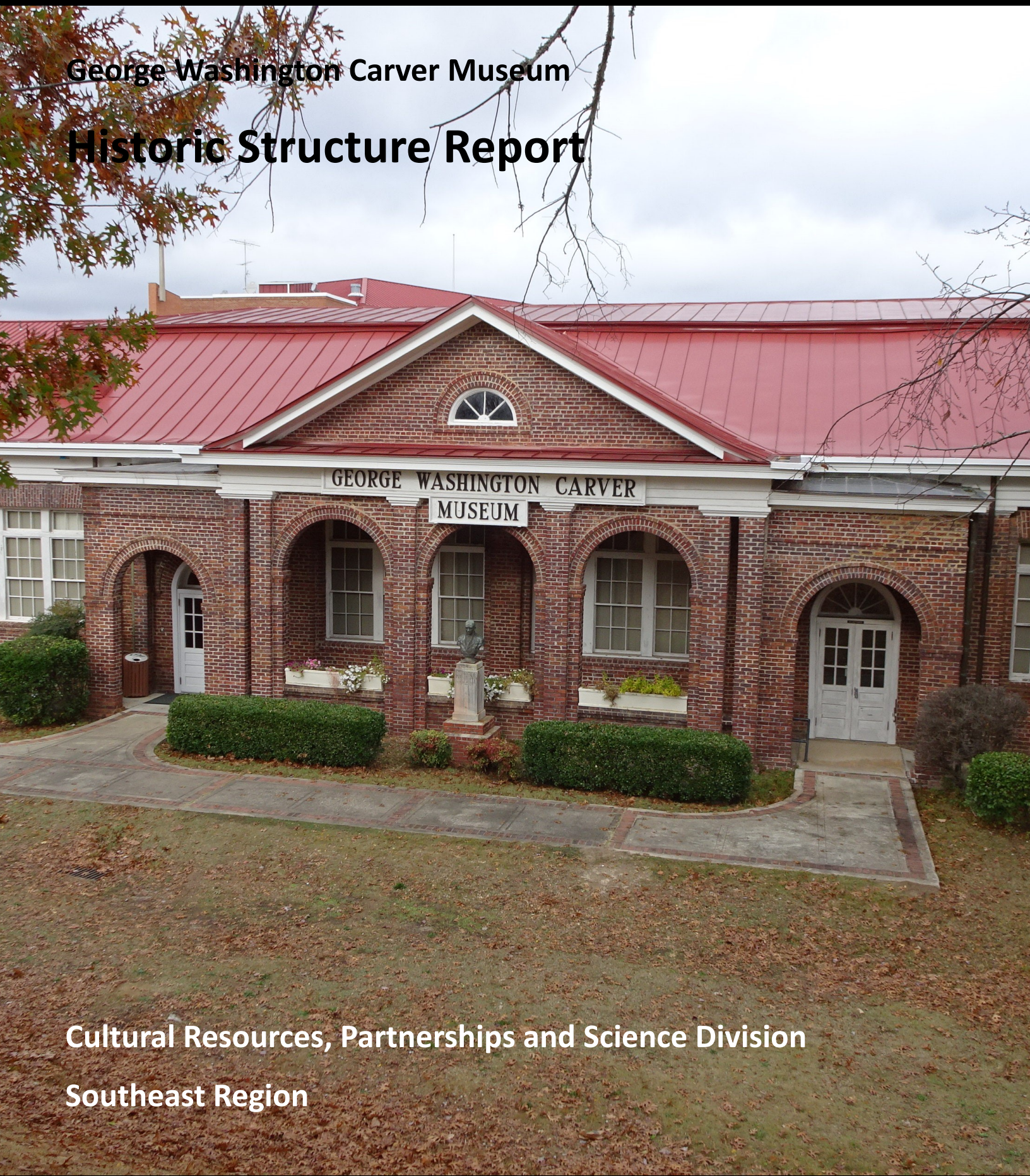
National Park Service
U.S. Department of the Interior

Tuskegee Institute National Historic Site
Alabama

George Washington Carver Museum

Historic Structure Report



Cultural Resources, Partnerships and Science Division

Southeast Region

George Washington Carver Museum

Tuskegee Institute National Historic Site

Alabama

Historic Structure Report

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About the front cover: The George Washington Carver Museum, looking north, December 2016

George Washington Carver Museum

Tuskegee Institute National Historic Site

Alabama

Historic Structure Report

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Superintendent, Tuskegee Institute National Historic Site — Date

Recommended by: _____ (ACTING) 8/20/2019
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Foreword

We are pleased to make available this Historic Structure Report, part of our ongoing effort to provide comprehensive documentation for the historic structures and cultural landscapes of National Park Service units in the Southeast Region. A number of individuals contributed to the successful completion of this work; but we would particularly like to thank the Project Team who authored the report. The authors would like to thank the staff at the Tuskegee Institute National Historic Site who assisted with the project, including Museum Specialist Robyn Harris, then Superintendent Sandra Taylor, and Acting Superintendent Barbara Tagger, the Park staff who assisted with the inspection of historic structures, and Historical Architect Jessica Kelly of the Southeast Regional Office for their assistance. We hope that this study will prove valuable to park management in ongoing efforts to preserve the historic structure and to everyone in understanding and interpreting this unique resource.

Julie Ernstein, Acting Chief
Cultural Resources, Partnerships and Science Division
Southeast Regional Office
2019

Management Summary

At the request of the National Park Service (NPS), Panamerican Consultants, Inc., and its subconsultants, Wiss, Janney, Elstner Associates, Inc. (WJE) and WFT Architects (WFTA), have developed this Historic Structure Report (HSR) for the George Washington Carver Museum. The museum is located on the campus of Tuskegee University, Tuskegee Institute National Historic Site, Tuskegee, Alabama. It is also located in the Historic Campus District. Figure 1 is a map of the state of Alabama showing the location of the Tuskegee Institute National Historic Site. Figure 2 is a map of the Tuskegee Institute National Historic Site showing the location of the George Washington Carver Museum.

The George Washington Carver Museum is listed in the National Register of Historic Places (NRHP) as a contributing resource to the Tuskegee Institute National Historic Site.[1] The property is important within the site because it represents an immediate link to Tuskegee's most significant scientist, George Washington Carver, a philanthropist, humanitarian, and researcher who used the building for his last laboratories and office and as the site of the creation of his foundation, the George Washington Carver Research Foundation. Carver endowed the foundation upon his death for the perpetuity of the museum and education of young African American men in the sciences. The building, originally constructed in 1915 as a laundry, also represents a tangible link to Booker T. Washington, the Institute's first principal, during a period when the school stressed industrial education for men and women. The laundry was a site for the education of women in an important household and economic activity. Finally, the laundry was designed by Robert Robinson Taylor, a significant African American architect, who taught at Tuskegee Institute and shaped its campus for almost forty years. The landscape of the campus was created by the significant black American landscape architect, David A. Williston. Landscape work at the museum was completed by Merle Cooper and his students, who did the planting and laid out the new concrete walks.[2]

Historical Data

The George Washington Carver Museum is located on the northside of Campus Road on the campus of Tuskegee University within the Tuskegee Institute National Historic Site. The Tuskegee Institute National Historic site was created by Public Law 93-486 on October 26, 1974. The site includes approximately 74 acres, 24 of which are owned by the federal government and managed by the National Park Service. The remaining 50 acres belong to Tuskegee University. A major portion of the campus was designated a National Historic Landmark (Historic Campus District) in 1965. The main features of the National Historic Site are the George Washington Carver Museum and The Oaks, the home of Booker T. Washington, both of which are owned by the National Park Service.[3]

Tuskegee University in Alabama officially opened its doors to America's formerly enslaved people as the Tuskegee Normal School for Colored

1. Horace J. Sheely Jr., *National Survey of Historic Sites and Buildings: Tuskegee Institute* (N.P.: National Park Service, 1965).

2. Denver Service Center, *Historic Structure Report, George Washington Carver Museum, Tuskegee Institute National Historic Site, Tuskegee, Alabama* (Denver, Colorado: National Park Service, Southeast Regional Team, Historic Preservation Branch, 1980), 51–52.

3. Tyrone Brandyburg, *Tuskegee Institute National Historic Site Administrative History* (N.P.: National Park Service, 1994).

Teachers in 1881. In time, the school gained recognition for its superior training of African Americans in industrial trades that helped to improve their economic conditions and way of life. By 1892, through legislation, the school was granted authority to act independently of the state of Alabama. Booker T. Washington served as principal of Tuskegee Institute from July 4, 1881, until his death in 1915. Under his leadership, the school achieved institutional independence and national prominence.

Washington, an exacting taskmaster who worked ceaselessly for the cause of African American economic independence, sought only the best black teachers and administrators for the new school. Among those he brought to Tuskegee were Robert R. Taylor, architect, David A. Williston, landscape architect, and George Washington Carver. Aside from Washington himself, no other name is more associated with Tuskegee than George Washington Carver.

Like Washington, Carver was born into slavery and struggled throughout his early life to attain an education. Unlike Washington, Carver spent his early life outside the South attaining Bachelor's and Master's degrees in agriculture from what is now Iowa State University. Carver also took college training in music and art, and would pursue painting his entire life, an avocation that was not completely understood by his colleagues at Tuskegee Institute. Carver, an excellent teacher and researcher, was not an adroit administrator. When Washington made Carver chairman of the agricultural department fresh out of university in 1896, problems with staff arose. Finally, by 1910, Washington, who no longer wanted to see internal politics disrupt the department, made Carver chief of research and the experiment station, a position he would hold, more or less, for the rest of his career.

Carver flourished in his new position with less administrative responsibility, and students flocked to his classes. In his position as chief of research for the Tuskegee Experiment Station, he was in a unique position to significantly affect the economic lives of southern black farmers. During the first quarter of the twentieth century, small southern farmers, both white and black, had fallen into a severe economic decline created by sharecropping and tenant farming and further burdened by the monoculture of cotton, which depleted the soil. Carver embraced the responsibility of promoting scientific farming methods that would break this cycle. One of the methods Carver actively promoted was the diversification of crops. He also advocated the planting of peanuts, which replenished the soil with nitrogen that the repeated planting of cotton had taken from it.

After Washington's death in 1915, his successor, Robert Russa Moton, acknowledged Carver's importance to Tuskegee Institute by expanding his freedom to conduct independent research. During this period, Carver's interest in the reuse of agricultural waste products and the development of wartime food substitutes led to his extensive research on the southern peanut.[4] As a representative of the National Peanut Board, Carver famously appeared before the US House of Representatives Ways and Means Committee to talk about peanuts and crop diversification. Although allotted a mere fifteen minutes for his appearance, he charmed Congress for more than an hour and helped ensure passage of the Fordney-McCumber Tariff Bill of 1922.[5] Carver began to spend more time away from the Institute giving lectures and publicity interviews with various media, and ultimately achieved worldwide fame. He was at one time, arguably, the most famous living scientist. As noted on the National Peanut Board web site: "It's not overstating matters to say that Dr. Carver and the peanut helped save the economy of the south."[6]

In approximately 1938, Carver became ill with anemia and had to be hospitalized. At this same time, the Institute decided to rehabilitate the

4. *Historic Structure Report*, 22.
5. "George Washington Carver," *Encyclopedia of World Biography,* accessed August 15, 2018, http://www.notablebiographies.com/Ca-Ch/Carver-George-Washington.html.
6. "George Washington Carver," National Peanut Board, accessed August 15, 2018, http://nationalpeanutboard.org/peanut-info/George-washington-carver.htm.

former laundry into the George Washington Carver Museum, a place where Carver would have his laboratories, office, student assistants, and where he could exhibit his many geological, agricultural, and artistic collections. The creation of the museum, and ultimately a foundation for its support and the teaching of science to young African American men, spurred Carver to recover from his illness and actively participate in its creation. Carver was deeply involved in every aspect of the creation of the museum, laboratory, and office, spending all of his time planning and thinking about it. The building was completed and dedicated in 1941 by Mr. and Mrs. Henry Ford, friends and supporters of Carver. After the opening, Carver grew increasingly ill, and on January 5, 1943, he died. At his death, he left his life savings, more than $60,000, to the George Washington Carver Research Foundation.

The museum remained virtually unchanged after his death until November 1947, when a fire occurred in the basement. The first floor partially collapsed but the building did not burn down because of its solid brick walls. Unfortunately, many of the records of Carver's experiments and his paintings were lost, but most of his private papers were saved. Eventually, the fire damage sustained by the building was repaired.

In the rebuilding, however, the museum would become a different place—the laboratories and offices would go to a new science building and the museum would now house all museum materials and activities at Tuskegee. It would also be the repository for the African Art Collection and the dioramas of African American history, which were then located in the Library. The museum would also get its first curator.

As the old museum transitioned into the new museum, a host of changes were made including the replacement of the wood floor framing with a non-combustible steel frame with concrete floor deck, and the addition of a wet-pipe fire-suppression sprinkler system. The basement area was completely excavated and fully developed with offices and restrooms to support the museum above. Access to the lower level was provided by a steel spiral stair in the center of the building. (Changes to interior finishes, as understood based on comparison of physical evidence to archival documentation, are discussed in the Condition Assessment chapter of this report.) For the next twenty-seven years, the George Washington Carver Museum served the Tuskegee Institute community as a general school museum and repository of its African Art collection.

The greenhouse where Carver conducted his famous research on the pollination of amaryllis plants—an important component of the building during his tenure—was removed during the 1950s (date not known). This modification is one of the few major changes affecting the exterior since the period of significance.

In 1974, the museum was acquired by the National Park Service and once again underwent changes in collections and exhibitions concepts. A complete adaptive rehabilitation of the interior was implemented with the goal of providing a building that serves the exhibition, archival, and administrative needs of the museum while providing amenities and resources for visitors to the Tuskegee Institute National Historic Site. Today, as articulated in the Long Range Interpretive Plan (2003), the George Washington Carver Museum serves as the central point for orienting and providing amenities to park visitors. It tells the story of its namesake and Tuskegee Institute and University, and the setting of the Tuskegee Institute National Historic Site. The main exhibit area of the museum is divided into two sections. One interprets the career of Carver and the other the growth and development of Tuskegee University. These two stories are told using exhibits, paintings, photographs, and objects—the most spectacular of which is the Jesup Wagon, a traveling agricultural teaching tool used for agricultural extension work.

In 2012, a Consensus Determination of Eligibility (DOE) was prepared by Bethany Serafine and Rudy Evenson both NPS Southeast Regional Office Historians, which determined that the following landscape elements are contributing to the George Washington Carver Museum: the concrete and brick steps (1930) (LCS- 000198) and the George

Washington Carver bust (1936) (LCS- 091222).[7] Deputy Alabama State Historic Preservation Officer (SHPO) Elizabeth Ann Brown concurred.

Treatment and Use

The George Washington Carver Museum is significant for its association with Tuskegee Institute's most famous scientist, George Washington Carver; its past as a laundry for the training of women in the economically important industry; and as part of the architectural and physical landscape as designed by Robert R. Taylor, architect, and David A. Williston, landscape architect. The building is located on the Tuskegee campus, off Campus Road, in the Tuskegee Institute National Historic Site as well as the Tuskegee Institute Historic District. It is anticipated to remain in use as a museum commemorating the life and work of George Washington Carver and the growth and development of Tuskegee Institute and University. The recommended overarching treatment for the structure is therefore *Rehabilitation*.

During the fieldwork investigations for the completion of this report, it was discovered that the roof structure of the Carver Museum needed immediate emergency bracing until appropriate stabilization measures or long-term repairs were implemented. As recommended by the Panamerican team structural engineers, WJE, the Park restricted access to the building interior until emergency bracing of selected roof trusses was completed.

Administrative Data

Locational Data

Building Name: George Washington Carver Museum

Location: Tuskegee Institute National Historic Site, Tuskegee, Alabama

LCS Number: The George Washington Carver Museum is on the List of Classified Structures (LCS) as follows:

- George Washington Carver Museum LCS 091221, and its contributing landscape elements: concrete and brick steps (1930) LCS 000198, and George Washington Carver Bust (1936) LCS 091222.

Related Studies

Elizabeth Ann Brown. *Consensus Determination of Eligibility for Landscape Features at The Oaks and George Washington Carver Museum, Tuskegee Institute NHS*. Montgomery: Alabama State Historic Preservation Office, 2012.

Denver Service Center. *Historic Structure Report, George Washington Carver Museum, Tuskegee Institute National Historic Site, Tuskegee, Alabama*. Denver, CO.: National Park Service, Southeast Regional Team, Historic Preservation Branch, 1980.

Horace J. Sheely Jr. *National Survey of Historic Sites and Buildings: Tuskegee Institute*. National Park Service, 1965.

Cultural Resource Data

In 1966, a 1-1/2-page National Historic Landmark nomination was completed on the Tuskegee Institute National Historic Site, which included The Oaks and Carver Museum as contributing resources.

In 1977, a *Historic Resource Study* (HRS) was created by John W. Jenkins of the National Park Service Denver Service Center, but was never published. In this document, the "laundry (Carver Museum)" is discussed as part of the construction projects related to the period 1896–1915, a period

7. Serafine, Bethany, and Rudy Evenson, *Consensus Determination of Eligibility for Landscape Features at The Oaks and George Washington Carver Museum, Tuskegee Institute NHS* (Atlanta: National Park Service Southeast Regional Office, 2012).

that Jenkins believed was the "zenith of industrial education" at Tuskegee.[8]

A Historic American Buildings Survey (HABS) documentation project (HABS AL-876 old number; ALA-44-TUSG-9) was completed for the museum in 1978. Eleven sheets of measured drawings, but no narrative, were prepared.

A Historic Structures Report (HSR) was prepared for the George Washington Carver Museum by the NPS, Denver Service Center in 1980. The HSR includes historical, landscape, and architectural data, as well as itemized condition tables of exterior features engineering systems, and a recommended preservation program.

The Tuskegee Institute National Historic Site parkwide Interpretive Plan was created in 2002 and focused heavily on the Carver Museum and The Oaks, since these are the two buildings administered by the NPS.

Lord, Aeck & Sargent, Atlanta, Georgia, completed a Condition Assessment Report for the interior and exterior of the museum building in 2011 in order to identify the scope and location of needed repairs and to develop general treatment recommendations and preliminary budgets.

In 2012, a DOE for landscape elements of the George Washington Carver Museum was made by the Alabama SHPO. It was determined that the concrete and brick steps and the George Washington Carver bust were contributing resources to the museum landscape.

Also in 2012, the NPS completed a major roof restoration and renovation at the museum.

Period of Significance: 1915–1943

Proposed Treatment: Rehabilitation

8. John W. Jenkins, *Historic Resource Study, Tuskegee Institute National Historic Site, Tuskegee, Alabama* (Denver, Colorado: National Park Service, Denver Service Center, Historic Preservation Team, 1977).

Project Scope and Methodology

The goal of the HSR is to develop planning information for use in the repair, maintenance, and preservation of this historically significant structure. First developed by the National Park Service in the 1930s, HSRs are documents prepared for a building, structure, or group of buildings and structures of recognized significance to record and analyze the property's initial construction and subsequent alterations through historical, physical, and pictorial evidence; document the performance and condition of the structure's materials and overall physical stability; identify an appropriate course of treatment; and, following implementation of the recommended work, document alterations made through that treatment.

The HSR addresses key issues specific to the George Washington Carver Museum including the history and construction chronology of the building; the existing physical condition of the exterior envelope, structural systems, and primary interior spaces and features; and the historic significance and integrity of the building.

The following project methodology was used for this study.

Research and Document Review. Archival research was performed to gather information about the original construction and past modifications and repairs for use in assessing existing conditions and developing treatment recommendations for the building. Documents reviewed included maps, drawings, specifications, historic photographs, and other written and illustrative documentation about the history of construction and repairs to the structure. The research for this study built upon prior historical and archival research by the NPS and others, as outlined in the bibliography provided with this report. Primary reference material for this study was obtained from the Tuskegee Institute National Historic Site collections. Additional research material was obtained from the NPS Technical Information Center (TIC) in Denver,Colorado,

and multiple online sites associated with the history of Tuskegee Institute / University, George Washington Carver, and other pertinent cultural and social topics. The Tuskegee University Archives and their Archivist, Dana Chandler, were particularly helpful.

Condition Assessment and Documentation. Concurrent with the historical research, a condition survey was performed and observations documented with digital photographs, field notes, and annotation on baseline drawings. For purposes of the field survey, drawings were prepared by the project team. The condition assessment addressed the exterior and primary interior spaces and features of the building as well as the building's hazardous materials.

Development of History, Chronology of Construction, and Evaluation of Significance. Based on historical documentation and physical evidence gathered during the study, a context history and a chronology of design and construction were developed. An evaluation of the significance was also prepared, taking into consideration guidelines provided by *National Register Bulletin: How to Apply the National Register Criteria for Evaluation*.[9] This evaluation of history and significance provided the basis for the development of recommended treatment alternatives.

Guidelines for Preservation. Based on the evaluation of historical and architectural significance of the structure, guidelines were prepared to assist in the selection and implementation of preservation treatments.

Treatment Recommendations. The Secretary of the Interior's Standards for the Treatment of Historic Properties guided the development of treatment recommendations for the significant exterior and interior features of the buildings, as well as for the features of the landscape included in this study. Following the overall treatment approach of *Rehabilitation* for the museum, the specific recommendations were developed to address the observed existing distress conditions as well as the Park's intended future use and long-term objectives.[10]

Preparation of Historic Structure Report. Following completion of research, site work, and analysis, a narrative report was prepared summarizing the results of the research and inspection and presenting recommendations for treatment. The HSR was compiled following the organizational guidelines of NPS *Preservation Brief 43: The Preparation and Use of Historic Structure Reports*, with modifications to organizational structure for purposes of this project.[11]

9. National Park Service, *National Register Bulletin: How to Apply the National Register Criteria for Evaluation* (Washington, DC:, Government Printing Office, 1997).

10. Anne E. Grimmer, *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring & Reconstructing Historic Buildings* (Washington, DC: US Department of the Interior, National Park Service, Technical Preservation Services, 2017).

11. Deborah Slaton, *Preservation Brief 43: The Preparation and Use of Historic Structure Reports* (Washington, DC: National Park Service, Technical Preservation Services, 2005).

FIGURE 1. Map of Alabama showing location of Tuskegee Institute National Historic Site (not to scale).

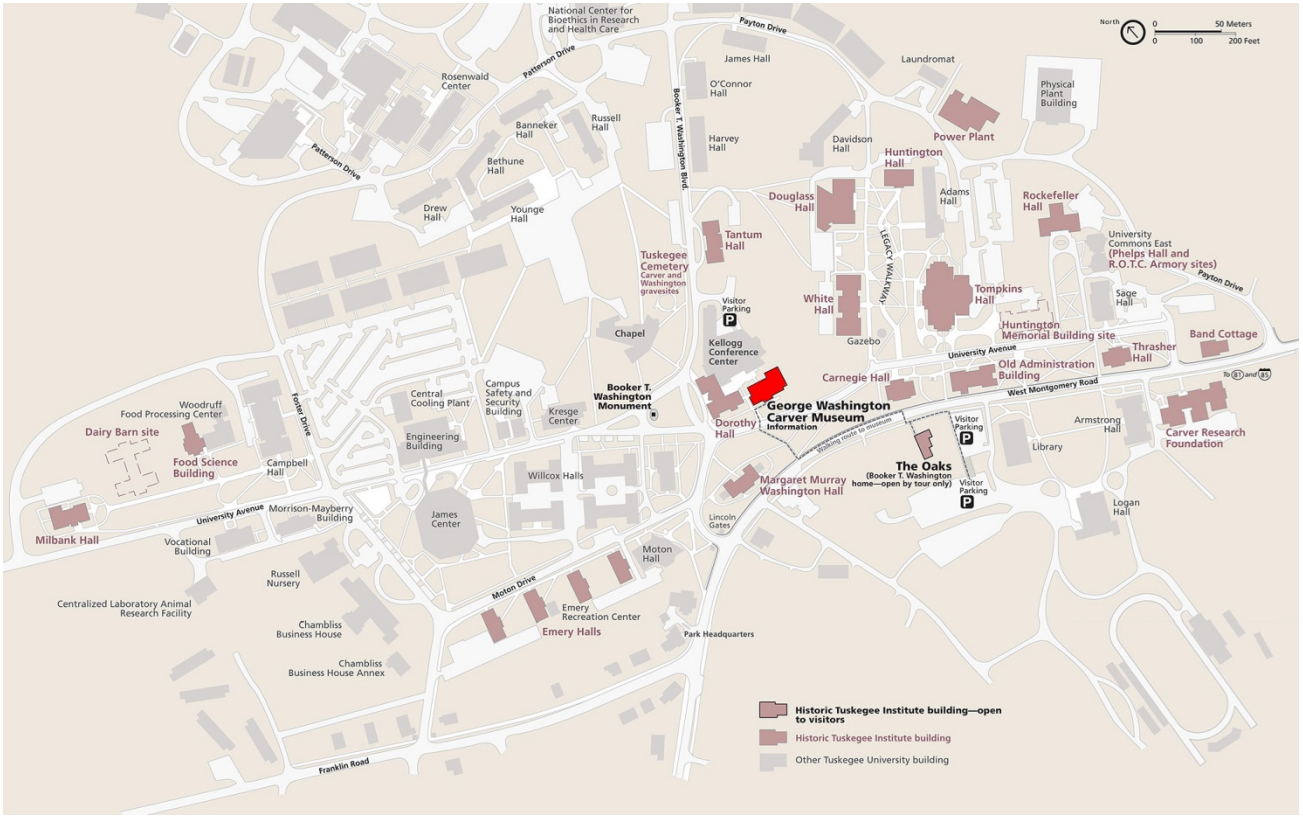

FIGURE 2. Tuskegee Institute map showing the George Washington Carver Museum. (Source: National Park Service)

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Developmental History

Historical Background and Context

Tuskegee University in Alabama officially opened its doors to America's formerly enslaved people as the Tuskegee Normal School for Colored Teachers in 1881.[12] In time, the university gained recognition for its superior training of African Americans in industrial trades that helped improve their economic conditions and way of life. By 1892, through legislation, the school was granted authority to act independently of the state of Alabama. Booker T. Washington served as principal of Tuskegee from July 4, 1881, until his death in November 1915. Under his leadership, the school achieved institutional independence and national prominence.

In 1965, Tuskegee University was designated as a National Historic Landmark. The US Secretary of the Interior established the Tuskegee Institute National Historic Site on November 13, 1977. Tuskegee Institute National Historic Site stands today as a symbol of African American achievement and a reminder of Booker T. Washington's legacy in African American education and culture.[13]

12. This historic context follows the five periods of Tuskegee Institute's development history as organized in Clement & Wynn, The Jaeger Company, and Grashof Studio Design, *Campus Heritage Tuskegee University, Tuskegee Alabama* (Atlanta: Clement & Wynn, 2009).
13. "Tuskegee Institute National Historic Site Alabama," National Park Service, accessed May 23, 2017, https://www.nps.gov/tuin/index.htm.

Early History of the City of Tuskegee

The City of Tuskegee has played a major role in the history of Alabama and the United States. Located forty miles east of Montgomery, Alabama, Tuskegee was settled and laid out in 1833.[14] At the time of Tuskegee's founding, the area was still inhabited by Native Americans of the Creek Nation. The town's name is a derivation of a Creek leader named Taskigi, whose town occupied the triangle of land formed by the convergence of the Coosa and Tallapoosa rivers. The land on which Tuskegee now stands was first settled soon after the French and Indian War (1754–1763). A treaty ending the war declared that France would surrender the area to the English, who took control of the French fort at Tuskegee. The United States assumed possession of the area after the American Revolution, when it became part of the Mississippi Territory. In 1817, the Alabama Territory was formed from the Mississippi Territory, and two years later, Alabama became the twenty-second state admitted to the Union. Tuskegee was sited along a historic Indian trail that later became the highway between Fort Mitchell and Fort Montgomery.[15]

After the Creek Nation was forcibly removed from Alabama in 1836, European American pioneers settled in the area. With the founding of Macon

14. Sarah Lawless, "Tuskegee," *Encyclopedia Alabama,* last modified November 21, 2016, http://www.encyclopediaofalabama.org/article/h-2051.
15. Fort Mitchell was an important post in Russell County during the Creek War of 1813–1814.

County in 1832, Tuskegee became the county seat. In 1843, the City of Tuskegee was officially incorporated. By 1855, Tuskegee was one of five settlements in Macon County to experience a significant amount of trading business. Unlike the other towns, Tuskegee lacked a railroad, yet it benefited from its position as county seat and its central location. The city's streets were laid out around the central square and courthouse.

At the beginning of the Civil War in 1861, the majority of enslaved African Americans lived within the agricultural region stretching from Virginia to Mississippi, commonly known as the "Black Belt" region. Tuskegee occupied the near geographic center of this population area.

With the establishment of Tuskegee Normal School in 1881, the town began to gain national fame through the success of the school, the efforts of educator Booker T. Washington (1856–1915), and the agricultural research of George Washington Carver (1864–1943). Few towns in the South have had as much impact on modern African American history as Tuskegee. As noted in Booker T. Washington's *An Autobiography: The Story of My Life and Work* (1901), before his arrival in Tuskegee in June 1881, he found it ". . . almost impossible to find the town on any map and had difficulty in learning its exact location."[16]

Establishment of Tuskegee Normal and Industrial Institute (1881–1895)

In the decade following the Civil War, there were few educational opportunities for African Americans in the South. Several missionary groups, such as the American Missionary Association, entered the region to convert those formerly enslaved and establish schools for them. On March 3, 1865, President Abraham Lincoln signed a bill establishing the Bureau of Refugees, Freedmen, and Abandoned Lands (also known as the Freedmen's Bureau) to protect the rights of the recently emancipated 4,000,000 slaves in the South. Operated by the War Department, the Freedmen's Bureau supervised all relief and educational activities relating to refugees and freedmen to help African Americans and whites in the South transition from a society based on slavery. From 1865 to 1872, the Bureau oversaw some 3,000 schools and opened over 1,000 schools for freed persons.[17] A number of colleges and training schools for blacks, including Howard University and Hampton Institute, were also established before the Bureau's termination in 1872. Although a short-lived agency, the Freedmen's Bureau provided initial opportunities for African Americans through land ownership and education. In addition, black educational institutions created by the Bureau served as the antecedents to future schools such as Tuskegee Institute.

Tuskegee Normal School for Colored Teachers, organized on July 4, 1881, was authorized by House Bill 165. Lewis Adams (1842–1905), a former slave and community leader, had a significant role in the founding of Tuskegee Institute.[18] Lacking a formal education, Adams taught himself to read and write by reviewing some of the lessons the other children in his family received from a hired tutor. He mastered the trades of tinsmithing, shoemaking, and harness making in his father's plantation service shops. Adams left his father's plantation after the abolition of slavery in 1865, opening his own shop in downtown Tuskegee near the site of the current public square. His shop provided much-needed and desired services to the entire community.

16. Booker T. Washington, *An Autobiography. The Story of My Life and Work* (Toronto, Ontario, Naperville, Illinois: J.L Nichols & Co., 1901), 53. Pdf e-book.

17. Richard Wormser, "Freedmen's Bureau (1865-72)," (Educational Broadcasting Corporation, 2002), accessed May 25, 2017, http://www.pbs.org/wnet/jimcrow/stories_events_freed.html.

18. "Lewis Adams biography," Macon History 2007, accessed May 25, 2017, http://maconhistory.weebly.com/lewis-adams-bio.html.

Adams encouraged several young men to apprentice with him to learn valued trades, while his wife, Sarah ("Sallie"), taught cooking and sewing to interested women from their family residence. The couple soon attracted more students than they could accommodate. Efforts to provide rudimentary education to African Americans were also made by the officers and members of the AME (African Methodist Episcopal) Zion Church (Butler Chapel AME Zion Church), where Adams was a deacon and superintendent of the Sunday School. The church's program failed because its teachers lacked proper training. Adams aspired to establish a vocational school and a normal school for the training of teachers to relieve the critical needs of African Americans in the post-Civil War era.

In 1880, Colonel W.F. Foster and Arthur L. Brooks, who represented the citizens of Macon County in the Alabama House of Representatives, were seeking reelection in a campaign of strong candidates. Foster appealed to Lewis Adams for the support of the African American community, a common practice by white Alabama politicians in the late nineteenth century. Adams agreed to encourage African American voters to vote for them in return for the establishment of a normal school at Tuskegee. With the backing of the African American vote, the incumbents retained their seats. Fulfilling their promise to Adams, Brooks, a member of the Education Committee, introduced House Bill 165. Governor Rufus W. Cobb signed the bill on February 12, 1881, establishing the Tuskegee Normal School.[19] Lewis was named one of the three original commissioners to supervise the operation of the school. He served on the board until his death in 1905.

On February 12, 1881, State Act 292 of the General Assembly of Alabama legislature authorized an annual $2,000 appropriation for teachers' salaries only, leaving the school without the necessary equipment for training its students.[20] The school began without secured land, buildings, or teachers—only state legislation authorizing the school. Lewis Adams, Thomas Dryer, and M. B. Swanson formed the board of commissioners to organize the school. George Campbell, a former slave owner, replaced Dryer as a school commissioner. Adams and Campbell worked closely to secure twenty-five-year-old Booker Taliaferro Washington (1856–1915) of Hampton Normal and Agricultural Institute in Virginia as the school's first principal (Figure 3). In his autobiography, Washington acknowledged Adams as the leading African American citizen in Tuskegee, ". . . to whom the honor should largely be given for securing the location of the Tuskegee Normal and Industrial Institute in the town."[21]

FIGURE 3. Booker T. Washington. (Source: Library of Congress LC-USZ62-5512)

Booker T. Washington held the first class of thirty adults at Tuskegee on July 4, 1881, in a small building adjacent to the Butler Chapel AME Zion

19. The school was later known as Tuskegee Institute and is now Tuskegee University.

20. National Park Service, "Tuskegee Institute National Historic Site Tuskegee, Alabama."
21. Washington, *My Life and Work*.

Church near the town center. His wife, Fannie Norton Smith Washington (1858–1884), joined the school's faculty and broadened the curriculum for Tuskegee's female students. Mrs. Washington also developed the school's home economics program. Prior to the start of the first class, Washington had arranged the purchase of the 100-acre Bowen farm, an abandoned plantation one mile from the town center, for the Tuskegee Institute campus. He required the land for the expansion of the basic secondary school program he had been hired to direct: agricultural and industrial programs to help students support themselves and to serve as a practicum for advancement.[22] Washington and his assistant principal, Olivia America Davidson (1854–1889), gathered donations to purchase land, organized entertainment, borrowed the down payment from a Hampton administrator, and traversed New England the following summer for further contributions.[23] Davidson had met Washington while attending Hampton Institute. She was instrumental in the creation and success of Tuskegee Institute.

At ceremonies marking the close of the first year, blacks and whites marched together from the town center to set a cornerstone for the new building. The school named the first building Porter Hall, after a Brooklyn minister who had donated to the school. Lumber purchased on credit was on the grounds prior to the cornerstone ceremony. Local residents held bake sales to raise funds, donated farm animals, and volunteered their labor to the school, while Washington placed advertisements in various national publications. Three existing buildings on the property were rehabilitated to become classrooms, and construction began on Porter Hall. Institute Board member Lewis Adams oversaw the construction crew for the new building.[24] Porter Hall was completed during the school's second session at a cost of $6,000.[25]

In November 1881, Washington held classes for the first time on the new campus. The campus extended north from Montgomery Road, along the main spine of Tuskegee Ridge. It included a series of three spur ridges and steep-sided drainage valleys, which influenced the early development of the campus. Due to the severe topography of the land, the best building sites were located on top of the relatively flat plateaus. Increasing enrollment required the construction of additional classrooms and dormitories on the new campus. The school continued holding classes at both the original and new campuses until 1883.

Porter Hall stood on the north edge of the plateau running parallel to Montgomery Road. The three-story frame building contained classrooms, administrative offices, the library, the school chapel, and dormitory rooms for female students. Washington rented barracks and houses from local landowners to house the male students. Some of these structures stood opposite Porter Hall along Montgomery Road. During this period, Washington sought donations from around Macon County and material support from local residents to finance the new construction projects.

Washington modeled Tuskegee on Hampton Normal and Agricultural Institute in Virginia, where he had studied in the mid-1870s and taught from 1879 to 1881. He changed the originally state-funded school to a private school with some state funding, following the example he had learned while at Hampton which taught him private schools provided greater independence than public ones.[26] Washington also implemented the following ideas and practices from Hampton at

22. Ellen Weiss, *Robert R. Taylor and Tuskegee: An African American Architect Designs for Booker T. Washington* (Montgomery, Alabama: New South Books, 2012), 23.
23. Ibid.
24. Ibid.
25. Booker T. Washington, "Advertisement for the Tuskegee State Normal School in Tuskegee, Alabama," *The Colored Citizen*, May 3, 1884.
26. Weiss, 20.

Tuskegee: merging academic studies with agricultural and industrial curricula; character building as a rationale for drudgery; brick manufacturing as a student industry; night school for the poorest so they could work by day; marching; inspections; co-education; Sunday night inspirational talks; fundraising from sympathetic Northerners; and the meshing of image and reality of architecture and building at all levels.[27] In contrast to Hampton's all-white staffing, Washington engaged an all-black faculty and staff to show that the children of slaves could find their place in the world.[28]

By its third session, the School had ten officers and teachers with an estimated enrollment of 172 students from almost every county of Alabama and three other states.[29] In 1883, the Alabama legislature amended the act incorporating the Tuskegee Normal School to specifically place the annual appropriation, increased to $3,000, under the control of the State Education Commission. As amended, the act left the school under the direction of Tuskegee's Board of Trustees, resulting in the creation of a private institution. Washington and Davidson continued to collect donations, which allowed for the purchase of additional surrounding farmland. The campus soon grew to 580 acres during its early years.

Washington proceeded with the design of the campus, mindful of how the school's image would be perceived by the outside world, specifically the African American community and potential patrons. He considered brick masonry buildings as symbols of durability and success.[30] In the summer of 1883, Washington engaged in a brick-making experiment in which clay was extracted from one of the deep valleys running through the center of the original 100-acre campus. He secured a $200 loan for the construction of a brick kiln, which yielded some 70,000 bricks on its first successful firing.[31] Washington demonstrated his ability to combine practical instruction with economic advancement and physical development with the success of the school's brick-manufacturing operation. Brick making proved an economic asset for the school during its early years, providing building materials for future construction while offering students experience in the brick-making trade. Some of the original bricks were used in the foundation for Alabama Hall, the next building erected on campus (Figure 4).

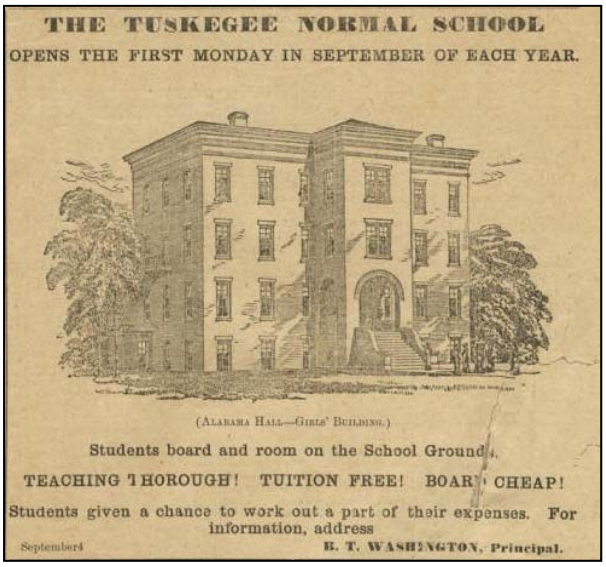

FIGURE 4. An 1886 advertisement for Tuskegee Normal School featuring Alabama Hall. (Source: "Advertisement for the Tuskegee Normal School in Tuskegee, Alabama," *The Herald*, September 25, 1886)

Washington sited Alabama Hall on the west side of Porter Hall. The plateau running parallel to the public Montgomery Road offered the most easily cultivated ground and the best building sites in the otherwise hilly campus. Washington clustered the first school buildings along the northern edge of the plateau, leaving the ground between these buildings and the public road available for farming. William Brown, a carpentry instructor at the school, has been identified as the possible architect of the massive four-story brick Alabama

27. Ibid.
28. Ibid.
29. Washington, "Advertisement," n.p.
30. Clement & Wynn et al., 5.
31. Ibid.

Hall.[32] Completed in 1884 by students, the building served primarily as a female dormitory housing 100 occupants. New institutional buildings like Alabama Hall had been incorporated into the campus setting since the early development period. Attention to the overall campus setting centered on landscaping and the placement of shade trees, buffer plantings, flower beds, and foundation plantings next to buildings.

Completed in 1888, Armstrong Hall was the next largest institutional building on campus. It was named for General Samuel Chapman Armstrong, the principal of Hampton Institute, who had recommended Washington for the Tuskegee position. The two-and-one-half-story building is architecturally like Alabama Hall, suggesting that William Brown may have designed it.[33] Four years later, Armstrong Hall was renamed Olivia Davidson Hall after Washington's second wife.

Tuskegee's institutional buildings were connected by a main campus road extending along the spine of the campus plateau and parallel to Montgomery Road. The campus road held an important ceremonial function in the early days of the school, serving as a stage to hold special events. Viewing stands were often constructed on the edge of the road for special dignitaries to observe student parades. The school feted US Presidents William McKinley and Theodore Roosevelt during their visits with student parades on the campus road.

In 1885, Washington's older brother, John Henry Washington (1866–1932), became Tuskegee's Director of Industries. He also served as the principal of the night school, which provided students the opportunity to work during the day and attend classes at night. Tuskegee's industry-related buildings were clustered at the east end of the campus. Several buildings were constructed on the campus under John H. Washington's leadership to support a variety of industries, such as a blacksmith building and a sawmill. Known as the Band Cottage, the 1889 blacksmith shop is oldest extant building on the Tuskegee campus today. During this period, the school built a carpentry shop at the campus entrance to facilitate the exchange of goods between the school and local customers. During the 1880s, additional wood structures for other trades were erected in the industrial area.

Booker T. Washington also expanded agricultural education and outreach during the school's early years. By 1899, a large brick model barn was constructed at the northwest edge of the original 100-acre site. Washington claimed the barn building itself represented improved husbandry practices.[34] Washington reached out to local farmers, creating an annual Farmers' Conference, the first of which was held in 1891. The conference became a forum where local farmers discussed their needs and exchanged information. Washington utilized the conference to further advance Tuskegee's influence in the local community and to impact rural development in the region. In November of the same year, Washington announced plans to add architecture, surveying, and other higher branches to the technical side of the industrial arts programs.[35] He hired two architectural drawing teachers in 1892, Robert R. Taylor for architectural drawing and principles of woodworking, and William Eugene Hutt from the St. Louis Manual Training School for mechanical drawing and principles of metal work.[36] Hutt had a short tenure at Tuskegee, leaving the school in 1896.

Robert R. Taylor was the first African American graduate in architecture from the Massachusetts Institute of Technology (MIT). While at MIT, Taylor spoke to Booker T. Washington on one or more occasions. After Taylor's graduation from MIT, Washington recruited Taylor to serve as Tuskegee Institute's campus architect, planner, and

32. Ibid., 6.
33. Ibid., 7.
34. Ibid., 8.
35. Weiss, 41.
36. Ibid.

construction supervisor. From 1892 to 1899 he was an instructor in architectural drawing and architect to the institution. Taylor's first building on campus, Science Hall (later named Thrasher Hall), was completed in 1893. His next building was the Chapel (1895–1898), which he considered his best design work. Washington and Taylor worked together to design a campus to meet the changing and growing needs of the school.

Another major development in the industrial arts program included the construction of Cassedy Hall in 1892. John H. Washington designed and supervised the construction of the building, which became the school's center for industrial arts education. An open area around the industrial shops at the campus entrance provided space for customers to park their wagons. The next two institutional buildings, Phelps and Thrasher halls, were constructed on the plateau between Montgomery Road and the internal campus road. A third building, the Phelps Bible School, was constructed in 1892. Miss Olivia Phelps-Stokes donated the money for the Bible School and arranged for her nephew, Isaac Newton Stokes, to design the three-story frame building. To the east of the Bible School, opposite Porter and Armstrong halls, the school constructed Thrasher Hall to the designs of architect Robert Taylor. At Thrasher Hall, Taylor incorporated into the three-story brick science building some architectural details from existing campus buildings, while introducing a more sophisticated architectural vocabulary with the use of stacked porches and articulated columns. Taylor repeated these architectural elements in many of his subsequent building designs for the Tuskegee campus.

In 1893, Washington changed the name of the school to Tuskegee Normal and Industrial Institute to acknowledge the school's new curriculum. By the mid-1890s, the Tuskegee campus had a basic organization with buildings grouped by their function and use. The school had twelve major institutional buildings on campus.[37]

Academic buildings and female dormitories were located in the middle of the campus around Porter, Alabama, and Thrasher halls, all of which fronted the main campus road. Male dormitories and industrial training buildings were clustered near the eastern edge of campus, near its entrance. The farm and related agricultural activities moved to the northwest, onto recently purchased land adjacent to the original 100-acre campus. Numerous small shops, sheds, and outbuildings of largely frame construction were scattered across the campus.

Tuskegee's enrollment increased after September 18, 1895, when Booker T. Washington delivered one of his best-known speeches at the opening of the Cotton States and International Exposition in Atlanta. He was invited to speak at the exposition, which promoted southern commerce. Washington was a known educator and speaker when he gave his speech in Atlanta, but the 1895 address propelled him into national renown. In what is historically referred to "The Atlanta Compromise Speech," Washington challenged both races to adjust to post-Emancipation realities, which he summarized in one sentence as: "In all things that are purely social we can be as separate as the fingers, yet one as the hand in all things essential to mutual progress."[38] He advocated for vocational education for African Americans to ensure economic security in exchange for acceptance of social segregation. Washington presented the audience with one of his and Tuskegee's essential tenets, the dignity of labor, by stating, "No race can prosper till it learns that there is as much dignity in tilling a field as in writing a poem."[39]

37. Clement & Wynn et al., 9.

38. Booker T. Washington, *Address of Booker T. Washington, Principal of the Tuskegee Normal and Industrial Institute, Tuskegee, Alabama, delivered at the opening of the Cotton States and International Exposition, at Atlanta, Ga., September 18, 1895, with a letter of congratulation from the president of the United States*, accessed August 15, 2018, https://www.loc.gov/item/90898322/.

39. Ibid.

One of the most significant events at Tuskegee in the last years of the nineteenth century was the arrival of George Washington Carver (circa 1864–1943) in 1896. Carver had completed graduate work at Iowa State University, with intensive work on plant pathology at the Iowa Experiment Station, and was a highly accomplished botanist by the time Washington invited him to head the school's Agriculture Department. Funds were short for the school when Carver arrived at Tuskegee, so he had to equip his own laboratory. Carver was instrumental in developing the department into a strong research center. Over the course of his forty-seven years at Tuskegee, Carver established himself as one of the most prominent scientists, inventors, and teachers of his time.

In 1897, Booker T. Washington purchased a lot across from campus on Montgomery Road for his personal home, known as "The Oaks." The house's construction fully conveyed Washington's educational philosophy, having most of its materials locally manufactured and installed. He hired Robert Taylor as the architect and paid students to build his home. David Williston designed the landscape plan for the property. Completed in 1900, the brick Queen Anne house is stylistically different from the rest of the campus. The residence was the first in Macon County to have electricity and steam heating. Washington entertained many esteemed guests, patrons, and other visitors at The Oaks. He lived in the house until his death in 1915.

Late Booker T. Washington Era and the Influence of Robert Taylor (1898–1915)

In 1892, when architect Robert R. Taylor arrived at Tuskegee, the campus consisted of a dozen or more brick and frame structures, many of them cottages or cabins used for shops, classrooms, and faculty and student housing.[40] The construction of Tuskegee Chapel ushered in the beginning of a new era in the development of the campus. Built from 1896 to 1898, the Chapel became the campus focal point under the influence of Taylor, the location and orientation of future buildings shifted from the campus road to the Chapel. Along with David Williston, a landscape architect, Taylor illustrated and implemented Washington's vision for Tuskegee, even following Washington's death in 1915. Formal planning of the campus was carried out in the early twentieth century. During this period, the layout of the Tuskegee campus was reorganized with its campus core and edges redefined.[41]

Tuskegee Chapel was a large building with a capacity of 2,500 occupants. The Chapel site was selected because it offered good views of the building from the campus entrances and it would not obstruct views of other important buildings.[42] According to *Campus Heritage Tuskegee University,* Robert Taylor's presence at Tuskegee allowed Washington to maintain control over the planning and construction of buildings, and preempted the decision-making power from influential donors.[43] Evidence for this is that most of the buildings on campus were designed and constructed by Tuskegee faculty and students. One exception was the Armstrong Slater Memorial Agricultural Building, where the Slater officials sent architect John K. Woods to design the building. This marked the last time a non-Tuskegee architect designed a campus building during Washington's lifetime. The two-story building, which students built using Tuskegee brick, stood between Montgomery Road and the new Chapel.

Tuskegee restructured its academic units in 1899. The vocational trades program was reorganized with John H. Washington directing the Mechanical (or Boys') Industries. Margaret Murray Washington led the Girls' Industries, and George Washington Carver directed the School of Agriculture. Robert Taylor returned to Tuskegee

40. Weiss, 23.

41. Clement & Wynn et al., 9.
42. Ibid., 9-10.
43. Ibid.

in 1902, after a few years pursing private practice, to replace John Washington. Twenty-six buildings were constructed on the campus between 1889 and 1910.[44] Student labor supplied the principal work force in the construction of the Institute's buildings. Teachers and staff performed architectural and engineering duties, provided craftsmanship, and supervised the students' work. Teachers and students manufactured bricks on site. Kilns were located opposite the first curve on the west side of Bibb Street, and east of Old Montgomery Road. Timber cut from trees on the campus grounds was prepared for building use at the school's sawmill in the rear of the dairy barn and at other locations. The lumber was ripped and cut in the campus carpentry shop for structural items and milled and made into windows, doors, frames, moldings, and other building components. Two 1902 photographs show Tuskegee students digging the foundation for what would become the C.P. Huntington Memorial Building (Figure 5 and Figure 6).

In 1900, total enrollment at Tuskegee was 1,231 students, consisting of 359 women and 872 men. The school had students from twenty-seven states and territories, from Africa, Puerto Rico, Cuba, Jamaica, and Barbados.[45] Nine-tenths of the student body resided on the campus. The staff at that time included 103 persons including officers, clerks, and instructors.[46] During the 1900 school year, students were trained in the following industries, in addition to religious and academic training: agriculture, dairying, horticulture, stock raising, blacksmithing, brick masonry, carpentry, carriage trimming, cooking, architecture, freehand drawing, mechanical drawing, sewing, plastering, plumbing, printing, sawmilling, founding, housekeeping, harness making, electrical engineering, laundering, machinery training, mattress-making, millinery, nurse training, painting, shoemaking, tailoring, tinning, and wheelwrighting.[47]

FIGURE 5. Students digging the foundation for the C.P. Huntington Memorial Building. (Source: Francis Benjamin Johnson Collection, Library of Congress LC J694-99)

FIGURE 6. Roof construction of building by Tuskegee students in 1902. (Source: Francis Benjamin Johnson Collection, Library of Congress LC J694-99)

Andrew Carnegie bestowed Tuskegee with a $20,000 grant to build a library, which was completed in the academic center of the campus in 1901. The building is distinguished as only the

44. Booker Conley, Foreword to *Historic Buildings Tuskegee Institute: A Report of Conditions* (Tuskegee, Alabama: Tuskegee Institute, 1980), n.p.
45. Booker T. Washington, *Nineteenth annual report of the principal of the Tuskegee Normal and Industrial Institute, Tuskegee, Alabama : for the year ending May 31, 1900* (Tuskegee, Alabama: Tuskegee Institute Steam Print, 1900), 7.
46. Ibid., 7–8.
47. Ibid.

second Carnegie library built in the South and the first constructed for an African American institution in the country. In the same year, Washington encouraged the Southern Improvement Association to purchase 200 acres along the southwest boundary of the campus for what would become the Greenwood Subdivision. Tuskegee's architecture department designed the houses, and Robert Taylor generated plans for the affordable housing. The subdivision was part of Washington's continued interest in extending the school's influence into the surrounding community. Tuskegee students provided numerous services for the new community.

Washington continued to recruit leading African American professionals after the turn of the twentieth century. In 1902, he recruited David A. Williston (1872–1962) from the Lincoln Institute in Jefferson City, Missouri, to join the agricultural science faculty.[48] Williston was one of the first professionally trained black landscape architects in the United States. In 1898, he became the first African American to graduate from Cornell University with a Bachelor of Science degree in agriculture. He taught horticulture and landscape gardening. Williston designed some of the major campuses of the nation's historically black colleges, including Howard University in Washington, DC. He also worked closely with Robert Taylor to further design the Tuskegee campus. He taught intermittently at the school for twenty-seven years.[49] In 1930, Williston opened his own firm in Washington, DC, which was the first African American-owned landscape architecture firm in the country. Williston's legacy at Tuskegee remains evident today, though his contributions to landscape architecture and the African American cultural landscape have received limited acknowledgement within the existing scholarship.

In 1902, Washington relocated the main entrance from its original position near the east edge of the campus to the new center of campus, close to the new chapel and the new trades building. The original brick gateway was moved in the 1920s to the new location. In 1906, Taylor's formal campus plan included the circulation network, entrances to the campus, and the grouping of buildings based on their function. Williston's early landscape plan, elements of which appear in a 1911 campus survey, conformed to and supported the basic design features of Taylor's plan.[50] Landscape enhancements include allées of trees to reinforce the formal arrangement of the road network, the addition of open spaces resembling collegiate quadrangles, straight lines of trees along the edges of the formal open spaces, and less formal plantings in the center of campus.[51] Williston served as superintendent of buildings and grounds from 1910 to 1929, overseeing most aspects of construction and maintenance on campus.

When Porter Hall was razed in 1905, the Institute's administrative functions were divided moved into separate buildings on the campus. For example, its offices were relocated to Robert Taylor's Office Building, and its library was first shifted to Alabama Hall, then to the principal's 1890 frame house, and, finally, to Taylor's Carnegie Library. Other functions were also reassigned, including its chapel to the Pavilion and then to Taylor's Chapel. The girls' dormitory function first relocated to Alabama Hall and then to a host of later buildings—Taylor's Huntington, Douglass, Tantum, and White halls among them.[52] These buildings were constructed in an east-west alignment from Porter Hall along the northern edge of a narrow plateau.

48. Dreck Spurlock Wilson, ed., *African American Architects: A Biographical* Dictionary*, 1865–1945* (New York: Routledge, 2004), 630.
49. Ibid.
50. Clement & Wynn et al., 13.
51. Ibid.
52. Wilson, 24.

FIGURE 7. Review stand at Tuskegee Institute's twenty-fifth anniversary celebration in 1906. (Source: Francis Benjamin Johnson Collection, Library of Congress LC J694-99)

FIGURE 8. Tuskegee Institute faculty with Andrew Carnegie during the twenty-fifth anniversary celebration. (Source: Francis Benjamin Johnson Collection, Library of Congress LC J694-99)

Tuskegee Institute held a grand celebration for its twenty-fifth anniversary in 1906 (Figure 7 and Figure 8). Many dignitaries were in attendance for the celebration including some of the country's leading educators, religious leaders, businessmen, philanthropists, and others. Guests of note included Charles W. Eliot, President of Harvard University; Andrew Carnegie, preeminent industrialist and philanthropist; Secretary of War William H. Taft; Reverend Lyman Abbot, a religious leader at the time; Principal H.B. Frissell of Hampton Institute; and more than 100 philanthropic guests. Secretary Taft gave one of the primary addresses during the celebrations. One notable speech was given by Robert Curtis Ogden, a businessman who promoted education in the South. He was one of the great financial supporters of Tuskegee. In his address, Ogden referred to Tuskegee as an example,

> . . . to exhibit, upon an unmatched scale of development, the possibilities of an institution entirely controlled in its diversified academic and industrial curriculum, productive industries, executive organization and business affairs by a faculty and corps of managers composed entirely of men and women of African descent.[53]

The speeches and presence of such distinguished guests and representatives from all of the leading institutions in the country demonstrated the importance of Tuskegee Institute at the national level. During the 1906 anniversary celebration, Washington spoke of the changing mission of the school that would influence future development of the campus. He imparted to the audience that Tuskegee Institute would rise to a higher stage of perfection. Tuskegee initiated a major building campaign in 1906, with four buildings totaling more than 100,000 square feet under simultaneous construction. A new dormitory for female students, Tantum Hall, was also constructed that same year to celebrate and demonstrate the skills of the Tuskegee students.

From its beginning, Washington considered Tuskegee's mission to be the improvement of the economic conditions of African Americans. He believed that farming should be the largest industry on campus, given the majority of blacks were farmers. In 1909, his conviction was realized with the construction of Milbank Hall, a three-and-one-half-story brick edifice that became the new center of the school's farm on the west side of campus. The building held classrooms, offices, and assembly rooms. After the construction of Milbank Hall, Washington, in one of his last letters, described the relocation of all of the school's agriculture-related structures to the area around Milbank Hall.

In the second decade of the twentieth century, Washington constructed several buildings that were in line with his new vision for Tuskegee to increase its community outreach and service. Washington solicited financial support from local residents and developed a solid economy by selling goods and services to the public. In 1913, his vision was again recognized with the dedication of John Andrew Hospital. Built by Robert Taylor, after he studied other hospitals to design what became a state of the art facility, the new hospital provided students with not only health care but also the opportunity to train as nurses. Before the establishment of the hospital, health care at the Institute was provided at either a twenty-five-bed hospital built in 1901 or at various infirmaries on campus.

Prior to Washington's death in 1915, he had witnessed the construction of approximately eighty-five buildings and the addition of thousands of acres to the school's property.[54] Under Taylor's guidance, the industrial arts building was relocated, larger dormitories and academic structures were built, new service and extension

53. Mr. Ogden's Address in "Twenty-Fifth Anniversary Edition," *The Tuskegee Student,* April 28, 1906 (Tuskegee, Alabama: Tuskegee Institute, 1906). Online, accessed July 30, 2018.

54. Clement & Wynn et al., 2.

facilities were created, and a master plan for Tuskegee was developed.

Taylor is also credited with the design of the following buildings at Tuskegee: The Oaks (1899), the President's House; Huntington Hall and the four Emery dormitories (1900); Dorothy Hall (1901), the women's trades building; Carnegie Library (1901); the Administration (or Office) Building (1902–1903); Rockefeller Hall (1903), a men's residence; Douglass Hall (1904); Collis P. Huntington Memorial Building (1904–1905), an academic center; Tantum Hall (1907); Milbank Agriculture Building (1909); Tompkins Hall (1910), a dining facility; White Hall (1910), a women's dormitory; John A. Andrew Memorial Hospital (1913); the Laundry (1915), now the George Washington Carver Museum; James Hall (1921); Sage Hall (1927); Wilcox Trade Buildings (1928); Logan Hall (1931); Armstrong Science Building (1932); and Hollis Burke Frissell Library (1932).[55] Taylor retired from Tuskegee in 1935, returning to his hometown of Wilmington, North Carolina.

At the time of Washington's death in 1915, there were 1,500 students, a $2 million endowment, forty trades, one hundred fully equipped buildings, and about 200 faculty members.[56] The campus encompassed approximately 2,500 acres. In addition, the school also owned 25,000 acres received from an 1896 federal grant. Approximately thirty-two buildings remain on campus today from the Booker T. Washington era. The efforts of Washington, assisted by Taylor and Williston, in establishing the overall basic plan of the campus would govern the campus development for another generation.

55. Ibid.
56. "History of Tuskegee University," Tuskegee University, accessed 23 May 2017, https://www.tuskegee.edu/about-us/history-and-mission.

Robert Moton and Frederick D. Patterson Eras and the Influence of David Williston (1916–1952)

Robert Russa Moton (1867–1940) of Hampton Institute succeeded Booker T. Washington as the second president of Tuskegee Institute in 1915. Similar to Washington, Moton was a Virginia native who graduated from Hampton Normal and Agricultural Institute (1890) and remained at the school. (Moton served as commandant of the male student cadet corps at Hampton Institute.) At Tuskegee, he inherited Washington's demanding responsibilities of fundraising, overseeing the faculty and students, and providing for the maintenance of the school's campus (Figure 9).

FIGURE 9. Dr. Robert Russa Moton (President, 1915–1935). (Source: Tuskegee University)

Moton began to expand the Institute's academic programs soon after his arrival. The school had a budget of $100,000, with the State of Alabama annual appropriation during his administration never exceeding $5,000, which required Moton to raise large amounts of money. Tuskegee had to maintain a hospital, bank, commissary, farm, dairy, truck garden, greenhouse, garage service, and power plant, all of which served the school and the

adjacent community.[57] Moton successfully increased the school's endowment with a $10 million capital campaign.

During World War I, through the successful lobbying efforts of Moton, the federal government approved an Officers' Training Camp for African Americans at Fort Des Moines, Iowa. Emmett Scott, one of Moton's advisers, was appointed special assistant to the Secretary of War on racial matters. In 1918, President Woodrow Wilson, now understood to have supported segregation in the federal government, dispatched Moton and two others to France to investigate the conditions under which black soldiers served. Moton was responsible for scrutinizing accusations of cowardice and misbehavior. After World War I, as race relations continued to deteriorate, Moton reached out to US Presidents Wilson and Warren G. Harding to speak out against lynching.

On the first day of the fall session in September 1920, there were 1,820 students enrolled at the institute, marking the highest enrollment to date, which was 551 more students than the previous year.[58] The Institute admitted approximately 200 more students than anticipated as a result of the return of young men from World War I. The total enrollment for the regular courses in 1920 was 2,240, with 1,166 boys, 973 girls, and 101 disabled soldiers taking part in vocational work under the Federal Board for Vocational Education. Included in this number were 243 pupils in attendance at the Institute's Summer School for Teachers, as well as persons enrolled at the hospital for special courses in midwifery, and post-graduate work for physicians in medicine and surgery. In total, the Institute provided instruction in definite courses of study to a total of 2,877 persons resident on the school grounds.

In his 1920 president's report, Moton stated the general financial condition of the school was encouraging despite of the economic downtown in business and the consequent financial stagnation. The Institute enjoyed the benefit of regular contributions from its friends and loyal donors. In addition, students at that time increased their own contributions toward their own education, in spite of a decline in cotton prices experienced by many of their parents.[59] By 1920, the Institute created a Loyalty Fund for circulation among alumni and former students.

During the interwar years, Tuskegee confronted campus demonstrations by the Ku Klux Klan (KKK) and financial disruptions brought on by the Great Depression. In 1923, Moton received threats from the KKK after he insisted that black doctors staff the "Veterans Hospital for Negro Disabled Soldiers," to be constructed on 464 acres of land donated by Tuskegee. Despite the difficulties of this period, Moton continued to improve the campus, and the hospital was completed in 1929. Other improvement included paving of campus roads in 1927, construction of a greenhouse in 1928, and major renovations to the Commissary and Douglass and James halls.[60]

By April 1930, Robert Taylor, along with fellow architect and faculty member Louis Persley (1888–1932), completed a revised development plan for Tuskegee that proposed changes to the campus. Based on the 1911 topographic map, Taylor recommended relocating the school entrance to the west side of the Economics Building (formerly the Slater-Armstrong Memorial Building). Two new buildings—a library and a science hall—were proposed for the area between the Carnegie Library and the Home Economics Building. One of the most notable recommendations was for a new academic complex on the south side of

57. Clement & Wynn et al., 17.
58. Enrollment information obtained from Tuskegee Normal and Industrial Institute, Principal's Annual Report Edition 1920-1921 (Vol. 15 No. 4). *The Tuskegee Institute Bulletin* (Tuskegee, Alabama: Tuskegee Normal and Industrial Institute, 1921), 5.
59. Ibid., 6.
60. Clement & Wynn et al., 18.

Montgomery Road, near the location of the original entrance.

Moton also reorganized academic programs during this period. He added a junior college program and a full four-year college program, offering degrees in Agriculture, Home Economics, Mechanical Industries, and Education. New courses at the college level were also added. In addition, Moton built the new campus complex in 1932, the Department Quadrangle across Montgomery Road from the main campus. Proposed by Taylor, the complex included Logan Hall, an auditorium, and a gymnasium at the head of a court. Chapman Armstrong Hall and the Hollis Burke Frissell Library were erected opposite each other between Logan Hall and the road.

FIGURE 10. Dr. Frederick Douglass Patterson (President, 1935–1953). (Source: Tuskegee University)

In 1935, Moton retired and was succeeded by Dr. Frederick Douglass Patterson (1901–1998; Figure 10), his son-in-law. Patterson had originally arrived at Tuskegee in 1928 to teach veterinary medicine. He was later appointed director of the School of Agriculture. Patterson carried on Booker T. Washington's dedication to vocational instruction and making Tuskegee a model for African American progress. He also experimented with concrete block fabricated on site, eventually constructing several buildings on campus using the "Tuskegee Block."[61] Two home-economics practice houses, twenty houses for faculty, an addition to the Home Economics Building, and the new School of Veterinary Medicine were built with the block.

Patterson succeeded in obtaining an increase in the annual appropriation from the State Legislature, and by the end of his tenure, the school received $110,000 in state annual support. In the late 1930s, with support from the Alabama General Education Board, Patterson established the School of Commercial Dietetics and the School of Commercial Aviation. In 1940, he created the George Washington Carver Foundation, a non-profit organization that offered scientific research grants to African American students. In 1944, he brought the School of Veterinary Medicine to the Tuskegee campus and founded the United Negro College Fund to assist and advance minority higher education. The Engineering School was created in 1948. Other construction projects included Moton Hall and a new gateway.

In 1941, the US Army Air Corps established a training program for black aviators at Tuskegee Institute. The training occurred at Moton Field, about 4 miles (6.4 km) from the campus center. Known as the Tuskegee Airmen, African Americans in World War II formed the 332nd Fighter Group and the 477th Bombardment Group of the United States Army Air Forces. In addition to pilots, the training program included navigators, bombardiers, mechanics, instructors, crew chiefs, nurses, cooks, and other support personnel for the pilots. All black pilots trained at Moton Field were educated at Tuskegee Institute. After primary training at Moton Field, they were moved to the nearby Tuskegee Army Air Field, about 10 miles (16 km) to the west, for specific

61. Ibid.

training on operational aircraft.[62] The Tuskegee Airmen were the first African American military aviators in the United States Armed Forces at a time when the American military was racially segregated. The Tuskegee Airmen overcame segregation and prejudice to become one of the most highly respected fighter groups of World War II.

After World War II in April 1948, David Williston designed a landscape plan for Tuskegee's campus. Beginning in the first decade of the twentieth century, Williston's contributions to the beautification of the Tuskegee campus were significant. In keeping with Washington and Taylor's campus plans, Williston's 1948 plan organized related buildings in groups. The Academic and Administration Buildings were concentrated in the eastern half of the campus. The Women's Dormitory group buildings were centered on either side of the big valley and the Home Economics group buildings were located around Dorothy Hall near the center of campus. The Architectural, Engineering, and Trade School group buildings remained in the Wilcox Complex. Williston's plan expanded the Emories with the addition of four more dormitories. The Dormitory for Men group included the Emories on the west side of campus and a cluster of dormitories, including Rockefeller Hall and Sage Hall, on the east side. The Agriculture group remained on the western edge of campus around Milbank Hall. The Medical group was centered on John Andrews Hospital, and a new College of Medicine and a College of Dentistry were proposed in the area between the hospital and the chapel. The Veterinary School remained unchanged.[63]

In 1952, the George Washington Carver Foundation Laboratory for the Advancement of Knowledge through Agriculture and Science was established on Montgomery Road opposite the original campus gates. Earlier, Patterson had helped to nurture the George Washington Carver Research Foundation, which was financed with Carver's personal endowment to the school, and the George Washington Carver Museum. Patterson retired as President of Tuskegee in 1953. Following his death in 1988, he was buried on the Tuskegee University campus.

Luther Foster Era and the Influence of Edward Pryce (1953–1980)

Dr. Luther Hilton Foster (1913–1994) became the fourth president of Tuskegee Institute in 1953 (Figure 11).[64] His twenty-eight-year tenure included significant periods in the nation's history: the civil rights and antiwar movements. Foster concentrated on reforming Tuskegee's administrative and academic structure. He created the College of Arts and Sciences and the Engineering School, while eliminating many of the vocational programs initiated during the Washington era.

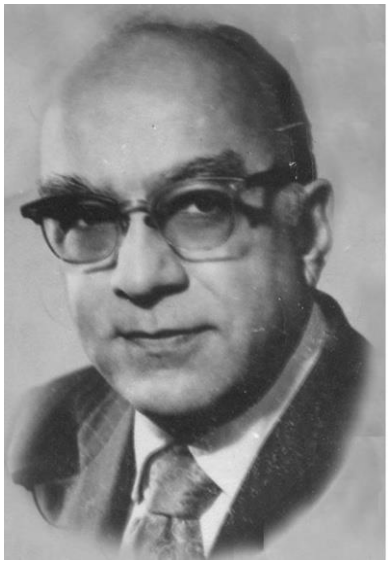

FIGURE 11. Dr. Luther Foster (President, 1953–1981). (Source: Tuskegee University)

62. For more information on Tuskegee Airmen see National Park Service, "American Visionaries Legends of Tuskegee: Tuskegee Airmen," https://www.nps.gov/museum/exhibits/tuskegee/airoverview.htm.
63. Clement & Wynn et al., 20.
64. J. Michael Elliott, "Luther Foster Jr., 81, Dies; Leader of Tuskegee Institute," *New York Times*, December 2, 1994.

Foster was known for his "quiet but firm" leadership during the turbulent years of the civil rights movement. The educational and economic empowerment models of Tuskegee helped to lay the groundwork for the movement. Specific civil rights movement events related to Tuskegee include:

- The death of Student Nonviolent Coordinating Committee (SNCC) member, military veteran, and Tuskegee political science student, Samuel "Sammy" Leamon Younge, Jr., the first college student to die in the movement, killed in 1966 in Macon County for attempting to use a gas station whites-only restroom.

- The important *Gomillion v. Lightfoot* (1960) Supreme Court decision (Charles G. Comillion was a professor at Tuskegee Institute).[65]

Foster was born on the campus of St. Paul's College in Lawrenceville, Virginia, where his father was an administrator. He earned undergraduate degrees from Virginia State College (1932) and Hampton Institute (1934). He received a master's degree in business administration from Harvard University (1936), and a master's degree (1941) and a Ph.D. (1951) from the University of Chicago. After four years as Howard University's budget officer, Foster joined the staff of Tuskegee as business manager in 1941.

During the mid-twentieth century, the Tuskegee campus experienced physical changes with the demolition of two brick buildings, Cassedy Hall and Olivia Davidson Hall, on the east end of campus in the mid-1950s. In 1957, a fire destroyed the Robert Taylor-designed chapel. Tuskegee engaged architect Paul Rudolph (1918–1997) to design a new chapel in 1958, though the building was not constructed until 1967–1968.[66] Rudolph's Modernist chapel was designed in conjunction with two former Tuskegee faculty members, architects John A. Welch and Louis Fry.

Under Foster, landscape was in the control of a Tuskegee graduate, Edward L. Pryce (1914–2007), who came to Tuskegee in 1934 to study under George Washington Carver. As a student, Pryce became interested in landscape architecture after meeting David Williston. He left Tuskegee after his graduation, returning in 1948 to become the director of the Department of Ornamental Horticulture. Pryce served as campus planner beginning in the 1950s, while completing a master's degree in landscape architecture at the University of California at Berkeley. His thesis project was a master plan for the Tuskegee campus. Pryce acted as Superintendent of Building and Grounds from 1955 to 1969. In 1962, Pryce and Rudolph collaborated on a new master plan for the campus. Their plan continued in the Tuskegee tradition of grouping buildings based on their function. Pryce continued working for Tuskegee, producing plans for the school through the mid-1980s. He was instrumental in getting the school nominated as a National Historic Landmark in 1965 and as a National Historic Site in 1974.

The Institute grew from approximately 2,000 to more than 3,500 students during Foster's leadership. He retired in 1981 and served as President Emeritus from 1981 to 1984.

In 1970, as superintendent of buildings and grounds at Tuskegee, Pryce voiced his concern to Foster about the need to renovate and refurbish certain buildings, particularly Booker T. Washington's home, The Oaks, and the Carver Museum, due to an increase in the number of visitors to the school. The 1960s marked a period of growing African American pride and the

65. The US Supreme Court ruled that Tuskegee city officials had redrawn the city's boundaries unconstitutionally to ensure the election of white candidates in the city's political races. The decision proved critical for the later passage of the 1965 Voting Rights Act, which outlawed discriminatory voting practices.

66. Clement & Wynn et al., 23.

importance of blacks in preserving the history of black achievement in American history. Pryce and Foster came up with an innovative response to these institutional and societal needs—have Tuskegee Institute designated as a National Historic Site, recognizing the Institute's outstanding contributions to black history. After consulting with the National Park Service, the administration began drawing up a proposal for national recognition of the Tuskegee campus.[67]

Pryce was initially tasked with obtaining federal recognition, with the advice and consent of Foster. His first submittal to the National Park Service was for the development of the Tuskegee National Shrine Visitor's Center. Pryce stated:

> . . . . since the birthplaces of Washington and Carver do not give the visitor a feeling of the work which was accomplished by them, the only place would be Tuskegee Institute. It is here that the range of American education philosophies in general, and effect of these philosophies upon the education of Negroes in particular, is demonstrated . . . . People have forgotten the place were the first brickyard and lumber mill were; they don't know what the campus looked like after Booker T. Washington had been here for ten year [sic]; they will never know, perhaps, that four United States presidents have visited Tuskegee Institute. . . . Our children are growing up without knowledge of the work and tradition and conflicts and success which had occurred here. . . . In view of the many important historical developments which have occurred here, the Tuskegee community presents the National Park Service with the most unusual opportunity to fulfill its obligations and commitment to America in general, and to the Negro in particular, with respect to the restoration, preservation and maintenance of significant events, places, and resources.[68]

Between 1970 and 1972, Institute officials met with members of the Alabama delegation to Congress in Tuskegee and Washington, DC, to further develop plans. In May 1972, Foster sought and received letters of endorsement from the Mayor of the City of Tuskegee, the Governor of Alabama, the Director of the Alabama Historical Commission, the Alabama State Director of Archives and History, and the director of the Tuskegee Veterans Administration Hospital in Tuskegee.[69]

On June 1, 1972, a bill that would "preserve facilities and materials of significance and enhance the usefulness of the Institute in the future" was placed on the Senate floor by Alabama Senator James B. Allen on behalf of Senator John Sparkman. In two weeks, a bill to "establish Tuskegee Institute as a National Park" was placed on the floor of the House of Representatives by Representatives Elizabeth Andrew and William Nicholas, and the bill was moved to the House Interior Committee for a cost estimate. The Subcommittee on Parks and Recreation of the Committee on Interior and Insular Affairs of the US Senate held a public meeting on September 27, 1972, at which public testimony was given about the proposed park. However, the hearing was held in the closing days of the 92nd Congress and the final report from the National Park Service was not available. The decision was postponed.[70]

At the beginning of the 93rd Congress, hearings were again held in the Senate and House, and Congressmen and National Park Service representatives began to regularly visit the school. Discussions were held regarding the naming of the site, and budgets were discussed and created. Finally, by October 1974, the House and Senate concurred, and on October 26, 1974, President Gerald Ford signed Public Law 93-485 for the establishment of the Tuskegee Institute National Historic Site. On August 25, 1976, a Memorandum of Agreement was signed by Foster, as President of Tuskegee Institute, and the Southeast Regional Director of the National Park Service regarding

67. Brandyburg, n.p.
68. Ibid.
69. Ibid.
70. Ibid.

the preservation of the original campus at the Tuskegee Institute National Historic Site.[71]

Benjamin F. Payton and Current Eras (1981–Present)

Benjamin F. Payton (1932–2016) became the fifth president of Tuskegee in 1981 (Figure 12). He was a civil rights advocate who was instrumental in transforming the historically black Tuskegee Institute into the more broadly encompassing Tuskegee University that it is today. Under Payton's nearly three decades of leadership, the university completed a successful $169 million capital campaign that is building capacity for tomorrow's leaders by expanding housing, classroom, and student activity facilities. Payton retired in 2010.

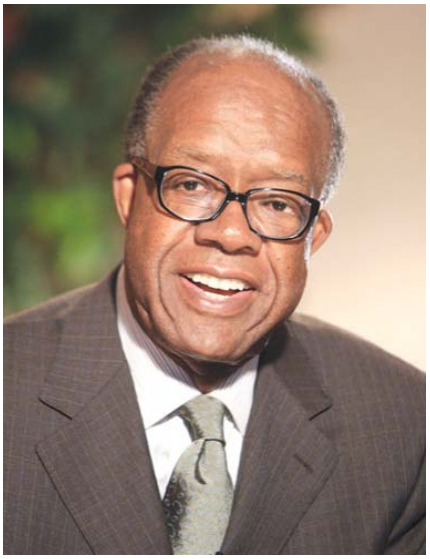

FIGURE 12. Dr. Benjamin F. Payton (President, 1981–2010). (Source: Tuskegee University)

During the late twentieth century, several construction projects occurred on campus. New buildings included the Carver Foundation Addition (1984), Physical Plant Building (1985), General Daniel "Chappie" James Center for Aerospace Science and Health Education (1987), W. Marable Field House (1987), Food Animal Production, Research and Service Center (1993), Caprine Research (1994), and Dorothy Hall / Kellogg Conference Center (1901 / 1994 restoration). The General Daniel "Chappie" James Center for Aerospace Science and Health Education, a large multi-purpose building, was named for a Tuskegee alumnus and America's first black four-star general. Seven other buildings, built between 1856 and 1926, were renovated during this period to comply with fire and safety requirements and energy-efficiency standards. The Huntington Memorial Building (1893), renovated in 1984, was destroyed by fire in 1991.

In 1996, Payton served as a member of the Tuskegee Syphilis Study Legacy Committee, which actively pursued a government apology for its participation in the forty-year study on the degeneration of syphilitic African American men. The US Public Health Service had set up a base at the John A. Andrew Memorial Hospital on the University's campus to study the long-term effects of untreated syphilis on African American men in 1932. The government had hidden its real purpose until 1972, which created mistrust among African Americans to the government and the medical profession. Payton's committee sought to rectify part of that mistrust through a formal apology from President Bill Clinton, which occurred in 1997. President Clinton also announced a $200,000 grant to Tuskegee University to initiate the plans for a National Center for Bioethics in Research and Health Care. Two years later, the University introduced the nation's first African American bioethics center.

The first five presidents of Tuskegee enjoyed long terms, a tradition that lasted until the second decade of the twenty-first century. Dr. Gilbert L. Rochon served as the sixth president of Tuskegee University from November 1, 2010, to October 19, 2013. He vowed to "Bring the World to Tuskegee and Tuskegee to the World." During his short tenure, the University experienced an increase in enrollment, endowment, and research funding. The Tuskegee University Board of Trustees appointed Dr. Brian L. Johnson as the school's seventh president on April 28, 2014.

71. Ibid.

Dr. Johnson served as president of Tuskegee University from April 28, 2014, to June 30, 2017. Under Johnson's leadership, the University adopted a five-year strategic plan and created a Master Campus Plan that focused on modernizing the campus and its facilities for the twenty-first century. The overall goals for the university included increasing student enrollment, updating technological infrastructure, and improving student engagement.

As of July 1, 2017, Dr. Charlotte Morris is serving as the Interim President of Tuskegee University. She will continue to focus on the strategic plan under her provisional leadership.

Booker T. Washington (1856–1915)

Booker Taliaferro Washington is considered one of the most influential African American educators and leaders of the late nineteenth and early twentieth centuries (Figure 13).[72] He also had a significance influence on southern race relations from 1895 until his death in 1915. Washington was noted for his oratory and active speaking schedule. He became a notable political force, and many considered him as the heir to Frederick Douglass. Though he achieved wide recognition as a spokesman for African Americans, he was also criticized by some about the extent and use of his power and influence.[73]

FIGURE 13. Booker T. Washington. (Source: National Park Service)

Washington was born into slavery on April 5, 1856, on a plantation near Hale's Ford, Virginia.[74] His mother, Jane, was one of six enslaved people (including her son, Booker) owned by tobacco farmer James Burroughs.[75] In his autobiography *Up from Slavery* (1901), Washington identified his father as "a white man who lived on one of the nearby plantations."[76] Washington's mother worked as a cook for the Burroughs family, leaving little time for her children. His closest family ties were with his older half-brother, John, and a younger half-sister, Amanda. After Booker's birth,

72. "Booker T. Washington Timeline," Booker T. Washington National Monument, National Park Service, last modified February 26, 2015, https://www.nps.gov/bowa/learn/historyculture/washington-timeline.htm; Richard Wormser, "Booker T. Washington," Educational Broadcasting Corporation 2002, http://www.pbs.org/wnet/jimcrow/stories_people_booker.html.
73. National Park Service, *American Visionaries Legends of Tuskegee: Booker T. Washington*, last modified April 7, 2000, https://www.nps.gov/museum/exhibits/tuskegee/lgimage/btw29.htm.
74. The exact year of Washington's birth has been a matter of debate, as he did not possess a formal birth certificate. Dates of his birth range from as early as 1854 to as late as 1859. His headstone at Tuskegee is inscribed with the year 1856, a date reportedly noted next to his name in a family Bible. This date defers to the birth date acknowledged by the National Park Service.
75. Jeremy Wells, "Booker T. Washington (1856–1915)," *Encyclopedia Virginia*, last modified December 23, 2013, https://www.encyclopediavirginia.org/Washington_Booker_T_1856-1915.
76. Booker T. Washington, *Up From Slavery: An Autobiography* (Garden City, NY: Doubleday & Company, Inc., 1901).

his mother married Washington Ferguson, also enslaved. In 1864, Ferguson fled the situation, relocating to the new state of West Virginia where he found employment in a salt works in the town of Malden.

Four months after the end of the Civil War (1861–1865) and Emancipation, in the summer of 1865, Jane and her children joined Ferguson in West Virginia. In 1870, as a young student, her son assumed the name "Booker Washington" for the first time.[77] Washington followed his stepfather and worked in the salt furnaces and coal mines while he attended school. In his 1901 autobiography, Washington recounts learning about "a great school for colored people somewhere in Virginia" for the first time while overhearing a conversation between two men working in a coal mine.[78] From that point forward, Washington's ambition was to attend Hampton Normal and Agricultural Institute in Virginia. He continued to work in the mine a few months longer until an opportunity arose for a domestic position in the household of Gen. Lewis Ruffner, owner of the salt furnace and salt mine. Mrs. Viola Ruffner, the general's wife and a native of Vermont, recognized Washington's ambition. In his eighteen months with Mrs. Ruffner, Washington developed an appreciation for the values of hard work, cleanliness, and thrift.[79]

In 1872, at the age of sixteen, Washington set off on an arduous 500-mile journey to attend Hampton Normal and Agricultural Institute, bringing with him a small sum of money donated by family and friends. When Washington entered Hampton Institute, the school had been in existence for only four years under its principal, Gen. Samuel Chapman Armstrong (1839–1893). Through Armstrong's efforts, Hampton Institute became the first black vocational school in the South in 1868. Armstrong became one of the most influential individuals in Washington's life. At Hampton, Washington adopted Armstrong's conviction for "learning by doing" and industrial education. Armstrong, in his 1872 annual report, noted the need for skillful agriculturists and mechanics rather than poets and orators.[80]

Washington became an exemplary pupil under Armstrong's tutelage. Though Armstrong's philosophy of education for blacks was based on what he considered their deficiencies, his "system" was embraced and perpetuated by Washington, who graduated from Hampton Institute in 1875. During the next two years, Washington returned to his family in Malden to teach and to help his brothers, John and James (adopted), earn money for their tuition to Hampton Institute. He left Malden in 1878 to study for a year at the Wayland Seminary School in Washington, DC. The seminary's deep religious atmosphere left a lifetime impression on Washington.[81]

In 1879, Armstrong asked Washington to join the faculty of Hampton Institute and continue as a post-graduate student. Washington taught at the newly created night school for Hampton students who wanted to work during the day and study at night, a program he would later implement at Tuskegee Institute. While at Hampton Institute, Washington was placed in charge of overseeing the education, growth, and development of American Indian students. He resided in the same dormitory with almost seventy-five American Indian students.[82] In May 1881, at the end of Washington's second year as a teacher at Hampton, Armstrong received a letter written on behalf of African American citizens of Tuskegee, Alabama, by George Campbell, a board member of the Tuskegee Normal and Industrial Institute. Campbell inquired about securing a white male candidate for principal of the school. Armstrong

77. William F. Mugleston, "Washington, Booker T," *American National Biography Online*, last modified February 2000, http://www.anb.org/articles/15/15-00737.html.
78. Washington, *My Life and Work*, 42-43.
79. Ibid.
80. Ibid.
81. Ibid., 45.
82. Ibid., 48.

replied that he knew of no suitable white man for such a position. Instead, he recommended Booker T. Washington.

In 1881, in the "Black Belt" region of Alabama, the twenty-five-year-old Washington organized Tuskegee Normal School for Colored Teachers based on the Hampton Normal and Industrial Institute model. Tuskegee differed from Hampton in its organization and operation, which included only African American faculty and staff. Confronted with challenging circumstances from the beginning, Washington used his ability to win the trust of Southern whites and Northern philanthropists to turn Tuskegee into a model school of industrial education. He reassured whites that his educational program would not challenge white supremacy or offer economic competition with whites. Washington accepted racial subordination as a necessary evil in exchange for the success of Tuskegee's mission, one that would allow graduates and students economic independence and freedom from sharecropping and debt.

Washington established a program of industrial and vocational education for African Americans, designed to demonstrate to his students the dignity of work.[83] At Tuskegee, he informed students how "to live on the farm off the farm."[84] Washington sought to enhance the economic conditions of blacks and to improve their way of life. In the early years, Washington turned to Hampton Normal and Agricultural Institute for support, specifically in seeking graduates to join the Tuskegee faculty. He was known as a hands-on principal, who attended to every detail, from overseeing faculty and students to working at the school publication. Early on, Washington also had to ensure that prospective teachers were trained not only in the methods of teaching, but also in the fundamentals of education. Washington monitored the quality of instruction, inspected campus grounds, and scrutinized his students, and traveled extensively to secure donations for the Institute.[85] Tuskegee Institute embodied his policies and prospered under his administration.

Washington's personal and professional lives were intertwined with Tuskegee Institute. Washington, his three wives, and three children, all lived at Tuskegee during his lifetime. He married his first wife, Fannie Norton Smith (1858–1884), in 1882. From Malden, Smith had known Washington for most of her life and was also a graduate of Hampton Normal and Agricultural Institute. The couple's only child, Portia Washington (1883–1978), was born the following year. In 1884, Fannie died before having the opportunity to witness how the couple's dedication and efforts on behalf of the school would contribute to the success of Tuskegee. Washington married his colleague, Olivia America Davidson (1854–1889), a teacher and principal at Tuskegee Normal School for Colored Teachers, the following year. Davidson was born in Virginia to a former slave and a freeborn mother.[86] Her family moved to southern Ohio in 1857, later relocating to the northern part of the state where she attended the Enterprise Academy in Albany, a school owned and operated by African American educators. After teaching in Mississippi for two years and in the Memphis public school system for four years, Davidson enrolled at Hampton Normal and Agricultural Institute in 1878.[87]

Olivia Davidson arrived at Tuskegee in 1881 after the school had been in session for three months, and was employed as an assistant teacher. Following her marriage to Washington in 1885, she had two sons with him, Booker T., Jr. (1887–1945) and Ernest (1889–1938; Figure 14). Davidson's role at Tuskegee was significant in the early years of the school. She worked as a curriculum specialist,

83. Sheely, 1.
84. Ibid.
85. *American Visionaries Booker T. Washington*.
86. "Davidson, Olivia A. (1854-1889)," BlackPast.org, accessed October 13, 2017, http://www.blackpast.org/aah/davidson-olivia-1854-1889.
87. Ibid.

assistant principal, fund-raiser, and builder. Washington credited the success of the school in its first twelve years to Olivia more than anyone else.[88] In May of 1889, personal tragedy struck again for Washington, when Olivia died from injuries she incurred during a fire in the Washington home.

In 1893, Washington married his third wife, Margaret James Murray (1865–1925). She was a graduate of Fisk University who came to Tuskegee as a teacher in 1889. In the following year, she became principal at Tuskegee Institute. During her marriage, she assumed the role of the president's wife and conducted much of the day-to-day activities at the Institute while Washington traveled for six months of the year raising funds for the school and serving as a spokesperson for African Americans. Margaret Washington also raised Washington's three children. Further, she is significant in African American history for helping establish the black women's movement and participating in the formation of the National Federation of Afro-American Women in 1895.

Booker T. Washington entered the national spotlight with his 1895 address to the Cotton States and International Exposition in Atlanta. In his speech, Washington publicly accepted disfranchisement and social segregation provided whites would allow black economic progress, educational opportunity, and justice in the courts. This speech, which is often called the "Atlanta Compromise," marked his rise as the foremost spokesperson for African Americans of his time.

In 1900, Washington's Tuskegee residence, "The Oaks," was completed. The Queen Anne-style home was built by the school's students and faculty with materials manufactured on campus. The Oaks became an operational center for Washington as well as a social center for the Institute. Washington received many distinguished guests at The Oaks, especially during Tuskegee's twenty-fifth-anniversary celebration in 1906. In addition to being the center of entertainment obligations associated with the school, The Oaks served foremost as the Washington home. For example, the wedding reception for Washington's daughter, Portia, was held there.

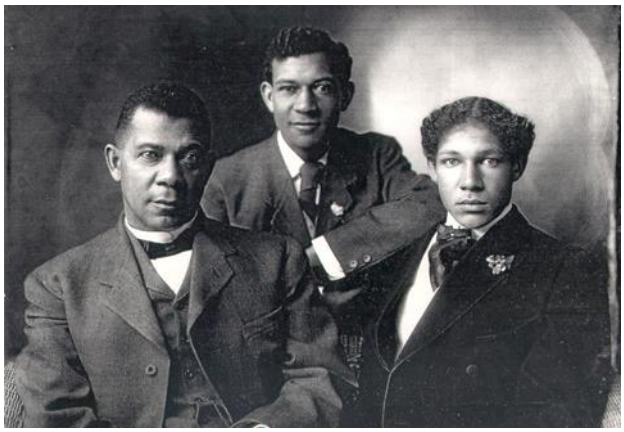

FIGURE 14. Booker T. Washington and his sons. (Source: Francis Benjamin Johnson Collection, Library of Congress LC J694-260)

At the turn of the twentieth century, Washington's accomplishments included the writing of many books that reflected his ideas on education and society. One of his best known works is his autobiography, *Up from Slavery* (1901). During his career, he served as an advisor to two American presidents. In 1901, President Theodore Roosevelt (1858–1919) invited Washington to the White House to seek his advice on cabinet appointments, the first such invitation for an African American. Later, President William Howard Taft (1859–1930) employed Washington as an advisor on racial matters. Industrialists in control of the financing of many black schools in the South also depended upon his advice regarding which schools should receive funds. In 1900, Washington founded the National Negro Business League, an idea utilized by W.E.B. Du Bois (1868-1963).[89]

Around the same time, some members of the African American intellectual community questioned Washington's ideas and positions. Among them was W.E.B. Du Bois, then a scholar at Atlanta University, who attacked Washington's

88. Washington, *My Life and Work*, 61.

89. "Booker T. Washington Timeline," Booker T. Washington National Monument.

philosophy in his 1903 book, *The Souls of Black Folk*. After Woodrow Wilson (1856–1924) became president in 1913, Washington lost influence in the federal government, which Wilson helped segregate further. At the same time, a new era was emerging in the black community, in which the younger generation would no longer accept white supremacy. Under the leadership of Du Bois and others, this generation demanded political and civil rights, and formed the National Association for the Advancement of Colored People (NAACP) in 1909. However, the majority of working-class and middle-class African Americans still held Washington in great esteem as a community leader.[90] Debates about Washington's legacy continue.

On November 14, 1915, Washington died of overwork and arteriosclerosis while at Tuskegee, shortly after returning from New York City, where he had been hospitalized. At the time of Washington's death, the Institute had 1,537 students and an all-black faculty of 197 members, teaching thirty-eight trades and professions. The campus was dotted with more than 100 buildings. Washington is buried on the campus of Tuskegee University near the University Chapel. After his death, Margaret Washington remained at The Oaks and continued to help run the Institute, as well as participate in speaking engagements on social change.

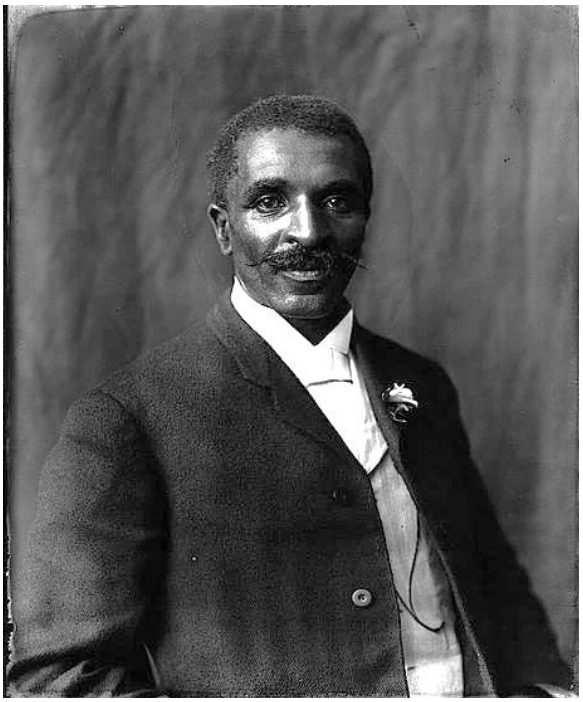

FIGURE 15. George Washington Carver, circa 1900. (Source: Francis Benjamin Johnson Collection, Library of Congress, LC-J601-302, Lot 2962)

George Washington Carver

The following account of the life of George Washington Carver is drawn primarily from the Historic Resource Study of Carver's life completed in 2014 by Jason H. Gart, Ph.D., for the George Washington Carver National Monument, Diamond, Missouri.[91]

Aside from Booker T. Washington, no other person is more associated with Tuskegee Institute than George Washington Carver (Figure 15). Like Washington, Carver was born into slavery, overcame great odds to become educated, and devoted his life to the betterment of the lives of African Americans through education. While the two great men admired each other, and toiled ceaselessly toward the same goal, they were quite

90. Steven Hahn, "The Race Man" [book review of *Up from History: The Life of Booker T. Washington* by Robert J. Norrell"], *The New Republic*, October 26, 2009, https://newrepublic.com/article/70598/the-race-man.

91. Jason H. Gart, *He Shall Direct Thy Paths: The Early Life of George W. Carver, Historic Resource Study, George Washington Carver National Monument, Diamond, Missouri* (Washington, DC: National Park Service, 2014).

different in temperament, their approach to education, and the way they were viewed by students, friends, and the public.

George Carver was born enslaved, probably in January or June 1864, in Diamond Grove, Missouri. In 1922 Carver wrote:

> I was born in Diamond Grove, Missouri, about the close of the great Civil War, in a little one-room log shanty, on the home of Mr. Moses Carver, a German by birth, and owner of my mother, my father being the property of Mr. Grant, who owned the adjoining plantation.[92]

Carver's mother, Mary, also enslaved, was purchased on October 9, 1855, when she was approximately 13 years old. Moses and Susan Carver kept the bill of sale, perhaps as proof of ownership in case Mary ran away or was stolen. In later years, Carver had possession of the bill of sale which he described as a "precious document."[93] Mary was Moses Carver's only enslaved person.

Much of George Carver's early life cannot be precisely documented. Carver himself was not always clear about events, dates, and places, and began, early in his life, to create a persona that was fed by his eccentricities and Booker T. Washington's biography, *My Larger Education* (1911). Perhaps nothing is more celebrated and less understood than Carver's kidnapping as an infant; this event is discussed in many different ways by Carver and his biographers.

The basic outline of the kidnapping is as follows. Carver, while still an infant, and his mother, Mary, and perhaps his brother, James, or one of his sisters were kidnapped by Bushwhackers, Confederate raiders who roamed the Missouri countryside during the tumultuous Civil War period. Missouri did not secede from the Union, but was a border state; many Confederate sympathizers lived within its borders, and money could be made by raiding farms in the state. Moses Carver, to regain his property, hired his next-door neighbor to find and return Mary, George, and the other children. Mary was never returned; George was.[94] For the return of George, the neighbor was paid with a race horse. As a result, George, an infant, and James, several years older, became the responsibility of Moses and Susan Carver to raise.

Once again, it is not clear whether or not the boys were brought into the house and raised by the Carvers. It seems, however, that as an infant, George would have resided in the house at least for a period of time. It is possible that as the boys grew older they lived in the one-room log cabin that was originally built to house their mother. James worked in the fields with Moses, and George spent most of his time working in the house with Susan. In 1897, Carver wrote, "My body was very feeble and it was a constant warfare between life and death to see who would gain the mastery."[95] He suffered from a series of illnesses that affected his throat, and his growth was stunted. Because of his illnesses and his small size, he spent much of his time helping with domestic chores, including the laundry, cooking, sewing, weaving, and ironing, and with minor physical tasks, like shelling corn and carrying firewood and water. Even with all these tasks, Carver spent a great deal of time in the woods, saying that "I literally lived in the woods. I wanted to know every strange stone, flower, insect, bird, or beast."[96]

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92. Ibid., XX; National Park Service, *American Visionaries Legends of Tuskegee: George Washington Carver,* last modified April 7, 2000, https://www.nps.gov/museum/exhibits/tuskegee/gwcoverview.htm.
93. Ibid., 21.
94. Ibid., 32–34. One story tells of James hiding with Moses and Susan Carver, and he was thus spared. Another story tells of Carver's sister not being returned, as well as his mother. Some speculate that Mary may have simply run away with George and James, and only the children were found and returned.
95. George Washington Carver, "A Sketch of His Early Life Written by George W. Carver in 1897," in Gart, 37.
96. Carver, "Sketch," in Gart, 44.

At the end of the war and with the end of slavery, George and James continued to live with Moses and Susan Carver. George expressed great interest in going to school. He had learned "to read, spell, and write just a little" from the Carvers but longed for more. About the same time he was actively thinking about education, Carver underwent a private religious conversion that would sustain him throughout the remainder of his life.

> I was just a mere boy when converted, hardly ten years old. There isn't much of a story to it. God just came into my heart one afternoon while I was alone in the "loft" of our big barn while I was shelling corn to carry to the mill to be ground into meal.[97]

Carver was taught to pray by a "dear little white boy," a playmate, who told him about Sunday school when they sang and prayed. When queried about praying, the boy told Carver what it was and how to do it:

> I do not remember what he said; only remember that as soon as he left I climbed up into the "loft," knelt down by the barrel of corn and prayed as best I could. I do not remember what I said. I only recall that I felt so good that I prayed several times before I quit.[98]

James and George could not go to Sunday school with their playmate because they were black. Religion, nevertheless, as a kind of private indwelling of spirit manifest in the beauty and utility of plants, would become a defining part of Carver's life.

Carver left the farm about 1874 to begin his schooling at Neosho Colored School in Neosho, Missouri, and until 1890, he would pursue a restless path through nine Midwestern cities and three states, never staying in one place very long. During this period, he used the laundry skills he learned from Susan Carver and took in laundry to make ends meet, eventually opening laundries in several places. He also homesteaded south of Beeler, Kansas, making significant improvements to the land including the planting of fifty fruit trees; however, Carver did not stay in the area long enough to receive the final legal papers making the homestead his. Instead, he moved almost 500 miles to Winterset, Iowa, a place that would change his life.

It is not clear what drew Carver to Winterset, and when he arrived there he began working at a hotel and eventually opened a laundry. One Sunday, Carver attended services at a white church where Helen Milholland, wife of Dr. John Milholland, heard him singing. Impressed by his voice, the Milhollands, a socially prominent family, invited Carver to their house to sing for them. Carver visited them once a week thereafter to sing. As a result, a deep friendship developed among them in which the Milhollands became surrogate parents to Carver. They were impressed by his singing and his painting abilities, and Helen Milholland insisted he attend Simpson College. Carver entered Simpson College on September 9, 1890, the only African American at the college.

Because he had not graduated from high school, Carver took preparatory courses upon entering Simpson College. He quickly determined that he wanted to study art and singing.

> I recall when just a boy just starting up to do art work that I longed to paint flowers so that they would speak to the beholder and inspire and enthuse them to do great things. I have seen people stand and look at pictures (portraits as a rule), and tears would slightly flow down their cheeks. I have wanted my painting of flowers to speak as I stated before to the beholder, and lift their souls beyond the sordid things of life, and give them a glimpse of the creator who shapes and fashions all of our destinations.[99]

Carver's art instructor, Etta M. Budd, was skeptical that a black student could make a living

97. G.W. Carver to Isabelle Coleman, July 24, 1931, in Gart, 48.
98. Carver to Coleman, 1931, in Gart, 48.
99. G.W. Carver to J.J. Lewis, August 15, 1939, in Gart, 81.

from art and allowed him to take art classes only on a provisional basis. The training he received in art class would forever shape his scientific career and provide insights into looking at plants. Budd was impressed with Carver's renderings of plants, and advised Carver, "to take up agriculture in order to render a greater service to my people."[100] Carver took the suggestion to heart and in 1891 left Simpson to attend the Iowa Agricultural College and Model Farm (now Iowa State University).

After a bumpy social start at the school, which was quickly smoothed over by support from various benefactors, Carver began to thrive. He was at a true university with rigorous classes, and had an opportunity to closely interact with faculty members. He developed very close relationships with some of the most important agricultural scholars of the time—Joseph L. Budd (father of Etta Budd), Louis H. Pammel, James Wilson, and Henry C. Wallace; the latter two would later serve as US Secretaries of Agriculture. Wallace's son, Henry A. Wallace, became friends with Carver and would often join him on walks to collect botany samples. The younger Wallace also would serve as US Secretary of Agriculture (1933–1940), and later became the thirty-third vice president (1941–1945) under President Franklin D. Roosevelt. Wallace and Carver remained close friends, and Wallace later became an important champion of Carver when he moved to Tuskegee Institute.

Carver wholeheartedly participated in the life of the university. He was involved in numerous clubs and religious activities and continued to paint. His painting *Yucca and Cactus*, which was based on desert vegetation he had seen while homesteading in western Kansas, was ultimately selected to represent Iowa at the 1893 World's Columbian Exposition in Chicago and won an honorable mention. On November 14, 1894, Carver received a Bachelor of Agriculture degree from Iowa Agricultural College and made the momentous decision to continue his education.

When Caver began his graduate study in agriculture, he was one of eight graduates of the class of 1894 hired by the college as teaching assistants, and one of three graduates retained by the botanical department in 1895. His formal position, Assistant in Botany, meant that he was responsible for subordinate teaching duties and also "given charge of the greenhouse, bacteriological laboratory, and the laboratory work in systematic biology."[101] He also began teaching for the first time, something he greatly enjoyed. His students also enjoyed his classes and his "unusual gift for guiding students to discover things for themselves."[102] Carver worked under Louis Pammel, a renowned plant pathologist and mycologist. Carver took special interest in the collection and classification of fungi and other plant pathogens, including bacteria and viruses. During his graduate studies, he collected and introduced around 1,500 specimens, many unique and quite rare, into Iowa's herbarium collection. Pammel and Carver became friends, and Pammel's support throughout Carver's career was especially important to Carver.

Carver began writing scientific papers while an undergraduate, both with teaching staff and individually, and continued to do so throughout his graduate years. He published articles in the *Iowa Agricultural Experimental Station Bulletin*, and had several speaking engagements. Carver completed his graduate program in the fall of 1896, when he was about thirty-one years old. It is believed that he was, at that time, "the only African American then holding an advanced degree in agricultural science."[103] Writing to Pammel in May 1922, Carver recalled his time at the college: "I have no words to adequately express my impressions of dear old I.A.C. All I am and all I

100. Gross, "Interview with Doctor Carver," 3, in Gart, 83.

101. G.W. Carver to Mr. Griffith, July 3, 1916, in Gart, 92.
102. Gart, 92.
103. Ibid., 94.

hope to be, I owe in very large measure to this blessed institution."[104]

A talent as great as Carver's did not go unnoticed by Booker T. Washington, who made it part of his life's work to attract the most gifted and talented black teachers to Tuskegee Institute. While in Iowa, Washington invited Carver to one of his lectures and tried to entice him to Tuskegee with a job offer. The University of Iowa was hoping that Carver would stay and pursue a Ph.D., and then join the teaching staff. Alcorn Agricultural and Mechanical College (now Alcorn State University) in Mississippi had already offered Carver a faculty position. Carver was undecided as to which opportunity to follow. However, on April 12, 1896, he wrote Washington indicating that he would be amenable to accepting a position. Carver stated:

> Of course it has always been the one great ideal of my life to be of the greatest good to the greatest number of "my people" possible and to this end I have been preparing myself for these many years, feeling as I do that this line of education is the key to unlock the golden door of freedom to our people.[105]

This sentiment would certainly have impressed Washington, who extended the position. Carver arrived at Tuskegee Institute on October 8, 1896, as the newly created Chair of the Agricultural Department (Figure 16).

Carver's arrival was looked upon with suspicion by his colleagues. He had never lived in the Deep South and knew nothing of its ways. His interest in plant pathologies and mycology was interesting, but deemed of little practical value in an agricultural and industrial school. He was hired not as a researcher but as a teacher, and it would be some time before he would fully appreciate the distinction. Carver's theories of education as an end in itself clashed mightily with the Institute's ideas of education as a way to rise politically, socially, and economically. Additionally, he alienated many of his colleagues by continually talking about painting—something that no one around him understood, particularly as a means to rise politically, socially, and economically.

When Carver arrived at Tuskegee, it quickly became apparent that he was not prepared to run a large and diverse department. His responsibilities included organizing the new department, developing the specifications for the new agricultural building, and managing the school's agricultural activities, which included two large school farms (the 700-acre campus farm and the 800-acre Marshall Farm, located three miles from the campus), a poultry yard, dairy, livestock, beehives, and several pastures. Carver, who was not detail oriented and unable to delegate, quickly found himself floundering. Although he had successes, most notably in increasing the crop yield on the school farms six-fold over two years by increasing diversity, initiating crop rotation, and utilizing organic materials to naturally enrich the soil—techniques he had learned at Iowa Agricultural College—he also had conspicuous failures, particularly in managing the poultry yard. His management of poultry led to a significant interdepartmental feud between Carver and George R. Bridgforth, fueled by Carver's constant complaining to Washington and submission of a mock resignation. By the end of the decade, Washington removed Carver as head of the agricultural department and reassigned him to a new position that had fewer responsibilities—director of the Department of Research and the Experiment Station (Figure 17).

104. George W. Carver to Dr. Pammel, May 5, 1922, 2, Folder Correspondence, Carver-Pammel (1918-1924), Box 1, George Washington Carver Papers, Iowa State University, in Gart, 92.
105. George W. Carver to Booker T. Washington, April 12, 1896, 1, Folder Correspondence 1 (1894—1896), Box 006.004, George Washington Carver Papers, Tuskegee University Archives, cited in Gart, 95.

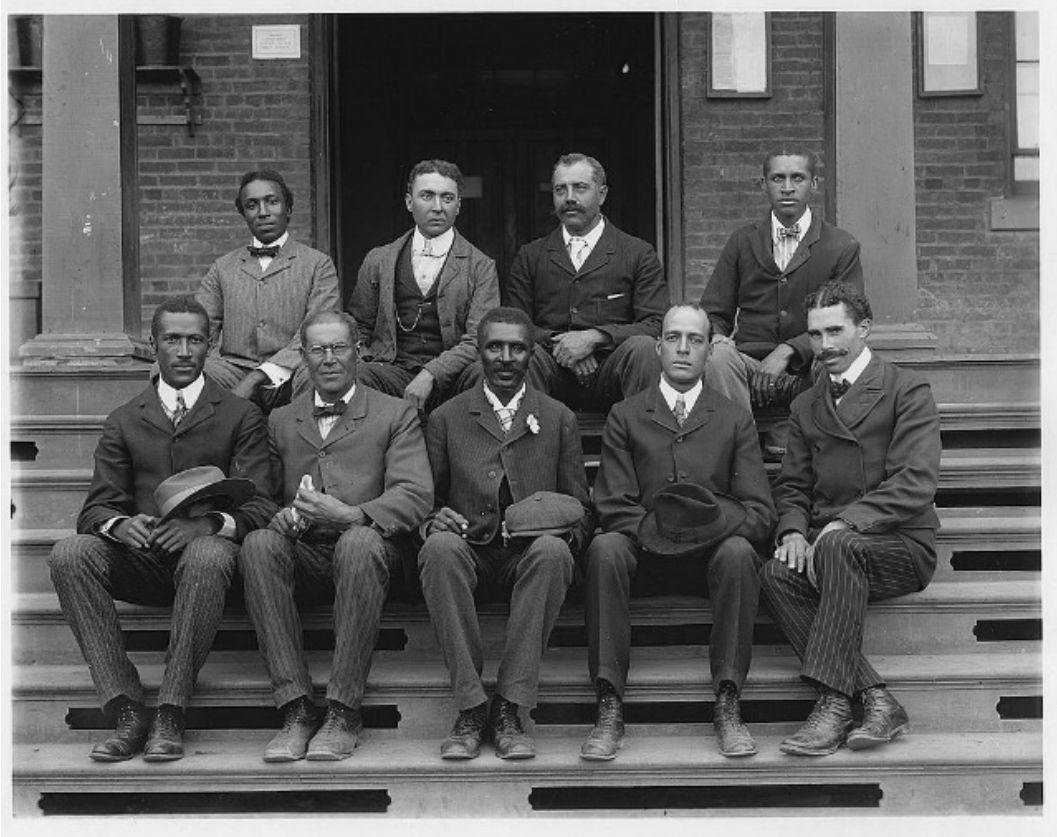

FIGURE 16. George Washington Carver, circa 1900, center, bottom row, with staff, Tuskegee Institute. Note the flower in Carver's lapel; this is an affectation he adopted at Iowa State University and carried with him for the rest of his life. (Source: Francis Benjamin Johnson Collection, Library of Congress, LC-DIG-ppmsca-05633)

FIGURE 17. George Washington Carver, sixth from left, note the large flower in his lapel, standing with students examining mustard plants in an outdoor, hands-on class at Tuskegee Institute. (Source: Francis Benjamin Johnson Collection, Library of Congress, LC-J694-163)

Washington, a paternalistic principal who expected all his staff to work as tirelessly as he did, suffered Carver's theatrics, in part, because Carver excelled at teaching. Carver believed that his students learned best through the practical study of nature, which meant spending time outside the classroom gaining hands-on experience in the natural world (see Figure 17). Washington, writing in February 1911, observed that Carver was "a great teacher, a great lecturer, a great inspirer of young men and old men."[106] Carver also spent time teaching and guiding the poor, rural black farmers of Alabama through the Agricultural Experiment Station.

As director of the Experiment Station, Carver held a powerful position for influencing the agricultural economy. The black farmers of Alabama, and most of the South, were caught in a severe downward economic spiral of sharecropping or tenancy farming and the monoculture of cotton. Carver believed that the solution to the problems of the Deep South lay in applying scientific methods to farming, and making those methods known to the small farmer. The goal of scientific agriculture was basic: through the introduction of scientific techniques, often framed in terms of practical or applied approaches, such as crop rotation, composting, and crop diversification, small farmers could eventually reduce their production costs and become self-sufficient. Carver was a true believer and worked diligently to make the life of the small black farmer better.

Toward that end, beginning in 1897 and funded in part by the state of Alabama, the Tuskegee station served as a clearinghouse, offering guidance on seeds and crop varieties and on planting schedules, as well as analyzing soil samples submitted by local farmers. Carver wrote and published more than forty bulletins through the station from 1897 to 1914. Geared specifically to his audience, his bulletins utilized simple language and an inspiring writing style to illustrate the value of scientific agriculture. He organized monthly Farmers Institutes for sharecroppers and tenant farmers, which he personally taught with hands-on instruction. In 1906, at the urging of Booker T. Washington, Carver organized a traveling school known as the Jesup Agricultural Wagon, with funding provided by Morris K. Jesup, a white banker and philanthropist, and the John F. Slater Fund. The wagon, which carried a milk separator, butter churn, and other farming implements, served as a mobile agricultural school carrying scientific farming techniques across the state. In 1918, the wagon was replaced by a demonstration truck known as the "Knapp Agricultural Truck," in honor of Seaman A. Knapp, an early promoter of farm demonstration work and the former president of Iowa Agricultural College.

By the mid-1910s, Carver's work was beginning to garner publicity in both the black and white press, which would ultimately turn him into a powerful figure in the African American community. After Washington died in 1915, Carver became the face of Tuskegee, and the new institute president, Robert R. Moton, freed Carver to do as he pleased. It is during this period that Carver became associated with the peanut, a legume that he promoted to the farmers of Alabama as a cash crop to replace cotton, which was being ravaged by the boll weevil and soil depletion. Because of his work and his 1916 research bulletin, "How to Grow the Peanut and 104 Ways of Preparing it for Human Consumption," Carver coaxed farmers, black and white, into switching from cotton to peanut cultivation, which replenished the soil with beneficial nitrogen. Cotton oil mills were converted into peanut oil mills; livestock could eat the peanut plant; sharecroppers could feed their families. "It's not overstating matters to say that

106. Booker T. Washington to George W. Carver, February 26, 1911, Folder Correspondence 1 (1894–1896), Box 006.004, George Washington Carver Papers, Tuskegee University Archives, in Gart, 99.

Dr. Carver and the peanut helped save the economy of the South."[107]

Carver became a representative of the National Peanut Board, and was asked to testify before the US House of Representatives Committee on Ways and Means on January 21, 1921. The Committee was mesmerized by his presentation about the peanut and let him testify for more than an hour-and-a-half. His careful and knowledgeable words, his eccentric looks—a very old suit and a hand-made tie—and his connection to powerful political figures made him a sensation. By the 1930s, Carver was a national and international figure. People consulted him on all manner of issues. Thomas Edison may have offered him his own laboratories with an annual salary of $50,000. Luther Burbank, Harvey Firestone, and John Burroughs all spent time with Carver seeking answers or input on various issues. Carver counted three presidents—Theodore Roosevelt, Calvin Coolidge, and Franklin D. Roosevelt—as friends.[108]

Carver died on January 5, 1943, after a lingering illness, pernicious anemia. His health had rallied for a period while the George Washington Carver Museum was being completed at Tuskegee Institute, and he was creating a foundation to ensure its perpetuity. Carver never married, and lived frugally in rooms at the Institute. Upon his death, his life savings went to the George Washington Carver Foundation for the perpetuity of the museum and the goal of introducing young black men to science. Carver is buried in the Tuskegee campus cemetery beside Booker T. Washington.

Carver is memorialized across the United States in the name of schools, parks, and buildings. Carver's birthplace was made a national monument on July 14, 1953, making him the first African American to have a national park named in commemoration. At a dedication of a building in his honor at his alma mater, Simpson College, Ralph Bunche, American political scientist and first African American Nobel Prize winner, declared Carver the "least imposing celebrity the world has ever known."[109]

While the basic outlines of Carver's life are known, a large part of his life and some of his most basic motivations are not known or well understood. Carver was a great teacher, humanitarian, and scientist, but he warned future biographers, ". . . there are many things we cannot understand, my life is probably one of the best examples of it."[110]

George Washington Carver Museum (LCS #091221)

The George Washington Carver Museum (1915), LCS 091221, is located on the north side of Campus Road on the campus of Tuskegee University within the Tuskegee Institute National Historic Site (Figure 18). The museum, which was first constructed as a laundry, was originally created to showcase Carver's collection of geological and agricultural specimens recovered throughout his career at Tuskegee, and to serve as his offices and laboratory space. The all-brick building was created by Tuskegee students as part of their training. It was described in a 1917 Tuskegee Institute publication as:

> . . . a modern new laundry building . . . . The building is a brick structure, 57 x 122, one story in height. The story is high enough from the ground to allow a basement to be placed underneath should it ever become necessary. The building is generously supplied with windows which give ample light and ventilation. . . . The roof is covered with tin and is supported by a number of trusses which have been built from one wall to the other, affording a floor space clear of supporting posts . . . . The architecture of the building conforms in type

107. "George Washington Carver," National Peanut Board.
108. "George Washington Carver," *Notable Biographies*, accessed May 16, 2017, http://www.notablebiographies.com/Ca-Ch/Carver-George-Washington.html.
109. Ibid.
110. G. W. Carver to Dr. L. C. Fischer, September 14, 1937, in Gart, 125.

> with that of Dorothy Hall, and the idea of unity of the two structures has been effected by a wall connecting the two buildings.[111]

FIGURE 18. Entrance of the George Washington Carver Museum in 1981. (Source: National Park Service)

In 1938, the laundry, which had been empty for a number of years, was converted into a museum and laboratory / office space for Carver. The National Park Service acquired the building in 1974 and prepared a Historic Structure Report (HSR) in 1980, in which the building is described as:

> . . . basically a one-story, hip-roofed rectangular building [. . . with exterior walls of unpainted brick masonry . . .] with a one-story basement ell projecting from the east end of its northern elevation, a gabled portico flanked by small porches on its south elevations, and a small porch in the center of the east elevation. The building is sited on a hillside falling toward the north and east, so that the south elevation has a grade level equal to the main floor and north elevation has a grade level falling to the east, but generally equal to the lower floor. At the southeast corner a terrace has been constructed carrying the south grade level around the east side of the building. The east terrace descends to the north in a flight of concrete steps broken by a railing.[112]

The HSR did not give the museum building a style classification, possibly because the building does not represent a formal architectural style. It is a brick rectangle with vaguely Neoclassical ornamentation attached to it, creating a symmetrical and eye-pleasing whole.

The National Park Service is currently using the building as a museum and a visitor's center for the Tuskegee Institute National Historic Site.

Architect. The architect of the laundry was Robert Robinson Taylor, then the head of architectural and mechanical instruction at Tuskegee Institute (Figure 19). Taylor was born in Wilmington, North Carolina, in 1868. His father was Henry Taylor, an enslaved son of a white slave-holding father and a black mother, and his mother was Emily Still, who came from a free black family. Because of the circumstance of his birth, his father was given an unusual amount of freedom before the Civil War to go into business for himself. He became a prosperous contractor and ship builder. After Robert's early formal schooling, his father brought him into the business, teaching him the rudiments of the building trade. Father and son, however, agreed that Robert should have a more technical schooling and that the Massachusetts Institute of Technology (MIT), Boston, which stressed the practical applications of learned material, was the place for him.[113]

111. Tuskegee Normal and Industrial Institute, *Thirty-third Annual Report of the Principal and Treasurer for the Year Ending May 31, 1914*, 6, in *Historic Structure Report*, 14–15.

112. Ibid., 80.

113. Clarence G. Williams, *From 'Tech' to Tuskegee: The Life of Robert Robinson Taylor, 1864–1942* (Boston: MIT Libraries online), last modified January 13, 1998, http://libraries.mit.edu/archives/mithistory/blacks-at-mit/taylor.html.

FIGURE 19. Robert Robinson Taylor. (Source: National Park Service)

Taylor was undaunted by the prospect of attending MIT and went to Boston in September 1888 to take the entry exam. He did not score well in several exam areas, but did well enough to get into the school. He began studying at MIT, taking several classes to make up for his deficiencies, and soon Taylor was working at the same level as all his classmates. Robert R. Taylor appears to be the first African American to attend MIT; however, if he was aware of this singular event, he did not comment upon it.

While at MIT, Taylor's grades and work were exemplary and consistently above average. In both 1890-1891 and 1891-1892, Taylor was awarded the Elisha Thatcher Loring Scholarship, eligible to all students based solely on need and performance.[114]

It was Taylor's performance at MIT that brought him to the attention of Booker T. Washington, principal of Tuskegee Institute. Taylor met Washington several times while at MIT when Washington was on his numerous visits through the northern states meeting influential people, networking, raising money, and scouting potential talent for the teaching and administrative staff at Tuskegee. Washington discussed with Taylor the possibility of further developing the new industrial program at Tuskegee and, probably much more tempting to Taylor, directing the construction program for new buildings at the school. When Taylor graduated in 1892, he had five job offers to begin industrial training programs at schools, including Tuskegee. He did not immediately accept any of these offers; instead, it appears he may have worked at an architectural firm in Cleveland, Ohio designing public and private buildings. Finally, in 1892, Taylor made his way to Tuskegee Institute.[115]

Taylor arrived at Tuskegee in late 1892, and except for the brief period from 1899 to 1902 when he returned to Cleveland, he spent his entire career at Tuskegee Institute.[116] He developed the mechanical and architectural program, generally called the "industrial" or "industrial arts" program at the school, and shaped the look and feel of the campus that lasts to this day. Taylor wholeheartedly embraced Washington's ideals of dignified labor, but was influential enough with Washington to help him understand that manual labor alone was not enough. Tuskegee also needed to produce graduates who could plan and manage the labor. Washington often presented Taylor as a model to others, pointing out his selflessness, leadership, and hard work.[117]

Taylor exhibited an incredible level of dedication and hard work to the school. While teaching classes, supervising students, running programs, and serving as Vice-Principal of Tuskegee Institute, for a period of time, he managed to design and superintend the construction of more than twenty buildings on the campus. They include:

- Max Bennett Thrasher Hall (originally Science Hall), 1893 – extant

114. Ibid.

115. Ibid.
116. See Footnote 4 for a discussion of Taylor's absence between 1899 and 1902.
117. Williams, n.p.

- The Chapel, 1898 – burned to the ground, 1957
- The Oaks, 1899 – extant
- Collis P. Huntington Hall, 1899 – extant
- Andrew Carnegie Hall (Carnegie Library), 1901 – extant
- Dorothy Hall (Girls Industrial Building, Guest House, now the Tuskegee University Kellogg Conference Center), 1901 – extant
- Old Administration Building (original Administration Building), 1902 – extant
- John D. Rockefeller Hall (Men's Dormitory, Women's Dormitory), 1903 – extant
- E. Julia Emery Hall I, II, III, IV (Job Corps Center dormitories), 1903-1909 – extant
- Frederick Douglass Hall, 1904 – extant
- Collis P. Huntington Memorial Building, 1905 – burned 1991, demolished 1994
- James D. Tantum Hall, 1907 – extant
- Elizabeth Milbank Agricultural Building (Milbank Hall), 1909 – extant
- Alexander Moss White Hall, 1910, tower and clock installed 1913 – extant
- Charles Tompkins Hall (Student Union), 1910 – extant
- John A. Andrew Memorial Hospital, 1912 (post-Taylor additions 1940, 1944, 1971, 1970) – 1912 original hospital building demolished in 1969 other parts of hospital building remain
- George Washington Carver Museum (Laundry), 1915 – extant
- William G. Wilcox Buildings A, B, C, D, E, 1920 – extant all
- Russell Sage Hall, 1926 – extant
- Warren G. Logan Hall, 1931 – extant
- Samuel Chapman Armstrong Hall, 1932 – extant
- Hollis Burke Frissell Library (Central Library), 1935 – extant[118]

Of the twenty-six extant buildings in the Tuskegee Institute Historic Landmark District, Taylor designed thirteen. Five additional buildings designed by Taylor between 1921 and 1932 are still standing but are not part of the historic district.[119]

Tuskegee's campus, during its most formative years, was virtually planned by Robert R. Taylor. Given Washington's determination to use the creation and construction of buildings as learning laboratories for students, Taylor's buildings use the materials that Tuskegee could produce, bricks and lumber, which are generally in the Neoclassical style, and feature porticoes and columns. The reason for Taylor's stylistic choices is not recorded and not commented upon by Washington or others. It is theorized that his southern heritage combined with his MIT education influenced his stylistic choices.[120] Regardless of Taylor's influences, after four decades of his guidance, the campus still has a strong sense of place and coherence. The use of brick as a primary architectural feature, the relatively small scale of the buildings, and the use of landscape as effective space for the buildings produces a campus of unity, harmony, and

118. Booker Conley and M.B. Smith, *Historic Buildings at Tuskegee Institute A Report on Conditions* (Tuskegee, Alabama: Tuskegee University Institute, 1980), 1–5.
119. Elaine Fussell Pinson, 'The Dignity of Labor': African-American Connections to Arts and Crafts Movement, 1865–1916 (Master's thesis, The Smithsonian Associates and Corcoran College of Art + Design, 2012).
120. Ibid., 91.

history.[121] The campus coherence is an asset that contemporary architects have continued to follow.

Taylor influenced and helped develop the second generation of African American architects. He made significant changes in Tuskegee's curriculum, adding architecture and history to what was a vocational drafting and industrial arts program. The Institute itself was a major patron of architects in the Black Belt of the South.[122] As Taylor's responsibility grew within the Institute, he began to work collaboratively with two local architects, Leo Persley and William Sidney Pittman was a graduate of both Tuskegee and Drexel Institutes, and who would marry Washington's daughter, Portia. Taylor worked on other projects outside Tuskegee, both alone and in collaboration with Persley.[123]

After retiring to Wilmington, North Carolina, in the mid-1930s, Taylor kept in regular contact with educators at both MIT and Tuskegee. In 1942, he was treated at the Mayo Clinic in Rochester, Minnesota, for an undisclosed illness. He was soon released, but not long afterward, he died of a heart attack on December 13, 1942, while attending a service at the Campus Chapel—a building he considered his outstanding achievement. Upon his death, a colleague eulogized him:

> Esteemed by his friends, respected by his associates, and trusted by those who sought his counsel, he represented the flower of achievement among his own people, and stands as a type of American which the nation, without regard to race or creed, can point to with pride and satisfaction.[124]

Builder. The laundry was built by student labor and was probably superintended by Taylor or someone on Taylor's staff. Although the project was begun in 1914, work was slow ". . . for the reason that it has been done largely as practice work by students during their industrial periods. . . . $13,000 will have been spent about the completion and equipment of the Laundry Building."[125]

It is not clear exactly which school departments were involved in construction of the building, but it probably involved several since the building was made of brick, had a tin roof, and used electric light and power, and steam-heated laundry machinery. After 1882, as the student population became more stable, Booker T. Washington began to think about creating "permanent" buildings on the campus—buildings made of brick. Toward this end, he requested money from a benefactor who gave him $200 for the construction of a brickyard. The brickyard would serve three purposes: provide brick for the construction of Tuskegee Institute buildings; provide a supply of brick for the townspeople to buy; and provide training to students in the art of making bricks, thereby teaching an important trade.[126]

Washington began the brick-making enterprise with high hopes, which were almost immediately brought down by the attitudes of the students and the realities of making brick. The making of bricks required hard, dirty, physical labor, and standing in a mud pit with mud up to their knees was not "a pleasant task" for the students, who balked at the requirement.[127] Additionally, designing and building a kiln posed problems; Washington lamented, "I always supposed that making bricks was very simple, but I found out by bitter experience it required special skill and knowledge, particularly in the burning of bricks."[128] Washington built three kilns that did not work, and their failures added to the students' reluctance to participant in the enterprise. Washington's

121. Ibid., 95.
122. Ibid., 92–93.
123. Williams, n.p.
124. Ibid.
125. Tuskegee Normal and Industrial Institute, 1921, 14.
126. Jenkins, 31.
127. Washington, *Up from Slavery*, 111, quoted in Jenkins, 32.
128. Ibid.

experiments exhausted the allotment he had been given, and he had to pawn a gold watch in Montgomery, Alabama, to get enough money to buy materials for a fourth try. Fortunately, the fourth kiln worked, and students began making bricks by hand and later with a brick-molding machine that reduced labor. The struggle was hard-fought but a new and successful program was begun at the school.[129] The brick from the Tuskegee Institute brickyard would be used to construct a permanent campus and to set the look and feel of the new buildings.

An article from the April 28, 1906, issue of *The Tuskegee Student* listed the various departments and schools at the Institute and provided some idea of the type of services students could have provided during the construction of the laundry. By far the largest department at the school was the Industrial Department, which was composed of the Mechanical Industries Department, the Agricultural School, and Industries for Girls. These large departments and schools covered thirty-seven different trades. Within the Mechanical Industries Department, carpentry, foundry, plumbing, electrical lighting, steam fitting, plastering, tin smithing, brick making, and saw milling were taught, all of which would be required in the building. In the School of Agriculture, landscape gardening and shrub / tree propagation and planting were taught and would be required for the site.[130] Additionally, the separate Architectural and Mechanical Drawing School would be used for the creation of the plans and changes within the laundry. The students may have made furniture such as folding tables and chairs, and the Girls' Industrial Department, which ran the laundry, may have also made baskets for holding the clothing.

Washington's ideals of self-sufficiency, combined with the concept of the dignity of labor, probably ensured that students touched almost every part of the laundry during construction and the fitting of the building.

History of the George Washington Carver Museum

The building housing the George Washington Carver Museum was initially constructed as the new campus laundry, which was a part of the Girls' Industrial Department, directed by Margaret Murray Washington, Booker T. Washington's third wife.

Laundry Division, Industries for Girls. When Tuskegee was establishing its curriculum as a school, Booker T. Washington took for his example the philosophy and subjects of Hampton Normal and Agricultural Institute, his alma mater. Washington believed the Hampton model presented the best formula for educating young African American men and women and preparing them for success in their chosen endeavors. This formula included the combined teaching academics and "industrial education" — the teaching of a trade. In 1907, Washington wrote:

> Early in the history of the Tuskegee Institute we began to combine industrial training with mental and moral culture. Our first efforts were in the direction of agriculture, and we began teaching this with no appliances except one hoe and a blind mule. From this small beginning we have grown until now the Institute owns two thousand acres of land, eight hundred of which are cultivated each year by the young men of the school. We began teaching wheelwrighting and blacksmithing in a small way to the men, and laundry work, cooking and sewing, and housekeeping to the young women. The fourteen hundred and over young men and women who attended the school during the last school year received instruction—in addition to academic and religious training— in thirty–three trades and industries including carpentry, blacksmithing, printing, wheelwrighting, harnessmaking, painting, machinery, founding, shoemaking, brickmasonry and brickmaking, plastering, sawmilling, tinsmithing, tailoring, mechanical and architectural drawing, electrical and steam engineering, canning, sewing, dressmaking, millinery, cooking, laundering, housekeeping,

129. Jenkins, 33–34.
130. *Historic Structure Report*, 22.

> mattress making, basketry, nursing, agriculture, dairying and stock raising, and horticulture.
>
> Not only do the students receive instruction in these trades, but they do actual work, by means of which more than half of them pay some part or all of their expenses while remaining at the school. Of the sixty buildings belonging to the school all but four were almost wholly erected by the students as a part of their industrial education. Even the bricks which go into the walls are made by students in the school's brick yard, in which, last year, they manufactured two million bricks.
>
> It seems to me that too often mere book education leaves the Negro young man or woman in a weak position. For example, I have seen a Negro girl taught by her mother to help her in doing laundry work at home. Later, when this same girl was graduated from the public schools or a high school and returned home she finds herself educated out of sympathy with laundry work, and yet not able to find anything to do which seems in keeping with the cost and character of her education. Under these circumstances we cannot be surprised if she does not fulfill the expectations made for her. What should have been done for her, it seems to me, was to give her along with her academic education thorough training in the latest and best methods of laundry work, so that she could have put so much skill and intelligence into it that the work would have been lifted out from the plane of drudgery. The home which she would then have been able to find by the results of her work would have enabled her to help her children to take a still more responsible position in life.[131]

In 1906, Washington noted that from Tuskegee's beginning the curriculum employed the "project method," which was used out of necessity. For example, the students established a farm and raised food to feed their fellow students. It has been noted that the school community, grounds, buildings, and facilities were not merely facilities, but were practical laboratories of instruction. This practical method of instruction was not limited to men but also was used for the young women. Jennie Moton, the wife of the second principal at Tuskegee, Robert R. Moton, described the education of women at the Institute as "an educational program that related itself to the real-life situations of the young women." Washington created a curriculum structured around the daily life and needs of the students at Tuskegee.[132]

In 1906, Washington's wife, Margaret Murray Washington, was the Director of Industries for Girls. She wrote:

> Taking into account the number of girls working their way through at their trades by day and attending night-school, they were distributed as follows: Horticulture, 4; training-kitchen, 13; housekeeping, 38; dining-room, 29; hospital, 20; kitchen-gardening, 8; poultry-raising, 7; tailoring, 14; dairying, 10; printing, 6; broom-making, 26; mattress-making, 18; upholstering, 18; laundering, 54; plain sewing, 72; millinery, 51; dressmaking, 69. All the girls were required to take cooking twice a week and 209 of the girls in the normal classes took basketry.[133]
>
> As the trades were the great attraction in the school curriculum, it was deemed necessary to separate the school into two divisions, that students might have an opportunity to receive instruction equally in the Academic and Industrial Departments. This year this scheme

131. Booker T. Washington, *Industrial Education for the Negro*, Teaching American History.Org, 2013, accessed April 2, 2018, http://www.teachingamericanhistory.org/libray/document/industrial-eduction-for-the-negro/.

132. Deborah L. Morowski, "Public Perception, Private Agendas: Washington, Moton, and the Secondary Curriculum of Tuskegee Institute 19190 – 1926," in *American Educational History Journal*, Volume 40, Nos. 1and 2, Information Age Publishing, Inc., Charlotte, North Carolina, 2013, 7-8.

133. Mrs. Booker T. Washington, "Industries for Girls," in *Tuskegee & Its People: Their Ideals and Achievements*, Booker T. Washington, ed., D. Appleton and Company, New York, 1906, 77.

> worked successfully by an arrangement that placed one division in the Academic Department on Mondays, Wednesdays, and Fridays, while the other was at work, and the other division in the Trades Department on Thursdays, Fridays, and Saturdays, while the other was in school, and so on regularly.[134]

Mrs. Washington had been initially concerned about the girls' trades since so many young women came to the school wanting to take part in the sewing, dressmaking, and millinery classes. She was heartened, however, by the fact that as the women grew into the program, they began to see opportunities in other trade areas, and laundry became one of them. In 1906, it was the third most favored industrial program behind plain sewing and dressmaking.

The Tuskegee laundry was created for use by the school, students, and faculty. Students, male and female, wore uniforms that had to be regularly washed and ironed; linens from dormitories, faculty housing, dining, and the bathroom facilities across the campus were washed, ironed, and distributed from the school laundry; the personal clothing and classroom clothing (lab coats, aprons, sleeves, etc.) of the faculty were washed and ironed; and small repairs were made to all these items, if necessary.

In 1906, Mrs. Washington wrote about the most popular of the girl's trades describing workroom scenes as if a visitor casually walked in. She wrote of the laundry:

> Work in the Laundry presents another aspect to the onlooker, and he doubtless decides on the spur of the moment that all is drudgery here. Girls are then assorting countless pieces received on Mondays from students and teachers. They are placing the assorted articles in cages in the basement. Two boys are filling three washers with bed-linen, and in another apartment two girls are weighing and measuring materials to make more soap to add to the boxes standing in the soap-room. Girls up-stairs in the wash-room are busy rubbing at the tubs. Some girls are starching, and others are sending baskets down on the elevator for girls below to hang in the drying-room. Others are in the assorting-room putting away clothes-bags into numerous boxes. The ironing-room farther on is filled with busy workers. Days come during every week when time is spent in the study of laundry chemistry. Rust and mildew stains and scorching are some of the problems of the Laundry, and they find solution. Soap, starch, water, and bluing have their composite qualities and are analyzed, and no more interesting correlation is there than that of the laundry with the class-room.[135]

Before 1915, laundry work at the institute was completed at Dorothy Hall, the women's Industrial Building, as part of a course of instruction. As the women's industrial program grew, it needed the space occupied by the laundry. In 1914, a donation of $15,000 was made for the construction of a separate laundry structure. To maintain the new laundry's functional educational integrity and for convenience, the new laundry was located on a lot next door to Dorothy Hall and connected to it by a wall.[136]

Though begun in 1914, progress was slow, and the new laundry was not completed until 1916. The *Thirty-Fifth Annual Report of the Principal and Treasurer of the Year Ending May 31, 1916* reported

> The building will provide us with the opportunity of helping our young women in better methods of laundering. $13,000 will have

134. Ibid.

135. Ibid, 79- 80; the classroom correlation spoken of here refers to the fact that Washington required all academic classes to relate in some manner to the trades. For instance, in math class, young women in the laundry trade might spend time calculating laundry load size to soap requirements or in chemistry how mildew grows and how to prevent its growth.

136. Tuskegee Normal and Industrial Institute *Thirty-Third Annual Report of the Principal and Treasurer for the Year Ending May 31, 1914*, 6, cited in *Historic Structure Report* 1980, 14.

> been spent in connection with the completion and equipment of the Laundry Building.[137]

The *Thirty-Sixth Annual Catalog for 1916-1917* describes the new laundry:

> The work of the Laundry Division has grown to such an extent that the rooms occupied in Dorothy Hall were too small and not suited to carry on its activities. The institution has met this situation by opening a new, modern Laundry building separate from Dorothy Hall. It is near enough to Dorothy Hall to make supervision easy.[138]

By 1937, the location of the laundry was out of place with the organization of the campus. The laundry machinery was moved to the power house on the northeast edge of the campus.[139]

Construction of the Laundry. Progress in the construction of the laundry was slow as a result of the use of student labor and extensive changes added in 1915, and the building was not completed until 1916. The original building as constructed in 1914 was a plain, unadorned brick rectangle with large windows. However, in 1915, extensive changes were made to the building during construction for reasons that were not identified.[140] It is possible that because the building was visible from Montgomery Road and was considered an extension of Dorothy Hall, alterations were made to give the building a more refined, vaguely Neoclassical feel, more in keeping with Dorothy Hall and the other brick buildings on the campus.

The construction of the laundry building overlapped Booker T. Washington's death in 1915. Although no documented connection was found between Robert Moton's arrival at Tuskegee and the dramatic changes made to the design of the building during his first year as president, further research may provide insight into the goals of the institution, and perhaps differences in Taylor's design approach under the two administrations. Regardless of the reasons behind the changes, the formal structure at the core of the campus would ultimately provide the ideal location for Carver's presentation of laboratory work as public inspiration.

The most dramatic change made in 1915 was the addition of a triple-bay gabled portico with two small, flanking porches in the center of the south (front) facade creating a formal symmetry to the building. Each bay contained an arched opening. Other changes included extensive landscaping involving the creation of a terrace, brick retaining walls, and steps; the additions and removals of doors and windows; the addition of a brick masonry ell off the east end of the north (rear) side; the alteration of attic trusses for the installation of a new double hipped roof; the construction of at least six louvered, semi-circular, metal ventilating dormers on the lower section of the roof, with four on the south roof and the rest on the north; and the construction of a brick wall between the laundry and Dorothy Hall, visually linking the two buildings.[141]

The laundry building apparently opened without event and actively served the students of the school until it was closed at an unknown date sometime before 1937. When the laundry was closed, all machinery was moved and the building sat vacant for several years.

In 1938, the Board of Trustees authorized George Washington Carver to move his office, laboratories, and collections into the building. Carver, by this time, had become a beloved, much consulted, and revered scientist within the United States among both black and white citizens. His

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137. Tuskegee Normal and Industrial Institute *Thirty-Fifth Annual Report of the Principal and Treasurer for the Year Ending May 31, 1916,* 15-14, cited in *Historic Structure Report*, 14.
138. *Thirty-Sixth Annual Catalog for the Tuskegee Normal and Industrial Institute for 1916-1917,* 16, cited in *Historic Structure Report*, 14-15.
139. *Historic Structure Report*, 11.
140. Ibid., 76.
141. Ibid., 76–78.

exploits, experiments, and pronouncements were regularly featured in magazines and newspapers, and in newsreels. He counted some of the most important politicians and philanthropists of the day as friends.

Creation of the George Washington Carver Museum. The creation of the museum came about unexpectedly. The 1936–1937 school year marked the fortieth anniversary of Carver's tenure at Tuskegee. Special events were held throughout the year, culminating in the unveiling of a bronze bust of Carver created by Atlanta artist Stephan Wolfgang Thomas. The bust, which had been entirely funded with small donations by Carver's many admirers and supporters, was unveiled at the commencement in June. Carver was not pleased with the attention lavished on him and thought entirely too much was made of the anniversary. One of his assistants, Austin Curtis, knowing that his mentor was unhappy with the personal attention, decided that he might be able to turn the occasion into a celebration of a more practical event. Curtis placed Carver's traveling exhibit of fibers, paints, stains, and peanut and sweet potato products, which was rarely seen at Tuskegee, along with some of his many collected geological and agricultural specimens on display in an upstairs room in the library. When visiting dignitaries came for the occasion, Curtis gave them a tour of the exhibit. One group who had never seen this exhibit or Carver's collections was the Board of Trustees, which was amazed by the presentation.[142]

All who viewed the presentation agreed that the items should be on permanent display. The idea quickly circulated, and by the Founders Day board meeting in April 1938, the trustees had approved the creation of a museum, offices, and working laboratory for Carver's collections and his continued work. Fortuitously, the school had a large, empty building, and to the minds of the trustees, the 1915 laundry with its open floor plan would make an excellent museum space. Carver was extremely excited and began planning the museum.[143]

Carver was intimately involved in the design, construction, and outfitting of the space, which incorporated his active research laboratory and his paintings into the museum experience. In October 1938, before the museum planning was completed, Carver moved his laboratory equipment into the building.[144] During the middle of the renovation, he became seriously ill with anemia and spent many weeks in the hospital. Realization of the finished interior through its completion in 1941 served to sustain Carver's last years; ". . . had he not felt acutely that there was a master scheme, and that he could not stop until the design was finished, he would not have made the necessary effort to live."[145] Carver's intimacy with objects of his previously solitary research and his unique vision for the museum's design necessitated his involvement in every aspect of the construction. As he expressed in a 1939 letter,

> I shall be compelled to get back because they have taken a sudden notion to move the greenhouse, and the brick masons are laying the wall right now. It is to go on the little boiler room where it will be very handy for me, and I have to watch every step of their movements . . . . The museum is taking shape, I am pleased to say . . . .[146]

Carver's decision to locate the greenhouse on the roof of the small north addition put his intimate work with amaryllis plants on display through the museum's large north windows. The location brought the field work to the visitors, but also afforded an opportunity to bring the work closer to Carver. After leaving the hospital, he moved his rooms from Rockefeller Hall to Dorothy Hall to be as close as possible to the museum. He was just a few steps away from the greenhouse where

142. Ibid., 10–11.

143. Ibid., 11.
144. Ibid., 15.
145. Ibid., 325.
146. Carver to Abbott, 1939, *Architect's Notebook for Carver Museum* (Denver: National Park Service, Denver Service Center, nd).

experimental plants awaited him and the school's horticultural gardens were nearby. In Dorothy Hall, he lived in Room 206, close to the building's matron in case there was a health problem in the night. Henry Ford, an ardent admirer, had an elevator installed to save Carver the nineteen steps up to the second floor. Carver spent the rest of his life living in this arrangement.[147]

It was Carver's fondest wish that young African American men would be inspired by the museum exhibits. Toward that end, he carefully gathered items and used his protégé, Austin Curtis, to interpret Carver's ideas and ensure that they were carried through. Curtis considered that the museum showed "the inseparable thought-and-act life of one individual."[148] The exhibits included:

> The skeleton of Betsy, one of the first yoke of oxen with which the first field of the Experiment Station had been plowed and planted; two foot glass jars of the first fruits of those fields; mammoth vegetables looking as fresh as when he had sealed them forty years before; samples of soils in their bamboo containers; cold-water pans on rough pine boards; stains; wall paper designs; vegetable dyes; wallboard; wild edible vegetables; feather and bead and mica ornaments; fibers; mats and rugs; hundreds of lace patterns; the incomparable blue powder in a pharmacist's jar; samples of cotton and cotton bricks; a fair showing of the seventy-five pecan products; one hundred and eighteen sweet-potato projects and a representative group of the three hundred peanut products.
>
> The Museum was designed to be not merely a record of the past, but a means of education for the future, an encyclopedia of Southern potentialities.[149]

In March 1941, the George Washington Carver Museum was dedicated by Mr. and Mrs. Henry Ford, although Carver shunned the ceremony. The ceremony ". . . consisted of the insertion of peanuts, soybeans, soybean fibers and soybean plastics into a concrete slab. During the service Mr. and Mrs. Ford inscribed their names on this slab."[150] During the Fords' time on the campus, they spent several hours away from the limelight with Carver, whom they considered a friend and had not seen since his illness.

In 1941, after the museum dedication, the paintings gallery held thirty-six of Carver's pictures. Carver's health seemed to rally for a period, but he grew increasingly ill, and on January 5, 1943, he died. At his death, he left his life savings, more than $60,000, to the George Washington Carver Research Foundation, which he created for the permanent funding of the museum.[151]

In the early hours of November 24, 1947, the museum caught fire and burned from the basement up through the first floor (Figure 20). The first floor partially collapsed but the building did not burn down because of the solid brick masonry walls. Unfortunately, many of the records of Carver's experiments and his paintings were lost, but most of his private papers were saved (Figure 21). The Institute's president, Dr. F.D. Patterson, estimated the loss to be $100,000. There was never any doubt, however, that the museum would be rebuilt.[152]

The first stage of the rebuilding began almost immediately, when a crew of workmen removed debris from the fire. President Patterson announced the Carver Museum would be restored, and appointed Charles Dawson as its curator.[153]

147. *Historic Structure Report*, 12.
148. Rackham Holt, *George Washington Carver, An American Biography* (Garden City, NY: Doubleday, Doran and Co., 1943), 327–328.
149. Austin Curtis, quoted in *Historic Structure Report*, 16.
150. *Historic Structure Report*, 18.
151. Ibid., 19.
152. Ibid., 22.
153. Ibid.

FIGURE 20. The George Washington Carver Museum still smolders late in the morning of November 24, 1947, as staff and onlookers survey the damage. (Source: Tuskegee University Archives, Tuskegee, Alabama)

FIGURE 21. The interior of the Carver Museum was severely damaged by the fire, although some portions of Carver's private papers were saved. (Source: Tuskegee University Archives, Tuskegee, Alabama)

At this time, the laboratory functions of the building, which may have caused the fire, were moved from the museum. Dr. R.W. Brown, Director of the Carver Foundation, announced that the laboratories of the foundation would be temporarily housed at the Science Building and the Old Veterinary Medicine Hospital. At the same time, plans were prepared for a new laboratory building to the east of the Science Building. The proposed new building would also be the home of the Carver Foundation.[154]

As the old museum transitioned into the new museum, a host of changes were made to the building, including the replacement of the wood floor framing with a non-combustible, steel frame with a concrete floor deck, and the addition of a wet-pipe fire-suppression sprinkler system. Painted brick walls at the upper floor were plastered. The basement area was completely excavated and fully developed with offices and restrooms to support the museum above. Access to the lower level was provided by a steel spiral stair in the center of the building. For the next twenty-seven years, the George Washington Carver Museum served the Tuskegee Institute community as a general school museum and repository for its African Art collection (Figure 22).

In 1974, the museum was acquired by the National Park Service and once again underwent a change in collections and exhibition concepts. On the upper level, the historic partitions that had once enclosed Carver's office and laboratory had undergone numerous modifications. Although park staff expressed a desire to retain the historic partitions for interpretive purposes, a determination was ultimately made to completely remove them to "create a unified architectural space on the upper floor."[155] The basement level was completely renovated to provide larger toilets, archival support spaces, administrative offices, and a multimedia presentation space. An elevator and new stair were installed to provide access to the lower floor, and building systems were completely replaced to meet modern building and energy codes. The structural framing was augmented to support the display of the Jesup Wagon. Recent modifications and repairs have been undertaken to improve the exterior envelope and building systems and to meet current accessibility standards. These have included replacement of the roof, elevator, and central stair.

154. Ibid.

155. Ibid., 155.

FIGURE 22. Exhibits that were part of the Tuskegee Institute collection on display in the George Washington Carver Museum, circa 1950. (Source: Tuskegee University Archives, Tuskegee, Alabama)

Within the Tuskegee Institute National Historic Site, the George Washington Carver Museum tells the story of both its namesake and Tuskegee Institute / University. The main exhibit area of the museum is divided into two sections interpreting the career of Carver and the growth and development of Tuskegee University. These two stories are told using exhibits, paintings, photographs, and objects—the most spectacular of which is the Jesup Wagon, a traveling agricultural teaching tool used for agricultural extension work. The museum is open Monday through Saturday from 9:00 am to 4:30 pm and is staffed by the National Park Service and students.

In December 2016, during field work for the completion of this HSR, structural deficiencies were discovered in several roof trusses of the building. Because of these conditions, it was recommended that the museum be closed until the trusses could be stabilized, and the National Park Service closed the building to the public. The National Park Service has stabilized the roof and is currently making arrangements for a permanent repair.

Documentation History of the George Washington Carver Museum

The Tuskegee Institute National Historic Site was designated a National Historic Landmark on June 23, 1965. It was administratively listed in the National Register of Historic Places on October 15, 1966. A National Register nomination form has never been prepared for the property; however, brief survey documentation was prepared for the National Historic Landmark designation in 1965. The Carver Museum is among the points of special interest identified in the 1965 documentation.

In 1977, a *Historic Resource Study* was created by John W. Jenkins of the National Park Service, Denver Service Center, but was never published. In this document, the "Laundry (Carver Museum)" is discussed as part of the construction projects related to the 1896–1915 period, a period that Jenkins believed was the "zenith of industrial education" at Tuskegee.[156] Jenkins' description of the laundry essentially repeats the description that appears in the 1917 Tuskegee Institute publication that is quoted on the first page of this report.

A Historic American Buildings Survey (HABS) documentation project (HABS AL-876; old number ALA-44-TUSG-9) was completed for the museum in 1978. Eleven sheets of measured drawings, but no narrative, were prepared under the direction of John Burns, HABS Architect; Stanley Gettle, Project Supervisor and Professor of Architecture at Tuskegee Institute; Davide Ates, Historical Architect, National Park Service, Denver Service Center; and Student Assistant Architects – Michelle Bebbs, Rudolph Brown, Ronald Carter, and Anita Sigmond, all of Tuskegee Institute, and Mackey Brooks of Texas A&M

156. Jenkins, n.p.

University (Figure 23). The HABS drawings are available online.[157]

A Historic Structure Report was prepared for the George Washington Carver Museum by the National Park Service, Denver Service Center in 1980. The HSR includes historical, landscape, and architectural data as well as itemized condition tables of exterior features, engineering systems, and a recommended preservation program. Additionally, an appendix includes paint analysis, mortar analysis, a hardware inventory, and architectural drawings prepared along with the 1980 HSR.[158] The architectural construction drawings from the associated adaptive reuse project do not appear to reflect as-built conditions. Most significantly, the proposed plexiglass vestibules, coved soffits, and suspended ceilings at the upper level do not appear to have been implemented as detailed.[159] Several modifications to the lower level multimedia room appear to have been completed after the adaptive reuse project, for which no documentation was found.

The Tuskegee Institute National Historic Site Parkwide Interpretive Plan was created in 2002 and focused heavily on the Carver Museum and The Oaks, since these are the two buildings administered by the National Park Service. The "Interpretive Themes" determined for the park and applicable to the George Washington Carver Museum are:

- Tuskegee played and continues to play a significant role in the ascent of African Americans into mainstream America.
- Through industry, science, and religion, Tuskegee impacted the economics, politics, military, and arts and sciences of the United States.
- As the first principal of Tuskegee from 1881–1915, Booker T. Washington showcased his talents and provided a national stage for himself and other individuals associated with this institution.
- George Washington Carver's influence as a scientist, humanitarian, artist, and educator at Tuskegee can be seen throughout the world.
- Past renowned leaders, faculty, and students have brought international recognition to Tuskegee.
- The grounds, buildings, students, and faculty at Tuskegee have fostered the resiliency of the human spirit and helped people struggling for opportunities and independence; today's leadership at Tuskegee continues this tradition.[160]

Lord, Aeck & Sargent, Atlanta, Georgia completed a Condition Assessment report for the interior and exterior of the museum building in 2011.

157. HABS AL-876, George Washington Carver Museum, Library of Congress, https://www.loc.gov/item/al0342/.
158. *Historic Structure Report*.
159. The drawings included in the HSR were the HABS documentation, and the same drawings appear to have been used as the base for the construction drawings that followed shortly after.
160. Department of Interpretive Planning, *Long Range Interpretive Plan Tuskegee National Historic Site* (National Park Service Harpers Ferry Design Center and Tuskegee National Historic Site, 2003), 80.

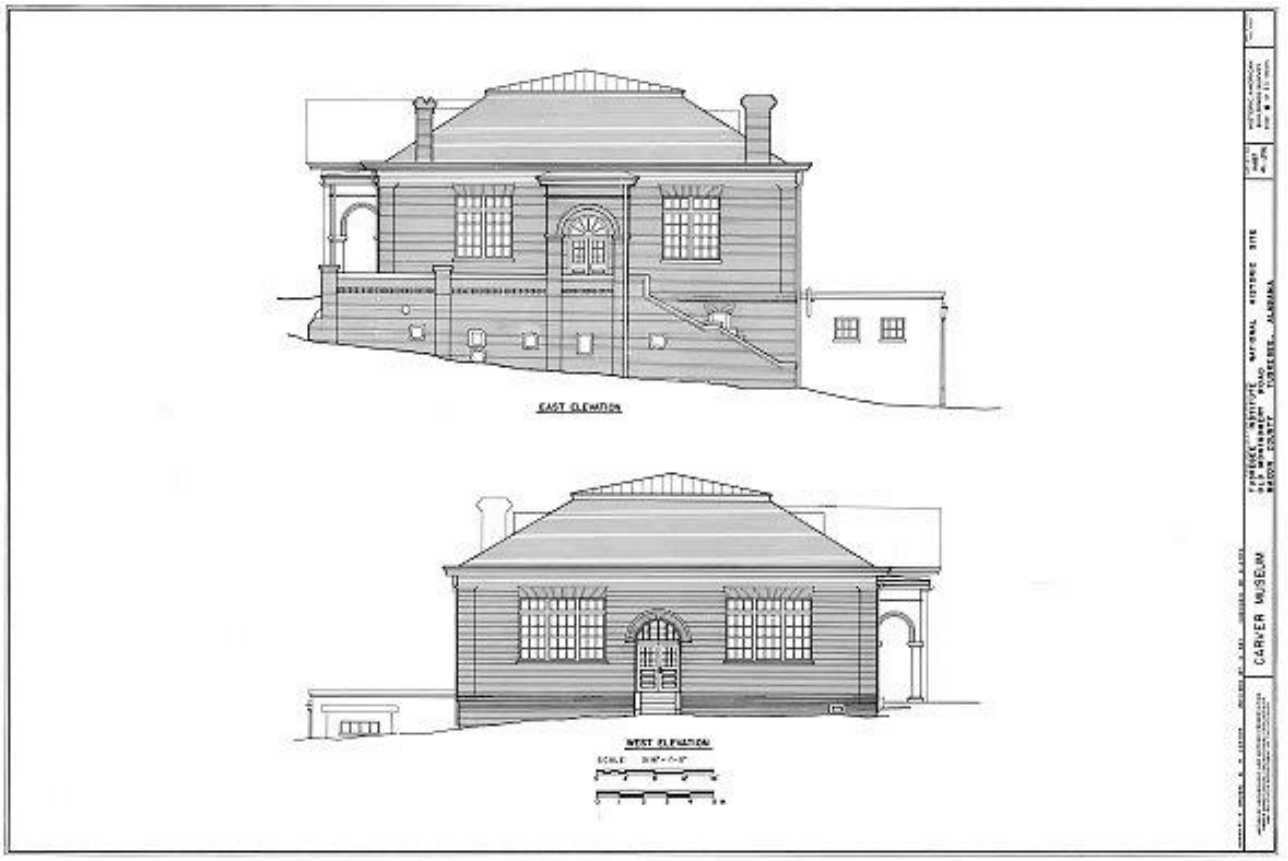

FIGURE 23. Historic American Buildings Survey (HABS) east and west elevations, Carver Museum.

> The condition assessments were commissioned to identify the scope and location of needed repairs and to develop general treatment recommendations and preliminary budgets . . . . Condition Assessment Drawings were developed to organize and present the condition information collected in the field. The drawings consist of a site plan, floor plans, a roof plan and elevations of the building. Treatment recommendations have been organized on the drawings in the form of "Information Tags." Each tag identifies the building component and recommended treatment and is color-coded according to the work scope."[161]

In 2012, a Consensus Determination of Eligibility (DOE) was prepared by Bethany Serafine and Rudy Evenson, both NPS Southeast Regional Office Historians, for the landscape elements of the George Washington Carver Museum. The DOE determined the following landscape elements contributing to the George Washington Carver Museum (LCS - 091221): concrete and brick steps (1930) (LCS- 000198) and George Washington Carver bust (1936) (LCS- 091222). According to the DOE:

> The steps leading from University Avenue to the Carver Museum are part of Williston's [David A. Williston, one of the first black landscape architects in the United States] original landscape design. The steps are concrete with brick retaining walls and a metal banister down the center. Nine steps lead to a landing flowed by 9 additional steps.
>
> The 30 inch bronze bust of George Washington Carver is mounted on a 1 foot, 6 inches by 1 foot, 6 inches by 3 feet, four inches high marble pedestal. The pedestal sits on a 2-step brick base that measures 3 feet, 2 inches, by 3 feet, 2 inches, by 2 feet, 3 inches high. Originally the bust was placed in front of Armstrong Hall, but

161. Lord, Aeck & Sargent, *George Washington Carver Condition Assessment* (Atlanta, Georgia: Lord, Aeck & Sargent 2011), 1.

> then moved in 1938 to its current location. The bust contributes to the Tuskegee Institute NHS under Criteria Consideration F: commemorative properties. The bust commemorates Carver's achievements at Tuskegee Institute.[162]

Also in 2012, the National Park Service completed a major roof restoration and renovation at the museum. This report by MCC / Catamount Engineering, SoCo Contracting, and Mizell Architects provided project specifications. The report also included project drawings and photographs.[163]

There is one set of drawings without accompanying textual documentation that provides information on proposed accessibility modifications to the Carver Museum:

- "Denver Service Center, NPS, 95% Construction Documents, Accessibility Enhancements located within George Washington Carver Museum, TUIN" [blueprints] (Denver, Colorado), 9 March 2012.[164]

There are also proposed and / or current projects in progress by the park involving the renovation of the single-story annex / re-roofing and proposed complete renovation of the heating, ventilation, and air condition (HVAC) systems.

During the field work for this HSR on December 7 and 8, 2016, Wiss, Janney, Elstner Associates engineers, part of the Panamerican Consultants, Inc. team, found significant structural problems in the roof truss system in the attic of the museum building (these problems are addressed in more detail later in the report). An initial conference call and letter to the park identified and assessed the problem:

> During our inspection in the attic of the building, we found that three of the top chords of the trusses have displaced laterally and are bowing significantly. The extent of lateral displacement was observed to be as much as 16 inches. This lateral deformation results in eccentric loading of the top chord that causes significant bending stresses within the top chords of these three trusses. Consequently, these trusses are in a weakened condition and are not capable of providing a dependable support system for the roof. Given the extent of deformation, it is apparent that the existing support of the roof is likely being accomplished by load sharing between the trusses and the roof panel segments of the gambrel roof. As a result, the existing structure is in need of immediate emergency bracing until appropriate long term repairs can be performed. As discussed on site, access to the building interior should be restricted until the emergency bracing is provided.[165]

Following notification to the NPS by WJE of the structural problem, the Park closed the museum to the general public and the Alabama SHPO was notified. The NPS Southeast Region has begun the process of repairing of the attic trusses.

Archeology. In 1977 and 1979, the Southeast Archeological Center (SEAC) conducted archeological investigations at Tuskegee University. These investigations were completed, in large part, for areas that were proposed as parking lots at The Oaks and Grey Columns. No investigations were completed at the George Washington Carver Museum. However, the museum and the grounds of the school were identified as "nationally significant cultural

162. Serafine and Evenson, n.p.
163. MCC / Catamount Engineering, SoCo Contracting, and Mizell Architects, *Roof System Renovation and Restoration, Technical Specification, George Washington Carver Museum, Tuskegee, AL* (MCC / Catamount Engineering, 2011).
164. Note that these documents are a 95 percent set, and are neither final nor as-built drawings.
165. Timothy M. Crowe and Deborah Slaton, Wiss, Janney, Elstner Associates, Inc., letter to Superintendent Sandra Taylor, TUIN, re: George Washington Carver Museum - Emergency Stabilization, December 9, 2016.

resources."[166] The Carver Museum was identified as significant for its association with George Washington Carver, "the nationally acclaimed black scientist," and the university grounds for their association with David Williston, "America's first black landscape architect."[167]

Although no archeological investigations were conducted at the Carver Museum, the investigation report cautions:

> The archeological investigations conducted at Tuskegee Institute National Historic Site to date [at The Oaks and Grey Columns] have not uncovered any cultural resources of National Register caliber. This should not, however, be interpreted as meaning that they do not exist, for almost certainly they do. For this reason, future development should be preceded by historical and archeological research.[168]

No other reports could be found indicating that archeological work has been completed at the Carver Museum.

History of Physical Changes to the George Washington Carver Museum

Before the laundry opened in 1916, the Institute undertook a major remodeling of the building in 1915. As constructed, the building was a simple brick rectangle with large windows. The remodeling elevated "it from a merely utilitarian structure to one able to lay claim to the title architecture."[169] The look of the building was transformed to one of "rigid symmetry" more in keeping with those buildings surrounding it, and perhaps that was the reason for the remodeling.[170] The official reason for the modifications was never noted or explained in period documentation. This extensive remodeling included:

- A triple-bay, gabled brick portico with two smaller porches flanking it was constructed in the center of the south (front) facade. Each open bay contained an arched opening and low parapet wall. Flat brick pilasters divided the portico into bays, and brick piers in each bay carried the spring line of the arches where they ended in plain brick masonry capitals. A semicircular fixed sash window was placed in the center of the pediment. The architrave of the main building extended over the portico. New shallower eaves were constructed on the gable pediment and eave line. The building was roofed with standing seam metal roofing and the porches with soldered metal roofing.

- At the east end of the south elevation and at the south end of the east elevation, a terrace was constructed level with the grade. The brick retaining walls had flat projecting pilasters corresponding to the bays of the building. At the top of the retaining wall, a low brick wall was constructed with open brick work at the bottom for drainage; the tops of the piers were surmounted by large flower pots. At the north end of the east elevation, the terrace descends to the lower ground level in a series of concrete steps retained inside a brick wall. The door opening to the east from the lower floor had its own landing within a small retaining wall.

- In the center of the east elevation, a porch was constructed matching those on the south elevation. The east porch was open on three sides instead of two.

- A doorway almost identical to the south door was installed in the center bay of the east elevation. The doorway at the south end was

166. Richard D. Faust, letter to Superintendent, Tuskegee Institute NHS re: Update on Archeological Investigations at Tuskegee Institute, US Department of Interior, National Park Service, Southeast Archeological Center, Tallahassee, Florida, June 5, 1979, 1.
167. Ibid, 1.
168. Ibid, 3.
169. *Historic Structure Report*, 76.
170. Ibid.

removed and filed with masonry to match the adjacent wall.

- The doorway in the second bay from the west end of the south elevation was removed and a window unit was installed in its place, thereby completing the symmetry of the facade.

- After the initial construction, the steam needs of the laundry equipment exceeded the capacity available from the campus plant. A one-story brick masonry ell addition was constructed to house a stand-alone boiler. The addition extends north from the two easternmost bays of the north elevation. Its concrete roof was covered with built-up roofing and surrounded by a brick parapet. On the west side was a pair of sliding wood doors each with three panes of glass. Small windows were installed in the addition at the upper north and east walls. A small doorway with concrete steps was created in the north wall of the main building to provide access for the lower floor to the still-lower floor of the addition. One downspout ran down the north elevation, and a second downspout ran down the east elevation.

- A brick masonry chimney was constructed at the south end of the east elevation.

- The upper hip roof was removed and a double hip roof was constructed, with standing seam metal plate roofing with a sheet metal flashing at the break between the two slopes. The attic trusses were altered for the new roof.

- At least six louvered semicircular metal ventilating dormers were constructed on the lower section of the roof, with four on the south roof, and one each on the east and west roofs, and probably four on the north elevations.[171]

- The exterior wood trim was painted in a darker color, almost black, with window and transom sashes in contrasting white.[172]

The laundry closed at an unknown date several years before 1938.[173] By 1937, the machinery had been moved and reassembled near the Power House on the northeast edge of the campus to be more in keeping with reorganization of the campus.[174] The conversion of the building to museum, office, and laboratory space called for a significant amount of remodeling, most of it on the interior, all under the watchful eye of Carver and a great deal of it at his behest. The remodeling in 1938–1941 included:

- A small greenhouse was constructed on the roof of the addition. The roof ridge apparently ran east to west and access was through a door in the west wall of the structure with a narrow walkway around its side. The west window of the easternmost window unit of the north elevation of the addition was converted into a doorway permitting access into the addition's roof and to the greenhouse.

- The northeast corner of the main floor was probably converted into a private laboratory for Carver. A new chimney was constructed at the north end of the east elevation, likely in connection with the new laboratory.

- The ground floor was converted into laboratory space for students working with Carver.

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171. The information provided does not total six ventilating dormers; however, the placement and number of dormers given here are as noted in the 1980 Historic Structure Report, 8.
172. All items listed in this section are as noted in *Historic Structure Report*, 77–78.
173. Ibid., 11.
174. Ibid.

- The majority of the main floor was converted into museum space.
- The "George Washington Carver Museum" sign was attached to the cornice of the south portico.
- The low walls connecting the arches of the portico were raised and cast concrete flower boxes placed on top of them.
- All exterior trim work was painted white.
- Alterations were made to the lower north elevation windows.
- Incandescent light fixtures replaced older light fixtures.[175]

During the remodel, new chert paths were made around the museum; however in 1940, in preparation for the dedication by Mr. and Mrs. Henry Ford, the paths were covered with concrete.[176] The bust of George Washington Carver, which had been located at Armstrong Hall, was relocated to a place outside of the new museum, flanked by new plantings of Buford hollies. Chinese photinia flanked the doorway and a large white oleander also was planted there. Carver transplanted several *Erythrina herbacea* from the woods so that he could harvest the hard red seeds for use as decorative material. One of Carver's inventions, a wood-pulp and concrete bench, was placed on the sidewalk under the large red cedar trees. The landscape work at the museum was completed by Merle Cooper and his students, who did the planting and laid out the new concrete walks.[177]

The museum was dedicated in 1941, and it appears that no changes were made to the building until a disastrous fire in 1947 caused major damage to the interior, destroying many exhibits and burning all of Carver's paintings. The fire apparently began in the student laboratory or storage area in the basement and spread from the east side of the building to the west side.[178] Changes made after the fire include:

- The main floor was entirely replaced with a new floor system consisting of a concrete slab supported by steel bar joists and covered with linoleum tiles (Figure 24).
- The ground floor was completely excavated, finished, plumbed, and renovated. (The 1950s lower floor was gutted and replaced during the 1980s rehabilitation.)

FIGURE 24. New George Washington Carver Museum main floor interior before the exhibits were set, circa 1948. (Source: Tuskegee University Archives, Tuskegee, Alabama)

- A spiral iron stairway was installed near the center of the main floor leading to the ground floor.
- The walls of the main floor were refinished with metal lath and plaster on the upper walls and a high plywood wainscoting on the lower walls.
- A complete wet-pipe fire suppression system was installed throughout the building.

175. Ibid., 78.
176. Ibid., 51.
177. Ibid., 51–52.
178. Ibid., 78–79.

- Fluorescent lighting was installed in the main room of the building.
- An acoustical tile celling was installed on the main floor between the box beams.
- The lower east exterior door was nailed shut and a ventilating fan installed in the upper portion of the door.
- The windows in the window wells were bricked in.
- Air-conditioning units were installed in some of the windows.
- Alterations were made to the windows of the lower north elevation.
- New draperies were hung in the windows of the main floor.
- Holes were created in the lower east terrace wall for ventilation of the crawl space.
- The doors in the rear wall of the addition were removed. In their place, two smaller metal doors were installed within concrete block masonry infill in the larger, original masonry openings. Metal hopper-sash transoms were installed above the doors.[179]

Between 1948 and 1974, when the museum was acquired by National Park Service, a number of changes were made to the building for which the dates of completion are not clear. These changes included:

- The greenhouse was demolished, likely during the 1950s.[180]
- Metal dormers were removed and replaced with new metal dormers. The new dormers are of a different style and fewer in number, with two on the north roof, none on the east roof and west roof, and two on the south roof.
- The standing seam roofing on the lower hip roof and portico was replaced with unpainted aluminum shingles.
- Iron grates painted black were placed over the exterior of all of the windows.
- New copper downspouts and sheet-metal gutters were installed.[181]

FIGURE 25. Front (south) facade of the George Washington Carver Museum before major renovation and restoration in 1979. (Source: Tuskegee University Archives, Tuskegee, Alabama)

Documents prepared for an adaptive rehabilitation undertaken by the NPS in 1979, likely as a part of the 1981 Tuskegee University Centennial celebration, included the changes described below (Figure 25). As noted, available documentation for this rehabilitation does not reflect as-built conditions. For example, the coved ceiling shown in these documents was apparently never constructed and the plaster was never removed from the walls on the upper floor. See further notes below related to alterations shown

179. Ibid., 79.
180. Lord, Aeck & Sargent, Appendix C, Timeline of Modifications, 2.
181. *Historic Structure Report*, 79 -80.

on drawings but not constructed, based on physical evidence.

The following work was to be conducted, based on the 95 percent rehabilitation documents:

- A universal access ramp was added to the entry.
- Interior finishes at the upper floor, including plaster and wood trim, were repaired and painted. (Although the available 95 percent documents indicate that interior finishes were to be removed at the upper level, physical evidence reveals that this did not occur. Plaster may have been added below the wainscot, but in the chase the plaster extends to the floor, indicating that the walls were plastered before the renovation and left as is.)
- Exterior door swings were reversed for egress.
- A new circular information desk was installed.
- A new circular stair and elevator were installed.
- Downspouts and gutters were repaired / replaced.
- Windows were reglazed with silicone sealant.
- New mechanical chases were added at the east wall.
- A textured finish was applied to the upper floor ceiling and boxed beams. (The dropped ceiling at the upper floor shown on the available 95 percent documents appears to have never been added; see note regarding sprinkler modifications below.) At the lower floor the existing plaster ceiling on the bottom of the joists was removed and replaced with a fire-rated gypsum ceiling (the walls extend to the underside of the ceiling). There does not appear to have been any dropped acoustical tile ceiling installed at either level as part of this project. The suspended track-light grid does appear to have been added at this phase as shown on the 95 percent drawings, but without the lay-in ceiling, vestibules, or coves.
- The roof over the boiler room addition was replaced with new built-up roofing.
- The lower floor was reconfigured with new partitions. The floor structure was reinforced and new steel wide flange columns were added.
- New ganged men's and women's toilets were added.
- Exterior masonry was repointed and repaired.
- Areas of deteriorated fascia and cornice trim were repaired.
- The finish schedule indicates asbestos tile in rooms 001, 003, 004, and 014.
- Most doors were replaced.
- New steel framing was added around stair and elevator openings.
- Wiring conduit was replaced throughout and panels were replaced.
- A new HVAC system was installed, including boiler, condensers, and ductwork throughout.
- A packaged air conditioner and humidifier was added to lower level curatorial storage area.
- The existing wet pipe fire sprinkler system was augmented and expanded. A halon fire suppression system was indicated for the archival storage room.
- A new water heater was installed.[182]

Following the initial renovation, an undocumented modification involved the enclosure of the multimedia assembly space on the lower floor. This project included the installation of the glass wall with a door isolating the assembly room from the corridors. This modification cut off

182. Lord, Aeck, & Sargent, Appendix C, 3.

the circulation on the lower level to the paired exit doors that are used by staff as their primary entrance.

According to the 2011 *George Washington Carver Condition Assessment* by Lord, Aeck & Sargent, Atlanta, Georgia, foundation work was undertaken on the museum in 1985 that included:

- Foundation drainage improvements were implemented, including bentonite waterproofing below grade and installation of a foundation drain system.
- A new sump pit with a float valve and pump was added at the east end of the south crawl space.[183]

According to the 2011 *George Washington Carver Condition Assessment*, roofing work was undertaken on the museum in 1985 that included:

- Replacement of damaged roof sheathing.
- Installation of a standing seam metal roof.
- Replacement of a small area of built-up roof.
- Installation of a downspout with strainers.
- Replacement of internal gutter.
- Painting of standing seam roof with Tin-O-Lin.
- Replacement of small areas of copper roof on both sides of the building.[184]

According to the 2011 condition assessment, additional roofing work and other repairs were undertaken on the museum in 1994 that included:

- Replacement of deteriorated framing and sheeting at roof.
- Installation of a 3/4 inch plywood boxed gutter with EPDM (ethylene propylene diene monomer [rubber]) lining and metal drip edges.
- Replacement of 1,200 square feet of standing seam metal roof.
- Sealing of gutter and roof joints.
- Replacement of 850 board feet of fascia and cornice trim.
- Repointing of masonry.
- Installation of new exterior doors / windows with new hardware.[185]

According to the 2011 condition assessment repairs in 1995 included:

- Replacement of the existing boiler with a Teledyne LAARS #HH-400, a new Gund-DOS pump, and a watts expansion tank.[186]
- Upgrading of the HVAC system with two new air-handling units and two new condensing units.[187]

In 2012, in keeping with the requirements of the Architectural Barriers Act (ABA), the museum underwent accessibility enhancements that included:

- Demolition of the old elevator, and its replacement with a new elevator with smoke detector.
- Addition of new accessible hardwood shelving in the storage closet in the basement.
- Demolition of existing stairs and installation of new concrete-filled steel pan stairs with rubber treads and risers.

183. Ibid.
184. Ibid.
185. Ibid., 4.
186. Ibid.
187. Ibid.

- Demolition and removal of the spiral staircase.
- Removal and replacement of the reception desk.
- Installation of recessed ceiling lighting in the basement.
- Creation of a new ceiling in the basement offices to be flush with other basement ceilings.
- Installation of the outdoor portion of a split-system heat pump on a concrete pad on the east side of building. This system serves the variable refrigerant flow (VRF) unit in the new elevator machine room.
- Repositioning of some fire suppression sprinkler heads in the basement.
- New lighting added in the machine room.
- Installation of new track for the intercom system at the first floor.[188]

In 2012, the National Park Service undertook an extensive reroofing of the museum that included:

- Replacement of deteriorated or otherwise unsuitable roof sheathing and blocking as needed to install new work.
- Repair or replacement of outlooks and rafter framing as needed to install new work.
- Replacement or repair of deteriorated fascia and frieze wood trim to match existing.
- Repair or replacement of deteriorated wood soffit to match existing, with staggered end joints between adjacent boards to blend appearance of new with existing materials.
- Priming and painted of all existing wood soffits, fascia, frieze, and raked trim.
- Clearing of existing storm water drainage lines associate with roof drainage.
- Installation of salvaged, soffit-mounted light fixtures and devices.
- Reinstallation of salvaged downspouts, with connection to existing drainage boot.
- Replacement of counterflashing and base flashing and installation of elastomeric sealant in joint at masonry flue.
- Repair and insulation of dormer vents to match existing configurations.
- Repair of deteriorated wood cornice and soffit to match existing, with retained materials, and replacement of 6 feet of soffit at each downspout.
- Relocation of vent pipe away from roof seam, and installation of new flashing boot.
- Patching of rolled roofing.
- Cleaning and repair of the flat seamed copper roofing; replacement of metal bird screen with copper screen.
- Installation of salvaged dormer-mounted sensor.
- Replaced metal flashing to match profile of existing pitch.
- Installation of metal valley flashing with side diverter. Installation of new seamed ridge.
- Replacement of existing roof panels at bottom of pediment; replacement of flashing.

188. Denver Service Center, *95% Construction Documents, Accessibility Enhancements Located within George Washington Carver Museum, TUIN* [blueprints] (Denver: National Park Service 2012).

- Clearing of annex downspouts.[189]

In 2017, the Carver Museum HVAC system underwent changes and upgrades. The CFM (control flow management) was changed to allow for more cool air to reach the offices downstairs and to increase airflow. Smoke sensors were added to the return duct system. Air handler unit 2, which had been non-operational at the beginning of the project, and which controls the first-floor environment, was repaired and modified to include a dehumidifier.[190]

189. Southeast Region National Park Service, *George Washington Carver Museum, TUIN, Tuskegee, Alabama* [As-built blueprints], November 14, 2012.
190. Robyn Harris, Museum Specialist, Tuskegee Institute National Historic Site, Alabama, email correspondence with Kelly Nolte, Panamerican Consultants, Inc., April 16, 2018.

Timeline for the George Washington Carver Museum

1914	Work was initiated on a new Tuskegee laundry, an Industrial School project made with Tuskegee bricks; architect was Robert Robinson Taylor.
1915	Major changes were made to the laundry before it opened, which included the addition of porches, changing of the roof, addition of windows and doors, addition of terraces; landscaping was done by David E. Williston and students; Booker T. Washington died.
1916	The laundry was opened.
1936–1937	Fortieth anniversary of George Washington Carver's tenure at Tuskegee was celebrated throughout the school year; Carver's traveling exhibit on his work was shown in the Library.
By 1937	The laundry was closed and the machines were removed from building; the building sat empty for a period of time.
1937	Bronze bust, paid for entirely with small donations, in honor of Carver's fortieth anniversary at Tuskegee was dedicated and placed in front of Armstrong Hall.
1938	The Board of Trustees voted to make the former laundry the George Washington Carver Museum, which included Carver's geological and agricultural collections as well as his offices, laboratories, and space for his student assistants; before the museum planning was completed, Carver moved his laboratory equipment to the building; bronze bust of Carver was moved to south (front) entrance of museum.
1938–1940	Modifications to convert the laundry into the Carver Museum included the addition of a greenhouse, the conversion of upper floor space to exhibits and laboratory space, and the placement of student laboratories and space in the basement.
1941	Mr. and Mrs. Henry Ford dedicated the George Washington Carver Museum with much attendant press coverage.
1947	The Museum burned in the early hours of the morning, with the fire possibly beginning in the student laboratories; the interior of the museum suffered significant damage with many exhibits and all of Carver's paintings burned.
1947–1948	Rebuilding of the museum occurred, with significant interior changes including a new flooring system with steel joists, new interior walls, the complete excavation of the basement to make more space, and the addition of a metal spiral staircase.
1948–1974	The greenhouse was demolished; metal roof dormers size, type, and number were changed; iron grates were placed over exterior windows.
1966	A National Historic Landmark nomination was prepared which included the George Washington Carver Museum as contributing resource.
1974	The National Park Service acquired the George Washington Carver Museum; Tuskegee Institute National Historic Site was authorized by the US Congress.
1977	A Historic Resource Study was completed on the Tuskegee Institute National Historic Site, and included laundry (Carver Museum).
1978	HABS recordation AL-786, George Washington Carver Museum was completed.
1979	Adaptive restoration completed including new interior finishes, doors, information desk, stairs, windows, ceilings, mechanical chases, and toilets; masonry repairs and repointing, fascia and cornice repairs and replacement; structural reinforcement of some floor areas, new HVAC, new fire-suppression sprinklers in some areas, and new hot water heater.
1980	Historic Structure Report completed.
1981	The centennial of Tuskegee University.
1985	Foundation waterproofing was undertaken as well as roof repairs.
1994	Roof repairs and replacements were undertaken.
1995	New boiler was installed.

2002	Parkwide Interpretive Plan was created, which placed great emphasis on the Carver Museum and the role of Carver at Tuskegee.
2005	HVAC was upgraded.
2011	Lord, Aeck & Sargent condition report for the interior and exterior of the George Washington Carver Museum was prepared.
2012	Modifications were implemented to provide access for the disabled, including new elevator and stairs; recessed ceiling fixtures and other new lighting; extensive reroofing of the museum; DOE was issued for landscape elements including concrete and brick steps (1930) (LCS-000198), contributing, and George Washington Carver bust (1936) (LCS- 091222), contributing.
2016	Carver Museum was closed for a period when structural problems were found with roof trusses during field work conducted for this Historic Structures Report.
2017	HVAC changes and upgrades were completed and included CFM for offices downstairs, smoke sensor added to return duct system, air handler unit 2 returned to operation on first floor and modified with a dehumidifier.

The George Washington Carver Museum (1915) (LCS-091221) and its contributing landscape elements—concrete and brick steps (1930) (LCS-000198) and George Washington Carver bust (1936) (LCS- 091222))—are contributing resources to the Tuskegee Institute National Historic Site, and the museum has undergone a HABS documentation (AL-786). The Carver Museum is currently administered by the NPS and is used as a museum.

Physical Description and Condition Assessment

The George Washington Carver Museum is a simple brick structure located on the campus of Tuskegee University in Tuskegee, Alabama (Figure 26). It is listed as part of the Tuskegee Institute National Historic Site, which was designated in October 1965. The National Park Service recognizes twenty-two buildings on the campus as historic.[191]

Site

Tuskegee University campus is situated on rolling hills that gradually slope toward the west. Oriented and designed to integrate with the terrain, buildings at the east end of campus are located at the top of the hills while those to the west are in a valley. The campus is also divided by Old Montgomery Road, a major thoroughfare that extends mostly east–west across the campus. Approximately eighty percent of the campus is located to the north of Old Montgomery Road. The two sections of the campus are each surrounded by a brick and wrought iron fence with gated entrances at intersections.

The George Washington Carver Museum is situated at the center of Tuskegee University's campus, immediately adjacent to the Kellogg Conference Center and the building formerly known as Dorothy Hall. The university has now combined Dorothy Hall with the Kellogg Conference Center, keeping the name of the latter. The museum is built on a sloped site and fronts University Avenue, a campus road that extends east–west (parallel to Old Montgomery Road) and connects the uphill and the downhill portion of the campus. The building is set-back approximately 60 feet to the north and approximately 15 feet below University Avenue (Figure 27).

The immediate site consists of a relatively flat mown-turf lawn south of the building and sloping lawn toward the northeast. Thus, the terrain adjacent to the east, north, and west elevations is sloped. The south lawn is accessed from a concrete stair that extends from University Avenue at the southwest corner of the site. A brick retaining wall extends from the base of the stairs. From the stair is a concrete sidewalk that branches to extend across the south and west elevations. At the south elevation, the sidewalk provides access to the main entrance portico and extends to the east terrace. At the west elevation, the sidewalk slopes toward the north and is bound on both sides by a brick masonry retaining wall with a wall-mounted handrail. It also provides access to an entrance centered on the west elevation. At both the north and east elevations, the areas between the building and sidewalk have hedges and other ornamental plantings. A flagpole is located at the southwest corner of the site and a bronze bust of George Washington Carver on a stone pedestal is centered in front of the south portico.

A terrace associated with the Kellogg Conference Center is located immediately adjacent to the west half of the north elevation of the building. The terrace is raised approximately three feet above grade and has a brick perimeter wall. The perimeter wall is approximately five feet from the facade of the Carver Museum. The site at the north elevation gradually slopes toward the northeast.

191. Tuskegee Institute Unigrid Map (Tuskegee, Alabama: Tuskegee Institute National Historic Site, National Park Service, 2017).

The east elevation is steeply sloped and features a brick masonry wall that supports a terrace that wraps around the southeast corner of the building. At the far north end of the terrace is a stair that extends to the northeast corner of the building, the lowest point of the site.

Mature trees and shrubbery are located adjacent to the southeast terrace wall as well as along the sidewalk at the west elevation of the building.

Measured drawings of the museum are provided in Appendix A.

FIGURE 26. The George Washington Carver Museum, looking north toward the entrance. (Source: All photographs by authors unless otherwise noted)

FIGURE 27. The site taken close to University Road, looking northwest.

Exterior

Description

The George Washington Carver Museum is a one-story, clay brick masonry building with a gambrel hip roof and a walk-out basement. The main structure has a rectangular plan measuring approximately 120 feet in the east-west direction and 55 feet on the north-south axis, with a 20-foot by 31-foot addition extending from the basement at the east end of the north elevation. The main entrances are centered on the south elevation and are accessed through a brick portico with arched openings. It is a Georgian Revival-style structure characterized by its brick pilasters, decorative brick water table, continuous wood entablature, wide overhanging eaves, brick arches, brick entrance portico, and roof with dormers.

FIGURE 28. Typical bay (although non-original window) on the north and south elevations.

The south elevation is divided into eight bays and features a brick portico with arched openings at the center of the elevation. The elevation also includes the main entrances which are located at the third bay from each end of the south elevation. The entrances are double-leaf doors with transom windows and are accessed from the entrance portico. The remaining bays consist of a multi-unit window separated by flat brick pilasters (Figure 28). An entrance portico is centered over the center four bays of the elevation. The portico consists of five semicircular arched openings. The three arched openings at the center of the portico span across two window bays and have a gable

roof. The arched openings at the end of the portico span one window bay and have a low-slope roof.

The west elevation consists of three bays. The end bays feature a paired multi-light window opening, and the center bay consists of an entrance stair and semicircular arched door opening with transom (Figure 29). The entrance stair is concrete and has brick cheek walls and wall-mounted handrails. The corners of the elevation have corner brick pilasters.

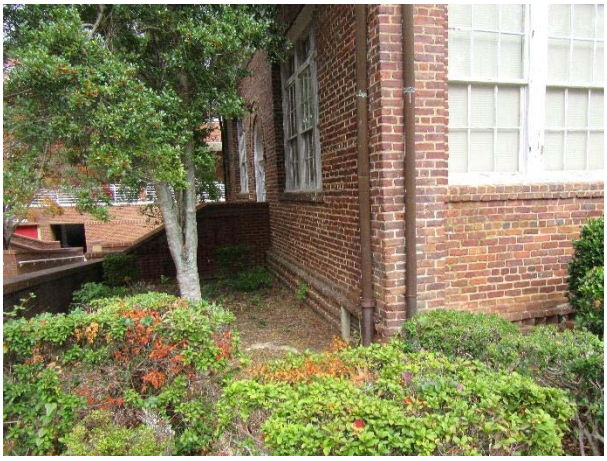

FIGURE 29. The west elevation, looking northeast.

The north elevation consists of the main floor and a walk-out basement (Figure 30). The main floor is similar to the south elevation and features eight bays, each with a multi-unit window opening that is separated from the adjacent bay by a brick pilaster. The walk-out basement level is also divided into eight bays, aligned with the eight bays at the main level; however, they are separated by a brick water table. Typical basement-level bays consist of a paired window opening. However, the two window openings at the far west end of the elevation are arched and have single-unit windows. Other deviations from the typical basement-level bay include an entrance door centered on the fourth bay from the west and a one-story clay brick masonry addition that covers the two bays on the east end of the elevation.

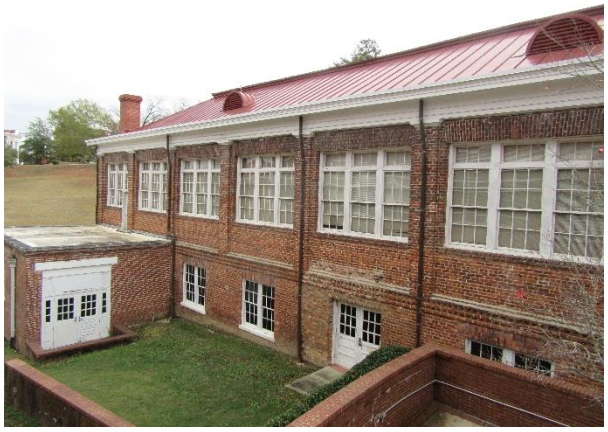

FIGURE 30. The north elevation, looking southeast.

The addition is approximately 30 feet wide and projects approximately 19 feet from the otherwise rectangular plan of the building (Figure 31). The addition features a door opening with sidelights and transom on the west elevation and is accessed from a sunken landing with concrete knee walls. The north elevation includes a paired window opening centered on the elevation and is flanked by scuppers and downspouts. The east elevation has two fixed window openings center on the wall.

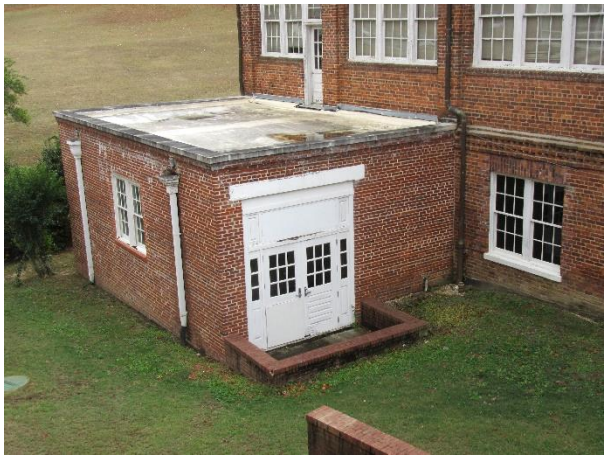

FIGURE 31. The basement addition, looking southeast toward the north and west elevations.

The east elevation of the addition aligns with the east elevation of the main building. As at the west elevation, the east elevation consists of three bays at the main level (Figure 32). The end bays have paired multi-light window openings, and the center bay has an arched door opening. A brick portico is located over the entrance. The basement level is also visible at the east elevation and is separated from the main level by a brick water

table. At the south end of the elevation is a brick wall that supports the terrace. The wall is capped with a brick balustrade. At the north half of the elevation is a concrete stair that extends from the terrace. It has a brick cheek wall with wall-mounted handrails. An arched door opening is accessed from a landing at the stair.

FIGURE 32. The east elevation, looking northwest.

Walls. The entire structure, including the addition, is constructed of unpainted mass masonry brick, laid in American bond pattern (Figure 33). The walls are approximately 15-1/2 inches, four brick courses, thick.

At the main portion of the building, the red clay brick measures 8 inches wide by 2-5/8 inches tall. A decorative brick water table wraps around the main portion of the building. The water table aligns with grade on the south elevation and denotes the separation of the main floor from the basement at the north, west, and east elevations (refer to Figure 33). The water table consists of six projecting brick courses including a stretcher course of brick that projects approximately 2 inches followed by alternating courses of stretcher course brick projecting approximately 4 inches and a herringbone bond course (consisting of a header course rotated forty-five degrees). A cementitious parge coating has been applied to the top two courses of brick, presumably to create a sloped surface to shed water.

FIGURE 33. Typical brick wall on the main structure.

The flat brick pilasters at the north and south elevations are supported by the brick water table and extend to the entablature where they are capped by a precast concrete capital, painted white (Figure 34).

A wood cornice wraps around the top of the main portion of the building and consists of two components: a lower cornice and projecting upper cornice. The lower portion of the cornice projects approximately 4 inches from the face of the wall and extends across the column capitals. The lower cornice is approximately 19 inches tall and is divided into three horizontal bands; each band has a grooved edge detail and projects approximately 1/2 inch beyond the band below. The upper cornice projects approximately 13 inches and is approximately 12 inches tall. The eave created by the projecting upper cornice has tongue-and-groove wood boards. The face of the cornice has profiled wood molding and is capped by an aluminum sheet-metal flashing, painted white. The upper and lower cornice are both painted white. The upper cornice also includes an integral gutter system with downspouts that extend to grade.

Typical window openings at the main building feature brick lug sills and flat arches. The sills are two courses of brick arranged in a header course with staggered joints. The upper course is sloped to shed water. The sill typically extends beyond the width of the window opening. The sills at basement window openings are typically concrete. The top of the openings typically have steel lintels and have flat arches that are approximately 20

inches tall and consist of soldier and rowlock brick units. Smaller window openings at the west end of the north elevation have arched openings.

At the north basement addition, the windows openings also have a steel lintel and brick lug sill. However, the brick sills consist of one rowlock course of brick and there is no arch expressed in the veneer brick.

At first-floor entrances on the east, west, and south elevations, the door openings are semicircular. They have an expressed brick arch consisting of soldier and rowlock bricks that follow the arch of the opening. Above the expressed arch and offset 12 inches from the edge of the opening is a corbelled course of rowlock brick that accentuates the arch of the opening.

Most of the remaining door openings are non-original and are rectangular openings with steel lintels.

FIGURE 34. A pilaster meeting the entablature and cornice.

Foundation. The building most likely has a continuous concrete spread footing that supports the load-bearing brick masonry perimeter walls. Based on existing archival documentation, the oldest portions of the foundation are located at the east end of the north elevation, east terrace walls, and at the one-story building addition. These foundations predate the opening of the building as a laundry in 1916. The remaining footings were documented in the Restoration Plans for the Carver Museum, dated April 2, 1948.[192]

In 1948, following a fire that destroyed much of the building interior, repairs and alterations were made to the structure. The alterations included excavating and expanding the occupied area of the basement that more than doubled the size of the basement. Excavation was performed at the south half and portions of the east and west end of the existing basement. As part of the alterations, new footings were constructed along the center of the basement plan to support structural columns. The alterations also included construction of a new footing and brick wall at the south and east elevations, a new retaining wall at the west elevation, and a new footing at the west portion of the north wall.

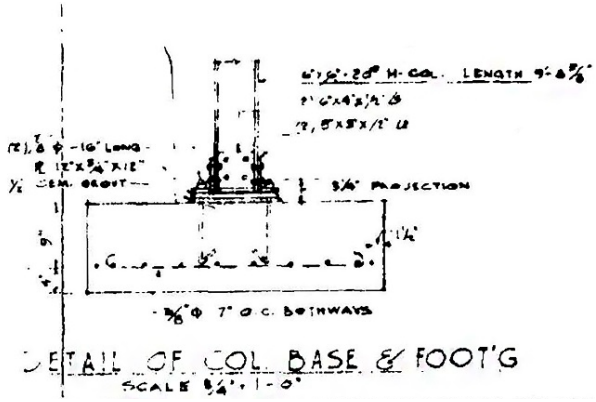

FIGURE 35. Detail of existing column base and footing, from 1948 restoration plans. (Source: *Restoration Plans for the Carver Museum,* 1948)

According to the renovation drawings, there are numerous foundation footings at the building, in addition to the column footings, which are reinforced concrete and measure approximately 3 feet 6 inches square and 13 inches deep (Figure 35). At the south and east walls, the foundation consists of a continuous concrete spread footing measuring approximately 16 inches wide and 8 inches deep (Figure 36). The footing directly supports a brick masonry wall. A new reinforced concrete retaining wall was constructed along the west wall. According to the plans, the wall measures 11 feet 10 inches tall and has a concrete

192. *Restoration Plans for the Carver Museum*, April 2, 1948.

spread footing measuring 5 feet 5 inches wide and 12 inches deep (Figure 37). At the previously unexcavated area at the west end of the north elevation is a new continuous reinforced concrete footing. The footing measures 3 feet wide and 12 inches deep (Figure 38).

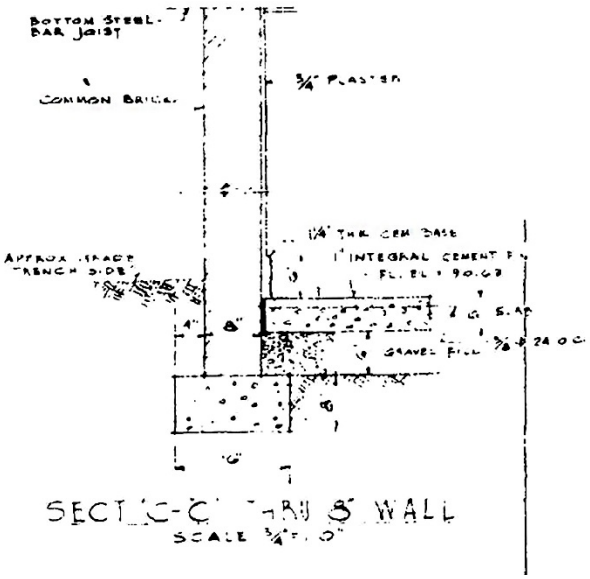

FIGURE 36. Section through wall, from 1948 restoration plans. (Source: *Restoration Plans for the Carver Museum,* 1948)

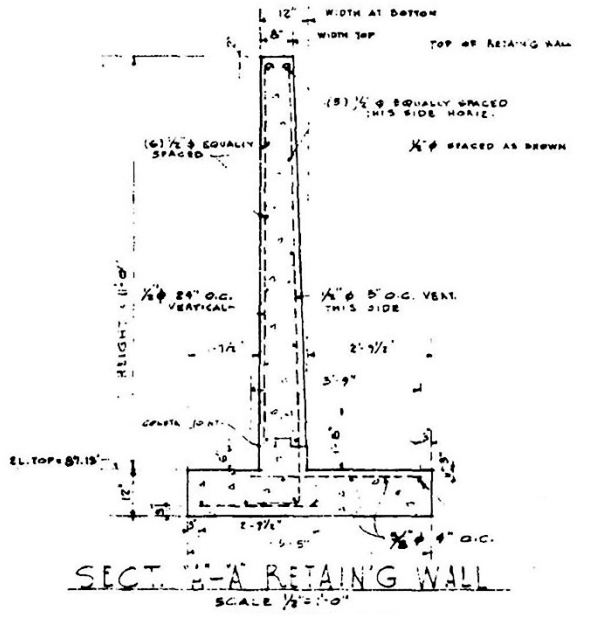

FIGURE 37. Section through retaining wall, from 1948 restoration plans. (Source: *Restoration Plans for the Carver Museum,* 1948)

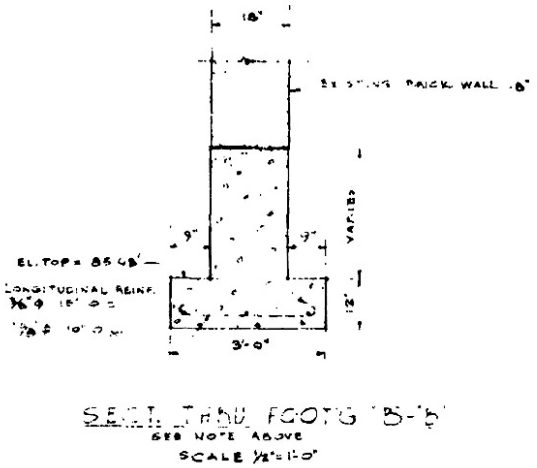

FIGURE 38. Section through foundation footing, from 1948 restoration plans. (Source: *Restoration Plans for the Carver Museum,* 1948)

Portico. The most prominent feature of the south elevation is a five-bay, brick arch portico that extends approximately 6-1/2 feet from the main structure. It was added shortly after the construction of the building, although not original, it is still considered historic. The portico consists of five bays, each with brick piers and a semicircular arched opening. A center gable roof spans over the center three bays of the portico. The gable roof section is flanked by single entrance bays with low-slope roofs. The end bays are approximately 12 inches shorter than the gabled portion of the portico and are set back 8 inches (Figure 39).

The brick piers at the portico are spaced approximately 12 feet apart and measure 32 inches wide and 12 inches deep. The base of each pier has three courses of corbelled brick. An applied decorative pilaster is centered on the exterior face of each pier and is capped by a concrete capital, painted white. Spanning between the piers at the center three bays of the portico is a brick guard wall. The wall is approximately 3 feet tall. The top three brick courses appear to have been added at a later date. Each section of the wall is capped by a concrete planter.

FIGURE 39. The main entrance portico, looking northeast.

The piers support the semicircular brick arches. At the springline of each arch are three courses of corbelled brick. The perimeter of each semicircular arch consists of two rows of rowlock brick and a single projecting header course. At the three center bays, the arches are approximately 12 feet tall. The south and side elevation of the flanking entrance bays have arches measuring 10 feet tall. Above the arch at the entrance bays is a corbelled brick band that wraps around the bay.

The frieze, consisting of wood painted white, wraps around the center three bays of the portico. A sign is mounted to the frieze and reads "George Washington Carver" with a separate sign mounted below which reads "Museum."

A wood cornice wraps around the flanking entrance bays. It has an eave that projects approximately 12 inches beyond the face of the brick. The gable roof portion of the portico has a full cornice return that gives the appearance of a pediment. The cornice return has a standing seam sheet-metal skirt roof. A fanlight window is centered on the end gable and has a corbelled brick surround.

The inside of the portico has a concrete slab floor. The center portion of the concrete has a dimpled texture consisting of divots in the concrete arranged in a grid pattern and spaced 3/4 inch apart. The concrete near the entrances is smooth and appears to be of a more recent vintage. At the east end of the portico is a non-original concrete ramp that provides a transition between the old and existing concrete. A pipe-metal handrail is mounted to the concrete along the length of the ramp.

The ceiling of the portico consists of tongue-and-groove wood and is painted white. There is a wood crown molding at the perimeter of the ceiling (Figure 40). Ceiling-mounted light fixtures are mounted at the center of the ceiling area above the entrance.

FIGURE 40. The interior of the main portico on the south elevation, from the west entrance, looking east.

Terrace. A terrace extends from the east end of the south portico and wraps around the southeast corner of the building. The terrace begins as a dimpled concrete slab on grade that is approximately 7 feet wide. As the site slopes, there is a brick retaining wall that supports the terrace. The terrace wraps around the southeast corner and extends across most of the east elevation. A brick perimeter wall extends along the edge of the terrace. The wall is approximately 30 inches tall and 8 inches wide. The bottom course of brick at the perimeter wall is a soldier course with every other brick removed. The design allows water to drain from the terrace. The upper portion of the wall has American bond brick with the upper three courses corbelled so that the top course of the

perimeter wall is 12 inches wide (Figure 41). Masonry piers, measuring 44 inches tall, are spaced approximately 15 feet apart along the length of the wall.

FIGURE 41. The low walls and staircase of the east elevation, looking south.

The terrace wall encloses an unfinished portion of the basement where mechanical systems are stored. The wall has numerous vent penetrations, hatches, and wall-mounted equipment (Figure 42).

FIGURE 42. The terrace wall, looking west at the southern portion of the east elevation.

A covered entrance vestibule is located at the east entrance (refer to Figure 32). The portico is similar to the flanking entrance bays at the south portico. It is a one-story structure built on the terrace consisting of brick piers that support semicircular arched openings on the north, east, and south elevations of the vestibule. The arched openings are articulated by two courses of rowlock brick and a projecting header course of brick. A cornice wraps around the top of the vestibule. The vestibule has a low-slope roof and is situated approximately 12 inches below the height of the main building roof.

At the north end of the east elevation of the terrace is a concrete stair with brick cheek wall. The cheek wall at the stairs is only 29 inches above the height of the treads. There is a small landing at the middle of the run of stairs. The lower half of the stairs is divided by a brick dividing wall, approximately 5 inches wide. The wall separates the stair from a secondary stair and landing that provides access to a basement entrance (Figure 43).

Windows. The existing windows and doors of the Carver Museum were replaced after its initial construction, but are still considered historic.

FIGURE 43. The small door and cheek wall, looking southwest, on the east elevation.

There are six general window types on the structure, all of which are wood framed and have monolithic glass. The primary window type throughout the building is found in the typical bays on the north and south elevations. It consists of three six-over-six double-hung windows with a three-light transom above each unit (Figure 44). The units are separated by mullions that are 8-1/4 inches wide. As described above, each opening has a brick flat arch and a two course brick lug sill that extends approximately 3-1/2 inches beyond the opening and is constructed with header brick. Typically, the opening measures 105 inches tall by 140 inches wide. Each window has non-original

chain pulls with brass hardware and metal hooks, but the windows are painted shut.

At the east and west elevations, the aforementioned windows were modified to a two-unit version. The modified two-unit version still has the typical flat arch window opening and sill details; however, the lug extends only 2 inches beyond the opening. Typically, the unit measures 105 inches tall by 80 inches wide (Figure 45).

Most of the basement window units on the north elevation are paired six-over-six double-hung windows with steel lintels that span across the opening. The window opening has a 4-1/2-inch concrete sill with a 2-inch lug, and a brick header consisting of soldier course brick that extends to the bottom of the brick water table (Figure 46). The opening measures 74 inches tall by 78 inches wide, with a 7-inch mullion in the center. Some of the glazing has been blacked out.

At one location on the north elevation basement is a single unit, six-light, fixed window with a concrete sill, steel lintel that spans across the opening, and a typical basement level brick header (Figure 47). The opening measures approximately 37 inches tall by 23 inches wide.

FIGURE 44. Typical window on the north and south elevations of the first floor.

FIGURE 45. Modified window unit on the west elevation.

FIGURE 46. A window on the north elevation with a typical basement level brick header detail.

FIGURE 47. The fifth window type on the structure, located on the north elevation at the basement level.

FIGURE 48. Fixed window on the east elevation of the basement addition.

At the east elevation of the basement addition is a fixed six-light window with film-tinted glazing (Figure 48). It has a steel lintel and a single rowlock brick course sill with a 2-inch lug. The opening measures 40 inches by 40 inches.

At the north elevation of the basement addition is a paired six-over-six double-hung unit with steel lintel and a single rowlock brick course sill (Figure 49). The center mullion measures 9 inches wide, and the entire opening measures 68 inches tall by 77 inches wide. While the existing window sash is wood, a vinyl frame has been installed in the existing jamb pocket.

A decorative semi-circular window is on the main entrance portico within the pediment (Figure 50). The wood-framed window has a fixed four-light sash.

FIGURE 49. The window on the north elevation of the basement addition.

FIGURE 50. Pediment window on the south elevation of the main entrance portico.

Doors. Six types of doors were identified on the structure, varying by floor level and elevation. The primary entrance doors are located on the south and east elevations (Figure 51). They are two-leaf wood-framed doors with a fanlight, a corbelled brick arch, and film-tinted glazing. The wood doors consist of three recessed panels at the lower portion of the door with a six-light window at the upper half. Above the door is a six-light fanlight. The door is positioned on the exterior side of the opening while the fanlight is positioned at the interior side. The door sweep, thresh, and hardware are non-original. Each leaf measures 87 inches tall by 26 inches wide. The door opening has flat wood trim measuring approximately 4 inches wide and painted white.

The remaining doors are unique and only occur at one location on the building. A double-leaf wood-framed door with a semicircular brick arch opening is at the west elevation (Figure 52). The wood doors each have nine-light glazing panels over three recessed wood panels. The door leafs measure 86 inches tall by 27 inches wide. The transom is a semicircular arched Diocletian window consisting of a center six-light window flanked by four-light windows. All three windows are fixed sash and separated by 6-inch-wide mullions. The hardware for the doors is non-original.

FIGURE 51. A typical entrance door that specifically acts as the main entrance, on the south elevation.

FIGURE 52. Semicircular brick arch opening door located on the west elevation.

At the basement level of the east elevation is a single-leaf wood-framed hinged door with an eight-light window over a single panel (Figure 53). The glass is wire safety glass (Figure 54). The door is located within a segmental arch opening and measures 76 inches tall by 34 inches wide. The threshold, sweep, and panic hardware are non-original.

At the west elevation of the basement addition is a non-original double-leaf wood-framed door with sidelights, transoms, and a painted white concrete lintel (Figure 55). The wood door leafs have an upper panel consisting of nine-lights with film-tinted glass and three lower recessed panels. The three panels on the north door leaf have been boarded over. The two sidelights consist of three lights with tinted glass above a panel. The transom consists of two three-light windows. However, the glass at the transom has been removed and the opening was boarded over with plywood, painted white.

FIGURE 53. The door used to access the crawl space on the east elevation.

FIGURE 54. Interior view of the crawl space access door, highlighting the safety glass.

FIGURE 55. The door used to access the basement addition from the west elevation.

A non-original wood-framed single-leaf hinged door is located at the first-floor level on the north elevation. Historically, the door provided access to a greenhouse on the roof of the basement addition (Figure 56). The door shares an opening with a window opening. The lower sash of one window unit was removed and the opening was slightly modified to accommodate the door. The door has a nine-light glass panel over three recessed panels. The doorknob is missing.

The basement-level entry door is a double-leaf wood-framed door with non-original hardware (Figure 57). Each leaf has three recessed panels at the bottom half of the door and a nine-light glazing panel above. The brick header consists of a steel lintel with a rowlock course of brick.

FIGURE 56. The door that provides access to the roof of the basement addition on the north elevation.

FIGURE 57. The basement-level entry door on the north elevation.

In the eighth bay from the south, there is a vented door / opening to the crawl space, just above the sloped grade (Figure 58). It has a segmental arch opening with soldier and rowlock course brick that follow the arch of the opening and extend to the bottom of the decorative brick water table.

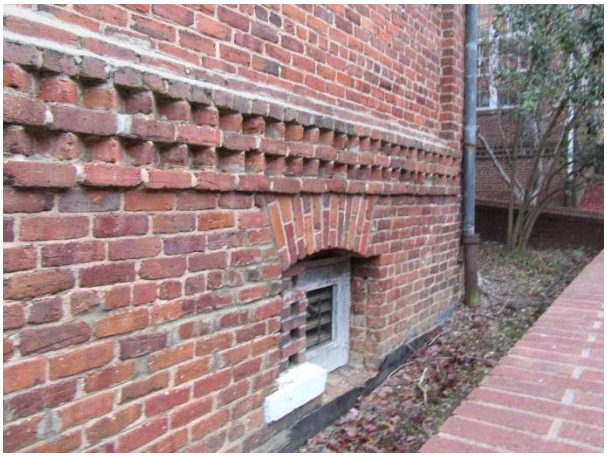

FIGURE 58. A small opening used to access the crawl space from the north elevation.

Roofing. The main structure has a non-original, standing seam metal gambrel hip roof (Figure 59). At the center of the south-facing slope of the roof is a gable roof which extends over the south portico. The roof was reported replaced in 2012 with a new standing seam metal roof. Centered above the second bay from the end at both the north and south elevations are semicircular eyebrow dormers with louvered vents. The vents are not visible from the attic and appear to be decorative.

FIGURE 59. The roof on the southern portico and main structure, looking northeast.

There are two brick masonry chimneys on the building, one at the southeast corner and one at the northeast corner. Both chimneys are located along the east wall, extend approximately 8 feet above the roof, have a corbelled brick detail which forms a cap at the top of each stack, and have sheet-metal flashing at the base. The southeast chimney is 28 inches by 16 inches (Figure 60). It appears that most of the chimney was rebuilt or repointed at some time. The northeast chimney measures 28 inches square and appears to have been extensively rebuilt in the recent past. Small vent stacks are located at the east- and west-facing roof slopes.

FIGURE 60. The south chimney stack and roof vent dormer, looking northwest.

The roof directs water to a gutter system integrated into the projecting upper cornice. Round copper downspouts extend from the gutter to a cast-iron stand pipe at grade. The downspouts are anchored to the masonry wall with metal straps. For the main gambrel hip roof, downspouts are located at the corners of each elevation of the building. Downspouts are also located on either side of the south portico and are aligned with pilasters at the center three bays of the north elevation.

The roof areas over the entrance portico on the south elevation have low-sloped roofing consisting of flat lock sheet metal (refer to Figure 59). A similar low-slope flat lock metal roof is located at the portico over the east entrance. Similar to the main roof, each roof area slopes away from the building to a gutter system integrated into the upper cornice and has a single round copper downspout that extends to a cast-iron stand pipe.

The basement addition has a flat membrane roof with a short parapet wall, measuring approximately 4 inches tall, with concrete coping and two scuppers. There are no roof drains. The roof is sloped to drain toward the scupper openings at the north side of the roof, each measuring approximately 3 inches by 5 inches (Figure 61). A sheet-metal scupper box and downspout are located on the north elevation of the basement addition, adjacent to the scupper openings.

FIGURE 61. The roof of the basement addition, looking northeast.

Condition Assessment

The following notable conditions were observed in December 2016 at the building exterior:

Clay Brick Masonry

- Step cracking was observed at arched openings at the south portico (Figure 62). The cracking included open mortar joints, eroded mortar, and vertical cracking through some brick units at locations aligned with head joints. The cracking was also associated with portions of masonry that were displaced approximately 3/4 inch from the natural curve of the arch (Figure 63). At some locations, the deteriorated mortar and cracked brick had been repaired with replacement mortar. The replacement mortar was typically cracked and

deteriorated as well, indicating that the cracking is still active.

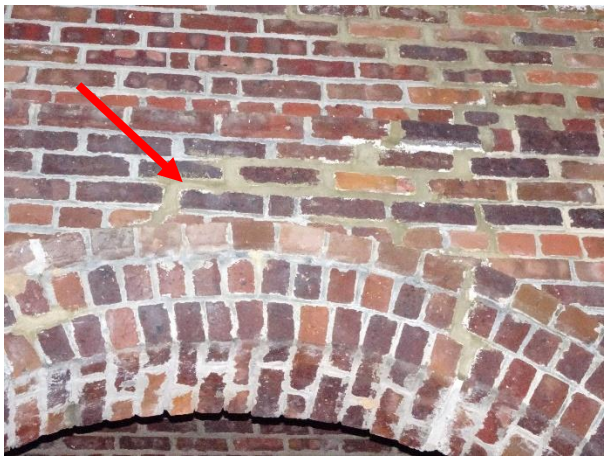

FIGURE 62. Step cracking at semi circular arched opening. Note that the joints have replacement mortar.

FIGURE 63. Displaced masonry at arched opening.

- Step cracking was observed at numerous locations including at the main building and at the north addition (Figure 64 and Figure 65). The step cracking typically extended from the corners of window and door openings. The cracking included open mortar joints, eroded mortar, and vertical cracking through some brick units at locations aligned with head joints. At many window head locations, there was evidence of corrosion at the steel lintels. At some locations, the deteriorated mortar and cracked brick had been repaired with replacement mortar (Figure 66). The replacement mortar was typically cracked and deteriorated as well, indicating that the cracking is still active.

FIGURE 64. Typical step cracking at the main building adjacent to window and door openings.

FIGURE 65. Step cracking and open joints at north addition.

FIGURE 66. Area of cracking. Note white-colored replacement mortar.

- Step cracking was observed at the east terrace wall (Figure 67 and Figure 68). The cracking extended from the terrace balustrade to the base of the wall. It appeared that the cracked

mortar joints had been previous repaired. The area around the cracking appeared damp and had biological growth at the joints.

- Displacement and bowing of the brick masonry was located at the east elevation of the north addition (Figure 69). The displacement consisted of four brick units that projected approximately 1/2 inch beyond the field of wall brick. The displacement was located within an area of deteriorated mortar joints and adjacent to a corroded window lintel.

FIGURE 67. Step cracking at east elevations of terrace wall.

FIGURE 68. Step cracking at north elevations of terrace wall.

FIGURE 69. Bowing at brick units adjacent to a window opening on the north addition.

- Open and deteriorated mortar joints were observed in the field of the wall at the main portion of the building and at the north addition. At the main portion of the building, the most significant deterioration was concentrated near downspouts and consisted of eroded mortar at joints and small areas where the mortar had been completely washed away (Figure 70). At the north addition, deteriorated mortar joints were observed throughout the field of wall and consisted of cracked, open, and eroded mortar joints. There was also evidence of numerous previous replacement mortar campaigns (Figure 71). The various localized repointing campaigns were each distinguished by a slightly different color of mortar and quality of work (Figure 72 and Figure 73).

FIGURE 70. Open and deteriorated mortar joints at the field of wall.

FIGURE 71. Different colors of mortar from various mortar repointing campaigns were observed throughout the building.

FIGURE 72. Different colors of mortar from various mortar repointing campaigns were observed throughout the building.

FIGURE 73. Different colors of mortar from various mortar repointing campaigns were observed throughout the building.

- Efflorescence was observed at the brick masonry walls at the south portico, the stair cheek walls, the underside of brick arch openings, and the north addition. At the south portico, the efflorescence was primarily located at the masonry below planter boxes and appeared to be associated with the moisture expelled from these boxes (Figure 74). Efflorescence at stair cheek walls was most pronounced immediately below the coping of the cheek wall (Figure 75). Efflorescence at arched openings was typically located at the face of the brick on the underside of the arch (Figure 76). At the north addition, efflorescence was extensive throughout the east and north elevations but was most concentrated at the top of the wall, along a horizontal line approximately five courses below the coping (Figure 77). The efflorescence aligns with the bottom of the roof scuppers and is located at the approximate height of the roof.

FIGURE 74. Efflorescence under planter units at south portico.

FIGURE 75. Efflorescence at retaining walls is located primarily below the coping.

FIGURE 76. Efflorescence at underside of arched openings

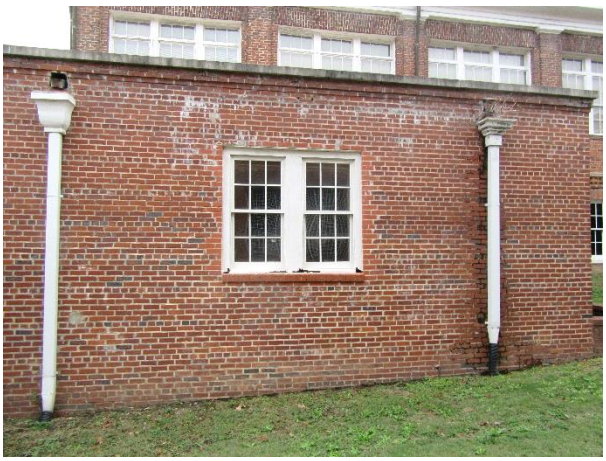

FIGURE 77. Efflorescence extends horizontally across the top of the wall at the north addition.

- Moisture staining, biological growth, and deteriorated mortar joints were observed at the brick masonry adjacent to scupper boxes and downspouts at the north addition (Figure 78). It was observed that the scupper box was approximately 8 inches below the bottom of the scupper opening. The scupper sleeve was flush with the opening and did not have a flashing to assist in directing water to the scupper box. Furthermore, the scupper box was observed to have leaves and twigs which diverted the water as it flowed out of the scupper.

FIGURE 78. Scupper box at north addition. Note moisture staining and biological growth below scupper.

FIGURE 79. Spalled brick at main portion of building is typically located at corners and along edges.

- Spalled brick was located at localized areas at the main portion of the building as well as at the north addition. At the main portion of the building, the spalls were small and were typically localized at corners and along edges (Figure 79). Spalls at the north addition were

located in the field of wall and consisted of loss of the entire fired face, which comprises the outer 1/8 inch of the brick (Figure 80). The deterioration was typically associated with other distress conditions such as cracked mortar joints.

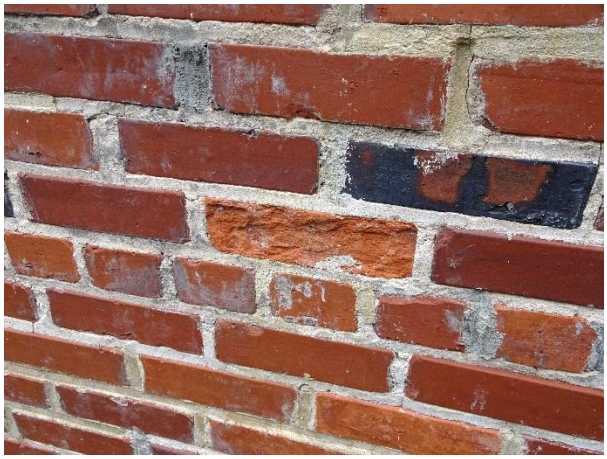

FIGURE 80. Face spalls of brick are located at the north addition.

- Biological growth was observed at the brick throughout the building including at areas below window openings, adjacent to downspouts, at stair cheek walls, and at terrace walls (Figure 81 through Figure 84). The observed growth included green and black-colored growth on the brick and mortar joints. The growth was most pronounced near cracked and deteriorated mortar joints and at cheek and terrace wall copings, and was often associated with areas of visible moisture or moisture staining.

- Crazing cracking was observed on many clay brick masonry units at the base of the terrace balustrade (refer to Figure 84). The bricks are set in a soldier course and bear directly on the terrace paving. The distress consisted of a network of micro cracks on the face of the brick. At the base of the terrace wall, the paving was wet and had biological growth. The pattern of cracking was characteristic of moisture-related deterioration.

FIGURE 81. Biological growth at retaining wall coping.

FIGURE 82. Biological growth at cheek walls.

FIGURE 83. Biological growth at mortar joints.

FIGURE 84. Crazing and microcracks at bottom course of brick at terrace balustrade.

- A large hole is located at the basement level of the north elevation, adjacent to the north addition (Figure 85). The hole appears to have been associated with a pipe penetration or large anchor in the masonry wall and has since been removed.

FIGURE 85. Hole in masonry wall.

- A large void was observed at one location on the north elevation, adjacent to a pilaster capital (Figure 86). It appears that a header brick was located at the void but has since been removed. A back-up wythe of masonry is visible through the void.

FIGURE 86. Missing brick in field of wall.

- Abandoned anchors were observed in the masonry above the basement door opening on the north elevation (Figure 87). The anchor holes are typically centered on mortar joints but extend into and notch the adjacent brick units. It is unclear what the anchors were associated with; however, the anchors appear to be wood and have been cut flush with the brick.

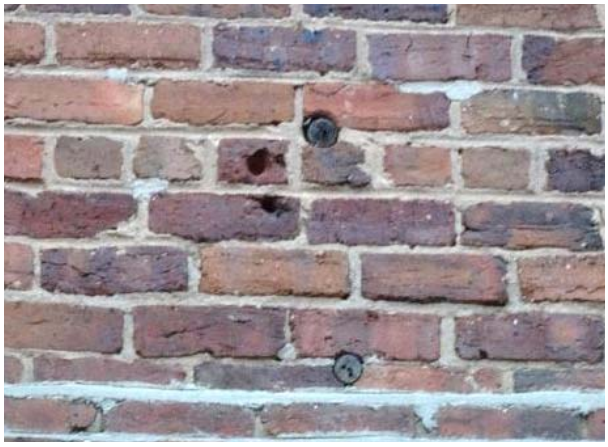

FIGURE 87. Abandoned anchors in field of wall.

Concrete

Spalling was observed at the top concrete tread of the east stair (Figure 88). The concrete spall was located on the riser portion of the stair, directly below the terrace landing. The spall was approximately 1-1/2 inches deep and appeared to follow a horizontal crack that extended the full length of the stair.

FIGURE 88. Cracked and spalled concrete stair tread.

- Spalling was observed at the concrete lintel above the exterior entrance door to the north addition (Figure 89). The spalling consisted of cracking at the upper corner of the lintel and included continuous crack spanning horizontally across the opening, approximately 1 inch above the bottom edge. The brick masonry around the lintel had step cracking and evidence of water infiltration.

FIGURE 89. Spalled concrete lintel at north addition entrance.

- The concrete slab at the south portico is cracked. The cracking consists of a network of hairline cracks, some of which have been repaired with sealant (Figure 90).

FIGURE 90. Cracking and previous repair of concrete slab at south portico entrance.

- Cracked and deteriorated concrete was observed at the stair landing and drainage gutter at the base of the east stairs (Figure 91). The drainage gutter extends from a downspout to a sewer outlet approximately 7 feet away. The concrete at the drainage gutter had extensive concrete patches that had failed.

FIGURE 91. Cracks and deteriorated concrete at base of east stair landing and drainage gutter.

- Cracking was observed at three concrete sills at basement windows on the north elevation (Figure 92). Where located, the sections of the sill were slightly displaced and had been painted over. The paint coating over the cracked sill had also cracked.

FIGURE 92. Crack and displacement at concrete window sill.

- Deteriorated paint was observed at concrete sills at the basement level of the north elevation (Figure 93). The deterioration consisted of alligatoring and debonding of the paint. The concrete is exposed at areas where the paint has peeled away.

FIGURE 93. Peeling paint at concrete window sills.

- Cracking and debonding of the cementitious parge coating was observed at the retaining wall that separates the east stair from the east basement door (Figure 94). One face of the retaining wall was coated with a cementitious parge coating. Large cracks were observed in the parge coating which extend from the door, horizontally across the wall.

FIGURE 94. Cracking at cementitious parge coating at east retaining wall.

Wood Elements

- Deteriorated wood was observed at the tongue-and-groove soffit boards adjacent to downspouts and at corners of the building. The deterioration consisted of decay of the wood, peeling paint, and displaced boards (Figure 95). The distress was observed from the exterior as well as from soffit areas accessed from the attic.

FIGURE 95. Deteriorated wood at soffit boards.

- Checked and split boards were observed at a few locations on the soffit as well as at the lower cornice band above the soffit (Figure 96 and Figure 97). Large checks in the lower cornice band were typically located near the ends of board or were associated with areas where moisture-related distress was observed. Splits in the wood were typically located at the ends of soffit boards. At these locations, the

boards had come free of the nail and were loose.

- Biological growth was observed on the face of the bead board ceiling at the south portico (Figure 98). The growth appeared as dark-colored spots on the ceiling and was most concentrated at the end bays of the south portico, where the roof consists of a low-slope sheet-metal roof.

FIGURE 96. Displaced wood boards at soffit.

FIGURE 97. Checked and split boards at lower cornice.

Windows and Doors

- Corrosion-related distress was observed at many of the steel lintels above window openings (Figure 99). At approximately half of the window openings, particularly those at the north addition and at the south elevation, rust jacking was observed at the lintels. The lintel at these locations was observed to have significant corrosion that displaced the adjacent masonry. Typical distress conditions associated with the corroded lintels included step cracking and open and deteriorated mortar joints.

FIGURE 98. Biological growth at wood ceiling boards in south entrance portico.

FIGURE 99. Corroded steel and open joints at window lintels.

- Deteriorated wood was observed at window and door mullions, jambs, and sills at the north addition (Figure 100). The wood appeared wet and was friable when probed. At some areas, over half of the cross-sectional areas of the wood were lost.

- Deteriorated glazing putty was observed at some window locations (Figure 101). Large sections of putty had come loose and fallen out at localized areas of first floor windows on the south and west elevations. Where the glazing putty had fallen out, there were no

glazing points observed, and the edge of the glass was visible.

FIGURE 100. Deteriorated wood at window frames.

FIGURE 101. Deteriorated and missing window glazing.

- Deteriorated cementitious fill material was observed at a few of the first floor window units (Figure 102). It appears that the cementitious fill was applied at the window opening during a previous window replacement project in an effort to square the opening in preparation for installation of the new windows. At a couple of locations, the exterior portion of the parge coating has debonded, spalled, or was no longer present. The most significant distress was located at the sills. Where missing, there is a 1/2-inch depression at the sill, adjacent to the window unit.

FIGURE 102. Spalled and cracked cementitious fill material at window opening.

FIGURE 103. Peeling paint at exterior door.

- Peeling paint was observed at exterior entrance doors and at window frames (Figure 103 and Figure 104). At many locations, the paint had failed and fallen away, and the bare wood was exposed to view. There was no primer coating observed on the wood.

- Biological growth was observed at the underside of the main floor window opening lintels (Figure 105). The growth consisted of dark-colored spots on the painted lintel. Window openings where biological growth was observed were typically located near downspouts and below soffits with evidence of moisture-related damage.

- Evidence of previous repairs was observed at the east basement door (Figure 106). It appears that portions of the east door frame were repaired with wood dutchman. The

repair was painted white to match the adjacent framing.

FIGURE 104. Peeling paint at door framing.

FIGURE 105. Biological growth at underside of lintel.

FIGURE 106. Evidence of previous dutchman repair at door frame.

Roofing and Waterproofing

- A blocked or clogged downspout was observed at the southeast corner of the building. During rain events, sheets of water were observed running along the exterior face of the downspout at the southeast corner of the main building, bypassing the roof drainage system (Figure 107). The overflow appeared to originate at the gutter to downspout interface, indicating that the downspout was blocked.

FIGURE 107. Overflow of water at clogged downspout.

- Ponding water was observed at the low-slope membrane roof at the north addition (Figure 108). The ponding was located at low spots at the south end of the roof.

FIGURE 108. Ponding water at north addition roof.

- Evidence of ponding was observed at the partially enclosed south portico. The concrete at the portico was damp, and the bottom courses of brick at the portico wall appeared

wet. Furthermore, there is no drainage or slope to the concrete to assist in directing water that entered the enclosure. As a result, water that enters the portico ponds along the portico wall (Figure 109).

FIGURE 109. The concrete at the south portico appeared wet and does not provide drainage.

- One roof scupper at the south end of the north addition was observed to be infilled with brick and was no longer in use (Figure 110). The infill brick had a distinctly different appearance than the adjacent brick.

FIGURE 110. Infilled scupper opening.

Other Elements

- Pest infestations, such as mud dauber nests, were observed at corners of window and door openings (Figure 111). The nests were typically small and were observed at only a few locations.

FIGURE 111. Mud dauber nest at window opening.

Interior Description

The George Washington Carver Museum building was originally constructed as a utilitarian structure to provide dedicated space for the campus laundry that had outgrown its rooms in the adjacent Dorothy Hall. The plan of the building remains as it was, simple and functional. A single large space, approximately 118 feet by 54 feet, is entered from two pairs of doors on grade at the south with exits on the east and west ends. The upper floor is constructed with trusses spanning the width of the building, from wall to wall, with no interior columns. Although the interior has undergone many renovations through the years, interior elements dating to the original construction remain. Most significantly, the open first-floor space with ceilings recessed above boxed truss chords and the tall window units on all sides divided by narrow brick pilasters. The character of this space and the flexibility of the building's lower floor level, which can be accessed on grade at the rear, facilitated the building's use as Dr. Carver's museum and laboratory, as well as its rehabilitation as a museum with modern curatorial and support spaces.

Laundry Interior, 1915–1936. Construction of the building began in 1914 and overlapped the passing of Tuskegee's founder, Booker T. Washington, in 1915. Before its completion in 1916, the building exterior was remodeled by the campus architect, Robert Robinson Taylor. Additions to the exterior were likely performed to better suit a formal campus environment and

contribute to the style of the neighboring buildings. Although the additions did not significantly change the interior, the incorporation of a symmetrical facade that "could be considered Architecture" facilitated the utilitarian building's later use as a museum at the core of the campus.[193] The institute's 1917 catalog described the interior as:

> . . . generously supplied with windows which give ample light and ventilation. Ventilating flues also run from the ceiling through the roof so as to take off any steam or foul air. The roof is covered with tin and is supported by a number of trusses which have been built from one wall to the other, affording a floor space clear of supporting posts. Electricity is used for lighting and for motive power, and steam of sufficient pressure is supplied from the central Power House for heating and for those machines which require steam.[194]

The bottom chords of the timber trusses supporting the roof were cased with wood panels with a batten or trim molding covering the horizontal joint. Ceilings were recessed to the tops of the boxed beams, and wood-framed brackets were attached to the bottom to support rails serving laundry equipment. The work space was lit and ventilated by large banks of windows set between the truss bays, two units wide on the east and west ends, and three wide along the north and south. Each consisted of joined double-hung windows and hopper transoms with surface-mounted operators. Interior surfaces of the walls were painted brick. The floors were wood, spanning longitudinally across floor joists. Photographs from the 1920s reveal partial height partitions separating office functions; however, no documentation of the original plan or equipment layout remains.[195]

Eventually, the steam needs of the laundry equipment outpaced the capacity available from the central plant. A single-story ell addition was added to the rear (northeast) corner of the building to enclose a well and steam boiler. The flat roof of the boiler addition would later provide a location for Carver's greenhouse.[196]

Carver's Laboratory and Museum, 1938–1947. By the 1936–1937 school year, the laundry building was vacant and the equipment had been relocated to the northeastern edge of the campus. During the year, the institute was celebrating George Washington Carver's fortieth year at Tuskegee. Not one to accept personal accolades, Carver was reticent to celebrate the bust commissioned in his honor. His assistant, Mr. Curtis, used the occasion of the ceremony to showcase Dr. Carver's traveling exhibit in the campus library.[197]

At the annual Founder's Day meeting in April 1938, President Patterson and the trustees approved the establishment of the George Washington Carver Museum in the vacated laundry building to provide permanent space for the exhibit. Carver was intimately involved in the design, construction, and outfitting of the space, incorporating his active research laboratory and his paintings into the museum experience. Realization of the finished interior through its completion in 1941 served to sustain Carver's last years; "had he not felt acutely that there was a master scheme, and that he could not stop until the design was finished, he would not have made the necessary effort to live."[198] Carver's intimacy with the design and layout of the components was expressed in a 1939 letter:

> I shall be compelled to get back because they have taken a sudden notion to move the greenhouse, and the brick masons are laying the wall right now. It is to go on the little boiler room where it will be very handy for me, and I have to watch every step of their movements . . . . The museum is taking shape, I am pleased to say . . . .[199]

193. *Historic Structure Report*.
194. *Thirty-Sixth Annual Catalog for Tuskegee Normal and Industrial Institute for 1916-1917* (Tuskegee, AL: Normal and Industrial Institute, 1917), 16.
195. *Historic Structure Report*.
196. Ibid.
197. Holt, 323-324.
198. Ibid., 325.
199. Carver to Abbott, 1939, *Architect's Notebook for Carver Museum* (Denver, CO.: Denver Service Center, nd).

Those attending the opening of the George Washington Carver Museum in 1941 would see lab tables displaying glassware and experiment apparatus behind steel pipe rails and fencing mounted to the new linoleum floor. Beyond the exhibit in the northeast corner, a door led to Carver's active laboratory, where the windows looked out over his greenhouse (Figure 112). In the northwest corner, Carver's paintings were displayed on partial height walls (Figure 113).

FIGURE 112. Historic view of the exhibit at northeast corner of the museum, circa 1940. (Source: Detroit Institute of Arts)

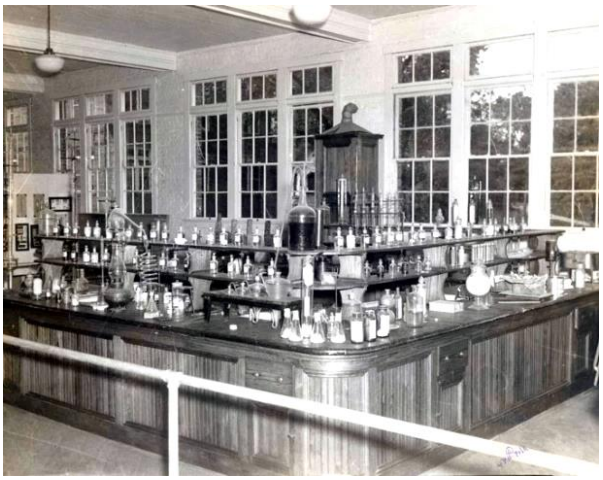

FIGURE 113. Historic view of central south portion of museum space with paintings beyond, circa 1940. (Source: Detroit Institute of Arts)

A wood-framed partition constructed during the renovation separated Carver's personal laboratory and office space in the east-most bay from the museum's public areas (Figure 114). Here

> . . . were his new office and laboratory and proving plant, where he tested recipes on wood, coal, gas, and electric stoves and a fireless cooker, using iron pots whenever possible. A small greenhouse had been built on the back, accessible only through his private rooms.[200]

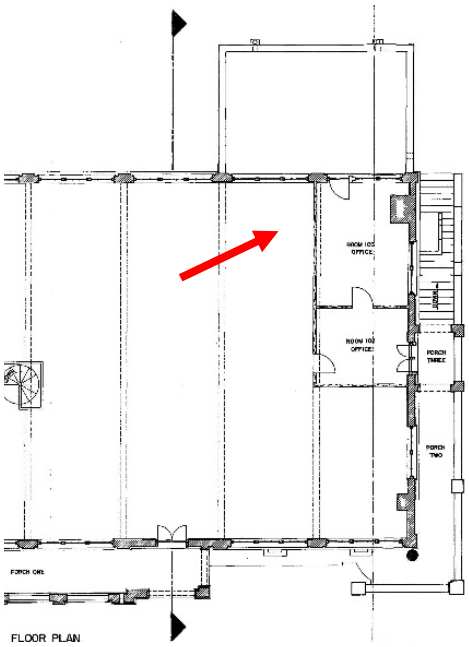

FIGURE 114. Floor plan illustrating existing conditions in 1979. Carver's laboratory and office indicated.

In the northeast most corner, a new chimney was constructed and used to vent the laboratory equipment (Figure 115). On the north wall, a door was constructed on the leftmost widow unit, providing access to the roof of the ell addition below. On this roof, a greenhouse, consisting of wood panels with a glass roof above, provided space for Carver's famous research into the cross-pollination of amaryllis plants (Figure 116 and Figure 117).

Finishes in the museum at the time of the 1941 opening remained mostly the same as during the use as a laundry. Brick walls were painted on the interior with a rail, possibly wood, installed at the height of the horizontal window mullion. Wood trim at windows remained, but the operators for the hopper transom windows had been removed. The floor appears to have been covered in sheet linoleum. Ceilings remained painted beaded boards recessed between the cased truss chords. A

200. *Historic Structure Report.*

simple crown molding continued around the recessed ceilings.[201]

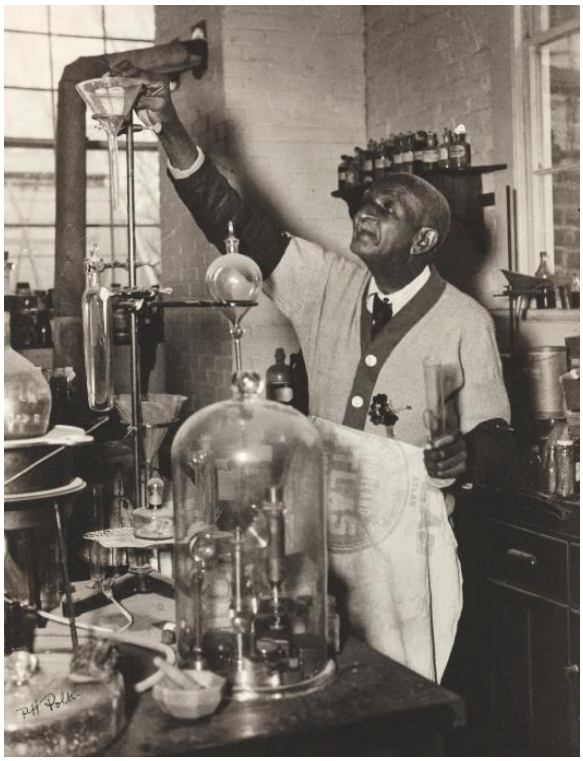

FIGURE 115. Historic view of the interior of Carver's laboratory at the northeast corner. The greenhouse can be seen through the window beyond. (Source: Prentice H. Polk, *George Washington Carver in Laboratory*, ca. 1940, gelatin silver print. Detroit Institute of Arts, Gift of Delano Willis, F1988.93)

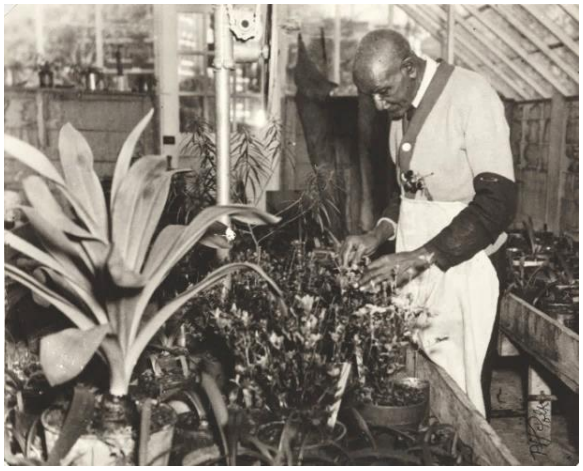

FIGURE 116. Historic view of Carver working in the greenhouse. (Source: Prentice H. Polk, *George Washington Carver in a Greenhouse*, ca. 1940, gelatin silver print. Detroit Institute of Arts, Gift of Delano Willis, F1988.94)

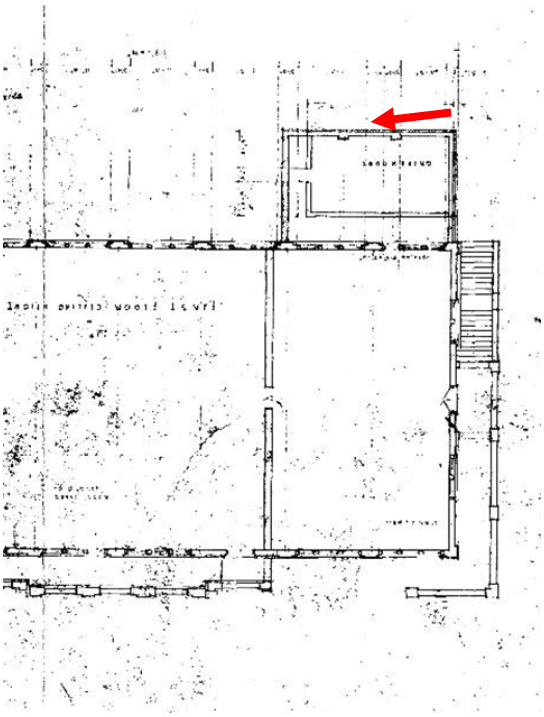

FIGURE 117. An early drawing of the museum indicating a greenhouse on the addition roof.

After the Fire, 1947–1974. During Carver's occupation of the building, portions of the lower floor had been finished to house student experiments. In 1947, a fire starting in one of the experiment storage areas burned through the wood floor and destroyed much of the exhibit space above, including Carver's paintings. Repairs after the fire included removal of the entire wood floor structure and replacement with a concrete deck cast on a draped, wire-reinforced asphalt paper form supported by steel bar joists and wide-flange columns. The lower floor was completely gutted with most of the south side of the floor slab replaced to accommodate new concrete column footings and grade beams.[202]

Experimental and research functions were removed from the museum building, and the lower floor was built out to house support spaces for the museum. Restrooms, mechanical equipment, and a wet-pipe sprinkler system were added. A spiral stair in the center of the building connected the floors. An extensive program was proposed, including a studio apartment constructed over the

201. Ibid.

202. Ibid.

boiler room; however much of the work was never completed.[203]

During the renovations, the upper floor gallery walls were finished with plaster on metal lathe and a plywood wainscot was installed to the height of the window meeting rails. Window aprons were removed, and the wood stools were coped to receive a trim bead capping the ends of wainscot. Linoleum tiles in a checkered pattern were installed in the upper floor gallery areas (refer to Figure 24). Surface-mounted fluorescent light fixtures were installed on the ceiling between the truss chords. Wood base at the perimeter was painted a dark color.

Sometime in the 1950s, Carver's greenhouse was removed from the roof of the boiler room addition. The exterior door to the ell on the lower floor was partially infilled with concrete masonry and a centrally located metal door.

National Park Service Museum, 1979–present. In 1974, portions of the Tuskegee campus, including the Carver Museum, were named a National Historic Site. Management of the building became the responsibility of the National Park Service and an effort to document and rehabilitate it was undertaken. It was determined that there was not significant evidence to recommend recreation of the interior spaces as they would have existed during Carver's tenure in the early 1940s. "A fire in 1947 virtually destroyed the interior integrity of the building and subsequent remodeling and changes over the years would make a recreation to the period of Carver's occupancy (1938-1943) highly conjectural."[204]

An adaptive restoration was completed in preparation for the institute's centennial celebration in 1981. The project included a complete rehabilitation of the museum. Extant historic partitions at the upper floor were removed and the entire non-historic lower floor was remodeled. The completed facility provided contemporary museum space with archival storage, office, and support spaces. Building systems were replaced to meet code and accessibility standards applicable at the time.[205]

Plans for the rehabilitation indicate removal of plywood wainscot and plaster from the upper floor walls and installation of arched entry vestibules, and a suspended ceiling with a coved perimeter and crossing arched soffits aligned with the entry doors.[206] Physical evidence suggests that the wood wainscot was removed but that removal of the plaster, installation of the suspended ceiling, and construction of entry vestibules were not completed. A note on the electrical and HVAC demolition plan indicates "Existing sprinkler heads to be capped and not extended to new ceiling as denoted on Sht. P-1."[207] The denotation suggests that the suspended ceiling at the upper level was omitted from the project after the completion of the construction documents.

At the east end of the upper floor, partitions dividing the previous office areas were demolished and chases were constructed to house electrical and mechanical equipment served from the floor below. In the center of the space, the spiral stair was removed and a spiraling stair was installed around a circular elevator shaft with a small hydraulic elevator. This work was accompanied by the construction of millwork supporting the reception functions of the museum.[208]

On the upper level, floor finishes were replaced and the walls appear to have been skim coated with plaster. Insulation was added at the attic level and the fire-suppression system was augmented to provide complete coverage of the building. Physical evidence suggests that the current suspended track-lighting grid was installed during the rehabilitation, along with the textured coating over the ceiling and boxed truss chords; however, no specific documentation of these modifications to the project were found.

203. *Historic Structure Report*.
204. Ibid.
205. Ibid.
206. Williams-Russell & Associates "Adaptive Restoration Projects, Carver Museum, Tuskegee Institute National Historic Site," [drawings] (Atlanta, Georgia, 1979).
207. Ibid.
208. *Historic Structure Report*.

During the rehabilitation project, the lower floor was completely gutted. New larger restrooms were added and the floor was provided with curatorial and archival storage spaces, a large assembly space, and office space for museum staff and curators. Mechanical systems were completely replaced. A new gas-fired boiler provided hot water for coils in two split direct expansion (dX) forced air units. A third, packaged unit provided cooling for the archival work room.[209]

The ductwork installed during the 1979–1981 rehabilitation remains to date. The system serving the lower floor consists of trunk supply ducts along the north exterior wall and along the south mechanical crawl space supplying internal lateral branch ducts to ceiling-mounted aluminum diffusers. A plenum return above the gypsum board ceilings is gathered at ceiling registers in the central hall. The upper level is conditioned from a single supply duct rising at the east exterior wall to branch ducts and diffusers just under the historic ceiling. Return air is collected at registers in a chase below the south window on the east elevation. Outside air from a small louver on the wall of the east exterior walkway provides ventilation air into the return air stream before the units. An energy recovery unit described in the HSR recommendations does not appear to have been implemented in the final design.[210]

Record documents indicate that the windows were to receive a plastic glazing layer to provide solar resistance. It is not clear, from physical evidence, whether or not this layer was added. A wet-pipe fire-sprinkler system was added throughout the building during the renovation. Documents indicate a halon system installed at the archival work and storage spaces.

Interior modifications to the lower floor since the 1979–1981 rehabilitation have included the enclosure of the lower floor assembly space. A partition was installed at the northeast corner and a glazed entrance was installed at the south, across from the elevator. These modifications separate the assembly space from the elevator lobby and corridor, and removed the paired egress doors from the path of egress on the lower level. Additional interior work has included the replacement of the boiler (1995) and both of the HVAC units (2005).[211]

Following the recommendations of the 2011 Condition Assessment Report (CAR), an Accessibility Enhancement project was completed in 2012. The spiraling stair and small elevator were removed. A new, twin-post, hole-less hydraulic elevator was installed with a rectangular shaft and a dogleg stair. Millwork serving the museum on the upper floor was removed and reconstructed between the new stair and the south wall.

The ell addition has undergone several changes, not all of which are documented. As previously mentioned, the roof of the building housed Carver's amaryllis greenhouse during the period of significance. The space below appears to have been used originally as a boiler room and most recently as a library.[212] The original large door opening to the west was removed and infilled with masonry and a narrower door following the fire in 1947. At an unknown date, the infill was removed and a custom wood frame with glazed transoms and sidelights and a pair of stile and rail wood doors was installed. This door unit remains; however, it has significant areas of rot due to moisture exposure. The rooms in the addition were under renovation at the time of the site visit.

FIGURE 118. Overall view of the museum space along the central axis, looking west.

209. Ibid.
210. Ibid.
211. Lord, Aeck & Sargent.
212. Ibid.

Upper Floor – Museum. The interior of the upper floor maintains the original open layout of the historically significant period during the occupancy of Dr. Carver (Figure 118), with the exception of the demising walls separating his laboratory and office spaces on the east end of the building. These partitions were modified following the fire and ultimately removed during the 1979–1981 rehabilitation.

FIGURE 119. Overall view of exhibit at northeast corner of the museum.

FIGURE 120. Current condition at the northeast corner. Chimney and windows remain as seen in the historic laboratory photograph.

The exhibit space is entered on the south through two pairs of doors with arched transoms. Exits on the east and west ends of the room are through similar double doors exiting to a raised porch on the east and to grade on the west. An exhibit installation in the northeast corner conceals the door to the boiler addition roof and the chimney added to serve Carver's laboratory (Figure 119 and Figure 120). Along the east wall, gypsum chases added during the 1979–1981 rehabilitation conceal mechanical and electrical equipment.

FIGURE 121. Overall view of upper floor museum. The east entrance at the front portico is seen beyond the gift shop.

Millwork desks serving the reception and gift shop occupy the space along the south exterior wall, between the paired entry doors (Figure 121). The contemporary reception area was constructed in 2012 in conjunction with the elevator and stair replacement (Figure 122). The centrally located elevator opens to the north. An unenclosed dogleg stair leads to support functions on the lower level from the east side of the elevator. The stairs are finished with rubber treads and risers and have continuous aluminum grip rails.

The remainder of the floor space on the upper floor comprises exhibits dedicated to Carver's life and work. The exhibits are self-supporting. The 2011 Condition Assessment Report recommended the assessment and modification of the exhibits to meet accessibility standards.[213] Documentation of specific subsequent modifications was not available.

213. Lord, Aeck & Sargent, n.p.

FIGURE 122. Overall view of upper floor museum along north wall at gift shop and reception desk.

Upper Floor – Finishes. No historic wall finishes remain at the upper floor. Paint analysis completed in 1980 determined that the plaster was installed following the fire in 1947.[214] Partitions constructed after the 1979–1981 rehabilitation consist of gypsum board on metal-stud framing. The exterior walls are finished with plaster exhibiting several layers of paint, with recent repairs to the finish coat, particularly in the lower areas previously covered with a plywood wainscot.

The exhibit space is carpeted with a brown broadloom, looped pile carpet that appears to be in good condition (Figure 123). The area in the center of the building, surrounding the elevator, stair, and reception space, is finished with a grey sheet linoleum installed on the concrete floor deck with a black transition strip at the carpet (refer to Figure 118). Baseboards at the perimeter are simple wood 1-inch by 6-inch elements, without shoe mold or detail, painted off-white to match the wall color (Figure 124). A smaller baseboard occurs behind some exhibits (Figure 125). Paint analysis completed in 1980 determined that the extant baseboards were likely installed in 1948 or later, concurrent with the installation of the wainscot and plaster.[215] It is not known if baseboards were replaced following removal of the wainscot and repairs to the plaster walls during the 1979–1981 rehabilitation.

FIGURE 123. Typical wall base with exhibits.

FIGURE 124. Typical wall baseboard and door plinth block.

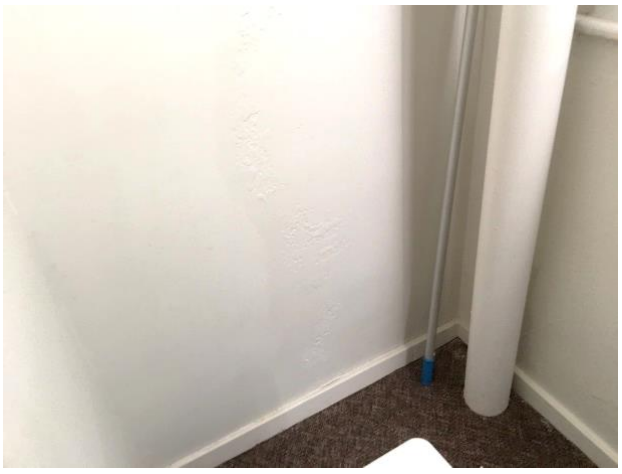

FIGURE 125. Narrow wall base and pipe penetration.

214. *Historic Structure Report*.

215. Ibid.

FIGURE 126. Overall view of upper floor museum along north wall, looking east.

Ceilings in the museum retain the original form of a recessed bay set between the boxed bottom chords of the roof trusses; however, both the ceiling panel and the boxed beams have been covered in a sprayed texture, and painted white to match the trim (Figure 126). A painted crown molding remains only along the exterior wall. The boxed beams are flush, without continuation of the crown molding or center trim which existed prior to 1947. Suspended from the ceiling is a grid of 2x10 wood frames concealing recessed lighting tracks with gimble fixtures (Figure 127). The date of the textured finish and suspended frames are not known. Based on information available, they appear to have been installed during the 1979–1981 adaptive restoration.

A wet-pipe fire-suppression system runs through the attic, consisting partially of heads dating to the original 1947 system, augmented by components dating to the 1979–1981 rehabilitation. Trunk main ducts supplying conditioned air to the museum space are suspended below the ceiling to the south of the centerline, with hard wall lateral branch ducts extending to diffusers on the east and west. Return air is collected on the east wall, through surface-mounted registers.

FIGURE 127. Overall view of upper floor museum along north wall, looking west.

Window units at the perimeter of the upper floor are original to the building and consist of joined double-hung windows with hopper transoms above a horizontal rail (Figure 128). Units on the north and south walls consist of three-unit bays. Windows on the north and south elevations have higher sills and are set in pairs. Windows are joined with a flush mull cover. Sash stops have a continuous single bead (Figure 129).

The interior window trim appears to be original to the building and likely applied directly to the interior wythe of brick. The jamb casings consist of 5/4-inch by 6-inch members with an eased or slightly radiused outer edge. Head casings are built of similar material to the jambs, with ears projecting slightly beyond the outer face of the jamb members, with no rosette or miter (Figure 129). Window sash may have been replaced in some locations, but most appear to be original. All have been reglazed with a struck silicone bead replacing the glazing compound on the exterior. A weatherstrip consisting of a surface applied metal strip with a bulb-type gasket is installed on the interior at the stool to a lower rail joint and continues to the vertical sash stop at some units. Many of the bulbs are missing or deteriorated. The metal strips have been painted white, matching the perimeter casing, sash, and frame members (Figure 131).

FIGURE 128. Typical horizontal rail at hopper transom.

FIGURE 129. Typical vertical mullion at joined window unit.

FIGURE 130. Typical window head and boxed beam.

FIGURE 131. Window sill above return air chase at east wall.

Window stools appear to be original and reflect the modifications to the building from the time of Carver's occupation of the building in the early 1940s. The stools from the time of the laundry through Carver's work in the museum consisted of a 5/4-inch solid wood board with a bullnose edge and a rectangular apron with a cove transition (refer to Figure 115). Following the fire in 1947, the renovation of the museum space included the removal of the wood aprons and installation of a plywood wainscot to the height of the meeting rails. The existing condition drawings completed in the 1980 documentation indicate this condition along with an applied wood bead terminating the wainscot at the outer face of the jamb casings.[216] Existing stools retain a coped profile beyond the jamb casing, likely cut to accommodate the wainscot material (Figure 132).

A single anomaly in the typical three-part window on the north elevation occurs at the east-most bay, where the western of the three double-hung units was replaced with a door to provide access from Carver's laboratory and office to the greenhouse constructed on the roof of the single-story addition. Although the door remains, access to it is obstructed by an exhibit installation against the window. The door appears to be fixed closed with no remaining latchset.

Treatments at all windows consisted of draperies prior to the 1979–1981 rehabilitation. Currently,

216. Ibid.

they are provided with off-white mini-blinds which appear to be in operable condition.

FIGURE 132. Typical lower rail of sash, sash lift, and stool. The coped end of the stool is typical of the upper floor windows, remaining from the 1947-1980 period when the walls had a wood wainscot.

FIGURE 133. Overall view of upper floor museum along south wall at west exit.

FIGURE 134. Arched transom with fanned muntins at the exit doors on east facade.

The only doors at the upper floor are exterior doors, in their original locations (Figure 133). Each of the doors is paired with a radiused transom above (Figure 134). The transoms have fanned muntins at each of the units except for the west door, which has an orthogonal, three-part design. The frames were modified during the 1979–1981 rehabilitation to reverse the swing to the exterior, in the direction of egress. Hardware on the entrance doors at the south portico consists of a fixed leaf with manual brass flushbolts and an operable leaf with a brushed aluminum knobbed latchset with bolt (Figure 135). The egress door pairs on the east and west exits have brushed aluminum vertical rod cross-bar type panic devices (Figure 136). The active leaf of the main entrance door has a closer on the exterior (pull side). The remaining doors have no closer. The interiors of the doors are painted, matching the windows and trim elements at the upper floor.

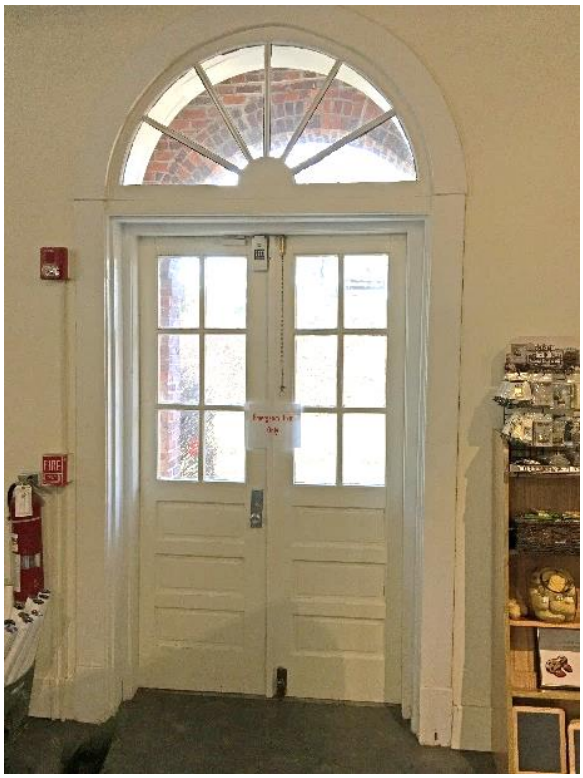

FIGURE 135. Paired door and arched transom at east entry on south facade. No panic hardware is provided at this door.

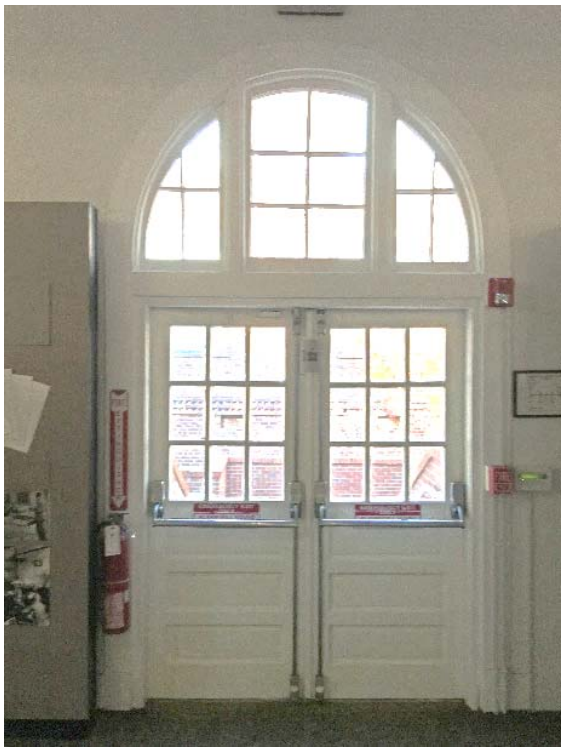

FIGURE 136. Egress door with arched transom at west elevation.

Interior – Lower floor. The interior of the lower floor remained unfinished through the occupation of the laundry and was only used in limited areas for experiment storage during the museum's occupancy by Dr. Carver. After the 1947 fire, the entire interior was gutted and renovated along with the replacement of the floor slab, framing, and foundation. The interior was nearly completely replaced during the 1979–1981 rehabilitation and further augmented by the replacement of the elevator and stair in 2012. An undated project involved the enclosure of the large assembly space with a glazed aluminum wall and door system (Figure 137). A project underway at the time of the site visit involved the renovation of the single-story ell (old boiler room) at the northeast corner of the building. A proposed project to replace HVAC ductwork will likely entail significant modification to the main ceilings and furred ceilings that currently conceal ductwork and wiring.

The layout of the lower floor level consists of a functionally derived plan with a central double-loaded corridor along the east west centerline of the building, turning to the north at the east. Institute curatorial, archival, and office functions are grouped to the west end of a large central assembly area. To the east of the assembly space are supporting functions such as restrooms, storage, audiovisual equipment closets, and mechanical rooms. These spaces are served by the north leg of the corridor which terminates at the ell addition. The plumbing wall and some partitions at the restroom area remain from the 1948 renovations.

FIGURE 137. Overall view at lower level central hall, looking west.

The finishes at the lower level are consistent and utilitarian. Most date to the 1979–1981 rehabilitation project or later. No significant historic features remain on the lower floor. Interior partitions consist of metal stud framing with painted gypsum board and black rubber base. Walls are painted a peach or off- white color (refer to Figure 137).

Floor finishes consist of a moderately worn, grey carpet tile at corridors. A newer, brown broadloom carpet with a looped pile was found at the assembly room and curatorial office suite. An exposed concrete floor in portions of the curatorial storage room has a red coating. Restroom floors are brown 4-inch by 4-inch porcelain ceramic tile with a matching 4-inch-high porcelain ceramic base.

Ceilings are suspended from the structure above with a standard gypsum suspension system (steel primary channels with secondary metal furring strips). Gypsum ceilings are painted to match the wall color and floated into the wall boards with no

transition or molding. No control joints in the gypsum ceilings or walls were observed; however, no cracks or damage was noted. The ceilings were indicated in the 1979 documents as having a one-hour fire rating. An assembly number associated with the floor framing and slab above was not indicated.[217] The ceiling installed in the 1979–1981 project replaced a plaster system installed in the 1948 project which was also indicated to have a one-hour rating.[218] The space above the ceiling was noted in the 1979 documents as a return air plenum. The heights of the ceilings are relatively low, approximately 7 feet 10 inches, and are further reduced along the north exterior wall to conceal a trunk duct.

FIGURE 138. Typical doors and finishes at lower level. Flush steel door (left) dates to 2012. Flush wood door (right) is typical of the 1979–1981 rehabilitation.

Interior doors at the lower level are flush wood doors with stained panels set in hollow metal frames that are painted black. The door frames extend the full height of the wall, with the head flush against the ceiling above. During the 2012 accessibility enhancements project, a fire-rated, flush hollow metal floor and frame were installed to serve the elevator machine room (Figure 138). A pair of doors with egress hardware provides an exit directly from the assembly room. Park personnel stated that these doors provided the most direct access from the parking areas provided for park staff, and constitute the primary daily entry / exit point for staff.

The windows serving the lower floor are located along the north facade. Within the assembly room, three pairs of double-hung windows are set in the center of the structural bays. The windows extend from a sill height approximately 1 foot above the floor to flush with the mechanical fur-down above (Figure 139). Two occur within the assembly room and have lights treated for blackout purposes. A third pair of windows, with clear glazing, occurs in the administrative office (Figure 140). All the windows on the lower level have been sealed, closed with sealant installed from the interior at the top of the meeting rail and in the counterweight kerfs (Figure 141).

FIGURE 139. Windows with blacked-out lights at assembly room.

217. Williams-Russell & Associates, n.p.
218. *Historic Structure Report*.

FIGURE 140. Typical window unit at lower level.

FIGURE 141. Typical sealant at meeting rail sash and counterweight kerf.

Central corridor and exhibit spaces. A single unenclosed stair connects the museum space to the support spaces in the lower level. The dogleg stair was installed during the 2012 accessibility enhancements project alongside a new twin-post, hole-less hydraulic elevator. The stair and elevator open to the north at the center of the primary east-west corridor (Figure 142). An aluminum framing system with frosted glass and a pair of similarly constructed doors opens into the assembly space to the north.

To the west, the corridor terminates at an exhibit space (Figure 143). Originally an office, the room is separated from the corridor by a clear-glazed sliding aluminum partition installed during the 1979–1981 rehabilitation. Within the space, artifacts from Carver's laboratory are displayed in a glass case above a laboratory table. A door in the north of the room opens to the offices and storage suite (Figure 144).

FIGURE 142. Central corridor, looking east past 2012 stair.

FIGURE 143. The NPS office / west gallery space.

FIGURE 144. Overall view at the NPS west gallery.

To the east, the corridor continues alongside a display alcove with a central, floor-mounted interpretive display and bookshelves at the rear. A flat screen monitor is installed on the east wall (Figure 145), and an aluminum track occurs along the top of the wall at three sides of the room. The double-loaded corridor continues to the wall of the mechanical room at the east, where it turns to the north serving the restrooms, storage, and support spaces.

FIGURE 145. Exhibit space east of stair.

Offices. The office suite is accessed through the gallery space at the west end of the central corridor. The central space was identified as a delivery storage room in the 1979 documents and is currently used as a reception space with bookshelves on the east wall (Figure 146). The office is located directly to the north of the central room, divided by a clear-glazed aluminum partition. A paired double-hung window is located in the center of the north wall (refer to Figure 140).

The large room opens to the west from the central space. The 1979 documents indicate the room as having a halon fire-suppression system and two wall-mounted humidifiers. The current use of the room is as a work area with desk space for NPS staff. Flooring in the room transitions from carpet to coated concrete (Figure 147). To the north of the office, the room originally indicated as a curator's work room was being used as storage space. A single, fixed six-light window is located in the center of the north wall (Figure 148).

FIGURE 146. Central room at office suite, originally indicated as delivery storage.

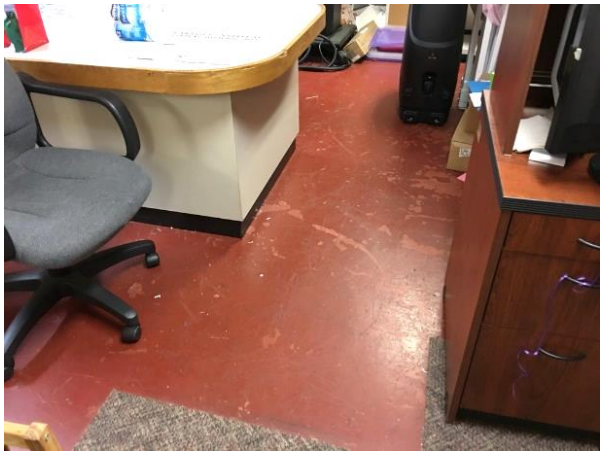

FIGURE 147. Furniture and floor coating at office room.

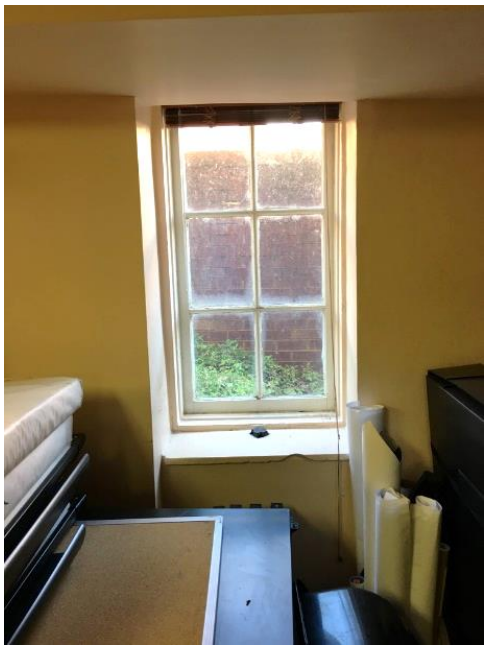

FIGURE 148. Single, fixed sash, window at lower level office.

Assembly room. The central space of the lower level serves as a multi-purpose meeting and assembly room. The east wall is composed of a projection / whiteboard and cork bulletin panels in a sliding aluminum system dating to the 1979–1981 rehabilitation (Figure 149). The northeast corner and the south entry were enclosed at a later date. Two transfer louvers in the northeast partition suggest installation following the initial construction of the HVAC system and return diffusers. It is not clear from information available whether or not the partitions continue to the underside of the deck to provide a smoke or fire barrier at the perimeter and to separate the assembly function from adjacent occupancies with different classifications.

A pair of double doors at the north wall, with cross-bar panic devices, provides direct egress to the exterior from the assembly space (Figure 150). Park staff indicated in interviews that these doors provide the most convenient entrance point for staff entering from the parking areas.

Several interpretive displays are located at the west end of the assembly room. A small internal window communicates with the neighboring office suite, where it is obstructed by bookshelves on the office side (Figure 151).

FIGURE 149. Assembly room, looking east.

FIGURE 150. Assembly room, looking north.

FIGURE 151. Exhibits at west side of assembly room. The interior window communicates with the office workroom beyond.

Rear hall, restrooms, and support spaces. The north-south corridor at the east end of the building provides access to the elevator machine and mechanical rooms followed by the back-to-back ganged toilet rooms and storage rooms

(Figure 152). A pair of doors encloses a millwork base cabinet with a cup sink. At the termination of the corridor is a low door leading to the old boiler room in the single-story ell addition (Figure 153). A small corridor turns back to the east, leading to the floor's only dedicated exit. The exit door opens to a small concrete landing and a stair up to the finish grade (Figure 154).

FIGURE 152. Rear hall at restrooms.

Wall and ceiling finishes in the restrooms match those found in the other spaces, with the exception of plaster on the exterior (east) walls. Floors are finished with 4-inch by 4-inch porcelain ceramic tile with matching 4-inch high wall base (Figure 155). Restrooms have four floor-mounted water closets at the women's restroom and two water closets with two urinals at the men's. One stall at each is designed to be accessible. The restrooms have drop-in lavatories mounted in wall-hung vanities. Two lavatories are provided in the women's restroom and three in the men's. A single height, accessible wall-hung electric drinking fountain is installed on the north wall of the women's restroom. The janitor's closet, dividing the restrooms at the west end, is served by a square floor-mounted mop sink. Storage and audiovisual rooms were not accessible at the time of the site visit.

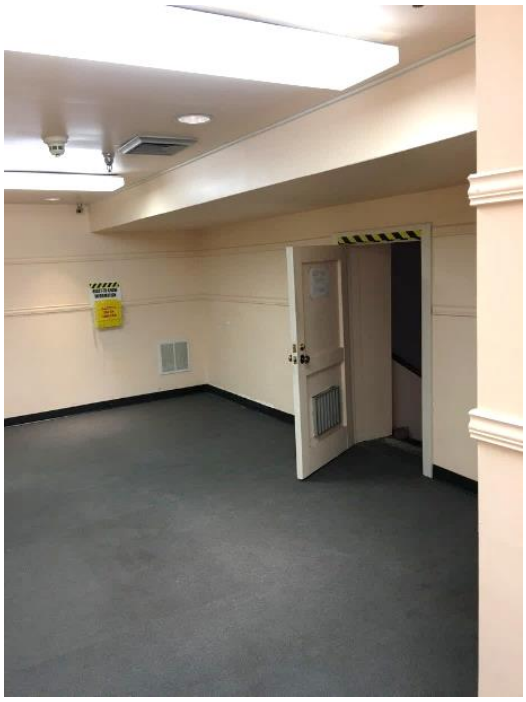

FIGURE 153. North termination of corridor and the low door leading to the single-story addition.

FIGURE 154. Exit door at the lower floor level.

A small storage room occupies the space to the north of the exit door. The gypsum ceiling has been removed from this space, exposing the trusses and the crossing ductwork. The adjacent partition at the corridor terminates at the underside of the bar joists.

FIGURE 155. Typical restroom finishes and grab bar.

Single-story ell addition (old boiler room). A single-story ell addition, originally housing a well and boiler room, projects from the northeast corner of the building. The room is divided approximately in the center, with the room to the east most recently serving as a library. The current layout is approximately the same as it appeared in 1980 with the exception of the exterior doors, which have since been reworked.[219] A renovation of the space was in progress at the time of the site visit.

The floor level of the room is approximately three feet lower than the main level of the lower floor. A concrete stair descends from the door to the interior corridor along the central demising wall (Figure 156). The stair is open to the room at the west side with a partial height wall sloped to form a guard rail. No grip rails were observed to be present. The guard rail appears lower than the 42-inch minimum required by International Building Code (IBC). The stairs and the concrete floor in the west room are painted grey. The floor in the old library (east room) is bare concrete.

The interior of the west room was unfinished during the time of the site visit, with the gypsum sheathing removed from 2x4 wood framing, exposing the interior wythe of masonry (Figure 157). A custom fabricated wood door with sidelights and transom windows opens to a concrete pad surrounded by a low brick retaining wall (Figure 158).

FIGURE 156. The stair leading to the single-story addition.

FIGURE 157. The north wall of the single-story addition, at the west room.

FIGURE 158. Transom at exterior door unit.

219. *Historic Structure Report*.

The east room is similarly unfinished with a pair of joined double-hung windows in the north wall, abutting the demising partition (Figure 159), and two smaller fixed sash windows in the east wall (Figure 160). A pair of painted flush wood doors joins the two rooms. Two fixed sash windows with obscured glazing are set high in the east wall and appear to have been covered by the previous interior wall.

FIGURE 159. The north wall of the single-story addition, at the east room.

FIGURE 160. The east exterior wall of the single-story addition.

According the 2011 CAR, the gypsum board at the interior of the library exhibited signs of mold growth and was recommended to be replaced.[220] Gypsum board finishes have been removed from the wood stud framing at the perimeter of the exterior wall to approximately the face of the window jamb returns and the wood stool and apron at the paired windows (Figure 161). Documents detailing the proposed restoration were not available at the time of the site visit.

FIGURE 161. Detail of termination of gypsum board removal at window return and sill.

Central stair and elevator. The accessibility enhancements project completed in 2012 involved the replacement of the outdated elevator, circular shaft, and spiraling stair with a code-compliant unenclosed dogleg stair wrapping a new elevator shaft. A new machine room was constructed to the south of the audiovisual equipment storage room on the lower level. Modifications to the building systems were completed as required to tie in existing systems. Structural steel framing and concrete foundation work was completed to install the enlarged shaft and pit. The elevator shaft consists of metal studs supporting gypsum drywall on the shaft interior and fiberglass-reinforced gypsum wallboard on the exposed surfaces. The walls of the shaft, machine room, and the underside of the stair are indicated to have one-hour fire ratings. The ceiling at the lower level was indicated to be patched to maintain a one-hour rating per UL (Underwriters Laboratories) 501.[221]

220. Lord, Aeck & Sargent, n.p.

221. Denver Service Center, *Accessibility Enhancements*, 2012.

Finishes in the elevator machine room match those at the other lower floor spaces, with the exception of a light brown 12-inch by 12-inch vinyl composition tile floor (Figure 162).

FIGURE 162. Elevator control unit.

FIGURE 163. Attic framing at ridge.

Attic. The interior of the attic dates to the renovation of the hipped roof immediately following the original construction of the building, approximately 1915 (Figure 163). Some framing members have been augmented with 2x materials and several ceiling joists have been replaced. The condition of the framing and decking members is discussed in the structural section below.

The attic space is naturally ventilated through openings in the hip eaves (Figure 164) to sheet-metal dormers installed on the north and south slopes of the main roof. Un-faced fiberglass insulation was installed between the ceiling joists during the 1979–1981 rehabilitation and remains in serviceable condition (Figure 165).

FIGURE 164. Overall view in attic.

FIGURE 165. Ceiling framing at typical truss.

Access to the attic is through a framed opening along the central axis of the building near the east end. The opening must be accessed by a ladder placed through the suspended light grids.

Utilities in the attic space consist of electrical conduit and fire-suppression piping. No mechanical equipment was observed to be present in the attic.

Condition Assessment

The interior of the museum is in good condition overall. The following items represent minor concerns or localized distress.

Finishes.

- The finishes, which include plaster or gypsum board wall and ceiling coverings, texture and paint coatings, wood trim, and metal frames, are typically in fair to good condition.
- Some baseboards and trim were observed to be loose.
- The gray carpet tile at the corridor areas of the lower floor is worn and some seams were observed to be separating. Other floor finishes were observed to be in good condition. Coated concrete floors in the archival work area were also worn and could receive finishes as appropriate for the function of the space.
- Some isolated cracking was observed at the textured ceiling finish in the upper floor. Separations were observed where the finish wraps the box beams and at the terminations at the exterior walls.
- Blistering paint and plaster were observed at several locations below the window sill height, at exterior walls at the upper level (Figure 166). In several locations the condition was observed below windows (Figure 167).
- Delamination of the plaster finish coat was observed at several locations near the top of windows at the upper floor (Figure 168 and Figure 169). As these locations occur at the narrow masonry pilasters, the moisture in the wall is present near the bearing condition of the trusses.

FIGURE 166. Blistering paint and plaster at south entry.

FIGURE 167. Blistering paint and plaster below window.

FIGURE 168. Delamination of finish plaster coat at exterior wall.

FIGURE 169. Delamination of finish plaster coat at exterior wall.

FIGURE 170. Blistering of plaster and paint and debonding of sealant at crown molding.

FIGURE 171. Crack in plaster at truss bearing.

- Blistering and peeling paint was observed near the ceiling at some plaster walls on the upper floor (Figure 170). At some locations sealant installed at the bottom of the crown molding was observed to be debonded from the wood trim.

- Cracks were observed in the plaster, typically radiating from the beam bearing points outward toward the heads of the window (Figure 171) or originating at the head of the window and traveling vertically (Figure 172).

- The joint where plaster abuts wood trim elements was observed to be open and deteriorating at some locations. Peeling paint, deterioration of plaster at the joint, and swelling of the wood trim was observed (Figure 173).

- Blistering paint and plaster at exterior walls were observed at several locations in the lower level. The most severe conditions were observed at the north wall of the curator's office (Figure 174) and assembly room (Figure 175). Rubber base was observed to be delaminating at these areas. Minor blistering of paint was observed at the exterior east wall of the restrooms (Figure 176) and the chair storage closet.

FIGURE 172. Crack in plaster extending from window head to ceiling above.

FIGURE 173. Opening of joint between plaster and wood trim, blistering of paint, and swelling at trim.

FIGURE 174. Blistering of plaster and paint and debonding of rubber base.

FIGURE 175. Blistering of plaster and paint and debonding of rubber base.

FIGURE 176. Blistering of plaster and paint at exterior wall of restroom.

- Blistering paint and plaster were noted at the exterior wall at the east end of the assembly room (Figure 177) and at the north end of the corridor (Figure 178). Both conditions occur in portions of the masonry wall associated with the single-story addition on the northeast corner of the building. The condition at the assembly room continues at the plaster jamb return of the window.

- Mold and mildew was observed at the gypsum board head return at the paired window in the single-story addition (Figure 179). Gypsum finishes had been removed from the walls but remained at window returns and interior finishes.

- A daylight gap was observed from the interior at the intersection of the single-story addition wall with the wall of the main building.

FIGURE 177. Blistering paint and plaster at exterior wall and window jamb return.

FIGURE 178. Blistering paint and plaster on masonry wall adjoining the single-story addition.

FIGURE 179. Mold and mildew on gypsum return at head of window, single-story addition.

Windows and Doors.

- Paint was observed to be delaminating at interior trim elements, such as mull covers and jamb casings (Figure 180; refer to Figure 173).

- Separations due to moisture infiltration of the window frame members were observed at joints between horizontal mullions and vertical casing trim (Figure 181 and Figure 182).

- Some wood window stools were observed to be out of place or rotated due to moisture damage and expansion of frame members.

- Some window hardware was missing, including isolated lower sash pulls and hinges at hopper transoms. Pulls at some window sash were observed to have light rust.

- Delamination of paint was observed at sash components at several window units (Figure 183). Bulb weatherstripping at many locations was observed to be painted and stiff, deteriorating, or missing bulbs.

- Staining and deterioration of paint coatings due to air or moisture infiltration was observed at the lower rail of the awning sash at some transom units (Figure 184).

FIGURE 180. Delamination of paint at vertical mullion.

FIGURE 181. Moisture damage at horizontal mullion trim.

- Separation of sill members due to moisture infiltration was observed at the fixed sash window located in the curator's work room Figure 185).

- Paint was observed to be blistering and delaminated at the interior panels of entry doors on the upper floor level (Figure 186).

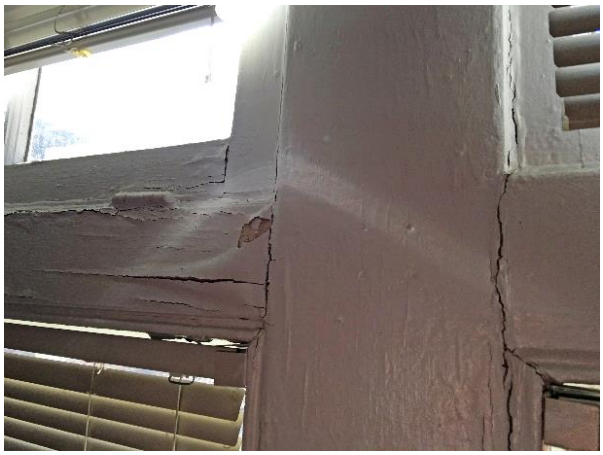

FIGURE 182. Moisture damage at horizontal mullion trim.

FIGURE 183. Delamination of paint at interior of lower sash rail. Typical bulb weatherstrip indicated.

FIGURE 184. Delamination of paint at bottom rail of hopper sash at transom.

- Severe moisture damage was observed at the lower rail of the paired entry doors on the west side of the single-story addition (Figure 187). The lower rail of the north door was missing. The lower rail of the south door showed significant loss of material. Stiles, panels, and rails at multiple locations on the unit exhibit similar deterioration. Moisture damage was also observed at the interior sill members of the sidelights frames (Figure 188).

FIGURE 185. Delamination of paint and possible moisture damage to sill frame members at fixed sash window.

FIGURE 186. Blistering and delamination of paint at interior face of door panels.

FIGURE 187. Severe moisture damage at paired doors of single-story addition.

FIGURE 188. Moisture damage to sidelight frame at single-story addition.

Other. A comprehensive building and fire code analysis was not completed as a part of this report. The following issues were noted of general concern and should be addressed in a comprehensive code analysis under the applicable sections of the applicable codes, particularly the International Existing Building Code.

- The actual function of several rooms at the lower level appears to differ from the named function on the 1979 construction documents, the 2012 construction documents, and previous reports. Examples include the delivery storage, curator's work room, the NPS office, and curatorial storage rooms. In some cases, rooms labeled as storage are used for office or work space and rooms labeled as office may be used as storage. Confirmation of the use of these spaces is recommended in conjunction with a detailed code review and design of new HVAC distribution systems. Storage rooms may require additional fire separation and / or ventilation rates than would office spaces.

- Egress from the upper floor consists of four exits; however only the doors on the east and west ends have panic device hardware. Egress from the lower level is provided by the single exit at the east end of the building and via the unenclosed stair to exits at the upper level. In the original plan of the 1979–1981 rehabilitation, the pair of doors on the north elevation served as an available egress. With the separation of the assembly space from the circulation areas, egress through the assembly room may be prohibited under IBC 1014.2. Additional analysis of the separation, occupancy, and egress requirements at the ground floor is recommended.

- The path of egress travel from the curatorial office suite should be evaluated in conjunction with a detailed code and fire-separation analysis. In the current configuration, the entry to the suite is through the exhibit space at the door to the delivery storage room. The sliding aluminum doors at the exhibit space (formerly "NPS Office") do not appear to have a breakaway egress function as may be required for the current use.

- The height of the door entering the single-story addition is not compliant with the code minimum of 80 inches (IBC 1003.3.1) for a means of egress. The stair is also not compliant as it has no landing on the push side of the door. The guardrail on the west side does not meet the height required for a guard. There are no grip rails provided. As the addition is currently under renovation, additional detailed analysis should be completed to evaluate access for public and / or staff to this area.

- Ratings of floor, roof, ceiling, partition, and column protection assemblies are not completely known from the documentation available, except for the walls of the elevator shaft and machine room installed in 2012.[222] The 1947–1950 repairs to the museum included the complete replacement of the upper flood and the supporting structure. The floor assembly consists of a 2-1/2-inch slab on a wire reinforced draped asphalt paper form supported by steel bar joists with a plaster ceiling installed on the underside of the joists. Steel columns and beams were indicated to be protected by ceramic block. An analysis of the installed materials and their completeness at terminations should be performed to determine the allowable construction type under the applicable codes.

- The rated floor assembly consisting of the space between the concrete deck and the gypsum at the bottom of the steel bar joists is indicated to be used as a return air plenum in the 1979 documents. The floor-ceiling assembly is also indicated as a rated assembly. An evaluation of the return air stream in the rated assembly and the presence of dampers, which may be required at rated wall assemblies, should be completed in conjunction with the analysis of the code requirements and ratings afforded by the assemblies installed.

222. Ibid.

- The floor-ceiling space is open at the perimeter to areas such as the crawl space and boiler room, where penetrations have been infilled with concrete masonry units (CMU; Figure 189 and Figure 190). Where the brick wall has been extended to the underside of the deck, it does not appear to be sealed or fire-stopped (Figure 191) as may be required for completeness of the floor-ceiling assembly, separation of rated spaces such as the boiler room, or air-seal at the return air plenum. Negative pressure at these areas could result in moisture from damp areas, such as the crawl space, to be drawn into the return plenum, increasing the dew point and potential for condensation at interior surfaces.

- There is no gypsum panel installed at the ceiling of the chair storage room (Figure 192). The gypsum layer at this space may be required to provide completeness of the floor-ceiling assembly and a seal for the return air plenum.

FIGURE 189. CMU infill at masonry wall terminates below deck at mechanical crawl space boiler room. Partition does not provide fire seal at deck and penetrations.

FIGURE 190. CMU infill at top of masonry wall terminated at underside of bar joists. Rated ceiling assembly system is not properly terminated at wall or duct penetration.

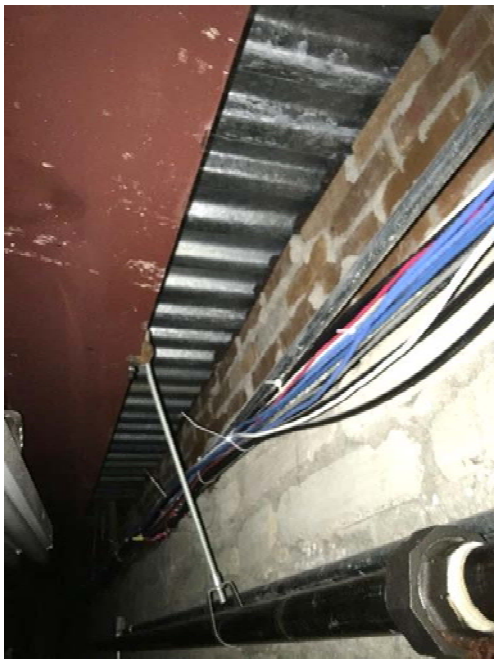

FIGURE 191. Brick masonry infill parallel to joists terminated at deck. No firecaulk or air seal was evident at top of wall.

FIGURE 192. Termination of gypsum board partition at underside of bar joist in chair storage closet. No gypsum ceiling installed at this room.

FIGURE 193. Deck patch supported by plywood. Combustible materials not allowed in plenum return.

- Several deck infill patches were observed to be supported by plywood fastened to the underside of the concrete deck (Figure 193). The use of combustible materials may be prohibited depending on the floor-ceiling assembly requirements and under IBC for the return air plenum.

- The penetration of the supply duct through the floor deck was observed to be sealed with expansive foam-type filler (Figure 194). The shaft walls were not noted to be fire rated in the 1979 documents. Penetrations through the floor-ceiling assembly may require a fire-stop system and a fire or smoke damper.

FIGURE 194. Duct penetration of floor assembly sealed with expansive foam sealant. If chase is not constructed as a fire-rated partition, the floor penetration should be firestopped.

Mechanical and Electrical Systems.

- A bi-level type drinking fountain should be provided to satisfy universal accessibility requirements.

- One electrical panel serving the upper floor is indicated in the 1979 documents as being installed in the furred chase on the north side of the east doors, accessed by a 2-foot by 2-foot panel. The chase depth and the access size do not appear to meet the minimums required by current codes.

- Rust was observed below the recessed electrical panel located in the exterior masonry wall near the main entrance. The

recessed cabinet may be exposed to moisture within the wall (refer to Figure 166).

- An open junction box was observed in the museum space adjacent to the northeast chimney (Figure 195).
- Gypsum board was observed to be removed above the electrical panel in the mechanical room.
- Copper hydronic piping serving the HVAC units was observed to be uninsulated (Figure 196).

FIGURE 195. Open junction box at northeast chimney.

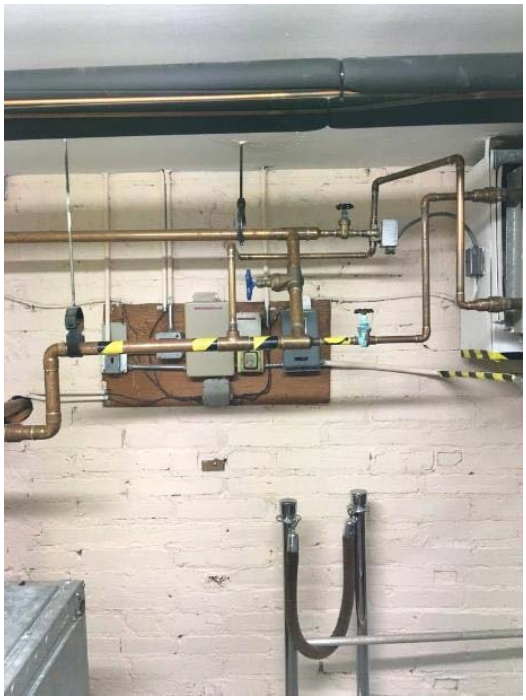

FIGURE 196. Hot water hydronic pipe and controls.

Structural Systems

Description

The main portion of the museum has load-bearing, clay brick mass masonry walls that bear on the concrete footings (as discussed above), with a steel-framed floor. The perimeter walls include masonry pilasters that support a wood truss-framed roof system.

As noted in the 1948 Restoration Plans for the Carver Museum, a finished portion of the basement has a 5-inch-thick reinforced concrete slab. Non-original 6-by-6 steel H-shaped columns are located at the basement level and centered along the east–west axis. The columns are spaced 17 feet on center and support the first-floor framing.

The first-floor framing consists of wide flange beams, measuring approximately 16 inches by 7 inches, which span between H-shaped columns. Bar joists span north–south between the perimeter load-bearing wall and beams. They span approximately 27 feet 5 inches and are spaced 22 inches on center (Figure 197 and Figure 198). The joists support a 5-inch-thick concrete floor slab that has a wire mesh reinforcing with a paper-based form liner. (Note that available copies of the 1948 drawings are difficult to read and the dimension as noted is not clear; the slab may consist of a 3-1/2-inch slab with a 1-1/2-inch topping.)

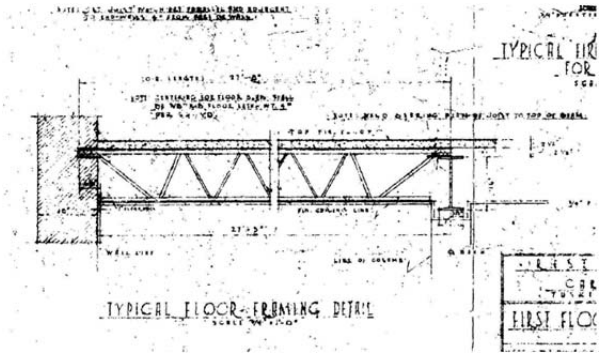

FIGURE 197. Detail of the first-floor construction from 1948 restoration plans. (Source: *Restoration Plans for the Carver Museum*, 1948)

FIGURE 198. A bar joist bearing on masonry foundation walls.

Supplemental structural members (added after 1948) were observed in the unfinished area of the basement at the south side of the building, below the entrance portico. The supplemental members include newer steel columns, beams, and a concrete foundation brace slab (Figure 199). The supplemental structure appears to have been installed to support a new flooring system. Newer columns are located approximately 2 feet inboard of the south load-bearing wall and support a beam that spans east–west. Transverse beams span between the load-bearing wall and the east–west beam and are spaced approximately 6 feet apart (Figure 200). The framing supports non-original composite metal deck consisting of galvanized corrugated sheet metal and topped with concrete.

FIGURE 199. View of supplemental concrete foundation brace slab.

FIGURE 200. A supplemental steel column in the basement that supports the decking above.

The first floor has an open plan with no visible structural members. The structure of the ceiling consists of 2-by-8 wood joists spaced 24 inches on center that span between trusses and end walls. Batt insulation is placed in the joist pockets (Figure 201). Bead board is attached to the underside of the ceiling joists.

The roof structure includes seven wood Howe trusses that bear on the exterior masonry walls (refer to Figure 201) that support timber purlins, rafters, and plank decking. The trusses are spaced approximately 15 feet on center and span approximately 55 feet. The truss assemblies have built-up bottom chords and top chords (four 2x10s) with solid sawn diagonal members (10x8s at the ends and 6x8s at interior panels). In addition, five vertical steel rods define each panel and extend vertically between the top and bottom chord, spaced approximately 7 feet apart. Wood 6x6 posts bear on the top chord of the truss and support 6x6 purlins that span between trusses. The purlins are located at the truss ends, at the roof slope transition, and at the ridge.

The roof framing over the trusses includes 2x6 wood rafters, spaced 24 inches on center, with wood plank decking that runs perpendicular to the rafters. The perimeter gutter is framed with 2x6 wood look-out members that bear on a wood sill over the masonry wall. The members are fastened to the end of the rafters and cantilever approximately 30 inches beyond the exterior face

of the masonry wall. The bead board at the eaves of the building is exposed to the attic interior.

FIGURE 201. A Howe truss and surrounding roof structure in the attic. Note the purlin positioning (arrows).

Condition Assessment

Primary structural conditions of concern observed during site work for this project are related to the roof trusses. These conditions were discussed by Panamerican project team members with National Park Service regional and park representatives during the site visit on December 7-8, 2016.[223] Conditions of concern include the following:

- As noted, the building has a gambrel hip roof that is supported by the perimeter masonry walls and seven timber parallel chord trusses that span north-south across the 55-foot width of the building. The trusses are approximately 10 feet 10 inches deep and are spaced approximately 15 feet on center.

  WJE found that the middle three trusses are leaning to the east and that the top chords are bowing as much as 16 inches. This lateral deformation results in eccentric loading of these members, which causes significant bending stresses within the top chords. These three trusses are in a weakened condition and are not capable of providing a dependable support system for the roof.

  Given the extent of deformation, the strength and stiffness of these trusses has been greatly reduced, and it is apparent the existing roof is being supported by unintended load paths which may not be dependable. This structure is not adequate to support anticipated service loads and was judged to be in danger of collapse. Consequently, the existing roof structure was found to be in need of immediate emergency bracing until appropriate long-term repairs can be performed.

  Based on conditions observed, access to the building interior was immediately restricted by the National Park Service until the emergency bracing could be provided.

In addition to the emergency issues with the roof trusses, the following notable conditions were observed in the building structural systems:

- After the temporary bracing of trusses is completed, longer term repairs and straightening of the structure will be necessary. As part of this work, a review of purlin assemblies and their supports (some of which have been affected by the truss leans discussed above) will need to be conducted and any problems corrected.

- Active moisture infiltration was observed at perimeter gutter locations, with associated water staining and apparent rot (Figure 202).

- Plank decking is damaged at some locations (Figure 203).

- Damage from a previous fire was observed at truss framing members in the attic (Figure 204 and Figure 205).

- No visible means of wind uplift resistance are present within the existing roof framing.

223. Refer to WJE letter to Superintendent Sandra Taylor dated December 9, 2016, summarizing truss conditions observed, and WJE letter to Superintendent Taylor dated December 12, 2016, with attached sketches for emergency bracing of trusses.

FIGURE 202. Water staining was observed on wood framing members in the attic.

FIGURE 203. Areas of damage plank decking were observed.

FIGURE 204. Example of previous fire damage observed in the attic.

FIGURE 205. Example of previous fire damage and water staining observed in the attic.

- Apparent differential settlement issues were observed within localized portions of the exterior masonry. In particular, these areas are located at the south entry arcade, east arch entrance, and the southeast corner of the building. At these locations, long-term movement appears to have occurred within the masonry arch construction, as indicated by step cracks.

Mechanical, Electrical, and Plumbing Systems

The mechanical and electrical systems in the museum building were completely replaced during the 1979–1981 rehabilitation. Prior to the rehabilitation, the building was conditioned by steam unit heaters and window air conditioners. In the 1980 HSR, five alternative fuel sources were analyzed: the institute's central steam plant, natural gas, fuel oil, electricity, and L.P. (liquefied petroleum) gas. It was determined that the most cost-effective fuel source, natural gas, should be used for the building's heat. A natural gas-fired boiler was installed to serve forced air HVAC units.[224] The lower level was completely gutted and reconfigured to support a new mechanical system, fire suppression, restrooms, electrical, and audiovisual needs of the museum and its support staff. During the project the mechanical crawl space along the south elevation was finished and the lower floor was expanded to include a new

224. *Historic Structure Report*.

mechanical room in the previously unfinished crawl space on the east.

The gas-fired boiler was replaced in 1995. Upgrades in 2005 included replacement of both the primary HVAC fan and condensing units.[225] The addition of a new hydraulic elevator in 2012 required the addition of a third split system serving a wall mounted fan coil unit in the elevator machine room.[226]

Heating and Air Conditioning. The Carver Museum building is conditioned by two primary forced air split direct expansion (dX) HVAC systems with hot water heat supplied by a gas-fired boiler (Figure 206). The system equipment has been replaced since the original installation, but remains in the same location. A third, wall-mounted, split heat pump unit was added to the elevator machine room in 2012, along with the replacement of the hydraulic elevator controls.

The largest system serves the upper floor museum space. The current system is an 8,000 cfm unit that was installed in 2005. The outside condensing unit is installed on a concrete pad on the east side of the building. Supply and return ducts are routed vertically along the east exterior wall of the building, through the floor slab and inside of furred enclosures to the ceiling level above the first floor (Figure 207 and Figure 208). The supply duct is suspended from the ceiling, exposed to view within the space and painted white. The main trunk runs just south of the central axis of the building with hard ducted lateral branches to diffusers above the track light grid. Return air is collected at wall mounted louvers under the southeast window.

FIGURE 206. Primary HVAC units in mechanical room. The elevated unit serves the lower level.

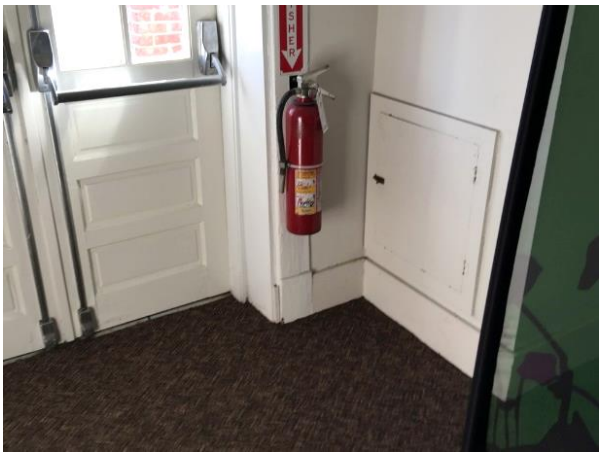

FIGURE 207. Access panel to furred chase enclosing supply ductwork.

The second system is 4000 cfm, supplying the lower level. The outside condensing unit is also mounted on a concrete pad on the east side of the building, adjacent to the larger unit. Supply ducts travel along the north and south exterior walls, above the hard-finished gypsum board ceilings. The ceiling is dropped along the north wall to provide space for the trunk duct. On the south elevation, the ductwork is run through the crawl space under the porch area (Figure 208). The construction drawings from the 1979–1981 rehabilitation indicate a return air plenum above the gypsum board ceilings to be gathered in ducts

225. Lord, Aeck & Sargent, n.p.
226. Denver Service Center, *Accessibility Enhancements,* 2012.

above the central corridor.[227] Return air diffusers were noted to be installed in the ceilings; it is not known, from evidence available, whether the diffusers are ducted to the return air system. The east and south walls of the assembly space have been enclosed since the rehabilitation project. Two transfer grilles are installed in the wall closing the northeast side of the space, allowing return air to migrate from the assembly space to the corridor. Refrigerant piping serving the units enters the mechanical room through a penetration in the enclosure between the rising ducts from the condensing units located just outside the east wall (Figure 210). A thermostat is located in the central assembly room.

Ventilation air for the two primary units is provided by an outside air duct supplying each return duct from a sidewall louver mounted at the east wall of the crawl space. Although recommended in the 1980 HSR, an energy recovery system does not appear to have been installed to treat incoming air. Filtration is provided at each unit.

FIGURE 208. Ductwork serving the upper floor. Refrigerant lines penetrate the enclosure between the ducts.

FIGURE 209. Ductwork serving the lower floor located in south crawl space.

FIGURE 210. Exterior condensing units serving the three split dX system. The newer unit is obscured by plantings.

The archival storage space was indicated in the 1979 documents to be provided with a dedicated packaged terminal air conditioning unit and two electric humidifiers mounted in the north and south corners at the west wall.[228]

Hot water feeding duct mounted coils at both primary units is supplied by a boiler installed in the south mechanical crawl space (Figure 211). The gas fired boiler and pump were replaced in 2011. The boiler flue has a powered exhaust fan before a

227. Williams-Russell & Associates, n.p.

228. Ibid., n.p.

horizontal flue routed through the historic chimney on the southeast corner of the building (Figure 212).[229]

A third HVAC unit was installed in the renovated elevator machine room during the Accessibility Enhancements in 2012. This system consists of a wall-mounted slit system packaged heat pump unit supplied by a condensing unit mounted at the east side of the building.

Exhaust at the restrooms is provided by wall mounted fan units which are ducted to a sidewall diffuser mounted in the east exterior wall, adjacent to the restrooms.

FIGURE 211. Boiler in south crawl space (center). Fresh air intake duct at upper left.

FIGURE 212. Vent and horizontal flue at boiler room.

Electrical. Electrical service enters the building below grade from a transformer and generator east of the building (Figure 213). The incoming service is metered at the transformer by the local utility. A primary service entrance panel and transfer switch are mounted to Unistrut framing at a concrete slab adjacent to the transformer and generator (Figure 214).

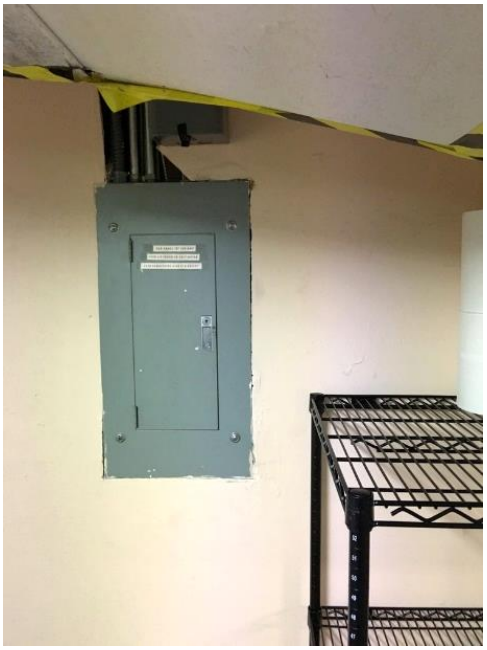

FIGURE 213. Electrical subpanel at mechanical room.

229. Lord, Aeck & Sargent, Appendix C, 4.

FIGURE 214. Electrical switchgear, transformer, and generator at east lawn.

The original main panel was removed from the single-story addition and replaced with a main panel adjacent to the generator and transformer. The main panel feeds disconnect at each air handler, two electric hot water heaters, and three subpanels. A gas-fired generator provides emergency power to the building. The date of installation of the generator and the extent of circuits provided with emergency power are not known at the time of writing.

Subpanel "B" is a 24-pole 240 / 120-volt, single phase, three-wire panel serving power and lighting circuits on the lower level as well as the boiler and mechanical room (Figure 215).

Subpanel "C" is a 24-pole 240 / 120-volt, single phase, three-wire panel located in the return duct chase. The panel serves track lighting in the east grids and general lighting and power circuits on the upper floor.

Subpanel "D" is a 20-pole 240 / 120-volt, single phase, three-wire panel that replaced an existing recessed mounted panel near the west entry door (refer to Figure 166). The panel serves track lighting in the west and center grids, general lighting, and power circuits on the upper floor.

Primary lighting for the upper floor museum space and accent lighting for displays consists of gimble fixtures in track systems mounted to the underside of a suspended wood frame grid. Emergency lighting at the upper floor consists of battery powered wall mount fixtures on the west, south, and east walls. Additional emergency power is provided by the natural gas-fired generator.

Lighting for the lower floor consists primarily of 2x4 surface-mounted fluorescent fixtures mounted to the gypsum board ceiling at work areas, offices, and most circulation spaces. Recessed incandescent can lights are provided in the ceiling at the gallery spaces adjacent to the elevator shaft and in the restrooms. Mechanical spaces have round incandescent fixtures.

FIGURE 215. Electrical primary entrance to building at lower level exit door.

Plumbing. Plumbing systems in the building were completely reworked and upgraded during the 1979-1981 adaptive reuse project. Domestic water enters the building from a meter in the southeast lawn and is run through pipe extant from the 1948 renovations.

The restrooms and support spaces were completely remodeled during the 1979–1981 adaptive reuse project.[230] The plumbing wall for the two ganged restrooms occurs approximately along the central east-west axis of the building. To the west of the restroom is a cup sink installed in a millwork base cabinet. A janitor's closet dividing the west end of the restrooms is served by a floor

230. Williams-Russell & Associates, n.p.

mounted square mop sink. To the north of the women's restroom is a single self-contained, wall-hung, electric drinking fountain (Figure 216). The restrooms each have lavatories mounted in wall-hung millwork vanities. Two lavatories serve the women's restroom and three serve the men's. Water closets and urinals are floor-mounted with flush valves. The women's restroom is provided with four water closets. The men's restroom is served by two water closets and two urinals. Each has a single accessible toilet stall with grab bars installed at the toilet compartment partitions. A cup sink is installed in a millwork base cabinet across the corridor from the restrooms.

FIGURE 216. Self-contained electric drinking fountain at lower level.

Hot water for the restroom-area fixtures is served by a 220-volt, 30-gallon hot water heater mounted in the janitor closet. Fixtures are vented at the east exterior wall. The vent pipe rises in the return air plenum at the upper floor.

A second sink is located in the curatorial work room and served by a 120-volt instantaneous hot water heater.

Floor drains were installed during the 1979–1981 project in the archival storage room and the mechanical room. There are no floor drains in the restrooms. A sump pump was added to the south crawl space during the 1985 foundation repair project.[231] The sump pump was observed to be holding water at the time of the site visit (Figure 217). It was not clear whether the float had engaged the pump switch.

FIGURE 217. Sump pump at crawl space.

The sanitary sewer main begins at the west crawl space wall with a cleanout gathering the waste pipe from the curator's work room sink and a floor drain in the curatorial storage room. The sanitary sewer main is run below the floor slab, along the central east-west axis of the building. A second cleanout occurs in the middle of the building, in the assembly space. The sanitary sewer line continues to the east, through the plumbing wall dividing the toilet rooms, exiting the building to the yard at the east. A cleanout just beyond the building wall occurs where the main turns north, continuing in a 6-inch pipe to a manhole northeast of the building.[232]

Fire Protection. A limited wet-pipe fire-suppression system was installed in the attic following the fire in 1947 in conjunction with the remodeling of the museum space and replacement of the floor structure.

231. Lord, Aeck & Sargent, Appendix C, 3.
232. Williams-Russell & Associates, n.p.

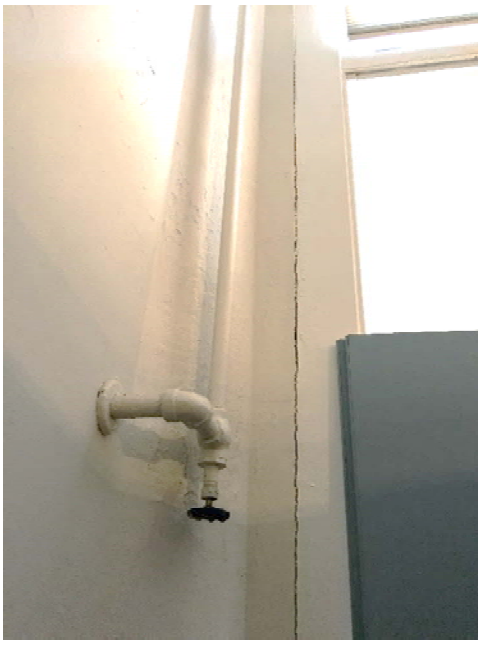

FIGURE 218. Sprinkler pipe riser to attic.

When the building underwent comprehensive rehabilitation during 1979–1981, the lower floor was completely remodeled to serve the museum. A wet-pipe sprinkler system was installed above the hard ceiling at the lower level. The existing system on the upper level was capped at each existing head and augmented to fully sprinkle the exhibit space.[233] The system consists of primarily pendent heads installed in the hard ceilings. Pipe connections to the attic space are exposed to view in the museum (Figure 218). A halon suppression system was specified for the archival storage and work spaces, with tanks mounted on the interior walls.

As part of the elevator replacement project in 2012, minor modifications were made to the sprinkler system to meet code requirements for the elevator shaft and elevator machine room.

Fire supply service is provided from the south of the building. A post indicator valve is located in the lawn to the southeast of the building. No backflow preventer was observed be present. Fire water lines enter the building on the east, at the mechanical room. A Siamese fire department connection was not observed at the exterior wall.

Fire extinguishers mounted on wall brackets were noted throughout the building, particularly at exits. Egress diagrams typically depict the floor plan prior to the elevator replacement and enclosure of the assembly space.

The fire-alarm system was installed in the 1979–1981 rehabilitation project and consists of fire detectors mounted in the ceilings throughout both floors. Cross zone detectors were scheduled for the curatorial storage and workroom for activation of the Halon system. The control panel for the fire-alarm system is mounted to the wall in the delivery storage room. Pull stations were observed near exit doors, and strobes were installed in the upper floor exterior walls and at the corridors of the lower floor. Minor modifications to the alarm system were completed in association with the 2012 elevator replacement to meet code requirements. There was no mass notification system found in the building.

Audiovisual and Communications. Telephone and data backboards are installed adjacent to the stair in the single-story addition (Figure 219). The area was under renovation at the time of the field visit and the panels were observed to be open to the room. The equipment was installed on unpainted plywood backboard. A communications satellite dish is installed in the east yard, adjacent to the HVAC condensing units. The current condition and use of the dish is not known.

The security system serving the building was installed during the 1979–1981 rehabilitation. It consists of transmitters mounted in the center of the ceiling between the lighting grids, and receivers mounted in the ceiling along the outside walls at the upper floor and at ceilings of rooms with window or door openings at the lower floor. Surface-mounted door sensors were installed at the exterior doors. A second, keypad-type wireless security device was observed to be installed at the upper floor exterior doors. The control panel for the system is located adjacent to the main (west) entry door at the south facade.

233. Ibid.

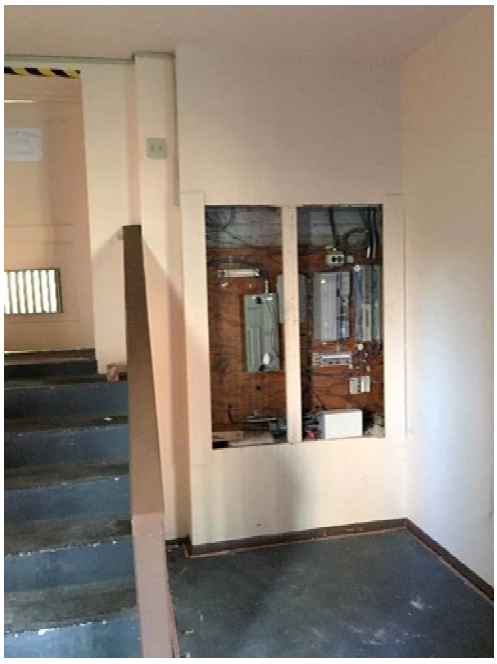

FIGURE 219. Telephone and data backboards at single-story addition space area under renovation.

Significance and Integrity

National Register of Historic Places

The National Register of Historic Places is the official list of the nation's historic places worthy of preservation. Authorized by the National Historic Preservation Act of 1966, the National Park Service's National Register of Historic Places is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect America's historic and archeological resources.[234]

The significance evaluation identifies the important historical associations of the property and comments on its architectural, archeological, and social value as they relate to the National Register of Historic Places. A property's significance is tied to a discrete period of time in which its important contributions were made and to relevant national, state, and local historic contexts.

Significance Criteria

In order for a property to be eligible for inclusion in the National Register of Historic Places, it must possess significance under one of four criteria. The Criteria for Evaluation for listing in the National Register of Historic Places state:

> The quality of significance in American history, architecture, archeology, 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 represent 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 has yielded, or may be likely to yield, information important in prehistory or history.
>
> **Criteria Considerations**
>
> Ordinarily cemeteries, birthplaces, graves of historical figures, properties owned by religious institutions or used for religious purposes, structures that have been moved from their original locations, reconstructed historic buildings, properties primarily commemorative in nature, and properties that have achieved significance within the past 50 years shall not be considered eligible for the National Register. However, such properties *will qualify* if they are integral parts of districts that do meet the criteria or if they fall within the following categories:
>
> a. A religious property deriving primary significance from architectural or artistic distinction or historical importance; or
>
> b. A building or structure removed from its original location but which is primarily significant for architectural value, or which is the surviving

234. National Park Service, "National Register of Historic Places" accessed April 1, 2019, https://www.nps.gov/subjects/nationalregister/index.htm.

structure most importantly associated with a historic person or event; or

c. A birthplace or grave of a historical figure of outstanding importance if there is no appropriate site or building associated with his or her productive life; or

d. A cemetery that derives its primary importance from graves of persons of transcendent importance, from age, from distinctive design features, or from association with historic events; or

e. A reconstructed building when accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and when no other building or structure with the same association has survived; or

f. A property primarily commemorative in intent if design, age, tradition, or symbolic value has invested it with its own exceptional significance; or

g. A property achieving significance within the past 50 years if it is of exceptional importance.[235]

National Register Status of the George Washington Carver Museum

Tuskegee Institute National Historic Site was authorized by Congress in 1974. It is the only university campus in the United States designated as a National Historic Site. The site includes The Oaks, the home of Booker T. Washington; the George Washington Carver Museum; Grey Columns, an antebellum mansion; and the fifty-acre original campus, which includes thirteen buildings.[236]

The site was designated a National Historic Landmark on June 23, 1965, and administratively listed in the National Register of Historic Places on October 15, 1966. A National Register nomination form has never been prepared for the property; however, brief survey documentation was prepared for the National Historic Landmark designation in 1965. This documentation notes significance of Tuskegee Institute as follows:

> Tuskegee Institute is closely identified with Booker T. Washington and his work. The school prospered under his administration and became a symbol of his policies. At the time of Washington's death in 1915, the student body consisted of 1,537 students and the all-Negro faculty was composed of 197 members who taught thirty-eight trades and professions.[237]

The Carver Museum is among the points of special interest identified in the 1965 documentation.

A Consensus Determination of Eligibility was prepared in 2012, seeking concurrence on the landscape features associated with the Carver Museum (as well as The Oaks) for listing in the National Park Service List of Classified Structures (LCS). The Determination of Eligibility noted that Tuskegee Institute National Historic Site meets National Register Criteria A and B. The site is nationally significant for its association with the education of African Americans in the nineteenth and twentieth centuries, and with Booker T. Washington and George Washington Carver. The Determination of Eligibility specifically noted that Tuskegee Institute "played a significant role in the education of formerly enslaved people in the Reconstruction era and continued to be an important educational institution for African Americans through the twentieth century."[238]

The Carver Museum, originally constructed as a laundry, was dedicated in 1941 to exhibit the geological and agricultural specimens that George Washington Carver had collected throughout his career at Tuskegee. A fire in 1947 damaged the building. It was renovated and expanded in 1951, and further renovated by the National Park Service in 1980. The museum continues to

235. *Code of Federal Regulations*, Title 36, Part 60, "The National Register Criteria for Evaluation."
236. Serafine and Eventon, n.p.
237. Sheely, n.p.
238. Serafine and Eventon, n.p.

interpret Carver's career and the development of Tuskegee Institute.[239]

Much of the campus was designed and built by faculty and students. The campus is also significant for its landscape design by David A. Williston, one of the first African American landscape architects in the United States. The historic spatial organization and landscape design of the campus are maintained today.[240]

The Determination of Eligibility identified the Carver Museum and the associated brick steps as contributing to the historic integrity of the Tuskegee campus.[241] These resources are now listed in the National Park Service LCS, as follows:

- George Washington Carver Museum, Structure No. HS-02, LCS ID 091221; National Register Status: Entered – Documented

  The Carver Museum is noted in the LCS as nationally significant under National Register Criterion B as a laboratory (1938–1943) and exhibit area for George Washington Carver; it is also locally significant under Criterion C for Architecture.

- Brick Steps – Carver Museum, Structure No. HS-11, LCS ID 000198; National Register Status: Determined Eligible – SHPO

  The brick steps at the Carver Museum are noted in the LCS as contributing to the landscape development of the museum. The steps are noted as probably part of the historic setting of the building as designed by David A. Williston in the 1920s.

Period of Significance

Based on research conducted for this study, a period of significance of circa 1915–1943 is recommended for the Carver Museum. This period begins with the date of construction of the building, designed by Robert Robinson Taylor, then the head of architectural and mechanical instruction at Tuskegee Institute, as a laundry for the campus. It continues through use of the building as a laboratory and museum by George Washington Carver beginning in 1938.

The adaptation of the laundry building for use as a laboratory and museum was of great interest to Carver, who wrote in 1939:

> I shall be compelled to get back because they have taken a sudden notion to move the greenhouse, and the brickmasons are laying the wall right now. It is to go on the little boiler room where it will be very handy for me, and I have to watch every step of their movements . . . . The museum is taking shape, I am pleased to say . . . ."[242]

Carver's collections and paintings were also placed on display, and the building was dedicated as the George Washington Carver Museum in 1941. The period of significance concludes with the death of George Washington Carver in 1943.

Consideration could be given to a narrower period of significance, e.g., 1938–1943, focusing on use of the building as Carver's laboratory and museum. While the primary significance of the building is related to its association with George Washington Carver, it is also an important historic resource as part of the Tuskegee Institute campus and is of interest and locally significant for its architectural design. Thus, research conducted for this study supports the broader period of significance described above.

239. Ibid.
240. Ibid.
241. In addition to the Carver Museum and its brick steps, the LCS lists The Oaks, Structure No. HS-01, LCS ID 091220; Drives at The Oaks, Structure No. HS-06, LCS ID 092173; Concrete gutters at The Oaks, Structure No. HS-07, LCS ID 092174; Concrete walkways around The Oaks, Structure No. HS-08, LCS ID 092175; Garage foundation – The Oaks, Structure No. HS-09, LCS ID 092176; Front retaining wall, The Oaks, Structure No. HS-10, LCS ID 092191; and the George Washington Carver Bust, Structure No. HS-03, LCS ID 091222.
242. Carver to Abbott, March 4, 1939, cited *Historic Structure Report*.

Character-Defining Features

The historic nature of significant buildings and structures is defined by their character, which is embodied in their identifying physical features. Character-defining features can include the shape of a building; its materials, craftsmanship, interior spaces, and features; and the different components of its surroundings.[243]

The following list identifies existing character-defining features found on the exterior and interior of the Carver Museum:

Exterior

- General configuration and orientation
- General massing and size
- General relationship to the sloped site
- Clay brick masonry walls
- Multi-unit wood-framed windows
- Wood-framed exterior doors with semi-circular arched openings
- Projecting wood cornice with integral gutter
- One-story masonry south entrance portico with semicircular arched openings and gable roof
- One-story entrance enclosure with semicircular arched openings at east entrance
- Terrace with decorative brick masonry balustrade

Interior

- Multi-unit wood-framed windows
- Wood-framed exterior doors with semicircular arched openings
- Open exhibit space at upper floor museum
- Spacing and proportion of cased truss bottom chords with ceiling bays recessed
- Height and depth of recessed ceiling bays at upper floor
- Casing trim at interior of upper floor windows and doors, projecting ends at head casing
- Wood window stools at upper floor (original material modified by renovation when cut to accommodate wainscot after 1947)
- Original window hardware including hinges at hopper transom sash, double-hung sash locks, lifts, and chains
- Door and frame built into window unit at northeast corner of upper floor, accessing addition roof
- Masonry chimneys at north and south ends of east wall
- Masonry surfaces and coatings (if present) concealed by plaster at exterior walls of upper floor
- Heavy timber roof trusses

Assessment of Integrity

Assessment of integrity is based on an evaluation of the existence and condition of the physical features that date to a property's period of significance, taking into consideration the degree to which the individual qualities of integrity are present. The seven aspects of integrity as defined in the National Register Criteria for Evaluation are location, design, setting, materials, workmanship, feeling, and association. As noted in *National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation*:

243. Lee H. Nelson, FAIA, *Preservation Brief 17: Architectural Character: Identifying the Visual Aspects of Historic Buildings as an Aid to Preserving Their Character* (Washington, DC: National Park Service, Technical Preservation Services, 1988).

> Location is the place where the historic property was constructed or the place where the historic event occurred. . . . Design is the combination of elements that create the form, plan, space, structure, and style of a property. . . . Setting is the physical environment of a historic property. . . . Materials are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property. . . . Workmanship is the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory. . . . Feeling is a property's expression of the aesthetic or historic sense of a particular period of time. . . . Association is the direct link between an important historic event or person and a historic property.[244]

The property must retain the essential physical features that enable it to convey its historical significance. The essential physical features are those features that define both why a property is significant (National Register criteria) and when it was significant (period of significance). The *National Register Bulletin: How to Apply the National Register Criteria for Evaluation* defines integrity as "the ability of a property to convey its significance."[245]

The historic integrity of the Carver Museum has been assessed within the context of the contribution of the building to the Tuskegee Institute National Historic Site.

Integrity of Location. The Carver Museum retains a high degree of integrity of location in relationship to its site. The location of the building has remained unchanged since it was originally constructed.

Integrity of Design. The Carver Museum retains a moderate degree of integrity of design relative to the exterior, which has been altered by an extension at the rear of the building. The building retains a low degree of integrity of design relative to the interior, which has been significantly altered through two rehabilitation projects for use as a museum, most recently in the 1980s.

Integrity of Setting. The Carver Museum retains a moderate degree of integrity of setting. Although the museum's relationship to the overall campus plan and context remain generally intact, newer construction adjacent to the rear of the museum have diminished its integrity of setting.

Integrity of Materials and Workmanship. The Carver Museum retains a moderate degree of integrity of materials and workmanship on the exterior. While the historic appearance of the exterior of the building is generally intact, some exterior materials were altered or replaced during prior rehabilitation and repairs. The museum retains a low degree of integrity of materials and workmanship on the interior. The interior has been extensively altered and many interior materials removed through prior rehabilitations.

Integrity of Feeling. The Carver Museum retains a moderate degree of integrity of feeling. It is understood as an active part of Tuskegee Institute and the location of George Washington Carver's laboratories, as well as exhibits of his work; however, integrity of feeling is diminished by alterations made to the building through previous rehabilitation projects.

Integrity of Association. The Carver Museum retains a moderate to high degree of integrity of association. Although altered, it retains its association with George Washington Carver and his work at Tuskegee Institute.

244. *National Register Bulletin: How to Apply the National Register Criteria for Evaluation,* 44–45.
245. Ibid.

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Treatment and Use

Requirements for Treatment and Use

The following discussion of treatment and use for the Carver Museum has been prepared based on historical research, condition assessment, and discussion with the National Park Service to understand intended current and future use of the building. The museum is nationally significant and is a contributing structure to the Tuskegee Institute National Historic Site. It survives with sufficient integrity to convey its historic associations.

As such, treatment and use of the museum should be considered within the context of the legal mandates and policy directives established by National Park Service Cultural Resources Management Guideline (Director's Order 28) for the protection of cultural resources. The building is a very important resource within the Tuskegee University campus, and is directly associated with George Washington Carver and his work. The exterior of the building is generally intact and conveys its historic character. The interior, although significantly altered since the period of significance, is still understood in its historic context. The building is expected to remain in use as a museum.

Laws, Regulations, and Functional Requirements

Key laws, regulations, and functional requirements that apply to the recommended work include the following:

- National Park Service Cultural Resources Management Guideline (Director's Order 28), which requires planning for the protection of cultural resources on park property.
- Section 106 of the National Historic Preservation Act (NHPA), which mandates that federal agencies, including the National Park Service, take into account the effects of their actions on properties listed or eligible for listing in the National Register of Historic Places and give the Advisory Council on Historic Preservation a reasonable opportunity to comment.

Treatment of the building and site is also to be guided by the following:

- *Secretary of Interior's Standards for the Treatment of Historic Properties*
- National Park Service Management Policies 2006
- Architectural Barriers Act Accessibility Standards (ABAAS)
- International Building Code (IBC), 2015
- International Existing Building Code (IEBC), 2015
- International Plumbing Code (IPC)
- National Electrical Safety Code (NESC)
- National Fire Protection Association (NFPA) 101: Life Safety Code (LSC), 2015 and NFPA 1 Uniform Fire Code
- NPS Guiding Principles of Sustainable Design

The State of Alabama has adopted the 2009 IBC but has not adopted the IEBC for statewide applicability.[246] The National Park Service is self-regulating in terms of enacting and enforcing building code standards. Tuskegee Institute National Historic Site is therefore not legally subject to local or state building code requirements. When undertaking repairs to buildings structures, the National Park Service endeavors to have the work comply with model building code standards. At this time, the 2015 IBC is the model building code used by the National Park Service for design and construction.

With historic structures, attempts to achieve strict conformance with model building code standards that are intended for new buildings can lead to destruction of the historic fabric. Alternative compliance procedures, such as Chapter 12 of the IEBC relating to historic buildings, should be referenced in determining code compliance. For the Carver Museum, alternatives to full prescriptive legislative and code compliance should be considered where such compliance would compromise the integrity of the structure.

The 2015 IEBC includes the following statements in Section 408, Historic Buildings:

> 408.1 Historic buildings. The provisions of this code that require improvements relative to a building's existing condition or, in the case of repairs, that require improvements relative to a building's predamage condition, shall not be mandatory for historic buildings unless specifically required by this section.
>
> 408.2 Life safety hazards. The provisions of this code shall apply to historic buildings judged by the building official to constitute a distinct life safety hazard.
>
> 408.3 Flood hazard areas. Within flood hazard areas established in accordance with Section 1612.3 of the International Building Code, or Section R322 of the International Residential Code, as applicable, where the work proposed constitutes substantial improvement, the building shall be brought into compliance with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable:
>
> Exception: Historic buildings need not be brought into compliance that are:
>
> 1. Listed or preliminarily determined to be eligible for listing in the National Register of Historic Places;
>
> 2. Determined by the Secretary of the US Department of Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined to qualify as an historic district; or
>
> 3. Designated as historic under a state or local historic preservation program that is approved by the Department of Interior.[247]

The IEBC exceptions noted above pertain to Tuskegee Institute National Historic Site as a property listed in the National Register of Historic Places, and to the contributing historic resources within the National Historic Site.

In addition, Executive Order 13514 issued in 2009 directs all federal agencies to implement sustainable design and construction practices. For the Carver Museum, the relevant guidelines in this executive order require:

> . . . managing existing building systems to reduce the consumption of energy, water, and materials, and identifying alternatives to renovation that reduce existing assets' deferred maintenance costs . . . [and] ensuring that rehabilitation of federally owned historic buildings utilizes best practices and technologies in retrofitting to promote long-term viability of the buildings.[248]

246. Alabama has adopted the 2015 IBC for state-owned buildings.

247. International Code Council, Inc., *International Existing Building Code 2015* (Country Club Hills, Illinois: International Code Council, 2014).

248. "Executive Order 13514 of October 5, 2009: Federal Leadership in Environmental, Energy, and Economic Performance" (Washington, DC: *Federal Register* 74, no. 194, October 8, 2009).

Also, newly installed electrical systems and components, including any significant alterations to existing electrical systems, should comply with applicable provisions of the NFPA 70: National Electrical Code (NEC).

Alternatives for Treatment and Use

The National Park Service has developed definitions for the four major treatments that may be applied to historic structures: preservation, rehabilitation, restoration, and reconstruction. The four definitions are as follows:

> **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. New exterior additions are not within the scope of this treatment; however, the limited and sensitive upgrading of mechanical, electrical, and plumbing systems and other code-required work to make properties functional is appropriate within a preservation project.
>
> **Rehabilitation** is defined as the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values.
>
> **Restoration** is defined as the act or process of accurately depicting the form, features, and character of a property as it appeared at a particular period of time by means of the removal of features from other periods in its history and reconstruction of missing features from the restoration period. The limited and sensitive upgrading of mechanical, electrical, and plumbing systems and other code-required work to make properties functional is appropriate within a restoration project.
>
> **Reconstruction** is defined as the act or process of depicting, by means of new construction, the form, features, and detailing of a non-surviving site, landscape, building, structure, or object for the purpose of replicating its appearance at a specific period of time and in its historic location.[249]

Of the four treatment approaches, *rehabilitation*, which involves making possible a compatible use through repair, alterations, or additions, is most appropriate for the Carver Museum. This treatment would allow for repairs, while permitting renovation (especially on the interior, which has already been extensively altered) to meet the needs of contemporary park visitation, interpretation, and National Park Service management. This treatment would also allow for preservation of extant historic fabric as appropriate, and for restoration of missing historic features where adequate documentation exists, as part of the overarching treatment, rehabilitation.

Preservation, which involves sustaining the building in its existing form, is considered overly limiting as an overall treatment approach for a building that, particularly on the interior, has been substantially altered through prior rehabilitation work. *Restoration*, which would return the building to its appearance during the period of significance, is not appropriate for the museum, given that the interior has been significantly altered through prior rehabilitation projects. In addition, the building is currently used as a museum but will not be returned to the laboratory function also present during the period of significance.

Although restoration is not appropriate as an overarching treatment for the museum, archival documentation exists that provides the potential for restoration of missing features of the building, such as Carver's greenhouse. In future, consideration could be given to restoring or recreating selected features of the museum as part of the overall rehabilitation program. Retention of original materials and character-defining features during rehabilitation work is also practical and appropriate, and will assist in the use of the Carver Museum for interpretation.

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249. Grimmer.

Ultimate Treatment and Use

Guidelines for Treatment

Guidelines and recommendations for treatment for the George Washington Carver Museum have been defined based on the preservation objectives and requirements for treatment and use outlined above. All treatment guidelines and recommendations were developed in accordance with the Secretary of Interior's Standards for Rehabilitation.

The Secretary of the Interior's Standards for Rehabilitation are as follows:

1. A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.
2. The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.
3. Each property shall be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.
4. Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.
5. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a property shall be preserved.
6. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.
7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.
8. Significant archeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.
9. New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.
10. New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.[250]

Guidelines for implementing the treatment recommendations provided herein are as follows:

- Undertake all work on the structure and landscape in compliance with the Secretary of the Interior's Standards for Rehabilitation.
- Retain the character of the historic structure and environs by protecting the building and significant site features.
- Ensure that proposed new elements or construction are compatible with the historic character of the structure and its site.
- Protect adjacent natural resources during construction activities.
- Document through detailed as-built drawings, photographs, and written narrative all changes and treatments to the building and its

250. Ibid.

immediate site. Maintain records of treatments and preserve documentation according to professional archival standards. Maintain a copy of records in National Park Service archives.

- Retain features and materials at both the exterior and interior of the buildings that survive from the period of significance to the greatest extent possible.

- Incorporate sustainable design principles in all future projects that respect the preservation principles listed above.

Recommendations

The following specific recommendations for treatment of the Carver Museum respond to the overarching treatment approach of *rehabilitation* to allow for modification for continued use, while retaining and protecting historic and character-defining features.

Exterior

- Guidelines and recommendations for exterior conditions address issues resulting from general weathering and aging of materials, as well as infiltration of moisture through the exterior envelope. Cracked and displaced brick masonry above window and door openings should be removed and salvaged to permit inspection of the condition of the underlying steel lintels. It may be necessary or desirable to replace the lintel with a new stainless steel or hot-dipped galvanized lintel, if significant corrosion and section loss is observed. Alternately, if the steel is intact, surface corrosion should be cleaned and the steel primed and painted. Following steel repair or replacement, reinstall brick masonry at the lintel to match the original coursing and plane of the wall.

- All gutters and downspouts should be cleaned and routed to remove debris and blockages. Non-corroding metal drain strainers should be installed at the head of downspouts to restrict debris from entering the downspout. Routine seasonal maintenance is required to keep the gutter and downspout free of debris.

- A new metal scupper sleeve should be integrated with the roof membrane. The sleeve should extend slightly past the scupper opening and have a perimeter flashing and drip edge to direct water into the scupper box. The scupper and scupper box should be regularly cleaned and maintained so they are free of debris.

- The roof above the south portico was recently replaced. In addition, selective repointing was performed at the arched openings at the south portico where cracking and displacement was observed. The repointing mortar appears to be intact. The condition of the joints and displacement of the brick masonry should be monitored on a regular basis to determine if the causes of distress are still active, and if so, appropriate repairs should be implemented.

- Mortar joints at 100 percent of the building should be raked out to a depth of 2-1/2 times the width of the joint or until sound mortar is encountered and repointed. New mortar should be applied in 1/4-inch lifts with a mortar mix appropriate to the original masonry and matching the appearance of the original mortar.

- Loose and spalled cementitious parging should be removed at window sills. Underlying substrate should be cleaned and new cementitious parging should be installed. Consideration should be given to installing masonry fill or sheet metal flashing at the sills if and when windows are reset or replaced.

- Deteriorated wood window sash and door framing should be repaired or replaced. As part of repairs, the sash should be removed, deglazed, and the deteriorated portions of the sash removed and replaced with new wood dutchman and epoxy. Window sash should be adjusted and joinery reinforced so that frames are square.

- Deteriorated wood at soffits, trim, and decorative elements should be removed and new wood dutchman units installed. The dutchman units should match the existing wood in profile and be primed and painted to match existing.

- Spalled and deteriorated concrete at the east stair and landing, concrete door lintels, and the drainage gutter should be removed. At the concrete stair and door lintels, remove concrete to a depth of 3/4 inch beyond reinforcing steel. Prepare and air blast exposed concrete and reinforcing bar within the area of repair to remove corrosion and roughen the surface. Inspect reinforcing steel and repair or install supplemental steel as necessary. Coat reinforcing steel with a corrosion-inhibiting coating. Install formwork and repair with concrete to match the existing. At the concrete drainage gutter, remove patches and unsound concrete and replace with new.

- Spalled brick units in the field of wall and at corners should be removed and replaced. Replacement brick should match existing in color, texture, and size.

- The joint between the north addition and the main building wall should be sealed with a pre-compressed, polyurethane foam building wall secondary joint sealant or pre-compressed, self-expanding secondary seal on the exterior surface and a fire-stopped expansion joint at the roof.

- Cracked and spalled cementitious parge coating at the foundation walls should be removed and repaired. Windows where glazing putty has deteriorated should be deglazed, and the glass reset and glazed with new glazing putty.

- Cracks that are wider than 1/32 inch in the south portico and terrace floor should be monitored over time. If cracks are found to be stable, they should be repaired using a cementitious crack fill material. Hairline cracks do not require repair.

- Drainage should be provided at the floor of the south portico enclosure. Consideration should be given to installation of a trench drain at the low point of the walk.

- In areas of painted wood that experience heavy mildew or organic growth, the wood surface should be cleaned with a biocide and repainted using alkyd-based paints (see below). For areas where mildew recurs rapidly, consideration could be given to stripping the surface to bare wood and repainting using alkyd-based paints containing anti-microbial additives.

- New wood elements and existing wood elements to be painted should be coated with a penetrating alkyd wood primer, followed by an intermediate coat (for window sash only, applied after glazing) of interior /exterior oil-based fast drying primer or interior / exterior alkyd primer / sealer, followed by a finish coat of exterior acrylic or exterior acrylic latex.

- Biological growth and mildew at brick masonry and lintels should be cleaned with a biocide.

- At locations where loss of paint are observed, the wood or concrete surface should be scraped, spot primed, and painted to match the original color scheme, using alkyd-based paints formulated for exterior wood or concrete.

- Cracks at the window sills do not appear to require repair at this time. The cracks should be monitored to confirm they are non-moving. In addition, the cracks should be monitored to confirm that moisture is not entering the structure at these locations. At the time of this study, moisture penetration was not observed at the crack locations.

- Voids in back-up masonry should be filled with grout and brick replaced or patched as required to match the original appearance.

- All embedded anchors abandoned in the brick masonry should be removed, and brick

replaced or patched as required to match the original appearance.

- Consideration should be given to installation of a through wall flashing at the brick masonry terrace wall, below the terrace balustrade. The flashing should be located at the top of the wall and include a drip edge flashing to direct water away from the wall. Deteriorated brick at the base of the balustrade wall should be replaced and portions of the terrace wall rebuilt where there is extensive cracking and displacement of the brick and mortar joints.

- The roof at the north addition was installed in the past five years. In the future, the roof should be sloped to drain to scuppers. The existing infilled scuppers at the east and west elevation of the structure may be opened to facilitate drainage.

- Consideration should be given to installation of sheet metal through wall flashing under coping units at the stair cheek walls and under the planter units at the south elevation.

- The building should be inspected and treated regularly for termites and other insect pests that are endemic in the region.

- Insect nests should be removed from the exterior walls regularly.

Structural Systems

The following recommendations specifically address deficiencies in the roof trusses discovered during field work for this current study:

- Where the top chords of the three middle roof trusses have displaced laterally and are bowing significantly, the trusses are in a weakened condition and are not capable of providing a dependable support system for the roof. As discussed during the site visit conducted for this project and documented by WJE in prior correspondence, the existing structure is in need of immediate emergency bracing until appropriate long-term repairs can be performed. As recommended by WJE on site, the park has restricted access to the building interior until the emergency bracing is provided. The top chords of the middle three trusses should be provided with properly designed bracing to prevent any additional movement.[251] Following completion of the emergency bracing, access to the museum can be resumed, and further structural analysis should be conducted in support of long-term repairs.

  In January 2017, Historic Preservation Training Center (HPTC) representative M. Elizabeth Rival visited the Carver Museum and concurred with the recommendations for the repairs. HPTC proposed that its Carpentry Section install truss repairs (i.e., temporary lateral bracing) per WJE's recommendations. It is not known if the temporary bracing was installed by HPTC or if completed, when it occurred. The museum is open to the public at an unknown date.

In addition to the emergency issues with the roof trusses, the following repairs are recommended to address conditions observed in the building structural systems:

- After temporary bracing of trusses is completed, longer term repairs and straightening of the structure will be necessary. As part of this work, a review of purlin assemblies and their supports (some of which have been affected by the truss leans discussed above) will need to be conducted and any problems corrected.

- Active moisture infiltration observed in the attic at perimeter gutter locations should be investigated and repaired. Water-damaged and rotted wood members should be repaired or replaced as necessary.

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251. Refer to WJE letter to Superintendent Sandra Taylor dated December 9, 2016, summarizing truss conditions observed, and WJE letter to Superintendent Taylor dated December 12, 2016, with attached sketches for emergency bracing of trusses.

- Damaged plank decking should be repaired or replaced.

- Fire-damaged truss framing members should be examined and repaired or replaced as necessary.

- The need for tie-downs or straps to provide wind uplift resistance within the existing roof framing should be investigated, and repairs implemented as needed.

- Differential settlement issues observed within localized portions of the exterior masonry, including areas at the south entrance arcade, east arch entrance, and southeast corner of the building, should be investigated and monitored to identify needed repairs. If movement is no longer active, step cracks in the masonry should be repaired. If movement is active, further measures may be needed to address ground conditions.

Interior

Guidelines and recommendations for interior conditions address issues resulting from general aging of materials, as well as infiltration of moisture through the exterior envelope. The envelope recommendations described above will be essential to prevent further deterioration of interior finishes and should be accomplished prior to repairs in the interior.

The previous *Historic Structure Report* (1980) noted the impact of interior renovations following the fire and recommended major alterations on the interior as required to provide a modern museum experience. In some cases, the report noted that sufficient evidence was not available to justify the restoration or recreation of historic finishes.[252] For instances where documentation has since become available or where additional investigation may be useful to determine whether historically significant interior finishes remain, a recommendation has been provided below. Such recommendations apply only to the upper floor of the museum, where sufficient documentation and / or extant material may be available to substantiate returning the museum space to a condition representing its appearance during the time of Carver's occupancy, if this approach is desired under future interpretive goals. There is no such extant fabric or known documentation for the lower floor interior.

Architectural Finishes – Upper Level.

- Loose wood baseboards and trim should be secured into place with finishing nails.

- Stained, loose, cracked, and blistered paint should be removed, sanded as needed to prepare the surface, primed, and repainted.

- Minor cracks and deterioration in plaster finishes should be repaired in place by filling cracks or damaged areas with compatible new material.

- Moderate deterioration of the plaster should be repaired in place by applying a compatible new plaster finish coat.

- Severely deteriorated plaster should be removed and replaced with a three-coat plaster system matching the original texture and finish.

- In many locations on the upper floor, plaster was installed with wood trim elements in place, resulting in a butt joint. Joints between the trim and plaster should be evaluated and sealed with a paintable acrylic sealant throughout the first floor. (This type of joint sealant should be used only on the interior.)

- Where wood trim at exterior wall locations has swelled or separated from adjacent plaster surfaces, the trim element should be removed to determine the extent of deterioration of the underlying blocking, masonry, and lath. Following repair to the substrate, the trim element should be repaired and reinstalled or replaced with a matching member where the damage is too severe to repair. All trim elements should be fully back-primed prior to

252. *Historic Structure Report*.

installation. Adjacent plaster surfaces should be repaired following the guidelines above.

- Areas of isolated cracking in the textured coating at the upper floor ceiling should be repaired by removing loose coatings to sound material and patching with a textured plaster finish to match the existing adjacent material. Consideration should be given to the installation of a control joint at the transition from ceiling to wall and beam to pilaster.

- Additional investigation is recommended to determine whether original wood ceilings and beam casings are present and whether these could be repaired to restore the original ceiling condition. This treatment approach should include the installation of period-appropriate light fixtures based on available historic photographs.

- Plaster at the upper floor walls dates to the 1950s renovation and appears to have been patched and repaired following the removal of the wood wainscot during the 1980 rehabilitation. Additional investigation is recommended to determine whether the painted brick masonry dating to the period of Carver's occupancy remains. Such investigations could be completed during the patching and repair of damaged interior plaster surfaces and could include additional paint analysis for coatings on the masonry.

  If the desired interpretation of the interior is modified to include the restoration of the historically significant interior surfaces at the upper floor, consideration could be given to removing the plaster and furring entirely, repairing and repointing brick masonry as required, and restoring the paint coating to the original condition. A breathable acrylic paint should be used. This approach should include the reinstallation of the surface-applied wood rail at the perimeter, as documented in interior photographs from the museum opening ceremony (refer to Figures 112 and 113).

- The 1980 *Historic Structure Report* noted that a reconstruction of the greenhouse on the north addition roof was seriously considered but ultimately rejected due to a lack of documentation and the difficulty of providing public access in the historic location. The report ultimately recommended, "If, and when, documentation can be located to eliminate conjecture and when the access problem can be satisfactorily resolved, the greenhouse should be reconstructed."[253]

  Current park personnel expressed that there continues to be support for this feature. Photographs of Carver inside the greenhouse (refer to Figure 116) and looking toward the greenhouse from the interior of the laboratory (refer to Figure 115) provide documentation not included in the previous HSR. Based on this evidence, consideration could be given to recreating the greenhouse on the exterior roof. This approach could include the restoration of the extant wood door in the northeast window bay. Access to this area is currently obstructed by a large exhibit.

  If access to the roof area is provided, sufficient measures will be required to prevent access to the roof within 36 inches of the edge of the roof by providing a sufficient guard. The roofing membrane and membrane protection should be of a type suitable for foot traffic.

  An alternative approach to providing access to the greenhouse would be to interpret it as an element that is not accessible by the public, but visible through the windows of the gallery. This approach seems to be the same as that used by Carver in his design of the museum. In the original configuration, the door to the low roof was not visible from the main gallery space and was only accessed through Carver's private laboratory and office. The location suggests that the greenhouse was not intended to be accessed from the public museum space, but it was immediately visible through the large north windows to visitors upon entry to the museum. A similar experience could be provided.

253. Ibid.

The 1980 *Historic Structure Report* noted that the offices were historic and that exhibit designers and park staff wanted to keep them, "as they have no need for the additional floor space which cannot be met without destroying this historic fabric . . . [but that] the architect, Dick Kusek, and the Regional staff prefer that both offices be removed to complete a unified architectural space on the upper floor." Recreation of the greenhouse as suggested above, visible only through the windows, appears to be in keeping with the way in which Carver set up the visitor's experience.[254]

Architectural Finishes – Lower Level.

- Carpet throughout the lower floor level should be replaced. The coated concrete floor at the archival work room should be refinished.

- Gypsum board at window and door jamb returns at the north addition should be removed entirely and replaced with moisture resistant gypsum board or plaster.

  Moisture resistant gypsum board is recommended for use at the interior on all exterior walls and in toilet rooms, janitor rooms, and other wet locations. Due to the vapor permeability of the exterior masonry construction, moisture resistant gypsum board is recommended for use at all new interior partitions and ceilings on the lower floor level.

- A control joint should be installed at the interior inside corner at walls and ceilings. Care should be taken to ensure that an air seal is provided between wall, furring, and ceiling cavities to prevent infiltration of humid air from the cavities.

- Fire-rated gypsum board should be installed at the chair storage closet ceiling and at other minor openings in gypsum walls or ceilings. The installation and terminations of the gypsum panels must meet the requirements of the Underwriters Laboratories (UL) or Factory Mutual (FM) floor / ceiling assembly rating and provide sufficient air seal to maintain the pressurization of the ceiling return air plenum.

- Non-functioning wall-mounted devices should be removed and surfaces patched and painted to match existing.

Doors and Windows.

- Casing trim and mullion covers at joined window units should be repaired and repainted as described above where paint is delaminated.

- Where window stools are displaced, stools should be removed, repaired, and reset. Warped units should be replaced with new material to match existing.

  The notched returns of the window stools date to the installation of a wood wainscot during the 1950s renovations. It is unclear whether the stools themselves date to the previous period of Carver's occupancy. Unless plaster walls are removed, the notched stools should remain. Replacement stools should be returned to flush with the plaster wall with no notch.

- Most deterioration at the interior of the windows appears to be due to air and moisture infiltration through window components including joints at the masonry and brick mould, at exterior trim components, at window sash perimeters, and at wood / masonry sills. Repair of these conditions should be addressed as noted above prior to repairing damage to interior elements.

  The interior of windows, including sash and associated trim, should be prepared, spot primed, and painted with an acrylic latex enamel.

- At second-floor windows, remnants of previous vinyl bulb weatherstripping should be removed following repairs to window

254. Ibid., 155, note 7.

components. Consideration should be given to installation of concealed weatherstripping at the jambs, meeting rail and lower sash to sill joints. If window sash are removed for restoration, a kerf could be installed to receive zinc weatherstripping mounted in the jamb sash pockets. A kerf-mounted bulb weatherstripping could be provided at the lower sash to rail, and a bulb gasket type weatherstripping at the meeting rail. A similar approach should be taken to weatherstripping the hopper windows at the transoms.

- The fixed window sash at the lower level should be sealed to the frame at the entire exterior perimeter prior to repairing and painting the interior surfaces.

- Most window hardware is in place at the upper floor. Some hardware exhibits signs of corrosion due to moisture exposure. Existing window hardware should be removed, cleaned, and polished. Consideration should be given to the installation of replica hardware where elements are missing. Historic photographs document that the transom operators present during the building's use as a laundry were not present at the time of Carver's occupancy.

- If the interpretation of the upper floor interior includes the restoration of original finishes, consideration should be given to replacement of the mini-blind-type window treatments with draperies appropriate to the period of Carver's occupancy.

- The interiors of wood exterior doors should be repainted. Hardware should be removed and replaced or reinstalled as required. New weatherstripping should be provided at the perimeter of all doors.

- Consideration should be given to installing panic devices at all exterior doors. The inactive leaf at paired doors should be provided with automatic latching flush bolts and a coordinating closer. Electronic access control could be provided through the installation of an electric retracting exit device latch. Alternatively, the doors could be secured with a magnetic lock at the head of each leaf activated by an electronic panic device at each door.

  To meet the requirements of the ABA, consideration should be given to the installation of a door operator at the primary accessible entrance to the museum. Battery-operated pushbuttons are recommended to avoid the installation of surface mounted conduit or penetrations through the masonry walls.

- Non-historic knobbed door hardware should be replaced with lever handles to meet ABA requirements.

- The door and sidelight frame at the addition should be repaired by replacing deteriorated elements with dutchman units or replacement members as required. The paired doors should be replaced with new units to match the existing. A new threshold and perimeter weatherstripping at the doors should be provided. Hardware at this door should be evaluated per the use of the room.

  The headroom at the connection to the lower level does not meet the requirements for a path of egress. However, due to the deficiencies of the existing layout, the doors may be determined to be needed as part of the egress design, thus requiring the installation of panic devices at these units.

Other

A comprehensive code evaluation should be completed under the IEBC. In particular, the following compliance issues should be addressed with any major work in the building:

- Storage and assembly spaces should be separated from adjacent occupancies as required by the IBC. Separation requirements for storage and janitorial rooms should be provided as required. Mechanical systems serving or passing through these spaces may

require smoke and / or fire dampers at rated partitions.

- Exit pathways from the lower level should be analyzed per the IEBC. Currently the monumental stair adjacent to the elevator and the northeast exit that opens to the exterior stair serve as the two available exits from the lower floor.

  The exit in the addition does not meet requirements for a path of egress due to low door head height and deficiencies of the stairs.

  The only doors opening from the lower floor directly to the exterior at grade are the paired doors in the assembly room. Current codes do not permit egress through an assembly space, thus these doors can only be considered an exit from the assembly room. They cannot serve as a path of egress from the corridors.

  If a renovation of the lower floor is planned, consideration should be given to reorganizing the plan of the lower floor to provide a corridor connecting the central corridor to the exterior at this location.

- The fire rating and continuity of the floor assembly should be reviewed. Construction documents from the 1979 renovations indicate that gypsum board was applied to the underside of the floor joists to provide a rated floor assembly in conjunction with the concrete slab on bar joist structure.[255] This installation should be evaluated.

  A documented UL or FM assembly should be identified that incorporates the thin floor slab system and bar joist system found in the building. The fire-rated gypsum panel installation should be evaluated for continuity of construction per the requirements of the specific assembly. If the ceiling is replaced, new fire-rated gypsum boards should be used with support structure, terminations, and other components as required by the tested assembly.

  The use of the rated ceiling assembly as a return air plenum should be evaluated per the IBC and the applicable mechanical codes.

The fire protections required for the applicable construction type should be evaluated per the IBC Chapter 6 and addressed under the provisions of the IEBC. In addition to the floor structure, protection may be required for columns and load bearing walls.

- Expansive spray foam materials should be removed from penetrations in the floor slab and replaced with fire-seal systems appropriate to the rating of the floor-ceiling assembly and the specific type of penetration.

- The continuity and extent of the return air plenum at the lower floor level ceiling should be evaluated. Openings to unconditioned areas, such as the crawl space and boiler room, should be sealed air-tight and fire-sealed where required. Exterior walls at the perimeter of the plenum should be sealed air-tight. Special care should be taken to seal the tops of furred cavities and penetrations into partition cavities to separate them from the negatively pressurized ceiling plenum. If the ceiling is reworked, consideration should be given to installing partitions above the ceiling to terminate the plenum away from the exterior wall to maintain positive pressure on the exterior wall above the ceiling.

  Alternatively, a ducted return system could be implemented with the planned replacement of the lower floor HVAC system.

  Combustible materials should be removed entirely from the return air plenum.

Mechanical, Electrical, Plumbing, and Fire Protection Systems

- Provide a bi-level electric drinking fountain at the lower level for public and staff use. Models providing bottle-filler capability should be evaluated considering the use by staff and the

255. Williams-Russell & Associates, n.p.

goals of providing a hydration facility for visitors walking through the campus.

- Review the location of the electric panel serving the upper floor per NEC clear space and location requirements.
- Investigate and remediate possible water intrusion evidenced by rust at the main electrical panel.
- Provide covers on all open junction boxes.
- Insulate hot domestic water pipe and hydronic pipe per ASHRAE requirements.
- Evaluate the payback period for the installation of an energy recovery unit to temper ventilation air before introducing it into the HVAC unit. (An energy recovery unit was also recommended in the 1980 *Historic Structure Report.*)[256]

Current and forthcoming work.

Work currently in progress or planned by the park to be completed at the museum includes the following:

- Repair of the middle three roof trusses with properly designed bracing.
- For years, the National Historic Site has discussed placing a recreation of George Washington Carver's greenhouse on the roof of the museum annex in the location of Carver's original, private greenhouse. This idea is discussed every few years, but it is not clear whether or not discussions have ever progressed to plan drawings or budgeting.

Recommendations for Further Research

1. Conduct finishes analysis of painted wood on the exterior of the museum to identify historic original / historic color schemes.
2. Conduct finishes analysis of painted interior surfaces to identify original / historic materials and finishes, particularly at the ceiling and interior masonry wall.
3. The possibility of placing a recreation of Carver's private greenhouse on the annex of the Carver Museum is often discussed by the National Historic Site. This possibility should be carefully assessed beyond discussion as a way of physically (visually) linking Carver and Tuskegee (Institute) University with the significant agricultural contributions both made to the rural South.
4. The landscape surrounding the museum when it was opened is well documented and was created by Carver, Merle Cooper, a professor, and his students. The possibility of restoring this landscape should be carefully assessed, including the paths, benches, and specified plant species. A wayside should be installed discussing the original landscaping of the museum.

Resiliency to Natural Hazards

Although the Tuskegee Institute National Historic Site is located in east central Alabama and is not sited in a coastal location, the site is still considered vulnerable to current and future threats associated with natural hazards.

Increasingly frequent strong storms and heavy rainfall have been noted for several years in the southeastern United States. Studies of effects of natural hazards on the State of Alabama have also predicted a rise in average temperatures, coupled with periods of more severe flooding and drought. As soils become drier and rainfalls heavier, the change of flooding increases. Although not a risk to the Tuskegee Institute site, sea level rise is occurring more rapidly in Alabama than in other coastal areas because the land is sinking. Tropical storms and hurricanes have become more intense over the past twenty years. [257] Alabama

256. *Historic Structures Report.*

257. United States Environmental Protection Agency, "What Climate Change Means for Alabama," EPA 430-F-16-003, August 2016.

experiences numerous tornados each year, and central Alabama is a particularly high risk area. Numerous tornados are typically recorded in the region each year and several in recent years have resulted in loss of life and significant property damage.[258]

Although threats are more immediate to coastal historic sites, inland historic sites similarly require identification of the resources anticipated to be threatened—both buildings and landscapes—and planning for protection as well as mitigation in the face of increased storms resulting from natural hazards.

As loss of historic resource integrity may occur, suddenly or slowly, from conditions related to natural hazards, documentation is the first response to mitigate anticipated loss or diminishment, or to plan for the impacts associated with natural hazards. This Historic Structures Report, including the historical narrative, condition assessment, and recommendations, together with photographs and measured drawings, is an important part of the documentation process.

As part of future efforts to build on and update the documentation provided in this Historic Structures Report, the National Park Service should consider such approaches as more detailed documentation resulting from new three-dimensional scanning technology, monitoring weather-related deterioration, updating emergency and disaster planning to address resiliency to natural hazards-related issues, and strategic planning for mitigation of the effects of climate change on park resources. The latter may include special protection, documentation, and interpretation measures to address resources that are especially vulnerable to damage or loss due to natural hazards-related conditions.

In addition to threats to the historic resources, natural hazards will affect visitation patterns. A park-specific brief has been prepared on this issue; the research conducted does not support a strong historical relationship between visitation and temperature at this site, but it does note that visitors may respond to other hazard-related weather patterns and events such as storms, as well as to non-hazard related factors. The brief further notes that understanding this relationship, and taking advantage of continued study, will help park management "adapt to the effects of [natural hazards] and remain effective resource stewards while promoting visitor experience."[259]

Efforts conducted for Tuskegee Institute National Historic Site will benefit from coordination with other planning and documentation projects to address effects of resiliency to natural hazards under consideration or in the process of being implemented by the National Park Service in the Southeast Region. Future severe weather events, rising sea levels, and other impacts related to natural hazards should be anticipated and considered in planning for protection and maintenance of the site and its resources.

258. National Weather Service, National Oceanic and Atmospheric Administration, Alabama Tornado Database, accessed July 2017, https://www.weather.gov/bmx/tornadodb_main.

259. "Tuskegee Institute National Historic Site: How might future warming affect visitation?" Park Visitation and Climate Change, Park-specific Brief (US Department of the Interior, National Park Service, Natural Resource Stewardship & Science, 2015).

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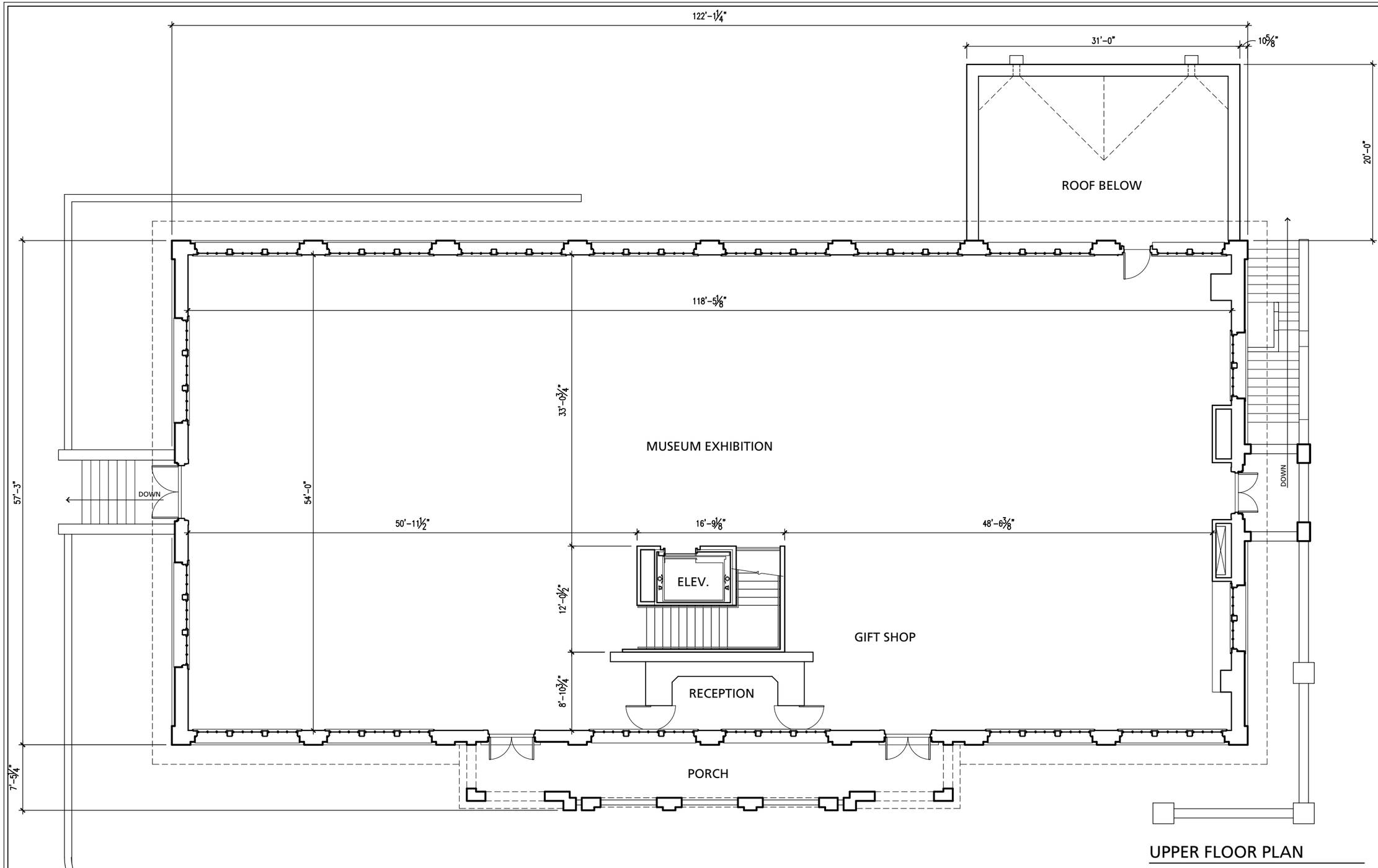
Appendix A: Measured Drawings



UPPER FLOOR PLAN

0 1 2 4 8

SCALE IN FEET
3/32" = 1'-0"

NORTH

DRAWN BY: WFT ARCHITECTS, OCTOBER 2017

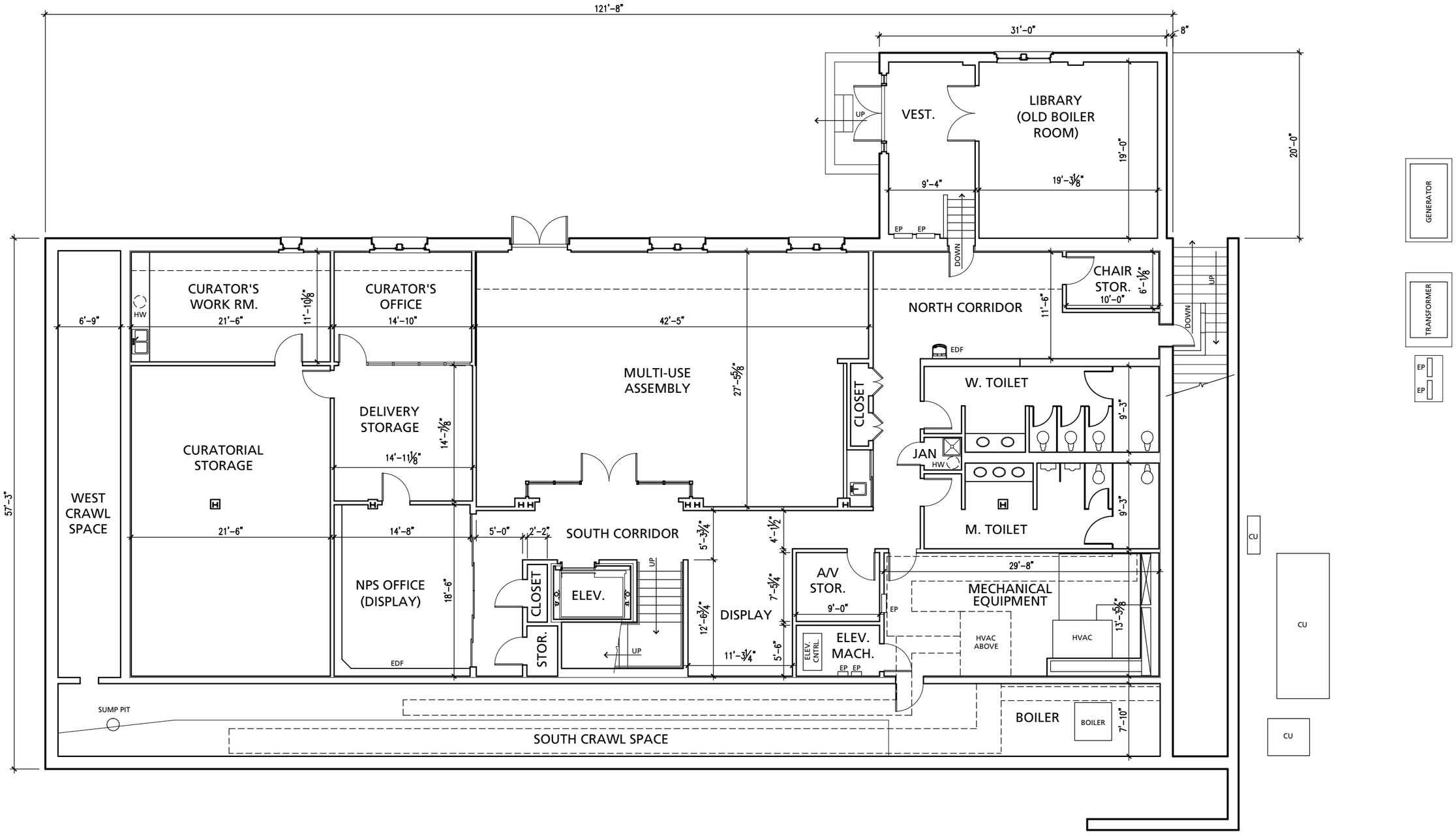
NATIONAL PARK SERVICE
U.S. DEPARTMENT OF THE INTERIOR
SOUTHEAST REGIONAL OFFICE

TUSKEGEE

GEORGE WASHINGTON CARVER MUSEUM
TUSKEGEE INSTITUTE NATIONAL HISTORIC SITE
ALABAMA

HISTORIC STRUCTURE REPORT

SHEET 1 OF 7



LOWER FLOOR PLAN

0 1 2 4 8
SCALE IN FEET
3/32" = 1'-0"

NORTH

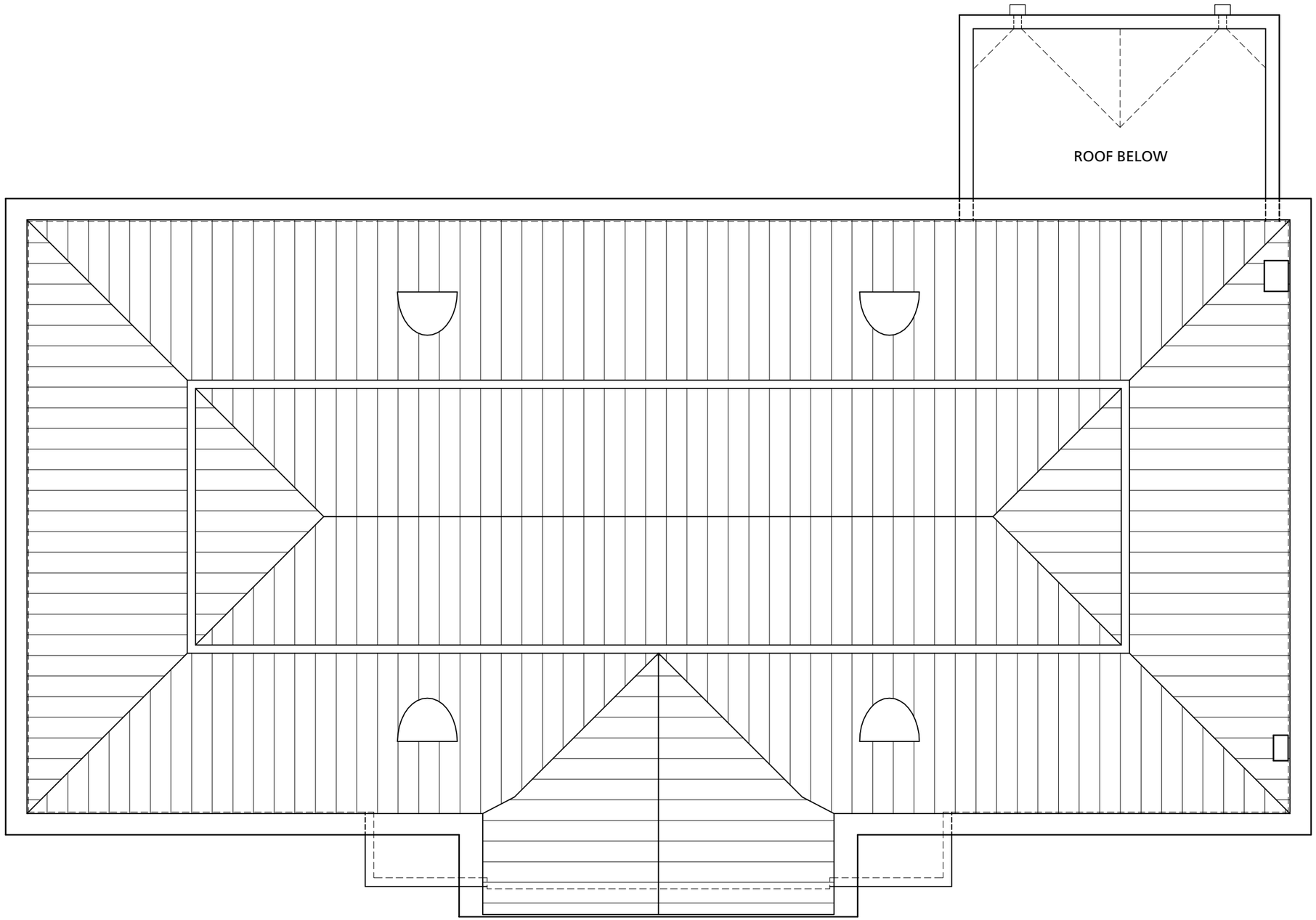
DRAWN BY: WFT ARCHITECTS, OCTOBER 2017

NATIONAL PARK SERVICE
U.S. DEPARTMENT OF THE INTERIOR
SOUTHEAST REGIONAL OFFICE

GEORGE WASHINGTON CARVER MUSEUM
TUSKEGEE INSTITUTE NATIONAL HISTORIC SITE
TUSKEGEE ALABAMA

HISTORIC STRUCTURE REPORT

SHEET 2 OF 7



ROOF PLAN

0 1 2 4 8

SCALE IN FEET
3/32" = 1'-0"

NORTH

DRAWN BY: WFT ARCHITECTS, OCTOBER 2017

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SOUTHEAST REGIONAL OFFICE

TUSKEGEE

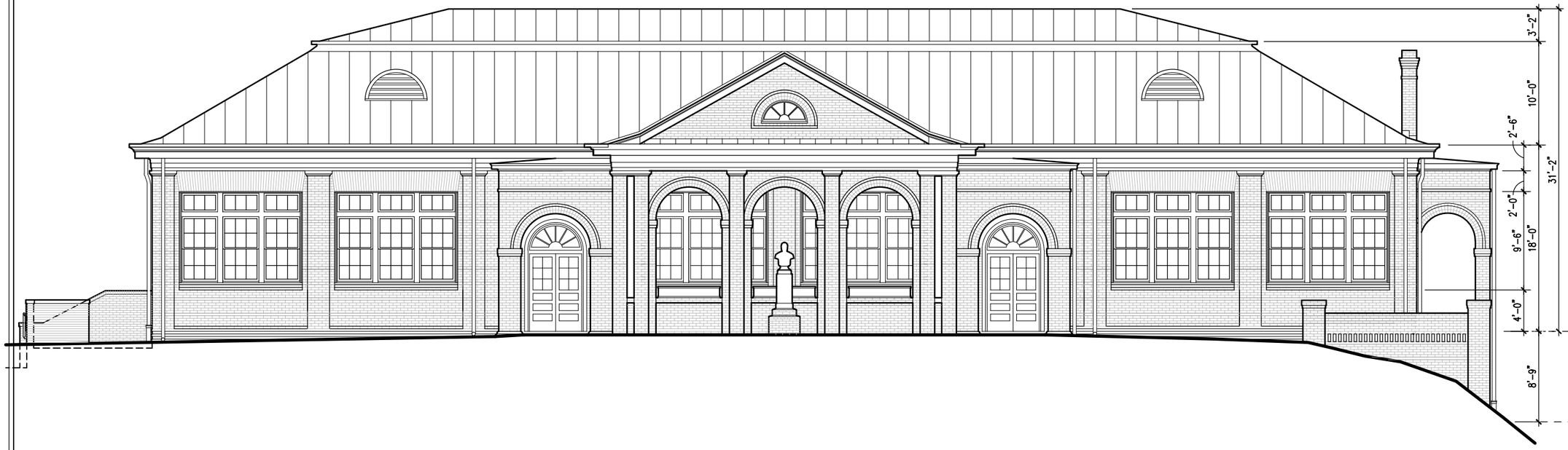
GEORGE WASHINGTON CARVER MUSEUM

TUSKEGEE INSTITUTE NATIONAL HISTORIC SITE

ALABAMA

HISTORIC STRUCTURE REPORT

SHEET 3 OF 7



SOUTH ELEVATION

0 1 2 4 8

SCALE IN FEET
3/32" = 1'-0"

DRAWN BY: WFT ARCHITECTS, OCTOBER 2017

NATIONAL PARK SERVICE
U.S. DEPARTMENT OF THE INTERIOR
SOUTHEAST REGIONAL OFFICE

TUSKEGEE

GEORGE WASHINGTON CARVER MUSEUM

TUSKEGEE INSTITUTE NATIONAL HISTORIC SITE

ALABAMA

HISTORIC STRUCTURE REPORT

SHEET 4 OF 7

EAST ELEVATION

0 1 2 4 8

SCALE IN FEET
3/32" = 1'-0"

DRAWN BY: WFT ARCHITECTS, OCTOBER 2017

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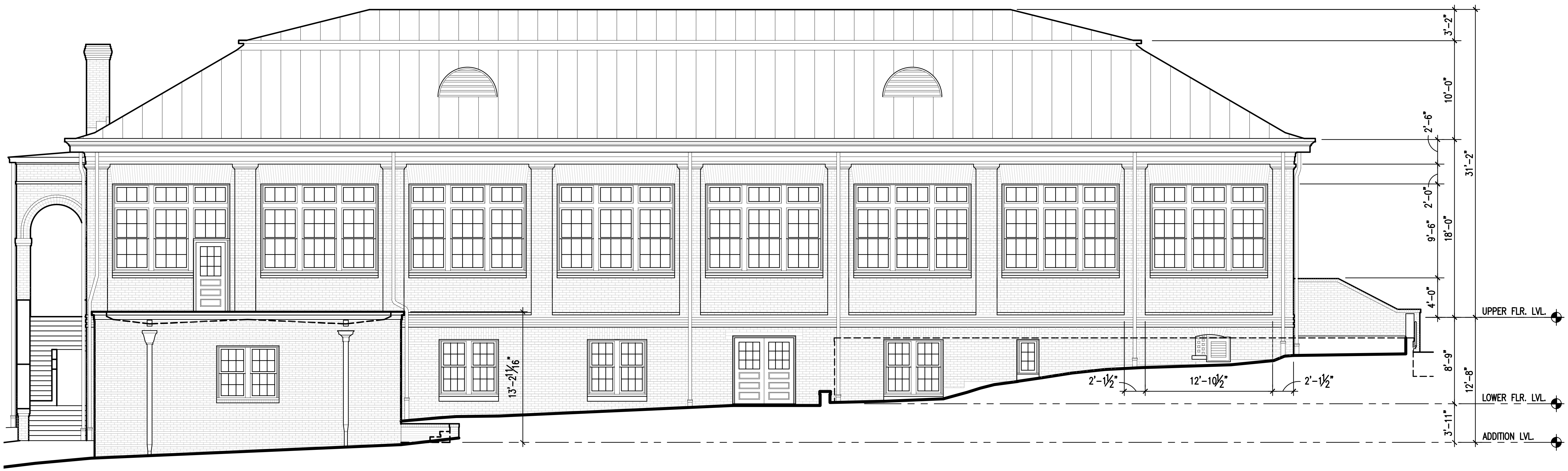
SOUTHEAST REGIONAL OFFICE

TUSKEGEE

GEORGE WASHINGTON CARVER MUSEUM

TUSKEGEE INSTITUTE NATIONAL HISTORIC SITE ALABAMA

HISTORIC STRUCTURE REPORT



NORTH ELEVATION

0 1 2 4 8
SCALE IN FEET
3/32" = 1'-0"

DRAWN BY: WFT ARCHITECTS, OCTOBER 2017

NATIONAL PARK SERVICE
U.S. DEPARTMENT OF THE INTERIOR
SOUTHEAST REGIONAL OFFICE

GEORGE WASHINGTON CARVER MUSEUM

TUSKEGEE INSTITUTE NATIONAL HISTORIC SITE

TUSKEGEE ALABAMA

HISTORIC STRUCTURE REPORT

WEST ELEVATION

0 1 2 4 8

SCALE IN FEET
3/32" = 1'-0"

DRAWN BY: WFT ARCHITECTS, OCTOBER 2017

NATIONAL PARK SERVICE
U.S. DEPARTMENT OF THE INTERIOR
SOUTHEAST REGIONAL OFFICE

TUSKEGEE

GEORGE WASHINGTON CARVER MUSEUM

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ALABAMA

HISTORIC STRUCTURE REPORT

SHEET 7 OF 7

National Park Service
U.S. Department of the Interior

George Washington Carver Museum
Tuskegee Institute National Historic Site
1212 West Montgomery Road
Tuskegee Institute, Alabama 36088

www.nps,gov/tuin