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Middleburg Plantation: A cultural and historical investigation into the formal gardens

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Middleburg Plantation
A cultural and historical investigation into the formal gardens

Research conducted by the:
Department of Landscape Architecture
at the University of Michigan
Ann Arbor
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Project Introduction

Middleburg Plantation

This report was produced by a group of Landscape Architecture graduate students from the University of Michigan, Ann Arbor, led by professor, Elizabeth Brabec, in a course titled Analysis/Design of Cultural Landscapes. The purpose of this course was to visit, analyze and research an historic landscape in order to produce a Preliminary Cultural Landscape Report.

The week of August 26 to September 2, 2000, the group traveled to Middleburg for on-site investigation and field-work. This included conducting a survey of the garden, archival research at the University of South Carolina, Columbia, SC, the Charleston Historical Society, the Gibbs Museum, and the Charleston Courthouse. Visits to other plantations including Middleton Place, Drayton Hall, and Boone Plantation were also made for context, as well as a visit to Caw Caw Plantation where an expert presentation provided contextual history of rice production in the South Carolina Low country.

Upon return to Michigan the group reviewed and discussed the Department of the Interior's Standards for Historic Landscape Preservation and its application to the Middleburg Plantation formal gardens. Following this discussion, the group put together the following report.
1. History of Rice Plantations

Charleston, South Carolina is a deep-water port located on the southeast coast of the United States of America on the Atlantic Ocean. It is in an area referred to as the Low country. This area is believed to have formed during the Pleistocene era as "sedimentary deposits accumulated during periods of oceanic transgression and regression" [Kovacik, 7]. The Cooper River runs its entire length within the Low country, beginning in the swamps above Monks Corner and extending to its mouth at Charleston. It is 60 miles in length and has two main branches, the East Branch and the West Branch, which join at an area known as "the Tee". In the 18th and 19th centuries, ocean-going vessels could reach as far up as the Strawberry Ferry. Access to inland waterways was constructed from the head of the Cooper River to the Santee River and Lake Moultrie [Terry, 7].

The climate of the Low country is subtropical with 260-290 days in the growing season. Winters are generally cool, but freezing temperatures occur at times. The annual rainfall averages 49 inches, with a range of 29-72 inches. Summertime is the rainy season, fueled by thunderstorms, tropical storms and hurricanes [Kovacik, 35].

The Cooper River lies in a broad shallow floodplain. Before rice agriculture began, backwater swamps containing cedar and cypress forests were characteristic of the Low country. The upland areas included loblolly, slash, pitch and longleaf pines, live oak, magnolia, cypress, hickory and gum trees and Spanish moss [Coclanis].
Large inland swamps and tidal riverine marshes created ideal conditions for growing rice. As a result, rice plantations lined the Cooper River as early as 1695 [Gray, 67]. Plantation life, slavery and rice agriculture defined the Low country and were the dominant forces that shaped the land and the culture of the region [Steen, 8].

The products from early plantations were natural resources such as wood, tar and pitch used by ships; livestock was also raised for food and export to the West Indies. During the last decade of the 17th century, rice agriculture took hold on the plantations in the South Carolina Low country, and it flourished throughout the 18th and 19th centuries [Sass, vol. 1, 180]. Rice production brought wealth into Charleston and the surrounding area for the first time since the early days of European colonization. Early rice production focused on the clearing of upland backwater swamps for rice growing.

A plat map of Middleburg Plantation on the east branch of the Cooper River, drawn by Joseph Purcell in 1786, indicates that large regions of upland were impounded for use as a reservoir. This reservoir irrigated rice fields located in former marsh along the Cooper River. With time, it was found that the marshland adjacent to tidal rivers, such as the Cooper and Ashley, could be irrigated with the daily fluctuation of fresh water levels, which resulted from the ocean tides. This led to an increase in the land devoted to rice production because previously unused riverside marshes could now support crops of rice. In addition, the natural annual flooding of riverside marshes made for nutrient-rich fields that produced larger, higher-quality rice yields.
The increase in acreage devoted to rice production naturally made obvious the need to process and mill the rice more efficiently. Rice processing was a labor-intensive process, requiring threshing, winnowing and polishing, jobs that were the responsibility of slaves and involved heavy manual labor. The development of machinery, driven first by the tides and later by steam, for the rice milling process greatly increased the amount of rice that could be produced in the Low country [Doar, 18; Chaplin, 251]. These innovations reduced the amount of time involved in the production of a single crop from fourteen months of manual labor, to eleven months with the aid of mechanical processing. Increased quality and yield of rice crops, along with mechanized processing, and cheap slave labor made rice agriculture a very lucrative business.

As a result, many plantations in the South Carolina Low country began to display elaborate gardens, an indication of the wealth of the rice plantation owners [Briggs; Cothran].

On plantations, slaves were the work force behind all aspects of production. Not only were there slaves that worked the fields, and in the house, but there were also slaves who were "gardeners". According to plantation records of the time, slaves listed as "gardeners" were considered particularly valuable by slave holders. In many instances, the position of the gardener was of great importance and it was not uncommon for the gardener to be responsible for site preparation and maintenance of the garden, along with plant propagation. In some instances, slave gardeners were sent to Europe for training in horticulture and design, and it is likely that many African American slaves were responsible for garden design, installation, and maintenance [Milner].

The formal gardens of rice plantations during 18th and 19th centuries took many forms. Examples of gardens are recorded in plat maps, mentioned in written journals, depicted in paintings, and some garden remnants have survived. Middleton Place, on the Ashley River in the South Carolina Low country, displays grand terraces and extensive gardens that were first constructed in the 1740's based on contemporary European design. The gardens at Drayton Hall, slightly down the Ashley River from Middleton Place, covered over approximately 10 acres and were complete with formal elements of the period such as serpentine shapes and a greenhouse. Though plats of the gardens of Middleton Place and Drayton Hall are conspicuously absent, plats from the plantations immediately across the Ashley River give an indication of the extent of formal gardens, which were usually placed adjacent to the main plantation house.
Jonathan Lucas II, an owner of Middleburg plantation, and his father were leading inventors and producers of rice milling machinery. At the dawn of the 19th century, water-powered rice mills had revolutionized rice production in the Low country of South Carolina. By the 1820's, steam-powered rice milling began to replace most of the tidally operated milling. As Jonathan Lucas II controlled the production of steam powered rice mills, both in Charleston and abroad, he rapidly became one of Charleston’s richest citizens (another miller was taking in $25,000 per year from a single mill in 1813 [Chaplin, 261]).

The toll mill at Middleburg, first installed in 1801, brought in much wealth although the remnants of the formal gardens are quite modest. One explanation of this modest garden may be that Benjamin Simons, a previous owner of lesser means, was the person who designed and developed the formal gardens. Another possible explanation is that Jonathan Lucas II, who spent most of his time at his summer home in Charleston, amid its approximately 10 acres of formal gardens, did not feel the need to create elaborate expensive gardens for Middleburg. By this period, between the months of May and November plantation owners were usually absent from their plantations, residing in their summer homes in Charleston, in the pinelands or at the seaside, to avoid contracting malaria [Sass, vol.1 186].

We can only speculate on the reasons behind the characteristically small size of the garden at Middleburg. We do know that it was installed between the late 1780’s and the 1830’s from evidence in existing plat maps and historical accounts. They give us some clues as to who owned the plantation at the time the garden was installed and why the garden took a relatively modest form.
The Simons family were the first owners of Middleburg Plantation. (The name is nowadays pronounced with a "short i", like Simmons.) The land was granted to Benjamin Simons (1672-1717), a Huguenot who emigrated from France to the British colonies in America to escape persecution. Family tradition states that Benjamin Simons had arrived in South Carolina by 1686 with the Dupre family, his aunt and uncle [Hill; Simons]. South Carolina land records show that Simons was granted 100 acres in Berkeley County in 1697 [Byra]. The first known, recorded reference to Middleburg Plantation dates from 1699, when the birth of a girl was recorded in the family Bible of Benjamin Simons [Salley]. The plantation was passed to Benjamin Simons II (upon his father's death in 1717, and to Benjamin Simons III upon his father's death in 1772 [Hill]. During this period, the productivity of rice plantations increased dramatically with the development of tidal rice cultivation. By 1785, the original 100 acres of Middleburg Plantation had grown to 3,342 acres [Hill].
A plat map of Middleburg Plantation was drawn in 1786. This map by Joseph Purcell is the first, known, visual depiction of Middleburg Plantation. The map shows a long, straight avenue leading NNW from the road to the house. Flanking the end of the avenue on the south side of the house are two rectangular gardens. A linear water feature with an irregular outline wraps around the built-up area from the south to the east. A rectangular pond surrounded by pasture is located on the north side of the house. A straight road runs NW from the house to the rice fields; it appears to be lined with large, evenly spaced trees on its west side. Other roads also radiate from the house into the fields. At the northern boundary of the property is the East branch of the Cooper River and the tidal rice fields that flank its south side. Byra [Byra] cites the work of Leland G. Ferguson and David Babson [Ferguson] when she identifies buildings surrounding the main house on the plat:

- Outbuildings are located SW of the main house
- Barn and machine house are located NW of the main house
- Offices are located north of the main house
- Negro houses are located east of the main house

Another map of Middleburg Plantation was drawn in 1794 by Goddard and Sturges. This map shows the same buildings and landscape features as the 1786 map, in approximately the same configuration.

Upon the death of Benjamin Simons III in 1789, his holdings were divided between his three daughters [Charleston]. Sarah Lydia Simons inherited the plot containing the house and tidal rice lands [Hill]. In 1799, Sarah Lydia Simons married Jonathan Lucas II.

The Lucas family was founded by an emigrant from England to America. Jonathan Lucas (1754-1821) arrived in South Carolina around 1790 [Dictionary]. Lucas, and later his son, Jonathan Lucas II (1775-1832), revolutionized the rice industry through the development and refinement of the rice mill. In 1801, the first, tidally operated, commercial, rice mill was built at Middleburg Plantation [Allston]. Steam power was added to the rice mill in the early- to mid- 1820's.

In 1824, Jonathan Lucas II and his family moved to England. His son, Jonathan Lucas III, assumed control of the family's operations in South Carolina. In 1823 Jonathan Lucas III was married to Mary Hayes Bennett, daughter of the South Carolina Governor Thomas Bennett. He died young in England in 1832.
Patti Byra [Byra] and several other researchers from the University of South Carolina [e.g., Barile, Ferguson], as well as the current owners, the Hill family, attribute several significant landscape changes at Middleburg Plantation to the decades of 1820 and 1830 when Jonathan Lucas III managed the plantation. The events leading to such changes include:

- The slave housing was razed and reconstructed east of the main house.
- A commissary and stable were built at the former location of the slave housing.
- The riverfront wharf was removed and a new wharf constructed.
- The gardens were relocated from the south side to the north side of the main house.
- Various species of trees, including magnolia, cedar and sycamore, were planted at the south side of the house.
- An allee of live oaks was planted along the entrance drive between the public road and the main house.
The hypothesis that the slave quarters were razed and the commissary and stable were subsequently built during this period was proved by archeological investigations done by the University of South Carolina Department of Anthropology. Several studies were conducted between 1986 and 1999. Byra shows that a large amount of soil was added to the area north of the house, creating terraced formal gardens, but her archeological analyses do not pinpoint the time period during which the filling occurred. An 1832 article [Miller] describing how the oak allee was planted indicates that the planting took place some time before this date. Our study concludes that it cannot be determined, based on currently available evidence, whether or not the formal gardens, the trees on the south side of the house and the allee of oaks were indeed planted during this period. We believe that it is also possible that the formal gardens were planted at an earlier date. This will be discussed in more detail later.

In 1848, Jonathan Lucas III died, leaving Middleburg Plantation to his son, Thomas B. Lucas. In 1856, the plantation left the possession of the Lucas family when William J. Ball mortgaged the property from Simon Lucas, son of Thomas B. Lucas. In the latter half of the nineteenth century, the productivity of the plantation decreased as did all rice production after the Civil War and the emancipation of slaves [Sass, 230]. Middleburg Plantation remained in the possession of the Ball family until 1981. In 1926, following the death of John C. Ball in 1923, the surveyor Richard C. Rhett made a map of the plantation.

This map shows the entrance road lined by the oak allee. It also shows the same roads as the 1786 maps, going from the north side of the house to the river and rice fields. The commissary and stable are shown east of the main house. The pond behind the house is not visible. It may have been overgrown with vegetation at the time of the survey.

John Coming Ball (1848-1926) bought the property in 1872 and made his home there [Irving, 155]. Between 1923 and the end of World War II, the plantation was uninhabited [Hill]. After WWII, Marie Guerin Ball, his daughter, and her husband, Edward Von Siebold Dingle, an artist and ornithologist, moved to the plantation [Leland; Irving 155; Ball 116]. It is believed that the Dingles plowed the area bordering the pond to grow vegetables [Macky Hill]. Also at this time, the rising water, caused by the Santee-Cooper Hydroelectric Dam (1938-1942), flooded the rice field dikes and the mill building was dismantled and sold as lumber [Sass, vol. 1 258].
Several sources from the 1920's and 1930's document the appearance of the formal gardens at that time (see selected quotations in Appendix 3). In 1926, Emma S. Gilchrist describes the garden with its roses, camellias and brick-bordered walks enclosed with closely clipped box hedges [Gilchrist]. In 1928, Dr. Johnson, who kept scrapbooks on Charleston and the many plantations of the Low country included photographs of the formal gardens at Middleburg Plantation. In his 1934 book, A. B. Lockwood includes descriptions of the formal gardens at both Middleburg Plantation and the Lucas home in Charleston [Lockwood; quoted in Appendix 3].

In 1981, Jane Evatt Hill purchased Middleburg Plantation from the Ball family. Byra writes:

Macky Hill (1991 personal communication) reports that at the time of his mother’s acquisition of the property, the garden area had been neglected for many years and was overgrown with weeds. The pond was full of vegetation, trees, and pond scum, and former fields contained large trees and brush.

In 1989, Hurricane Hugo wrought havoc in the South Carolina Low country. At Middleburg Plantation, the stable and the kitchen building located next to the garden collapsed. Magnolias, cedars and live oaks were broken or uprooted by the strong winds. The destructive forces of the hurricane harmed most of the vegetation at the plantation. The Hills invested much money and effort in the cleanup and restoration after the hurricane (Hill, personal conversation).

The members of the Hill family have actively sought to learn more about their plantation’s history. Professors and students from the University of South Carolina have conducted archeological, botanical and palynological (pollen) studies since 1986. From the formal garden and pond area, the Hills have selectively removed vegetation which they thought was not original to the design. The family desires to preserve the original design and the remaining, original plants within the formal garden. The family asked the Department of Landscape Architecture at the University of Michigan to assess the history and current conditions of the garden and to make recommendations for its treatment.
In order to have a better understanding of what may have been going on in the formal garden at Middleburg, we must first briefly review the history of horticulture and landscape developments in South Carolina during the period 1700-1860. There are many references to plant collectors, nurserymen, formal garden design, and gardens books during this time. The wealth of knowledge and plant material available then certainly had an effect on the design at Middleburg. In 1754, Dr. Alexander Green, an amateur botanist, started a nursery in Charleston. John Bartram and his son William, creators of what is called the first botanic garden in North America, traveled to South Carolina in 1773 to explore the flora of the region. In 1785, André Michaux was sent by Louis XVI of France to collect New World plants from the Carolinas. He brought with him many European varieties of plants such as crepe myrtle (Lagerstroemia indica), mimosa tree (Albizia julibrissin), ginkgo tree (Ginkgo biloba) and camellia (Camellia japonica). Thomas Walter (1740-1788) cataloged over 1000 species of plants collected within a 25-mile radius of Charleston [Bacot]. The names of local people who offered seeds and plants for sale include Samuel Everleigh (1732), John Watson (1755), and Peter Crowells & Co. (1789). In 1805 Charleston's first botanic garden was started. By 1835 Dr. John Bachman could list 1030 species within a nine-mile radius of Charleston.
Several books published during this period had an impact on garden design and layout. They include *The Theory and Practice of Gardening* (first published in Paris and then translated into English in 1712) which gave advice and recommendations on design elements, and *The Gardener's Calendar*, written by Robert Squibb in 1787, which told gardeners "what to plant each month for the best possible results" [Cothran, 23-30].

In the 1700's and 1800's, large estates, known as plantations, were developed by planters who had acquired their fortunes in agriculture or trade in the Carolinas and the West Indies. Charleston's wealthy landowners soon set out to build fine houses and gardens in the English tradition, primarily influenced by French Formalism. Fine gardens were an important part of life and culture. They represented wealth, power and social prestige [Cothran, 24]. Prominent among these early plantations were those named Mulberry, Mepkin, Crowfield, Middleburg and zz along the Cooper River. Crowfield may be considered the finest. There is a basic similarity in the landscape layouts at Crowfield and Middleburg: a central axis dominates the plan, with a large circular entrance in the front of the house and a formal garden leading down to a rectangular pond behind the house. The gardens at Crowfield were built in 1750 and abandoned by 1770, while Middleburg's garden may have been built as early as 1795. This suggests that Crowfield may have served as a model for Middleburg [Cothran, 24].
Another prominent garden along the Cooper River was that of the Ball plantation at Comingtee. A description of that garden around 1920 follows:

The garden was laid out in the old-fashioned way, with a straight walk down the middle, between flower-beds bordered with jonquils. There were bunches of snow-drops, too, and delicious old-fashioned sweet-roses; some large old crepe-myrtle trees faced each other across the walk; and here and there were great rounded bushes of box. Outside of the flower beds were the vegetable beds; and, in a sunny spot among them, an old brass dial "marked the hours which were serene." On the line of the fence, dividing the garden from the orchard was a huge pecan, rivaling the live-oak in size [Deas, 13-14].

The description of Comingtee is of particular importance to Middleburg because Catherine Chicken, who lived at Comingtee, moved to Middleburg in 1763 when she married Benjamin Simons. It would seem quite possible that she brought with her design ideas for the gardens at Middleburg [Deas, 68-69]. However, this scenario is unlikely. Two existing plats from the eighteenth century, one dating from 1786 and one from 1794, both show the formal rectangular gardens on the inland side of the house and neither plat indicates the existence of a garden on the river side of the house. There is no plat to be found that was drawn for the plantation in the nineteenth century so the small formal gardens of Middleburg could have been created anytime after 1794.
In 1799 Jonathan Lucas II married Lydia Simons and took over Middleburg, the family plantation. From 1800 to 1820, the Lucas family was busy raising children, building several large rice mills in the Charleston area, acquiring new properties and rising in society. This is another possible period when the gardens could have been built.

Archeological studies provide evidence of disturbance and construction on the plantation during the 1820's. "The slave quarters were burned to the ground and the commissary and stables built on the same site... at the same time the kitchen, housing for house slaves, and a privy were built next to the house" [Byra, 12]. This was just after the Denmark Vesey slave conspiracy of 1822 when some slaves revolted against their white masters. This may have frightened the rice plantation owners enough to rethink the locations of their slave quarters and to place them further away from the master's house [Barile].

But we also know that gentrification and beautification were strong social forces at this time. [Bushman, 100] Several plantations then added the now well-known feature of allees of live oaks leading up to the front of the plantation house, and planted large gardens around their enlarged, stately homes [Sass, 186]. In 1823, Jonathan Lucas III married Mary Hayes Bennett, the daughter of the Governor of the State of South Carolina, a family that lived in the style of the highest social order since they were the "first family" of the area. The Bennett family homestead was Brick Plantation, just down the river from Middleburg. The Garden Club of America documented the gardens of Charleston before 1840 and claimed that one of the most important gardens was that of Governor Bennett [Irving, 22]. The garden was the governor's pride. He brought over two English gardeners to whom he gave a house and a yearly salary of twelve hundred dollars. The grounds are described as having been most extensive, including a vegetable garden in the rear, numerous fruit trees and a group of large live oaks. They were laid out in the Flemish style, with square beds and broad, straight walks. Many foreign plants were brought from Europe and the family was constantly adding strange and beautiful specimens [Cothran, 38].
The various citations and descriptions found during research in the libraries and archives in Charleston do not provide a clear understanding of when, or by whom, the Middleburg gardens were laid out and installed. We do know that they are on a small scale compared with the grounds of its neighbors, perhaps by choice.

It could have been built by Catherine Chicken Simons after the death of her husband Benjamin Simons in 1789 and before Lydia Simons married Jonathan Lucas II in 1799. At that time, people still lived on their rice plantations year round. Or the designer and planter could have been Jonathan Lucas II, or even his young wife Lydia, in the early 1800's. What does seem less plausible is that Jonathan Lucas III designed and produced the formal garden at Middleburg in the early 1830's. The garden was small and did not have a true central axis. Because he was accepted in the highest circles of Charleston society and about to marry the daughter of the Governor, a very enthusiastic gardener himself, it seems less likely that Jonathan Lucas III would have constructed such a simple garden. Perhaps further research into the private correspondence of friends and family will bring forth more information about the design of both the Middleburg Plantation gardens and the beautiful gardens attributed to Jonathan Lucas III at his Charleston home.
IV. Existing conditions inventory

A. Location of gardens at Middleburg Plantation

The remains of the formal gardens of Middleburg Plantation are located directly adjacent to and north of the plantation house, between the house and the east branch of the Cooper River. The gardens are arranged with a central axis in line with the live oak allee. They are bordered by the partially restored kitchen building to the east, the remains of the household slave quarters to the west, the main plantation house to the south, and the rectangular pond to the north. These enclosing features serve as the boundaries for this evaluation of existing garden conditions, although many other significant features at Middleburg Plantation are of interest.

The buildings around the edges of the garden, though not specifically part of it, help to define it, and a description of their condition is thus useful. The house slave quarters, located to the west of the garden, appear to have been divided into two chambers back to back. They are in the worst deteriorated condition of the three bordering buildings. Two brick fireplaces with partial chimneys, two sets of brick steps, and approximately three-quarters of the building's brick foundation are all that survive. All of these features are visible on the garden area map (page 19). The kitchen building has been partially restored. It consists of a wooden post and beam frame on a brick foundation with clapboard siding and wooden shingle roof. Also present is a large brick fireplace with chimney, roughly in the center of the building. Just to the northwest of the kitchen building is a brick pit that is believed to be the remains of a privy and possibly original. This feature is also shown on the garden area map.
Landscape features that are not addressed in this evaluation include the multiple drainage swales (presumably used to prevent runoff from entering the rice fields), the area around the commissary and field slave quarters (no longer standing) northeast of the main house, the toll house, the rice mill, and the dikes and water control structures associated with the rice fields. There is a mound planted with several live oaks nearly at the edge of the rice fields just northeast of the central garden axis which appears to be a manmade feature and is worthy of future study. The rice mill, claimed the first of its kind in South Carolina [Chaplin, 253], is a significant architectural feature, even though the wooden parts of the original building are no longer present.

Spatial organization of the Middleburg garden is ruled by four concepts: axial symmetry along a central longitudinal axis; subsidiary division along a transverse axis; a four-part division into upper terrace, sloping area, lower terrace, and pond; and a stylized, geometric layout overall.

The formal gardens at Middleburg Plantation are organized into three main zones arranged linearly: the upper, guitar-shaped garden nearest the plantation house, the Camellia Allee and topographic fall, and the lower terrace and pond farthest from the house. The physical features and vegetation in these gardens were surveyed as described in Appendix 2.
LEGEND
• depression
d• tree stump

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NOTE:
See page 20 for reference table
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B. Spatial Organization

Spatial organization of the Middleburg garden is ruled by four concepts: axial symmetry along a central longitudinal axis; subsidiary division along a transverse axis; a four-part division into upper terrace, sloping area, lower terrace, and pond; and a stylized, geometric layout overall.

The formal gardens at Middleburg Plantation are organized into three main zones arranged linearly: the upper, guitar-shaped garden nearest the plantation house, the Camellia Allee and topographic fall, and the lower terrace and pond farthest from the house. The physical features and vegetation in these gardens were surveyed as described in Appendix 2.

Various elements define the upper terrace and the two axes, including buildings, structures, paths, and vegetation. Border vegetation continues beyond the outbuildings to enclose the remainder of the upper terrace, and consists of crepe myrtle (Lagerstroemia indica) and azaleas (Rhododendron spp.). The guitar-shaped garden gets its shape from the arrangement of the soldier-course brick that edges the paths. These bricks are spalled or fractured (not surprising if they are original to the garden and have spent in excess of 150 years in the ground). Several paths delineated by brick edging are apparent in this part of the garden. One path follows the central garden axis from near the brick pad in front of the porch steps to nearly the top of the Camellia Allee.

Two other symmetrically placed paths wind gently back and forth in a guitar shape and connect. Outside these paths are two more straight paths, one on each side of the garden, parallel to the central axis. The western path curves in towards the central axis at the end opposite the main house. The final path, apparent from its brick edging, is along the northern edge of the upper garden at the top of the fall of land, perpendicular to the main axis, and is flanked with azaleas. Only parts of this path are visible, but the western end of this path terminates in two, unpainted and partially rotted wooden fence posts, possibly the former location of a gate. This section of the garden is mostly flat, though it does slope slightly to the north.
B. Spatial Organization

The middle section of the gardens is characterized by a steeper slope, an allee of camellias, and brick path edging between the rows of camellias. The path and allee are on the central axis of the garden but are slightly misaligned with the central path in the upper garden. The path, as demarcated by the brick edging, is wider than the paths in the upper garden. There are no other features apparent in this section of the gardens.

The third and lowest section of the gardens is mostly flat like the upper garden and is devoid of evidence of pathways. This section of the garden terminates in a rectangular pond. The pond lies at the terminus of the garden, bisected by the central axis. It is visible from the sloping section of the garden and the lower garden. Providing a graceful boundary to the garden, the pond’s rectangular shape mirrors the shape of the main house at the garden’s other end; together they ‘bookend’ the garden. The Figure on page 23 illustrates a section through the gardens, along the central axis from the main plantation house to the north side of the pond. In sum, an overview of the entire garden reveals a highly geometric and axial layout typical of low country plantations and reminiscent of seventeenth and eighteenth century European estate gardens.

Macky Hill provided information that is not immediately apparent from a visual inspection. He discovered a buried piece of bluestone with a central hole where the upper terrace joins the sloped area. He speculated that it might have been a post foundation for a gate between the two terraces. Hill also stated that on the lower terrace, there was a fragmented brick-bordered path parallel to and three feet away from the first transverse axis path. Given these two facts, he posited a fence between the upper terrace and the lower terrace. Macky Hill also noted that during his subsurface soil exploration, he found shards of a terra cotta-like material scattered through the garden. No explanation is currently known for these shards, though they may originally have formed a spatial organization feature.
C. Topography

The terracing of the garden is a result of human manipulation, and is one of the most important character-defining features to survive into the twenty-first century. Closest to the house is a flat upper terrace. A modest slope forms a transition down to the lower terrace. The lower terrace itself slopes subtly down to the pond. Mac'9' Hill stated that the slope connecting the upper and lower terraces was entirely hand-filled over many years by slaves with the soil excavated from the pond. Hill provided a possible explanation for this: field slaves in tidal rice fields had more leisure time during the growing season than during planting or harvest times. During the growing season, the field slaves' main responsibility was to keep the fields flooded. The high water levels kept undesirable plants from growing in the rice fields, and eliminated the need for weeding. He speculated that the planters may have used the slaves in tasks such as earth moving to keep them occupied. Mac'9' Hill noted that subsurface disturbance may have occurred in the twentieth century, with the installation of a vegetable garden, a water main to the house, and a sewer line. This appears not to have significantly disrupted the garden's terracing.
The overall impression of the gardens at Middleburg Plantation is one of casual formality. There is an obvious plan to the garden, but it is not rigidly symmetrical. The paths along the central axis do not quite line up between the upper garden and the camellia allee, the plantings are not exactly symmetrical and, in some places, are pointedly asymmetric. The square pond is slightly trapezoidal and a bit off axis. The straightness of the live oak entry allee seems to indicate that the ability to make accurate measurements was not an issue, assuming the same people were involved.

D. Vegetation

Vegetation is a unique type of feature, as it is dynamic and in continuous transformation. Thus, though the Middleburg garden has a rich array of vegetation, this is one of the garden's most intricate puzzles. Some plants may yield up their dates of origin with precision, though only by invasive means such as tree coring. Other vegetation is difficult to date by any other means than educated guesses based on factors such as growth rates. In addition, no primary written or graphic documentation of the garden's original plantings has yet been uncovered. Middleburg's vegetation thus awaits further research on its dates of origin. The plantings currently present in the formal gardens at Middleburg Plantation are located mostly in the upper garden section. All of the plants surveyed, mapped, and identified by letter on page 19 are described in a table on page 20. The woody plants in the Middleburg gardens are dominated by azaleas (Rhododendron spp.) and Japanese camellia (Camellia japonica, Camellia sasanqua, though there are several important crepe myrtles (Lagerstroemia indica) and a scattering of other species including rose (Rosa spp.), forsythia (Forsythia sp.), Cape jasmine (Gardenia sp.), tca (Camellia sinensis), sugarberry (Celtis laevigata), and common flowering quince (Chaenomeles). There are several tree-of-heaven (Ailanthus altissima) that have grown voluntarily amongst the azalea and bay (Laurus nobilis) (plants H, I, and L) in the west corner of the upper garden. The ground cover in the upper section is turf grass. In the two lower sections the ground cover is a mix of field grasses.

Two giant crepe myrtle trees stand on either side of the upper terrace, and appear to be unusually old. The one on the eastern side of the garden used to have a single trunk and once possessed the title of North America Grand Champion. When its interior decayed, it was reinforced with a concrete core. A 1972 ice storm split the tree into multiple trunks [Allan 11/13/93]. The other giant crepe myrtle is near the house slave quarters and also has multiple trunks.

There are several stumps in the gardens, two of which are in the Camellia Allee just nearby plant OO and are most likely remains of camellias. Three other stumps, close to plant H, between plants A and D, and northwest of the privy are not identified, and there is scant evidence to posit much of a guess as to their species.

A series of depressions are significant features of the upper garden. Two of these depressions are located almost symmetrically outside of the curving paths at their narrowest point (one of them is near to plant E).

Existing conditions inventory

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D. Vegetation

These symmetric depressions are likely the remains of stumps of previously existing trees which have rotted away, although future analysis of any remaining root wood is possible during an archeological investigation. Unfortunately, there is not enough information available to tell what these plants might have been. The other depressions in this section of the garden may also be stump remains, though they do not seem to have symmetric mates on the other side of the central axis.

The allee of Japanese camellia (Camellia japonica) has lost many individual specimens. Trunk remnants and ground depressions indicate their locations. Most remaining individuals appear to be exceptionally old, and are in good condition considering their age. Other linear plantings are found throughout the garden, including the azaleas (Rhododendron spp.) flanking the transverse axis path. According to the Hills, these azaleas have been pruned back regularly, so it is difficult to tell their age. The Hills also made reference to snowdrops (Galanthus sp.) which bloom from January to March, scattered throughout the garden and to elephant mustard that grows year round.

E. Circulation

The path layout is symmetrical: the central path forms the long central axis of the garden, dividing the garden into two mirrored halves. On the upper terrace, these two halves are traversed by curvilinear paths. The paths consist of grassy footpaths with brick borders. According to Macky Hill, no subsurface gravel or paving has been discovered along the paths.

The brick borders were reset in a soldier course by the Hill family based on the example provided by several remnants. Many of these bricks are spalled or shattered. A conjecture based on a visual inspection is that the bricks may have been made before the late eighteenth century. Before the late eighteenth century, bricks were low-fired with a resulting soft and porous texture. Therefore, such bricks are vulnerable to moisture damage; saturated bricks often spall or shatter [Courtney].
The main house and two outbuildings are important character-defining features. The main house was built in 1697 and is believed to be the oldest surviving wooden dwelling in South Carolina. As a result, it has garnered much attention, and has been repaired and restored. The two outbuildings consist of the kitchen and the house slave quarters. The Hills repaired the kitchen, so that its walls and roof are intact. By contrast, the house slave quarters lost its walls and roof during Hurricane Hugo, leaving its two interior fireplaces exposed. Many of its bricks are now scattered around the privy and vegetable garden, although some of these bricks may be from former garden paths [Macky Hill]. The slave quarters' missing walls were critical character-defining elements, helping create the upper terrace's strong symmetry, and their absence strongly affects the viewer's experience of the garden's geometry. The privy's foundation is still intact, though its walls and roof are gone.

A matching pair of wood posts marks one end of the transverse path at the far side of the upper terrace. These were originally the columns of a house built in 1890, and were installed at Middleburg by the Dingles in 1960. Four foundation piers next to the kitchen are remnants of a water tower built by the Dingles in 1963 [Macky Hill]. The faucet to the side of the central axial path was installed in 1984-1985.
Middleburg Plantation is a significant historic site both as part of a larger settlement pattern and on its own merits. It is an integral part of the network of rice plantations that flourished along the Cooper River from the seventeenth to the nineteenth centuries. And by itself, Middleburg is a fine example of a working plantation with features not found elsewhere in the vicinity: the unassuming size of its house, the steam-powered rice mill, the outlying commissary, and more. The garden is well placed in this working plantation, its modest size complemented by its fine plan and detailing. While the main house is on the National Register of Historic Places, the garden itself has not been adequately assessed and deserves closer examination.

The National Park Service has established four criteria for evaluating the historic significance of a site, preparatory to its listing on the National Register. These criteria are:

"The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

A: that are associated with events that have made a significant contribution to the broad patterns of our history; or

B: that are associated with the lives of persons significant in our past; or

C: that embody the distinctive characteristics of a type, period, or method of construction, or that represents the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D: that have yielded, or may be likely to yield, information important in prehistory or history" [National, 2].
Criteria C and D are appropriate to Middleburg. The garden meets criterion C in that it "embodies the distinctive characteristics of a type / period and represents a significant and distinguishable entity whose components may lack individual distinction." Its plan is based on the seventeenth and eighteenth century Western European estate garden prototype, including a long central axis with subsidiary lateral axes, strict symmetry, geometrically laid out beds, allee, and constructed reflecting ponds. This garden type was the dominant choice of planters, as is evidenced by the fact that Middleton Place and Drayton Hall, both on the Ashley River, use the same design vocabulary. A similar palette is used at Middleburg and reinforces the link between that estate and other estates in the historic Cooper River rice plantation corridor.

Criterion D is applicable, for the Middleburg garden is an enigma. Though existing conditions clearly indicate a significant site, substantial original documentation on the garden as built remains elusive. Additionally, extremely limited information exists on the site's prehistory, yet excavation has revealed several prehistoric artifacts, the most significant of which is an 11,000-year old oyster shell spear point [Macky Hill]. This garden is therefore potentially ripe with discoveries important to both history and prehistory, and awaits research to uncover its full significance.

The National Park Service recognizes four categories of cultural landscapes: historic designed landscapes, historic vernacular landscapes, historic sites, and ethnographic landscapes. The Middleburg garden is clearly part of the design tradition that was codified in Western Europe during the seventeenth and eighteenth centuries (as discussed above), and that made its way to the South Carolina rice plantations. It is therefore a historic designed landscape, and the following site treatment recommendations are based on this crucial fact.

A. The management of the Middleburg garden by its current owners

The Middleburg plantation is currently owned by the Hill family. The owners articulate a sensitive and responsible stewardship philosophy, one that has guided them in their treatment of the landscape. The Hill family's ultimate goal is to preserve the entire East Branch of the Cooper River, including not only Middleburg and other plantations but also lands not yet altered by modern development. Thus, the family wishes to see the entire corridor declared a National Historic District, so that the integrity of the river corridor may be preserved. National Historic District designation would encourage landowners to see their individual properties as part of a collective whole, and to unite in their stewardship goals. For instance, landowners may eventually choose to restore the now overgrown viewsheds to their original unobstructed scopes. There is a collective advantage to restoring an original viewshed: it reinforces awareness of the cultural and natural network in which the Cooper River plantations were sited. Restoring Middleburg's original views has already been considered by the family.

The Hills have employed one powerful tool to protect the historic integrity of the site. Four years ago, they put Middleburg under a conservation easement, through the Low Country Open Land Trust. They are actively encouraging their neighbors to follow suit, and have already met with some success. Although immediately adjacent lands are not yet under conservation easements, the Hills are working to accomplish this.
The Hills favor a conservation easement for several reasons. Most important is that it legally ensures that there be no casual subsurface disturbance of the soil, thus preserving the subsurface historic record. Additionally, if practiced on a corridor-wide scale, it protects the plantations' current viewsheds. Finally, the easement protects abundant Native American artifacts greater than six thousand years old, artifacts that could flesh out the prehistoric record on Native American culture in this region.

Middleburg's conservation easement reflects the Hill's stewardship philosophy of keeping the estate intact as a historic record. Macky Hill refers to the estate as "a sealed record", abounding in resources waiting to be uncovered and explored; hence the stance that the soil is not to be disturbed, and the family's use of a conservation easement toward that end. The family's stewardship philosophy can be summarized as follows: preserve what is original; be cautious in removing elements; and learn as much as possible about the past in order to make informed decisions. To further protect the sealed record, Macky Hill has documented on paper much of the work that he has been performed in the garden. This documentation is not yet part of a site archive.

The family is conservative in their philosophy of vegetation management: if it is alive, keep it; if it is dying, take a cutting and propagate it; if it is dead, remove it. In practice, this management becomes more complex, including the removal of some live woody vegetation, and the application of herbicide. When the Hills acquired the property, there were large azaleas (Rhododendron spp.) to the north of the main house. Since they were apparently smothering the roses beneath them, blocking the view from the house, and causing structural damage to the house, the family decided to remove them. Over the last two decades, the family has also removed plants deemed undesirable, including wisteria (Wisteria spp.), Japanese maple (Acer palmatum), and spirea (Spiraea spp.).

The grass on the upper terrace is cut weekly, with a weed whacker performing most of the cutting and a hand mower the rest. This causes less damage to the bricks than the use of a riding mower. The lower terrace is mowed less frequently, using a riding mower.
The garden has a history of herbicide use. Roundup was used to kill the wisteria, but has not been used it at any other time. Currently, the upper terrace's brick paths are bordered by strips of dead turf and weeds, which was caused by unauthorized use of Roundup or some other herbicide [Macky Hill].

Macky Hill has identified of many plants that were living when the Hills acquired the property but no longer survive. It is important to document this vegetation, and to correlate it with any above-ground remnants (such as stumps) that still exist. Further documentation should describe species, size, condition, location, and circumstances of death.

The Hills have expressed a cautious attitude regarding public access to the site, one that respects the site's fragility. The family holds the strong conviction that Middleburg should not be developed into a casual tourist destination. However, they have welcomed serious scholars who wish to further knowledge of plantations along the East Branch of the Cooper River. Not insisting on an exclusive preservation and restoration policy, they believe that reconstruction of original site elements may be permitted if backed by sufficient reason.

When the Hills came into possession of Middleburg, the brick edging was partly buried and not upright. Vegetation was cleared around the bricks, and the positions of all upright bricks was recorded. The family then engaged a mason to right the toppled bricks and to secure all bricks on a bed of cement.

It has not been determined whether this is the first time that the bricks were set in mortar, but a mortar bed laid at any time may have hastened the deterioration of the brick. Portland cement mortar makes bricks especially vulnerable to damage, for two reasons. First, Portland cement is not as flexible as lime-based mortar, and does not yield with the expansion and contraction cycle of the brick. As a result, Portland cement may cause a brick to shatter as the brick expands, or to separate from the mortar as the brick shrinks. Additionally, Portland cement-based mortar may contain sulfate impurities, causing crumbling and exfoliating of the brick [Courtney].

The pond is located behind the subtly sloping rear terrace, with an embankment on the far side. Prior to Hurricane Hugo, it was ringed with mature live oak trees (Quercus virginiana) ranging from 65 to 150 feet tall [Macky Hill]. If these oak trees were original, they would have created a complementary counterpoint to the rectangular vertical mass of the house at the other end of the garden. Today, four live oak trees remain at the edge of the pond. The whole area is ringed with field grass. The Hills have performed some maintenance work on the pond since acquisition in 1981, including clearing out the basin and rebuilding the rear embankment.
B. The Site Inventory Framework Used in This Report

This inventory uses the site analysis framework described in the National Park Service treatment of historic properties [Birnbaum]. This framework breaks down into two categories: organizational elements of the landscape and character-defining features of the landscape. The organizational elements consist of spatial organization and land patterns.

Spatial organization and land patterns paint a broad picture of the entire landscape, and provide a context for assessing how individual features are organized in space, and how these features take their place in the landscape as a whole. Spatial organization and land patterns are thus considered first, and are typically addressed together. There are five character-defining landscape features, which vary from small (e.g., a single pillar) to vast (e.g., a rice field layout). They include topography, vegetation, circulation, water features, and structures, site furnishings and objects. When taken together, they describe the historic character of the site.

C. Treatment Recommendations

Our knowledge of the history of Middleburg's garden has many gaps. That most primary question of all is perplexing: What is the date of the garden's origin? Other questions remain unanswered after a search through original documentation, such as: Who designed the garden? Was it modeled after a particular preexisting garden? What were the original plantings, and which of those survive today? From what date are its terracing and brick? One is left with a sketchy picture of the specifics of the garden's origin, which stymies attempts to envision how today's garden retains its historic integrity. A treatment plan must take this crucial fact into account.

The Secretary of the Interior has codified four alternate treatment plans, involving different degrees of intervention [Birnbaum/Peters]. The alternative involving the least intervention is preservation, wherein the existing form is sustained. Next is rehabilitation, which focuses on maintaining those portions of the site that are key to its historic value, while allowing alteration to accommodate a compatible, but not historically demonstrated, use. Requiring yet more intervention is restoration, in which a period of historic significance is selected, and missing features are reconstructed while anachronistic elements are removed. Most drastic of the four is reconstruction, the replication of a site or feature that has not survived. This last alternative is to be selected only when site retains very little historic integrity.

Preservation is the recommended treatment approach for the Middleburg garden.

Preservation is defined as the act or process of applying measures necessary to sustain the existing form, integrity, and materials of an historic property. Work, including preliminary measures to protect and stabilize the property, generally focuses upon the ongoing maintenance and repair of historic materials and features rather than extensive replacement and new construction [Birnbaum/Peters, 18].
This choice was guided by the Secretary of the Interior's standards and guidelines for preserving cultural landscapes. The criteria for choosing preservation provided the closest match to the factors present at Middleburg. These criteria include:

1) When the property's distinctive materials, features, and spaces are essentially intact and thus convey the historic significance without extensive repair or replacement... [Birnbaum/Peters, 17]

The garden's major elements remain essentially intact, including spatial organization, topography, much of the vegetation, the path layout, the pond, and the outbuildings. Most of these elements are character-defining, and strongly convey the garden's historic significance.

The second criterion is critical to the selection of preservation as the treatment of choice. This is:

2) ...when depiction at a particular period of time is not appropriate... [Birnbaum/Peters, 17]

Those who have studied Middleburg do not concur on the date of the garden's origin. No primary documentary evidence which supports a reliable dating has come to light, and recently proposed dates range from the middle of the eighteenth century to 1830. It is therefore impossible to assign a period of historic significance to the Middleburg garden.

Until a firm date or period can be assigned, the landscape should to be regarded as a sealed record, and protected from alteration.

The last criterion is:

3) ...continuing or new use does not require additions or extensive alterations... [Birnbaum/Peters, 17]

As responsible stewards, the present owners state their express intent to conserve the garden as is, while striving to uncover historic information about the garden that will dictate future directions for its stewardship. Therefore, additions or extensive alterations are inappropriate.

The following treatment recommendations are based on the Secretary of the Interior's guidelines for preserving cultural landscapes [Birnbaum/Peters, 20-23]. These guidelines suggest treatments for each area: spatial organization, topography, vegetation, circulation, water features, and structures/site furnishings/objects. These guidelines are as follows:

1) Identify, retain, and preserve historic materials and features;
2) Stabilize and protect deteriorated historic features and materials as a preliminary measure;
3) Maintain historic features and materials;
4) Repair (stabilize, consolidate and conserve) historic features and materials; and
5) Carry out limited replacement in kind of extensively deteriorated portions of historic features.
Proposed Treatment

This report is the first step in the documentation process. Prior to undertaking any further work, a treatment file for the garden should be established, and written and photographic documentation should be supplemented with a detailed survey, and if possible, aerial photography. All preexisting records of the garden's treatment to date should be added to the treatment file. All materials should be archived on acid-free materials and digitally to the extent possible.

According to the family, extensive work has been completed on the garden. This includes: an early survey of brick border locations; a description of plants extant in 1984; work with archaeologists from the University of South Carolina including observation of soil layers comprising the pond basin, pollen and seed analysis, and the digging of test trenches; removal of some woody vegetation and more [Macky Hill]. Records of such work are invaluable and should be archived with other documentation. The Hills are also urged to record any treatment that they have performed but not yet documented, including the date, exact location, and type of treatment in the record. All such records should be added to the treatment archives. As treatment proceeds, detailed records should be kept of work performed. Photo documentation should accompany written records.

The policy that forbids subsurface soil disturbances should be continued. This ensures that valuable underground resources remain protected. If the knowledge of the site eventually changes so that digging becomes appropriate, another treatment plan should be drawn up so that digging proceeds responsibly, assign a period of historic significance to the Middleburg garden.

Spatial Organization

As important space-defining elements, the central longitudinal axis and the transverse axis should be carefully maintained. Interplanting of Japanese camellia (Camellia japonica) along the allee will reinforce the central longitudinal axis. This interplanting should use the following guidelines: plant specimens propagated from cuttings of existing camellias; minimize subsurface disturbance by employing hand labor and selecting specimens with small root balls. The transverse axis is currently obscured by overgrown azaleas, and conservative pruning is recommended to better reveal this axis. Pruning should proceed with caution to ensure the health of these plants. The location of the bluestone should be documented, and the stone should remain buried in order to protect it.

The terracotta-like shards that Macky Hill found in the soil should be archived, if any are currently unearthed. Until another treatment plan is put in place, no digging should be done to uncover more of these shards. A written record of this discovery should be archived.

Topography

As one of the major character-defining elements of the Middleburg garden, the terracing should be given high priority for stabilization and protection. A preliminary topographic survey of the terraces has been done for this report and should be completed. The terracing, including the two terraces
and the modest slope, should be stabilized and maintained as close to its current state as possible. Ground cover is a crucial means of stabilizing and protecting the current topography. Maintaining the current vegetative cover and mowing attentively are critical to avoid sculpting, gouging, or other damage to the ground surface. Use of a riding mower should be minimized to reduce soil compaction, with its resulting topographic alterations and loss of vegetation. In addition, setting a higher blade clearance on the slope will increase the ability of the grass to resist erosion, thus minimizing potential topographic alterations.

Vegetation

Because it is difficult to determine dates of origin for much of the garden's vegetation, treatment should proceed conservatively. Only those individuals that are clearly known to be recent invasive species should be removed. Experts in local and historic plant identification should be engaged to identify such vegetation. Removal should proceed with great caution to avoid disturbing the surrounding, intact historic fabric. Woody plants, including trees and shrubs, should be cut to just above the soil line. In dealing with an especially resilient species, the stump's severed section should be hand painted with an herbicide. The herbicides must be carefully handled in order to avoid dripping onto adjacent, desirable vegetation. Root systems should not be removed, in order to avoid subsurface soil disturbance. This ensures the protection of buried archeological remnants and prehistoric artifacts. Invasive herbaceous plants should also be identified by an expert and eliminated. If the plant is large or deep-rooted, it should be hand-clipped to the ground and monitored for regrowth. If it persists, a program of frequent re-clipping to the ground is often successful in eventually eliminating the individual. Small and shallow-rooted plants should be pulled out. The entire garden should be constantly monitored for the encroachment of invasive species, both woody and herbaceous, and such species should be removed as soon as they appear.

All other existing woody and herbaceous vegetation should be preserved, stabilized, and maintained. Because some surviving individuals are probably original, or have been propagated from original plantings, it is crucial to save these plants and to thus guarantee genetically authentic vegetation into the future. Sound preservation practice involves many tasks. Initially, each individual plant should be inspected to determine the level of intervention needed. Healthy, stable individuals need minimal intervention, and routine maintenance such as seasonal fertilizing is often sufficient. Overgrown plants should be judiciously pruned. It is important to perform such pruning carefully and gradually, to avoid damaging the plant's health. The individual's root system is thus kept in good condition, with the additional benefit of minimizing soil erosion.

Some plants may need a higher level of intervention. Plants that are not structurally stable may be stabilized by means such as staking or cabling. Diseased plants should be treated as directed by a horticulturist versed in historic plantings. Aged vegetation should be propagated using methods such as seed collection and generic stock cuttings of plants in good health. In order to preserve this genetic material into the long-term future, a nursery and greenhouse should be established, either off-site or at an inconspicuous on-site location. Involving local garden clubs in the development and maintenance of a nursery may reduce the expense of
operating a nursery, as well as foster community awareness of the site's historic importance. Other groups to involve include but are not limited to: other historical sites from a similar period (i.e. Mount Vernon), heirloom plant collectors, and plant societies. When an individual plant reaches the end of its life, it should have a sample extracted and preserved for dendrologic analysis. Invasive methods such as coring are to be practiced only on dying or dead individuals.

Turf should be maintained in a way that minimizes negative impacts on the garden's vegetation and brickwork. Mowing should be performed exclusively with a hand mower, and should proceed carefully near desirable vegetation and brickwork. It is critical that the grass that abuts bricks and desirable vegetation be cut only with a hand clipper, to avoid the damage that weed whackers inflict. Turf should be monitored for good health, especially on the sloping area, so that it continues to provide a stabilizing layer over the topography.

The use of herbicide should be discontinued, except as noted above. Research has not yet proven that herbicide does not affect brick, and this conservative stance is recommended until the long-term effects of herbicide are better known.

New planting should be avoided where no historic documentation exists. Current analytical tools might be employed to determine the presence of vanished plants, including electron microscopy and root hair analysis. In the future, additional landscape archeological tests may become capable of detecting layers of past plant species in the soil. At that point, a new treatment plan should be drawn up to

Circulation

The brickwork should be stabilized, protected, and maintained. Stepping or mowing over bricks should be avoided in order to minimize mechanical damage to the bricks. Inspection and research should be undertaken to determine whether the bricks were originally mortared into place. If there was no original mortar, the addition of mortar is not recommended, as this may damage the bricks, as noted above. However, if any original mortar still remains, it should be quickly re-pointed. Any delay in re-pointing may cause further brick deterioration, as water penetration takes place through faulty joints. When re-pointing, lime-based mortar of a dry consistency should be used, which will allow the mortar to flex in response to the expansion and contraction of the brick. Synthetic resins may be used for consolidating the brick, for which an expert should be consulted.

Because many of the bricks are severely deteriorated, the following extreme preservation option should be considered. The exposed brickwork may be covered with soil to reduce the impact of weathering and dampness on the bricks. A new set of bricks may then be placed on top of this buried set, to demarcate the old lines. New bricks should be clearly distinguishable from old, in order to avoid presenting a false historical record. This option may preserve bricks until sounder brick treatment techniques are developed in the future. Organic growth on bricks should be removed and future growth prohibited. All brickwork that is currently buried should remain so, and its position should be recorded.
Pond

The soil that forms the basin of the pond should be protected and maintained with three measures. First, desirable plants and turf should be maintained in optimal health in order to protect their root systems, thus helping stabilize the embankment and edges of the pond. Second, conservative turf maintenance should be practiced: turf should be cut with a hand mower to avoid compaction of the soil, and the blade height should be set high to encourage healthy roots. On the banks of the pond, turf should be cut by hand. Finally, the edge of the pond should be stepped on infrequently to minimize soil erosion.

Structures, site furnishings, and objects

The two outbuildings are important defining elements of the upper terrace, and it is crucial to stabilize and protect them. It is especially urgent that the severely deteriorated house slave quarters and the privy be stabilized, to protect brick and mortar that are currently vulnerable to the elements. Experts should be consulted on stabilization methods. Photo and other documentation of the house slave quarters and privy should proceed as soon as possible, before further deterioration occurs. If original documentation is eventually found on the house slave quarters, then reconstruction of that outbuilding’s exterior walls will help restore the original vertical symmetry of the upper terrace.

The garden’s structures include the pair of wood posts, the faucet, and the water tower foundation. All these are known to date from the late nineteenth through the twentieth century [Macky Hill]. Nonetheless, these elements should not be removed, for two reasons. First, their removal is most appropriately addressed as part of a larger restoration plan, and is outside the scope of a preservation plan. Second, their removal may disturb subsurface soil and its accompanying archaeological record.

New structures or objects are not to be installed unless they are functionally critical and no other locale is possible. If the installation of structures or objects is inevitable, archeologists should be consulted to determine the extent of the impending impact, and the work should be monitored by archaeologists.

The volatile South Carolina climate has inflicted damage on this site throughout its history. Such damage can be severe, particularly during hurricanes. For example, Hurricane Hugo wrought havoc with the entire garden: it destroyed much vegetation, including most of the mature live oaks bordering the pond, and it dislodged the main house’s two chimneys, scattering one of these chimney’s bricks across the garden. Because weather is likely to cause more damage in the future, measures should be taken in order to facilitate possible future reconstruction of currently intact elements. Thorough documentation of existing conditions is essential. The possible destruction of brick features suggests that an additional tool should be employed: labeling. Toward that end, current systems for labeling structural members should be researched, and the most appropriate labeling system chosen. If available, an invisible numbering system that uses labeling methods such as ultraviolet may be used to label individual bricks on structures. If no invisible numbering system is available, the most inconspicuous labeling method should be chosen. Photo and other documentation will also help immeasurably in any reconstruction effort.
VI. The future of the Middleburg garden

Much remains to be discovered about the gardens at Middleburg. Two primary resources await further research: further site investigation and written and graphical documents.

To date, pollen and soil analysis, as well as dendrological tests, conducted in the garden have not revealed any significant information on the date of installation and the appearance of the original garden. However, as sophisticated analytic methods, such as the use of an electron microscope, become more refined and affordable they may reveal information not accessible by current scientific means.

It is also possible that primary written or illustrative documents may eventually surface, such as journals or drawings. These could be valuable in learning the original date and appearance of the garden.

If enough data eventually surface to allow more precise knowledge of the original garden (including the date of inception or a possible period of historic significance), a restoration-based management plan should be considered.
Timeline of the History at Middleburg Plantation

Appendix one

1686 Benjamin Simons arrives in South Carolina.

1687 Simons receives a land grant along the East branch of the Cooper River. This parcel of land will become known as Middleburg.

1695 Rice cultivation begins in the Low country of South Carolina.

1699 First recorded reference to Middleburg Plantation and its house.

1717 Benjamin Simons II inherits Middleburg Plantation after his father's death.

1772 Benjamin Simons III inherits Middleburg Plantation after his father's death.

1786 The first known plat map of Middleburg Plantation is drawn by Joseph Purcell.

1789 Middleburg Plantation is divided amongst the three daughters of Benjamin Simons III. Sarah Lydia Simons inherits the plot containing the main house.

1790 Jonathan Lucas, an immigrant from England, arrives in Charleston, South Carolina around this time.

1794 A map of Middleburg Plantation is drawn by Goddard and Sturges.

1799 Jonathan Lucas II marries Sarah Lydia Simons and acquires Middleburg Plantation.

1801 The first tidally operated, commercial rice mill is built at Middleburg Plantation.

1823 Jonathan Lucas III marries Mary Hayes Bennett, the daughter of the Governor of South Carolina.
Timeline of the History at Middleburg Plantation

Appendix one continued

1824 Jonathan Lucas II and his family move to England. Jonathan Lucas III manages the family's holdings in South Carolina. Steam power is added to the rice mills around this time.

1820's-1830's Significant changes to the landscape of Middleburg Plantation are attributed to this period:
- The slave housing is razed and reconstructed at a new location much further from the house, probably east/southeast of the former location.
- A commissary and stable are built in the former location of slave housing.
- The gardens are relocated from the south side to the north side of the main house.
- Dependencies are constructed on the north side of the house, framing the garden.
- The riverfront wharf is removed and a new wharf constructed.
- Trees, including Cedar, Magnolia and Sycamore, are planted at the south side of the house.

1832 The allee of live oaks is planted along the entrance drive of the plantation by this time. Jonathan Lucas II dies in England.

1848 Jonathan Lucas III dies, leaving the plantation to his son, Thomas B. Lucas.

1856 William J. Ball mortgages the property from Simon Lucas, son of Thomas B. Lucas.

1926 Map of Middleburg Plantation is drawn by Richard C. Rhett.

1926 News and Courier article describes the history of the plantation and the current state of the formal garden.

1928 Dr. Johnson documents the formal gardens of Middleburg Plantation in his scrapbook.

1934 A.B. Lockwood describes the formal garden at Middleburg Plantation as well as those at the Lucas's Charleston residence in his book.
Timeline of the History at Middleburg Plantation

Appendix one continued

1970 Secretary of the Interior, Walter J. Hickel announces that Middleburg eligible for designation as a national historic landmark.

1981 Jane Evatt Hill purchases Middleburg Plantation from the Ball family.

1989 Hurricane Hugo heavily damages vegetation at Middleburg Plantation.

1993 Middleburg Plantation is granted a $14,302 state grant for preservation and reconstruction work.

1997 The Hill family selectively removes vegetation from the formal gardens and pond.

1986-1999 Archeological investigations are conducted at Middleburg Plantation by the University of South Carolina.

1992 A botanical investigation of the formal gardens is conducted.

2000 Students from the Department of Landscape Architecture at the University of Michigan conduct an historical and cultural investigation of the formal gardens. Recommendations are made regarding the future treatment of these gardens.
Two different methods were used to survey the formal gardens at Middleburg Plantation. One method used horizontal angles, measured by transit, and distance, measured by tape, to locate physical features such as border bricks, building foundations, and plant stems. The second method used a transit level and surveyor's rod to measure ground surface elevation in order to prepare a section drawing down the center axis of the gardens.

A. Physical feature location measurement

The two most important pieces of information in describing the surveying of the garden's physical features are the location of the transit and the reference point used to determine the zero angle (the point from which all angles were measured). The transit was plumbed to the front corner of the middle brick in the back porch steps on the southwest side of the main house. The brick was in the lowest step on the left (house slave quarters) side of the steps. The front brick was loose and was not a repeatable reference point. The zero angle was determined by the electric meter (mounted to a square wooden post) just to the southwest of the main house. More specifically, the surface of the wooden post to which the meter was attached defined the zero angle. All angles used to determine the positions of surveyed points in the gardens were measured clockwise from the line between the transit and this point. The instrument used for these measurements was a Dietzgen transit level, S/N 16513, accurate to 1' and owned by the University of Michigan School of Natural Resources and Environment.
Survey Methods

A series of sketches of the gardens were prepared that included all features of interest (i.e., brick path edges, vegetation stems, and trunks, building corners). Once these sketches were completed, they were used to lay out the arrangement of survey points. Linear features were surveyed with few (2-3) points while curving features contained quite a few more survey points. The survey points were labeled on the sketches with unique identification codes. Each sketch was associated with a table of measurements containing one record for each point surveyed. The fields in each survey point record were identification code, distance from the transit (in tenths of feet) and angle from the zero point (in degrees and minutes).

In the field, the team surveyed all of the desired points that were visible from the transit. In some cases this required the complete extension of the surveyor's rod since the point was behind vegetation or otherwise obscured. Some points also necessitated threading the measuring tape through shrubs in order to keep it approximately level and straight. Both of these difficulties are possible sources of error but, for our needs, these errors are not expected to be significant. Once all of the points of interest had been surveyed, the tables of measurements were the basis for building the map of the gardens in AutoCad v14 seen in this report (Appendix 2).

In addition to being located in the survey, each plant in the gardens was identified and assessed as to condition. Crown spread was used to size the symbols in the AutoCad map, and all of the vegetation information was then collected in the planting list included in this report. There were instances where not every stem was precisely located, particularly in the azalea masses, but the extent of the groupings and condition of the individuals were identified and measured. Some vegetation outside the garden boundaries was also included in the survey, mostly large or old individuals that could be used to connect this work with other projects or documents on Middleburg.

A second transit was used to survey some points not visible from the primary transit. In these cases, the secondary transit was located (by distance and angle) from the primary and the line connecting the transits was used as the zero line for the measurements by the secondary transit. This instrument was the same one used for the elevation measurements described below.

The corners of the main house and kitchen buildings were used as the basis for combining our survey work with the contour map of the garden area compiled previously [Byra, 90, Figure 28]. The contour map was scaled and shifted until the building corners noted on it were coincident with those in our survey. We did not attempt to replicate the large number of measurements necessary to duplicate the contour map but believed that it would be useful to combine the existing map with our work. Even if the change in scale has introduced distortions in the contour map, the combination of it with our survey provides insight and conveys information better than the individual parts, at the very least giving the sense of what is happening topologically in the gardens and where it is happening.
B. Elevation measurement

The transit level was used to determine the elevations of a number of points along the central axis of the gardens in order to prepare a section drawing. The instrument used for these measurements (and the secondary location measurements mentioned above) was a Berger Instruments Model 327 contractor's transit level, S/N 327-1413, accurate to 5' owned by the University of Michigan School of Natural Resources and Environment. The transit level was placed in a location determined by two criteria: all points along the garden central axis were visible; the eyepiece of the transit level was higher than the reference zero elevation. The reference zero elevation was the top surface of the first step up off the ground on the brick steps up to the porch on the back of the main plantation house. This was the same step used as a horizontal reference for the primary transit and was chosen as the zero elevation since there were no obvious survey benchmarks on the site and no other convenient or relatively permanent vertical measurement reference. The transit level location chosen that met the selection criteria was in the Camellia Allee. A 100-foot fiberglass measuring tape was laid on the ground and elevation measurements were made every 10 feet, starting at the reference point on the steps. The surveyor's rod was held vertically with the base resting on the tape for each measurement. These elevation measurements were then used to construct the section drawing seen in this report.
Since 1860

1926. "Here and there beside the driveway are gorse-bushes, brought over by the Huguenots, from their distant homes, and among their roots nestles another alien, the sweet violet from Kenilworth Castle…

"The garden is at the back of the house, where are the sweetest roses, shrubs, old fashioned flowers and delicious, intoxicating smells. The beds and walks were bordered with tiny bright red bricks, and enclosed with closely clipped box hedges, after a formal English plan. It is a very aged garden, probably one of the oldest in America, and, like the avenue, never more beautiful than now in its maturity. The crimson japonica bushes that encircle the garden have grown into immense trees, and those, on either side of the walk to the lily pond at the foot of the garden, have met overhead, forming a wonderful arbor, which when covered with bloom, is a charming sight, unique in conception. At that time yellow jonquils spread the ground with their gold and this bright contrast of color is harmonized and subdued by the ever-prevailing gray moss, that decks the larger trees. In the sweet custom of the long ago the family buried their dead here, in the home soil among the flowers. Later the bodies were removed to the graveyard of Pompion Hill Chapel." [Gilchrist] (Pompion is locally pronounced 'punkin'.)

1932. The original book by Irving has only a description of the rice mill and its importance. Many additional comments are made by the editor Stoney in 1932 including mention of Middleburg's garden: "laid out during the Lucas ownership, it is set thick with immense camellia japonica trees. Its chief glory is an avenue of them nineteen feet wide, whose branches meet overhead. Their flowers are single, scarlet as a cardinal's hat, and when in bloom, the ground under them is covered with a floor of fallen blossoms, red and purple. Beyond this is a pond formerly surrounded by many beautiful exotics where a new planting of azaleas and other flowers is to be made." [Irving]

1934. "At the back of the house, in the garden once formal and brilliant, are the remains of beds and walks laid out with edgings of tiny red bricks, and closely clipped hedges of box, enclosing calycanthus and all manner of sweet-smelling plants. From the back piazza one steps down directly into the rose garden. Round this sweep red camellia trees, testifying by their unusual size to their great age… In the lower part of the garden, the jonquils, no longer restrained, run in golden confusion everywhere. The banks of the pond are now overgrown with live oaks, cedar, and willow, trailing their branches in the dark water." [Lockwood, 222].
1957. In 1957 this crepe myrtle was declared by the American Forestry Association to be a "Champion Tree of North America" with a size of 9 feet 8 inches circumference and three feet in diameter. The trunk split in the 1972 ice storm [Allen, 9/12/83].

1963. Middleburg description. "A small wooden gate opens on to the garden at the rear of the house. The beds and walks are edged with tiny red brick and there are traces of small box edgings indicating that it followed a somewhat formal Continental plan. But long ago this garden outgrew the strict regulations of its youth and has become a sweet riot of old-fashioned flowers, of shrubs and ornamental trees. Here autumn lingers long and I find the December air filled with the intoxicating scent of great loquat bushes that stand in dense clumps. There are large crepe myrtles, their smooth trunks like serpents carved in pale ivory, and Cape Jessamine bushes that will fill summer with heady sweetness, while an arbored scuppernog vine that lends a homely air to the once formal garden will tinge autumn days and nights with the musky aroma of ripening fruit. The glory of the garden lies in its lines of camellia japonica trees bordering the center walk, meeting overhead to form a shadowed tunnel strewn, when spring is here, with red blossoms. The walk leads down to the square lake at the foot of the garden, with a live oak shading the water and keeping long guard over the lake and garden... I consider Middleburg the most perfect survival of an early river rice plantation and plantation garden in South Carolina." [Shaffer, 93-95]

After 1970. "A large crepe myrtle and the "Allee" of large Japonica trees have received national notice. In May, 1970, Secretary of the Interior, Walter J. Hickel announced that Middleburg was among nine buildings in South Carolina eligible for designation as national historic landmarks, which fact had been recognized by Harold Ickes in the 1930's." [Cross, 66]

1979. "The Middleburg house, completed in 1696, was renovated and an addition built in the 1800s but otherwise it has remained untouched for almost 300 years. ... The house sits back from the river at the end of an avenue of oaks that leads in from the highway. Behind the house the remnants of a formal garden, now reduced to random daffodill sprouts and a lane of giant camellia bushes, drops down to a small pond of ragged cattails. ..." [Laurie, 42-43].
1981. "Middleburg Plantation purchased by the Jane E. Hill and Max L. Hill Family for $425,000.00. The Charleston historic preservationist, David B. Hoffman, has been helping the Hill family with the restoration work in the house. [News & Courier, March 24, 1981]."

1983. [The Middleburg] "camellia allee - the blossoms were said to originate from the stock of Arthur Middleton... one of the few bald eagle nests in the area was at Middleburg for many years.... A record-sized crepe myrtle 30 feet tall. In 1957 this crepe myrtle was declared by the American Forestry Association to be a "Champion Tree of North America" with a size of 9 feet 8 inches circumference and three feet in diameter. The trunk split in the 1972 ice storm. [The plantation] was visited by many famous people including Daniel Webster and the Marquis de Lafayette." [Allen, 11/13/83]

1990. Jonathan Lucas, husband of Lydia Simons, daughter of Benjamin Simons III, built a toll rice mill at Middleburg Plantation between 1799 and 1801. The mill was demolished in 1935. The plantation is listed as a National Historic Landmark on the National Register of Historic Places [Historic, 55].

1993. Middleburg Plantation is granted a $14,302 state grant for preservation/reconstruction work to be done on the Commissary and Toll House on the ground of the plantation. [Charleston Post & Courier, November 25, 1993].

1993. Leland Ferguson's 50 minute video recording "Digging for Slaves", covering the 1986 archeological digging at Middleburg, is produced by Films for the Humanities & Sciences of Princeton, NJ [Ferguson Film].

1997. The Middleburg Plantation was part of a plantation garden tour whose entrance fee was $60 per person. The "garden contains an original chestnut rose bush... the chestnut has pink blossoms without any scent. Most chestnut roses were removed when hybrid roses became popular in the 1850s." Mackey Hill, the son of the owners, was later quoted in the article as wanting to wait until electron microscope analysis can be used to determine what plants were grown in the formal gardens behind the plantation. Later in the article Mackey explained in a matter-of-fact way that his two-year-old son had reportedly been bothered "by that man who wouldn't let him alone" which Mackey said might have been the ghost of Middleburg. A ghost has been sighted over the years at night under the allee of live oaks carrying a lantern. (At least one other source noted the presence of ghosts on the property in years past) [Munday].

This Web site has an interesting article which outlines the local cuisine in 1830 which is defined as the Rice Kitchen Cookery. Further, an associated Charleston restaurant held a dinner in 11/98 on the Middleburg Plantation porch using the large colonial kitchen fireplace for roasting trout, blanching green peanuts and cooking a rice dish called "mallard pilau" made with Carolina Gold Rice. While no mention of the gardens is made, it is interesting to note that the plantation is being used for historically-based events. This particular event was to benefit the James Beard Foundation.


Through the efforts of the Hill Family, the Middleburg Plantation is now protected by the Low Country Land Trust as the primary trust and the Berkeley Land Trust as a secondary trust. [Macky Hill]

Previous investigators have found the rare Chinkapin rose species which blooms pink fading to white with a bloom about 2.5 inches across the face of the bloom. One rose, reportedly a Louis Phillipe (perhaps a climber) was uncovered during Hill cleanup but died almost immediately after being found.

Among the roses mentioned in connection with the plantings at Middleburg are the Chestnut rose, Chinkapin rose, and Champneys' Pink Cluster rose. [Bailey], [Griffiths], [Scannielo].

The Chestnut Rose (= the Chinkapin or Chinquapin Rose) is Rosa roxburghii Tratt. (R. microphylla Roxbg.) [Bailey, 2997], [Griffiths, 101], [Scannielo 52 and 55]; Chinkapin is a word for a type of small Chestnut (Castanea ssp.) [Bailey, 742], which describes the roses fruit color. This rose is a much spreading shrub to about 6 feet (5m for G) with straight prickles, originally introduced from Chinese gardens and said to be rarely grown by G. Flowers are pink, often solitary 2 - 2 1/2 in., often solitary (double, darker in the centre for G, only double in var. plena for B); leaflets 7 - 14 elliptic to oblong-elliptic, acute, sharply serrate, glabrous beneath, 1/2 - 1 in.; fruit very prickly; bark peeling gray or pale brown.
Champneys' Pink Cluster is supposed to have been the result of a crossing by John Champneys at his rice plantation at Charleston, SC, of "Parson's Pink China" with a white musk rose Rosa moschata. It has large clusters of tiny double pink flowers of slight fragrance [Scannielo, 17 and 78].

When the allee of live oaks was planted around 1830, 32 oaks were planted and all survived.

Mr. Hill feels that Middleburg is on a par with both Drayton Hall and Middleton Place plantations and should be preserved carefully in its 1800 to 1830 historic period. The house dates from 1697 with very little change and the gardens were never updated from probably the 1820s or 1830s.

Bob Villa has recently been filming at Middleburg Plantation for his show "Back Home" and this show should air across the nation sometime in the Fall of 2000.

The two existing round columns on the WWN side of the garden (at the end of the azalea path) date from the Dingle period but are in the original position of an earlier fence.

Around the rectangular pond when the Hill family took possession of the property there were six large trees, four live oaks, one at each corner of the pond, a large cedar on the far side on axis from the house and a large magnolia on the back to the right of the cedar tree. After Hurricane Hugo decimated the area, only the back left and right live oaks were left standing along with the magnolia.

2000. Max L. Hill and Macky Hill, oral presentation 9/1/00. (Referenced as [Hill and Hill]) Description of Middleburg conditions present day. During the time of the Dingle family living at Middleburg, the backyard was completely surrounded in wire fencing to prevent the sheep from entering the grounds between the house and the pond. In addition, left of the central axis looking toward the pond, the lower left side below the existing formal garden was dug up for a vegetable garden and further enclosed by a 7-foot-high fence which was also covered with hog wire fencing to provide protection from the many deer in the area. This was erected by neighbor Postal Small sometime in the 1950s.
Appendix three continued

According to Macky Hill, the area immediately symmetrical to the Dingle vegetable plot was possibly a formal garden in the shape of diamonds. Looking at the base map (see XXX), the three camellias which are not part of the allee are potentially enclosed in a diamond-shaped pattern.

The Dingles also erected a small water tower immediately behind the Kitchen dependency; only the footings remain today. In order to encourage the birds to come close to the house, the Dingles planted azalea bushes next to the foundations of the house and the bushes were removed by the Hill family. The Dingles moved their sheep to the front of the house to graze in the round area encircled by the driveway.

According to the Hills, there are snowdrops which come up each year along the outside edge of the paths and have been spreading in towards the center of the formal pattern.

During restoration of the house (after 1981), Max Hill asked his workmen to "set the bricks right in the garden" so the small edging bricks now all stand upright in a small amount of concrete underground. Mr. Hill estimates that 90% of the bricks were righted in position.

According to Max Hill, the earlier reported yellow-flowering gorse bushes could still be seen, but were not apparent this year.
Photo Appendix
Diagram of garden's upper terrace brick pattern in 1983. House is to left. Courtesy of Macky Hill.

Diagram of plants in garden in 1983. House is to the left. Courtesy of Macky Hill.

Diagram of garden in 1986. House is to left. Courtesy of Macky Hill.

Oak allee looking south from house toward road. April 1983. Courtesy of Macky Hill.
5 View of servant’s quarters and house from west. April 1983. Courtesy of Macky Hill.

6 View west toward servants’ quarters from 2nd floor of house. Modern plantings of forsythia and azaleas seen at bottom right. February 1984. Courtesy of Macky Hill.

7 View north of garden from 2nd floor of house. April 1983. Courtesy of Macky Hill.

8 View of garden from house, looking north. Camellias and plantings along brick are visible. April 1983. Courtesy of Macky Hill.
Photo Appendix A

9 View of garden looking south toward house. Camellias are evident in left foreground, volunteer live oak in right foreground. February 1984. Courtesy of Macky Hill.

10 View of garden's center path looking north from house. Modern forsythia plantings are in left foreground, and chinkapin rose is in right foreground. February 1984. Courtesy of Macky Hill.


12 View of camellia allee from pond south toward house. February 1984. Courtesy of Macky Hill.
View of east side of garden looking north from 2nd floor of house showing planting borders along brick edging as well as Chinkapin rose at bottom left corner of bed. April 1983. Courtesy of Macky Hill.

View of garden looking north from 2nd floor of house toward pond showing camellias and plantings along brick edges. February 1984. Courtesy of Macky Hill.

View of northeast side of garden from 2nd floor of house. April 1983. Courtesy of Macky Hill.

View of east side of garden looking north from 2nd floor of house showing plantings along path edging, camellias and crepe myrtle at top of photo. February 1984. Courtesy of Macky Hill.
Photo Appendix A

Kitchen

17 Second view of northeast side of garden from 2nd floor of house. April 1983. Courtesy of Macky Hill.

18 Looking east from center of garden toward kitchen. Elephant garlic is visible in center of photo. April 1983. Courtesy of Macky Hill.

19 Looking southeast from center allee at kitchen. Camellias and crepe myrtle are visible in foreground. February 1984. Courtesy of Macky Hill.
View of transverse path looking east.
February 1984. Courtesy of Macky Hill.

View of transverse path looking west (toward wooden posts installed during the 1960s) showing border plantings. February 1984. Courtesy of Macky Hill.
Prior Conditions

Photo Appendix A
Pond & Rice Mill Toll House

22 View of pond looking north toward river from garden, showing cedar tree in foreground. February 1984. Courtesy of Macky Hill.

23 View of pond looking northeast from road toward river. February 1984. Courtesy of Macky Hill.

24 Rice mill toll house looking west. April 1983. Courtesy of Macky Hill.

Prior Conditions

Photo Appendix A

Rice Mill Ruins

26 | Rice mill ruins smokestack. April 1983. Courtesy of Macky Hill.


Photo Appendix A

Commissary


33. Live oak tree between house and commissary. April 1983. Courtesy of Macky Hill.

Photograph of south side of house.

Main house from west side. April 1983. Courtesy of Macky Hill.


North (garden) side of house. April 1983. Courtesy of Macky Hill.
Main Plantation House


East (kitchen) end and center of house, undergoing renovations with view of garden in foreground. April 1983. Courtesy of Macky Hill.

West end and center of house undergoing renovations with view of garden in foreground. April 1983. Courtesy of Macky Hill.
**View looking west past servants' quarters**
remains from 2nd floor of house. Large sycamore west of house is on left. August 2000. Courtesy of Univ. of Michigan.

**View looking northwest from 2nd floor of house.** Remains of servants' quarters and brick edges of paths are visible. August 2000. Courtesy of Univ. of Michigan.

**View looking west toward ruins of servants' quarters from steps of house on garden side.** Shrubs in foreground are not believed to be from original planting. August 2000. Courtesy of Univ. of Michigan.

**View looking northwest from steps of house on garden side.** Small shrubs in foreground are not believed to be from original plantings. August 2000. Courtesy of Univ. of Michigan.
5 Closeup of shrub at right of cluster in photo 7. August 2000. Courtesy of Univ. of Michigan

6 View looking west from central path of garden. August 2000. Courtesy of Univ. of Michigan

7 View from central path of garden northwest toward servants' quarters. Forsythias in left foreground are not from original planting. Courtesy of Univ. of Michigan
8 Closeup view of camellia allee and house. August 2000. Courtesy of Univ. of Michigan

9 View from house down central path of garden toward camellia allee, pond, and river. August 2000. Courtesy of Univ. of Michigan
Photo Appendix B

10  View of west side of camellia allee and flanking shrubs from north. August 2000. Courtesy of Univ. of Michigan

11  View of east side of camellia allee and flanking shrubs from north. August 2000. Courtesy of Univ. of Michigan

12  Same view as number 13, taken with Fuji print film (number 13 is taken with a digital camera). August 2000. Copyright Rick Meader.

13  View to north from 2nd floor of house showing center of garden layout and camellia allee in distance, in front of pond. August 2000. Courtesy of Univ. of Michigan

Existing Conditions
August 2000
14 View of east side of garden from porch steps, showing chinkapin rosebush in foreground, camellias and crepe myrtles in background. August 2000. Courtesy of Univ. of Michigan

15 View of east side of garden from second floor with digital camera, showing kitchen at right. August 2000. Courtesy of Univ. of Michigan
View of east side of garden with chinkapin rosebush in foreground. Spigot was added in early 1980s. August 2000. Courtesy of Univ. of Michigan.

View of kitchen and beyond to east from 2nd floor of house. August 2000. Courtesy of Univ. of Michigan.

View of kitchen and beyond to east from porch steps. August 2000. Courtesy of Univ. of Michigan.


Existing Conditions
August 2000
Closeup of chinkapin rose flower. August 2000. Courtesy of Univ. of Michigan

Closeup of cedar on east side, northeast of garden. August 2000. Courtesy of Univ. of Michigan

Closeup of tree at northeast corner of garden. August 2000. Courtesy of Univ. of Michigan

Closeup of fig tree northeast of garden. August 2000. Courtesy of Univ. of Michigan
Photo Appendix B
Survey setup


26 Closeup view of survey setup. Base point was southwest (upper right) corner of brick at lower right corner of bottom step. August 2000. Courtesy of Univ. of Michigan.
27 View of south side of house from center of drive circle. August 2000. Courtesy of Univ. of Michigan

28 View of south side of house from drive circle, showing magnolia tree to left and kitchen in far background at right (northeast) of house. August 2000. Courtesy of Univ. of Michigan

29 Closeup of tree at northeast corner of garden. August 2000. Courtesy of Univ. of Michigan

30 Closeup of fig tree northeast of garden. August 2000. Courtesy of Univ. of Michigan

Existing Conditions
August 2000

Photo Appendix B
Plantation House and Allee

PA - 20
31 View toward east from front of house (south side) showing live oak which is part of original allee planting. August 2000. Courtesy of Univ. of Michigan

32 View east from center of drive circle toward commissary. Same oak at left of previous picture is shown in center of image. August 2000. Courtesy of Univ. of Michigan

33 View toward southeast from south bedroom on 2nd floor of house. Pipe pond is beyond live oaks at right and in center of photo. August 2000. Courtesy of Univ. of Michigan

34 View south toward drive and live oak allee (planted in 1832) from drive circle south of house. August 2000. Courtesy of Univ. of Michigan
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Research conducted by the:
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at the University of Michigan
Ann Arbor