation and restoration work at National Trust properties throughout the United States. Staff members have performed work at Chesterwood, Stockbridge, Massachusetts; Cliveden, Philadelphia, Pennsylvania; Oatlands, near Leesburg, Virginia; and at Woodlawn Plantation near Mount Vernon, Virginia.

According to our conversation there is no necessity for licensing these mechanics as they are full time staff members of the National Trust for Historic Preservation.

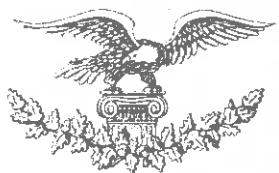
I look forward to working with your office as we continue the stabilization and maintenance of Drayton Hall, the finest English Palladian southern plantation house of the American colonial period.

With all good wishes, I am

Cordially,

Dennis T. Lawson
Administrator

bcc: Nathaniel Neblett, Historical Architect, Office of Historic Properties
Alan Keiser, Chief, Restoration Workshop
Mrs. S. Henry Edmunds, Chairman, Drayton Hall Council



National Trust for Historic Preservation

DRAYTON HALL

ROUTE 4

BOX 276

CHARLESTON, SOUTH CAROLINA 29407

(803) 766-0118

MEMORANDUM

TO: Theodore A. Sande, Acting Vice President, Historic Properties

FROM: Dennis T. Lawson, Administrator, Drayton Hall

DATE: 8 May 1978

SUBJECT: Closure of River Front Stairways to Drayton Hall

The river front stairways to Drayton Hall have been closed to all persons effective Friday, 5 May 1978. This action was taken due to the constant chipping and crumbling of the steps which had produced an extremely hazardous situation.

The land front stairways have deteriorated and present a similar hazard. Remedial action is imperative.

National Trust employees and volunteers at Drayton Hall have been cautioned to adhere with strict compliance to this action.

cc: Drayton Hall Council
Charles Lyle
Nathaniel Neblett
Drayton Hall Staff Bulletin Board
Drayton Hall Volunteers Bulletin Board

OFFICIAL FILE COPY

Charles T. Lyle, Director, Museum Properties, Historic Properties

C. Richard Bierce, Architect for the Properties, Historic Properties

DR. BURKE
March 7, 1980

Trip Report: Travel Order Number 145
Destination: Drayton Hall
Departure: February 20, 1980, 7:50 p.m.
Return: February 22, 1980, 5:35 p.m.

C.

Purpose of Trip:

- To achieve basic introduction and orientation to Drayton Hall;
- To review work plan of Restoration Workshop;
- To inspect deterioration in the stairhall ceiling;
- To inspect deterioration in the roof;
- To discuss restoration and repair priorities with the Property Administrator and the Workshop Director.

People Met:

Letitia Galbraith - Administrator, Drayton Hall

Alan Keiser - Director, Restoration Workshop

Drayton Hall Staff: Bob Barker

Terry Turner

Sue Brown

Nancy Ryan

Restoration Workshop Staff: Lynnette Strangstad

Dean Korpen

Steve Wood

Commercial Roofing Repairman

Accomplishments:

Met with individuals listed in function of achieving outlined purposes:

Observations:

I. Inspection of Roof and Gutter Conditions:

A. Roof: Recently completed repairs consisted of the installation of edge patching around the entire perimeter of the upper hip. The Roofer stated that there was little good material available to render a proper connection for the repair due to the advanced

Charles T. Lyle
March 7, 1980
Page 2

deterioration of large areas of the existing metal. Additionally, it is apparent that there are many locations where the seams are continuing to deteriorate at an accelerated rate. Many previous leaks had been somewhat ineffectively patched with a variety of patching compounds. The river side hips are in worse condition than the land side.

- B. Gutters: With the exception of the fragmentary remains of the downspout brackets on the side elevations, no evidence was discernible in the locations studied of any previous roof system.
- C. Roof Framing: Superficial inspection indicated a high degree of alteration to the roof framing configuration, leaving considerable doubt as to possible original conditions. No attempt was made to establish a chronology for the framing now in place. Additionally, several locations were noted in the framing connections of the upper hips which were not properly installed to resist any lateral movement.

III. Inspection of Stair Hall Ceiling:

- A. Ceiling: The existing plaster which remains appears to be sound in some areas, although a full inspection was not done. It is evident that a factor which contributed to the previous failures is the improper installation of the lathing. Insufficient space was left between the strips to permit the formation of an adequate key.

III. Inspection of Work by Restoration Workshop:

- A. Repair Work: The stabilization and repair work conducted last year by the Workshop staff was found to be of a very high quality. Two minor items were scheduled for reinstallation during the current project.

Recommendations:

I. Roof and Gutter:

- A. Roof: Because the critical function of the roof's ability to provide a watertight top to the structure cannot be guaranteed, it should be replaced in its entirety. Although some parts remain serviceable for the immediate future, it is highly probable that an increased frequency of repair will continue to vex the administrator and endanger the structural and decorative elements within.

Insufficient documentation and physical evidence now exists to justify the replacement of the roofing material with anything other than terne. It is recognized that other materials are known to have been employed at different times in the structure's existence, but no confirmation of the chronology of usage, nor of possibly different configuration of the roof is currently known.

Charles T. Lyle
March 7, 1980
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Replacement in kind achieves a continuity of material usage which is well-documented. Furthermore, as discussed on page 4 of the structural report, some of the existing joints carrying roof loads are "greatly over-stressed" and to impose the higher dead loads of heavier material would require substantial modification to the framing system as well.

B. Gutters: The urgency of protecting the surfaces which are affected by roof drainage mandates the installation of a system which is capable of removing the water as efficiently as possible. The absence of specific historic evidence precludes the installation of anything but a modern system which is designed to minimize the unavoidable visual effect it will create. Because of the deterioration to the decorative trim of the upper hip line, a perimeter gutter should be installed with leaders laid on the surface of the lower hip. The perimeter of the lower hip should be guttered as well with special attention given to the design of water flow at the pediment valleys. Sizing and location of adequate downspouts has not yet been determined. Where the new material is adjacent to painted surfaces, it should be painted to match. Where it is adjacent to natural finish materials it too should be left to weather naturally.

II. Stair Hall Ceiling:

A. Ceiling: The ceiling should be considered for replacement in its entirety. At such time as scaffolding is in place and proper inspection can be carried out from below, a final determination will be made as to the advisability of retaining any of the existing fabric. The new application should consist of standard 3 coats over wire lath in order to achieve the best combination of strength and appearance.

III. Work Schedule for Restoration Workshop

A. Schedule: The following projects were determined jointly to be of highest priority for immediate attention by the Workshop Staff under the operative stabilization grants:

- Completion of repair to chimneys, including masonry and installation of flue caps;
- Completion of work to stair hall floor;
- Repair of stair hall exterior doors to improve water tight seal at threshold.
- Continuation of repair and repainting of exterior stair and landings on river entry.
- Secure portions of ceiling cornice in southwest chamber on 1st floor which have come precariously loose;
- Commence repair of deteriorated masonry at the vaulted entry to the basement, land side.
- Commence stabilization of concrete structure at land front porch;
- Stabilization of interior stair framing to attic and basement;

Charles T. Lyle
March 7, 1980
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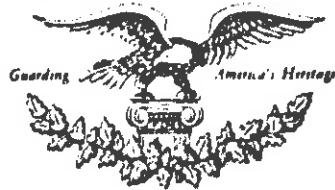
t The following areas were determined to be of priority importance after
the completion of the above listed items:

- initiate work on the stabilization of deteriorated treads and nosings on land front steps in order to develop appropriate methodology;
- initiate stabilization only of window sash deemed to be most vulnerable to wind and water drainage;
- construction of temporary wood stairs to the brick dependency to provide safe access for planned archaeological work as well as to protect the stone and brick components of the existing landing from further deterioration.

cc: Letitia Galbraith, Administrator *DeSoto Hall*
Alan Keiser, Director, Restoration Workshop

RS:rl

Frances Edmunds



National Trust for Historic Preservation

1785 MASSACHUSETTS AVENUE, N.W. WASHINGTON, D.C. 20036 (202) 673-4000

MEMORANDUM

TO: Property Administrators, Restoration Workshop Director,
Archaeologist
FROM: C. Richard Bierce, A.I.A. Architect for the Properties
DATE: April 4, 1980
SUBJECT: Development Projects, FY 80

Effective 3/28/80, the Heritage Conservation and Recreation Service has suspended the processing of development funds to projects which were not approved on that date. This suspension will probably result in the cancellation of those projects.

Affected projects, planned for initiation this fiscal year, include the following:

Chesterwood, stucco preservation	\$ 25,000
Decatur House, exterior preservation	5,000
Drayton Hall, Archaeology, Phase II	50,000 ✓
Drayton Hall, alarm system	12,000 ✓
Drayton Hall, roof repair	25,000 ✓
Lyndhurst, lightning rods	10,000
Lyndhurst, laundry preservation	24,000
Lyndhurst, Rose Cottage preservation	20,000
Lyndhurst, Greenhouse service building	20,000
	<u>\$191,000</u>

We are attempting to identify some means of salvaging some parts of these projects and will keep you informed.

ROBERT A. SHOOLBRED, INC.

CONSULTING ENGINEERS

P. O. BOX 831 - 125 MEETING ST.

CHARLESTON, S. C. 29408

(803) 577-4681

April 14, 1980

Miss Letitia Gregory Galbraith
Administrator, Drayton Hall
National Trust for Historic Preservation
Route 4, Box 276
Charleston, South Carolina 29407

Dear Miss Galbraith:

This letter is to outline findings during an inspection of Drayton Hall on April 10, 1980. The inspection was made at the request of Richard Pierce, and I was accompanied by Allen Kiser.

Mr. Kiser's primary concern was the deterioration of the concrete and reinforcing steel on the bottom surface of the front porch and floor slab. The reinforcing is rusting and spalling the concrete cover beneath the reinforcing. The concrete in this slab is not well consolidated, therefore, water is penetrating the slab, resulting in corrosion of the steel and spalling of the concrete. This is not a serious problem to remedy, however, prevention of recurrence of the problem is not quite as easy. The concrete and steel should be cleaned to sound material before patching. If a major part of the steel is missing, new steel must be spliced into the slab. A bonding agent such as Sika Chemical "Sikador" should be applied to the old concrete before applying the new concrete cover to the bottom of the slab. To assist in recurrence of the rusting, all mortar joints and cracks in the top of the slab should be sealed.

The masonry arches into which the slab beams are framed are showing serious flexural cracks at midspan of the arch, and also negative moment cracks near the spring line. These cracks are the result of:

- (1) Age deterioration of the materials.
- (2) The flatness of the arch (the shape of the arch is not correct for the applied load).
- (3) Weakening of the arch by cutting into it for support of the floor beam.
- (4) Concentrated load from the floor beam applied at midspan of the arch, causing bending moments.

These cracks should be closely monitored to determine if they are still active. At a later date I will make recommendations as to the method of making crack width measurements. Eventually these arches will in all probability require replacement. The urgency of replacement will be determined by results of the measurements over a period of time. It is essential that a record of measurements be started at an early date.

The plaster in the stairway was observed to have several pieces which were loose and capable of falling without warning. It is impossible to determine the condition of the plastering without closer inspection. It is recommended that a scaffold be erected and the whole ceiling checked thoroughly. All loose portions of plaster should be removed.

There is positive evidence that the lower ends of the pitched roof are spreading outward. This is evident in the obvious rotation which has occurred in several joints, and the fact that horizontal joists are being moved off of their supporting walls. Some of these joists have been moved outward by the spreading roof until they are bearing on the edge of the supporting structure. These joists should be spliced together to furnish bearing and to furnish resistance to further spreading of the roof.

If there are any questions, please contact me.

Sincerely,

ROBERT A. SHOOLBRED, INC.

Robert A. Shoolbred
Robert A. Shoolbred PE

From Kevin Murphy
& Charles Chase's Architectural Historical Research
Drayton Hall

supports a redecoration of these rooms at that approximate date.¹⁴ There are similarities between these mantels and those at the Joseph Manigault house in Charleston. That house was completed in 1803 for Manigault and his wife, Charlotte, the daughter of Dr. Charles Drayton.

Walker completed the above work on December 11, but he returned two years later. December 13, 1804, "Walker, having put up two marble chimney pieces (at \$5. he says) returned to c'ton, 4 p.m." Perhaps one of these is the mantel in room 104.

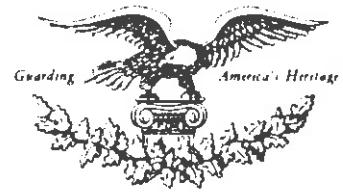
Stair Door

On May 27, 1803, Dr. Drayton writes: "Carpenters finished the post & rail fences on a line with the offices: - & also a door, to be placed on the private stair. Finished AM." Whether this is a door from a room to the stair, or the small door leading to the attic, is unknown.

Slate Roof

A leakage problem, not solved over five years of work, confirms the existence of a slate roof predating the present tin roof. Dr. Drayton first mentions the problem on April 27, 1801: "one fellow & 2 lads came from Legge (the bricklayer) last night, to trim slates." Evidently the leaking was still a problem when Drayton noted on February 15, 1806, "The tryal of the disputed account with Legge the bricklayer came on. It was terminated in my favor by curtailing \$." There are seventeen diary entries during that five year period that refer to work upon the slate roof, either by the slater, or by Reynolds, the "tinner", who did the flashing and gutter work.

A story has survived from the era of the War Between the States that a



National Trust for Historic Preservation

1785 MASSACHUSETTS AVENUE, N.W. WASHINGTON, D.C. 20036 (202) 673-4000

MEMORANDUM

TO: Theodore A. Sande, Vice President, Office of Historic Properties

FROM: C. Richard Bierce, Architect for the Properties, Office of Historic Properties
C. Richard Bierce

DATE: May 7, 1980

SUBJECT: Consideration of Roof Repair and Restoration, Drayton Hall

I. ISSUE:

Determination of the most appropriate means of correcting deficiencies resulting from deteriorated roofing and the infiltration of water into the Drayton Hall main house.

II. BACKGROUND:

On-sight inspections by staff of the Office of Historic Properties over the past four years have consistently revealed that the main house at Drayton Hall suffers from leaks in the roof due to the long-time absence of gutters and downspouts, and deterioration of the roof surface. There is also moisture in the lower portions of the house's walls which appears to be the result of alterations to ground-surface elevations around the perimeter of the house. The cumulative effect is readily apparent in the extensive damage to the structure at a number of interior and exterior locations.

Repairing and stabilizing projects for some aspects of the water-related damage to the structure have been done in the last few years. Development projects have dealt with the decorative plaster ceilings, structural wood framing and stone and brick masonry. These and other corrective and preventative measures have been addressed in the Property Development Plan. One recommendation is for the installation of a roof and site drainage system. A development project was initiated in 1979 to achieve this objective. A search for the best approach to the design of this system has been impeded by the growing realization of the need for substantive roof repairs. Successful resolution of the drainage problems will be highly dependent upon a comprehensive approach for the roof repairs.

Although it is marginally serviceable for the immediate future, the existing roof should be replaced, if possible, in its entirety now. This opinion is based on the increased frequency of repair which has been experienced over the past few years, inspection of earlier patching not properly installed, and the continuing deterioration of apparently sound surfaces and joints. Most importantly, as the uppermost element of the water drainage system - the "umbrella" - a marginal roof would diminish

the effectiveness of other preventative work and would still be subject to sudden failures resulting from normal movement, oxidation and severe weather damage.

III. DISCUSSION:

There are several facets to be studied in the selection of the most appropriate material for roof replacement. These include questions relating to historical antecedents at the property, philosophical direction for the property, structural condition of the house and financial impact. Within this framework, the three basic choices of wood, slate and metal will be discussed below.

There are no known documentary references to any one particular material being used on the roof, prior to the late 19th C. photos. The ca. 1886 photo clearly establishes a point of reference for the use of standing seam metal, which is continued to the present. The 1875 Harper's view has a roughly represented modular surface which may indicate wood shingles. The ca. 1870 view hints at a smooth modular surface which may be either slate or wood shingles in better condition. The 1845 Gibbes' drawing does not indicate any roof texture or material. Weathered shingles were recently found in the attic of the Mansion, and pieces of roofing slate have been found at different locations on the site by the archaeologists. No conclusions are now possible as to the period or location of usage of either material.

Some doubt exists as to the possible original configuration of the roof framing and exterior profile. The present framing system contains a number of elements in locations which belie the assumption that all are original to the date of construction. Different saw marks, fasteners and joining techniques indicate a succession of alterations to the roof. To date, no analysis of the sequence of construction, or of changes from the original form has been conducted. It is therefore much too premature to offer a conclusion as to: 1) the original roof form, 2) its structure, or 3) the use of a particular roofing material prior to ca. 1886.

The Property Development Plan has stated strong guidelines for the establishment of a preservation philosophy for Drayton Hall, guidelines which recognize the unique architectural and documentary qualities of this building.

"The development and operation of the property should be designed to stabilize the structures and grounds. They should be shown as they have evolved, rather than restored to the conditions of some other times." (p. 14)

"Changes should be made on the property for three purposes:

- to protect the property
- to provide for the movement and security of visitors
- to enhance interpretation of the property..." (p.15)

Bierce to Sande
May 7, 1980
Page 3

"Areas where research is not complete should be protected until funds are available to study them." (p.15)

To these cautions must be added an ever-present concern about introducing changes to the historic fabric which would be irreversible. It is imperative we provide for the possibility of the discovery of evidence in future that may reveal the original roofing materials or configuration.

There is considerable doubt as to the ability of the existing roof framing to sustain heavier dead loads, and even its ability to continue to carry the existing loads satisfactorily is in question. A 1977 analysis revealed that several beams are greatly overstressed, although there is no sign of impending failure. Recent inspections reveal movement in the lower hips which has precipitated joint failure as well as rotation and unseating of some rafters. It is essential that the causes of the movement be identified and corrected prior to the commencement of other work on the roof. This is planned to be accomplished under currently-available development projects. Design of any possible solution to the existing overstressed members will be pursued concurrently. At present no plans have been made to accommodate the imposition of higher dead loads which would result from the use of replacement materials other than metal. For comparative purposes, sheet metal weighs 100 to 150 lbs. per square installed, (a square is equal to 100 square feet in area) wood shingles weigh 200 to 300 lbs., and slate weighs between 800 and 900 lbs. per square. In order to accept the loads of either of the latter two materials, strengthening of the frame would be essential.

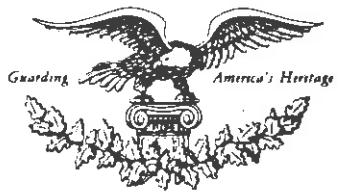
Simplified cost comparisons which assume the use of highest quality materials, but which do not include attendant structural costs are as follows:

-standing seam, terne metal, installed and painted	\$3.00/square ft.
-18" wood shingles, treated and installed	\$3.50-3.75/sq. ft.
-slate, installed	\$4.00-4.25/sq. ft.

(Related structural work would increase the latter two figures.)

IV. CONCLUSION:

Insofar as the foregoing discussion has shown, it is clear that there are several advantages to the employment of sheet metal in the replacement process. This usage would appear to be most consistent with the concept of continuity with respect to the preservation of the Mansion as it was when first acquired by the National Trust. It would be the most economical process, is lightest in weight and would cause the least extensive change to the structure. In the absence of more conclusive historical data and in view of the need to act promptly due to the current state of deterioration, I recommend a standing seam, terne metal roof be installed and that corrective structural action be taken, as outlined above, and seek concurrence to proceed.



National Trust for Historic Preservation

1785 MASSACHUSETTS AVENUE, N.W. WASHINGTON, D.C. 20036 (202) 673-4000

MEMORANDUM

TO: Dr. T. A. Sande, Vice President, Office of Historic Properties

FROM: C. Richard Bierce, Architect, Office of Historic Properties
CRB

DATE: May 15, 1980

SUBJECT: Drayton Hall Roof - Amendment to Memorandum of 7 May, 1980.

1. The statement I had made earlier regarding "no known documentary references to any one particular material being used on the roof" requires correction. References do indeed exist in the full text of the Chase/Murphy Report, a complete copy of which I had not previously seen and whose omission I regret.

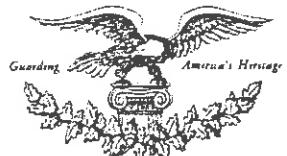
To wit, page 29:

"There are eleven references to the carpenters splitting shingles, or to shingles being brought to Drayton Hall. The entries date from June 8, 1789 to August 13, 1811; the shingles range in material from pine to cypress to oak. The only mention of specific shingling is for a barn in November 1804. The largest concentration of shingles produced was in June of 1789 when almost 19,000 were split and drawn in two weeks."

and page 32.

"There are seventeen diary entries during that five year period (1801-1806) that refer to work upon the slate roof, either by the slater, or by Reynolds, the tinner..."

2. Neither reference conclusively stipulates the use of shingles or slate on the Mansion, but it is quite likely that they both were employed within the cited time frames. However, I must again conclude that insufficient evidence exists to support a conclusion regarding the original roof surface treatment of the Mansion.



National Trust for Historic Preservation

DRAYTON HALL

ROUTE 4

BOX 276

CHARLESTON, SOUTH CAROLINA 29407

(803) 766-0188

MEMORANDUM

TO: John Frisbee, Vice President, Properties
FROM: Letitia Galbraith, Administrator, Drayton Hall *L.G.*
DATE: December 8, 1981
SUBJECT: Structural Problems at Drayton Hall

After the Drayton Hall Open House which brought at least 2,000 people to this property on Sunday, November 29, we noticed cracks in the ceiling of the first floor great hall. Cracks along the original fault lines opened, but more frightening, a large open crack appeared above the mantle in that room.

Although the tours did not exceed the allowable load limit in the room above, there were many large tours moving through the house on one day. Despite the re-enforcing of the floor above the great hall ceiling, a trampolining effect on this floor was felt by the guides. We thought that the weight and motion was solely responsible for the ceiling damage, but further investigation reveals a much more basic problem.

We have found a very large crack beside the ground floor fireplace. The crack in the plaster reveals a separation of the brick behind it. It is to be noted that six fireplaces and a chimney are all resting on this bearing wall on the ground floor.

I am very concerned. We must have a structural survey made to find out the extent of the problem and what must be done on a remedial basis if we are to keep the house open to the public. April promises numerous large tours. Will they damage the house further? We need answers as soon as possible or we may have much to regret.

cc: Frances Edmunds *✓*

John Frisbee, Vice President, Properties

Letitia Galbraith, Director

January 25, 1982

Structural Problems at Drayton Hall

This week one of our guides noticed large new cracks from floor to ceiling in the plaster and brick behind on both sides of the wall between the herringbone brick room and the south passageway on the ground floor. This wall is directly below the first floor drawing room, the ceiling of which has been a cause of considerable concern.

It is reasonable to assume that the cracks that are appearing in the building are inter-related. (see my memo to you of December 8, 1980).

I reiterate my great anxiety and the urgent need to have the problem assessed by a team of experts as soon as possible.

cc: Frances Edmunds
Charles Duell



National Trust for Historic Preservation

1705 MASSACHUSETTS AVENUE, N.W. WASHINGTON, D.C. 20036 (202) 673-0010

cc

MEMORANDUM

TO: John L. Frisbee, Vice President, Historic Properties
FROM: C. Richard Bierce, AIA, Director, Technical Services, Historic Properties CJB/PB
DATE: March 21, 1983
SUBJECT: Current and Planned Capital Projects at Drayton Hall

A. The following stabilization projects are underway on the mansion:

1. Floor Repair - Main Stairhall: The discovery of termite damage at the east end last summer led to a thorough investigation of the floor framing in the stairhall. In addition to native termites, evidence of water damage and severe deflection caused by poor quality repairs in the past was discovered.

The south main girder is being replaced with a new composite structure of laminated wood and steel. New bearing brackets are being built into the masonry support for the girder. A number of rotted joists are being replaced and others are being carefully jacked into place in conjunction with the new girder installation. All structural decisions are supervised by Robert Shoolbred.

2. Main Stair Stabilization: Much of the destructive deflection in the south stair flight was directly related to the floor conditions described above. The current process is primarily one of disassembly of the entire stair carriage and reinstalling in corrected alignment and with tightened joints. As required, deteriorated framing is being replaced.

B. Future Preservation and Stabilization Projects in the Mansion:

1. North Flight, Main Stairs: Although not in apparent critical need for immediate intervention, some tightening will be required. It is not now anticipated to require as extensive a program as in the south flight.

2. Fireplace Lintel - Basement: Mr. Shoolbred is currently observing the movement on the lintel and will commence designing soon. At this point, I do not know his preferred method of stabilization although we have discussed several options.

3. 18th Century Ceiling Stabilization: David Hoffman will be preparing estimates for this work upon completion of the stair work. The probable method of stabilization will employ epoxy consolidants.

continued

Page 2
March 21, 1983

4. Interior Woodwork and Partition Stabilization: Some areas in the first floor spaces have wood paneling in the process of slipping, due to failed joints and connectors. These isolated areas can be corrected by partial dismantling and raising to original positions. The two story partition in the stairhall is being carefully monitored in conjunction with the stair and floor work. It is not clear but it is hoped that some of this work will be beneficial to the stability of the partition.

5. Great Hall Ceilings: Temporary supports are in place to prevent further damage. It is suspected that deflection is caused by large groups on the second floor. No permanent solution has yet been devised but traffic has been routed to the perimeters of the space.

6. Exterior masonry stabilization work on both brick and stone is being planned to begin later this year.

7. Foundation Settlement: Mr. Shoolbred has been monitoring movement at several locations over the past year. At this point no definitive answers have been devised. A major contributing factor may be poor drainage around the house. Engineering design to correct major drainage deficiencies is currently underway.