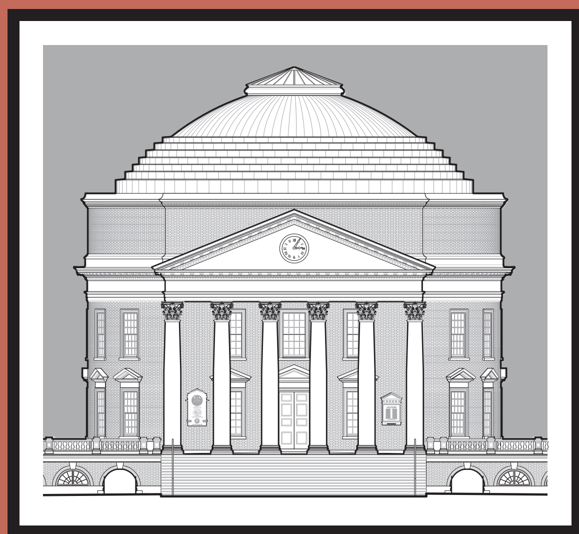
UNIVERSITY OF VIRGINIA

THE ROTUNDA



HISTORIC STRUCTURE REPORT

SECOND EDITION

THE ROTUNDA

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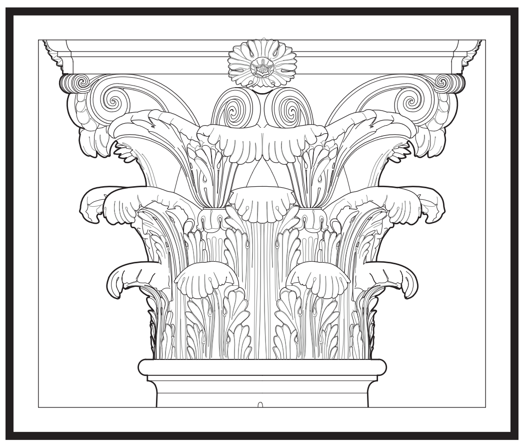

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JOHN G. WAITE ASSOCIATES, ARCHITECTS

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FOREWORD

The first edition of this historic structure report documented the beginning of what would become a 10-year labor of love to renovate the Rotunda. The overarching questions posed in the first report guided the project from inception to completion: what remains of each of the significant periods of the building's history, and how accurately does the building reflect Thomas Jefferson's original design? Thirty years after the last renovation, what should we do to ensure the Rotunda's iconic stature and long-term facility? Finally, and most importantly, we asked how the Rotunda could be better integrated into the daily life of the University.

The first report, along with informed discussions with the University administration, provided information and guidance in answering these questions. The resulting project was extensive and comprehensive, involving restoration of the building's exterior and replacement of the roof, oculus, and most dramatically, the failing marble capitals from the first nineteenth-century renovation of the building after the fire of 1895. These capitals were replaced with new Corinthian capitals quarried and carved in Carrara, Italy, as Jefferson had originally specified, and which, fascinatingly, followed the original order for installation. Other highlights of the renovation included creative new designs for the mechanical, lighting, sound, catering, and vertical-transportation systems of the building. The landscape surrounding the building was redesigned to be more inviting, with lushly verdant spaces for quiet contemplation, studying, gathering, and teaching. Inside the building, the star of the project is the newly refurbished Dome Room, which not only received a new acoustical-plaster ceiling and carved wood capitals and finishes but also reinstated access to its middle gallery for the first time since the 1970s. It isn't easy to upgrade a nineteenth-century building for twenty-first-century use while still respecting its historical integrity, but the team did this and more, with the renovation of the Rotunda receiving the AIA's highest recognition in 2019, the Honor Award for Architecture.

As work progressed in and around the building, more of its history was revealed. We discovered the chemical hearth in the lower east oval room, an artifact from the University's earliest efforts in the instruction of science, the discovery of which made national news. The archaeological work associated with this project revealed many other previously hidden histories that informed the renovation along the way. This revised historic structure report is being published to record both the work that was done and the discoveries made along the way.

But even with all these improvements, the most important change to the Rotunda was the planning for its new program to increase community engagement and student activity. Three classrooms were added—two in the southeast wing and one in the lower west oval room—that bring hundreds of students to the building each week. The southwest wing was renovated as a multipurpose room available to the University community for meetings, lectures, and events. The upper west oval room was refurnished for student study, as were the main level and middle gallery of the Dome Room. The building's hours were extended into the evening several days a week exclusively for student use, and it is a wonderful thing to witness students in every public space of the building. And, of course, the elegant tradition of Dome Room dinners was retained and enhanced, much to the joy of all participants. With all this, the building has become a popular place to teach and work and for record numbers of visitors to explore and learn about the history of the University of Virginia once again.

Alice J. Raucher, FAIA
Architect for the University of Virginia
April 2022

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INTRODUCTION

When thomas jefferson completed his second term as president of the United States, after four decades of public service, he returned to Monticello. There, until his death in 1826, he threw his energy into the creation and construction of what became the University of Virginia.

Situated near Charlottesville, Virginia, the new University was designed by Jefferson in consultation with Benjamin Henry Latrobe, the first professionally trained architect in the United States and Jefferson's surveyor of public buildings (a position that later developed into that of the Architect of the Capitol). Jefferson also conferred with Dr. William Thornton, an amateur architect who designed the U.S. Capitol, on the layout of the University. Construction according to Jefferson's designs for the Academical Village began with Pavilion VII in 1817 and ended with the completion of the Rotunda in 1828.

The Academical Village occupies a 28-acre site in the rolling hills east of the Blue Ridge Mountains. The original U-shaped complex of buildings is situated on an elevated site that gently slopes to the south. At the north end of the complex, the Rotunda, which originally housed classrooms and the library, dominates a greensward, known as the Lawn. Two rows of buildings, each with five pavilions and connecting dormitory rooms fronted by colonnades, extend south from the foot of the Rotunda, forming the east and west sides of the Lawn. Beyond the east and west Lawn are parallel lines of buildings, or Ranges, each consisting of three hotels, or dining rooms, with connecting dormitory rooms fronted by arcades.

The idea for a central Pantheon-like building for the Academical Village was suggested by Latrobe, who sent Jefferson sketches and drawings not only for the Rotunda but for the pavilions as well. After Latrobe's untimely death in 1820, Jefferson developed the design for the library and construction began in 1823. It was not completed until 1828, two years after Jefferson's death.

By 1850, it was apparent that the University had outgrown the original buildings, and plans were formulated for the construction of a large, four-story classroom addition to the Rotunda. Designed by architect Robert Mills, who had been associated with both Jefferson and Latrobe, it extended north from the Rotunda. Known as the Annex, it was constructed between 1851 and 1854.

One of the most significant events in the history of the University occurred on October 27, 1895, when the Annex, which housed the law school as well as the schools of physics and modern languages, caught fire. The fire extended to the Rotunda and reduced both structures to smoldering ruins with only the brick walls standing. Stanford White, of the New York architectural firm of McKim, Mead and White, was selected to rebuild the Rotunda and to design new classroom buildings that would terminate the south end of the Lawn. White intended to restore the Rotunda as it was originally designed by Jefferson. Inside the building, to accommodate the expanded University's library, he created a single, two-story library space. White also designed a monumental portico and staircase on the north elevation, which had not existed in Jefferson's original design. The Rotunda, as rebuilt by Stanford White, has been the subject of considerable discussion and controversy over the past century, but White's desire to retain Jefferson's vision on the exterior and to maintain the original function of the building represents one of the first major acts of historic restoration in the United States and established a precedent for the treatment of historic buildings.

In 1973, in an attempt to return the Rotunda to Jefferson's design, the McKim, Mead and White interior was demolished. The new interior generally followed Jefferson's design; however, twentieth-century materials and building technology were utilized, and modifications were made to address modern functional and building-code considerations. These limitations were coupled with an inadequate construction budget, insufficient building investigations, and a limited reuse program that made the project problematic from the onset.

The Rotunda was designated a National Historic Landmark in 1966, and, with the entire Academical Village, named a United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Site in 1987.

By 2006 the building was underutilized, and much of the work done as part of the 1973-1976 renovation, particularly the installation of mechanical and electrical systems and the construction of a new sheet-metal roof, had reached the end of its serviceable lifespan and needed to be replaced before causing serious damage to the building. Other components of the renovation work were questioned as to their accuracy and appropriateness.

In order to evaluate the Rotunda and present options for its future treatment and use, the University commissioned a historic structure report in 2005. That report, based on investigative work carried out between 2006 and 2008, was the most comprehensive yet undertaken for a building at the University. It reflected the Rotunda's significance as the central building and focus of the Academical Village, as well as its complex construction history from the initial building campaign through the addition of the Annex, and two major reconstruction projects.

Building on previous studies, the historic structure report included a detailed history of the original design and construction, as well as the subsequent modifications and periods of reconstruction. Detailed architectural descriptions of the entire structure, including all exterior features and room-by-room summaries of the existing conditions, were prepared. References were made to previous periods of construction where relevant, and studies of the building's evolution were developed. All elements of the building's fabric were examined to determine physical problems and to develop a scope of needed repairs, renovations, and improvements. An evaluation of current and historic uses of the building was also undertaken. Interviews with University staff provided a better understanding of the Rotunda's problems, shortcomings, and possible long-range uses. Measured drawings of existing conditions and sketches of historic conditions were prepared. One significant departure from the University's previous historic structure reports was the inclusion of major sections on the assessment of structural, mechanical, electrical, plumbing, and fire-protection systems, as well as landscape history.

John G. Waite Associates, Architects PLLC was engaged to prepare the new historic structure report, along with the following consultants:

Mount Ida Press	Architectural history
Plus Group Consulting Engineering, PLLC	Mechanical, electrical, plumbing engineering
Robert Silman Associates, PLLC	Structural engineering
EDAW	Landscape architecture

With the completion of the historic structure report in 2008, the University took the recommendations and conditions assessments under consideration and determined to use the replacement of the roof and mechanical systems as an opportunity to fully restore the Rotunda.

Through the restoration of the Rotunda to Jefferson's design, the University sought to establish the Rotunda not only as the school's iconic focus but also as a source of inspiration and the center of University life, bringing students and faculty back to the building on a daily basis. The students have streamed back into the building: to use the study and lounge space in the Dome Room and in the large west oval room on the main floor; and to use the classrooms in the south wings and in the west oval room on the ground floor. The newly designed courtyards are now impromptu classrooms. The Dome Room and a new meeting and event room adjoining the west courtyard provide lecture and reception space. In its restored form, the Rotunda is again the center of the University as Jefferson intended, used by students, faculty, administrators, and visitors. The project received a number of regional, state, and national awards for architecture, preservation, and engineering. In 2019 the American Institute of Architects recognized the project with an Honor Award, its highest award in American architecture.

So much information was uncovered during the restoration that the University asked John G. Waite Associates, Architects to update the 2008 historic structure report. This second edition includes new information on the structural analysis, mechanical systems, and archaeological findings. The architectural description and measured drawings were updated to reflect current conditions. Research conducted on the historic heating systems, the water supply, and the portico column capitals is now incorporated into the history, as is a summary of the restoration. The discovery of the chemical hearth in the lower east oval room during the work led to a separate historic structure report; a summary of its history and its discovery have been added to this edition. Besides John G. Waite Associates, Architects, the team for this work included:

Mount Ida Press	Architectural history
Kohler Ronan Consulting Engineers	Mechanical, electrical, plumbing, and fire-protection engineering
1200 Architectural Engineers	Structural engineering
OLIN	Landscape architecture
Rivanna Archaeological Services	Archaeology

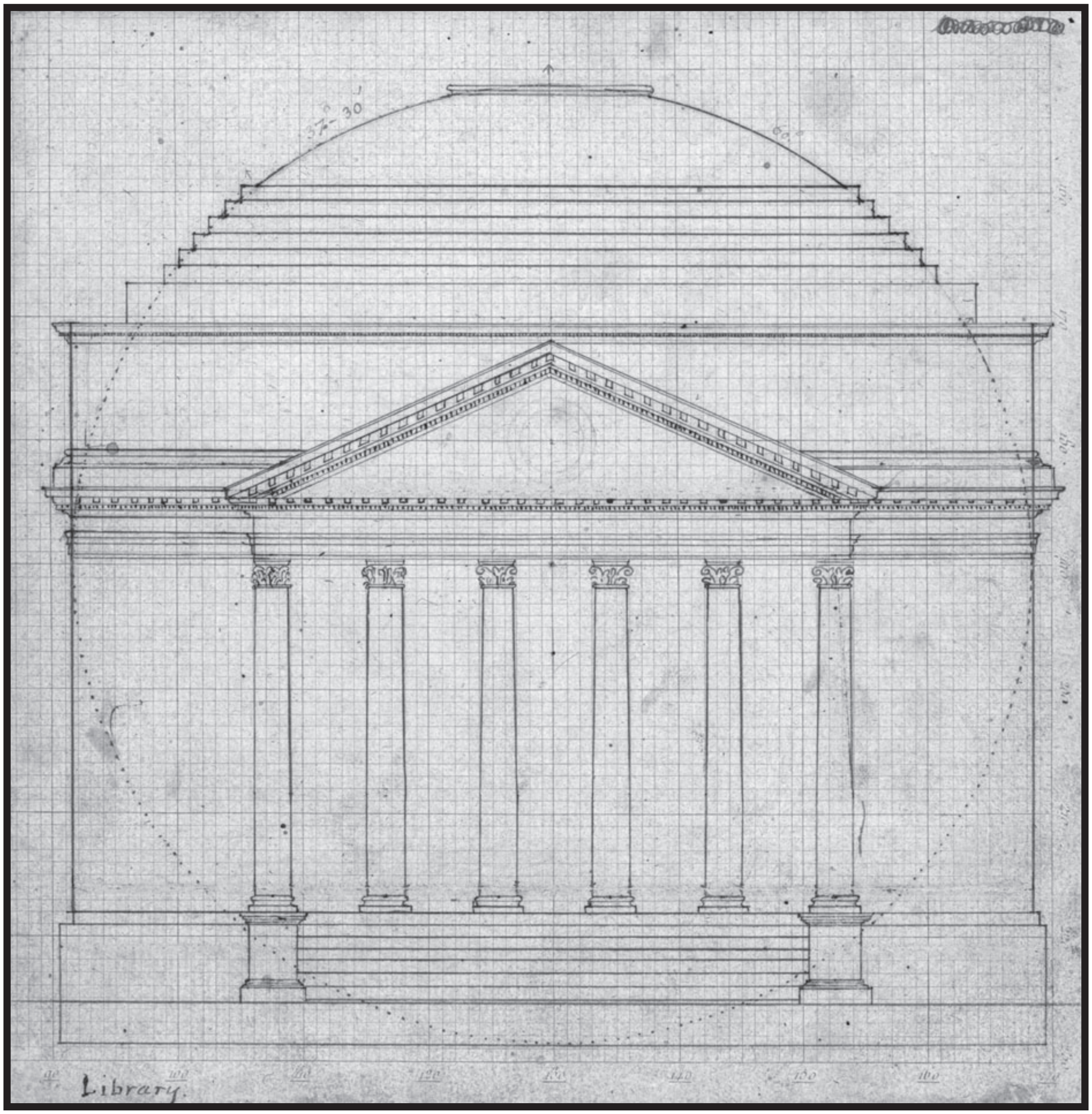


FIGURE 1. *Thomas Jefferson, south elevation of the Rotunda, drawing begun 1818, completed by March 29, 1819.*

THE ROTUNDA
HISTORY

Thomas Jefferson and the Design of the University and the Rotunda

Thomas Jefferson's ideas on establishing a public university for Virginia and on its architectural form had taken shape over many years. As early as 1779, while he was governor of Virginia and the colonies were at war with Great Britain, Jefferson had proposed that Virginia create a system of public education beginning at the primary level and capping it with a university. As his thinking developed, so did his intention to create a new architectural form for higher education. The originality and success of his design have been widely recognized for nearly two centuries, from even before the University opened in 1825. Drawing on the expertise of Benjamin Henry Latrobe, Jefferson would make the Rotunda the dominant architectural feature of his design for the University.

As the Virginia General Assembly was debating the possibility of a state-funded university in 1805, Jefferson outlined his ideas not only about its mission, location, professorships, funding, and management but also the "necessary buildings." "The greatest danger," Jefferson wrote, "will be their over-building themselves by attempting a large house in the beginning, sufficient to contain the whole institution." "Large houses are always ugly, inconvenient, exposed to the accident of fire, and bad in cases of infection," he continued. "A plain small house for the school & lodging of each professor is best. These connected by covered ways out of which the rooms of the students should open would be best. These may then be built only as they shall be wanting. In fact an University should not be an house but a village. This will much lessen their first expences."[1]

Five years later, when writing to the trustees responsible for funding the new East Tennessee College, Jefferson further delineated his ideas about the benefits of such an arrangement: professors' quarters, students' rooms, and their connecting covered ways, he felt, would best be arranged around three sides of a Lawn, thereby forming "an open square of grass & trees" and making "an academical village, instead of a large & common den of noise, of filth, & of fetid air." Such a plan, he wrote, "would afford the quiet retirement so friendly to study, and lessen the dangers of fire, infection & tumult."[2] In 1814 Jefferson carefully drew a site plan, intended for a proposed Albemarle Academy near Charlottesville, which incorporated these same features—a broad Lawn, 257 yards wide, which was bordered on three sides by two-story buildings for the professors and rows of one-story dormitories. When a proposal to establish a college in Albemarle County went before the state legislature and was passed in 1816, the institution was called Central College.

In May 1817, the governing body of the Central College, the Board of Visitors, approved the purchase of the land for the college and adopted the overall layout that Jefferson had prepared three years earlier for the Albemarle Academy. The minutes of that meeting note that the plan called for "erecting a distinct Pavilion or building for each separate professorship and for arranging these around a square each pavilion containing a School room and two apartments for the accommodation of the Professor, with other reasonable conveniencies." The Visitors approved the construction of a single pavilion on either the east or west side of the square and its contiguous dormitories. The minutes did not mention the treatment of the north side of the square.[3]

In these early proposals for the academy and the college, Jefferson did not suggest what form a library building would take or where it would be located within the Academical Village. Nevertheless, he had long had a library clearly in mind: he had suggested as early as 1805 that if a public university for Virginia were created "on a plan worthy of approbation," then he would convey to it his own personal collection of books.[4] As his architectural plans matured, the library would become the central building of the University.

A few days after the May 1817 meeting of the Board Visitors of Central College, Jefferson wrote to William Thornton, the first architect of the U. S. Capitol, putting forth his overall plan for the college and requesting some help with the design of the pavilions. He asked that Thornton "sketch some designs for us, no matter how loosely with the pen, without the trouble of referring to scale or rule; for we want nothing but the outline of the architecture, as the internal must be arranged according to local convenience." "A few sketches, such as need not take you a moment," Jefferson continued, "will greatly oblige us."[5] Thornton's reply, sent later that month, proposed an important alteration to Jefferson's scheme for the north side of the Lawn, which had three pavilions equally separated by dormitories: instead, Thornton suggested, there should be "a Pavilion for the Centre, with Corinthian Columns, & a Pediment." The other two pavilions on the north side should be pushed aside from that central pavilion and "joined together" at right angles at the corners of the Lawn. Thornton also recommended that there be only "one Pediment, and that in the center." The idea was that a central, pedimented pavilion along the north side would have prominence over the others.[6]

On June 12, 1817, the day after Jefferson received the letter from Thornton, he wrote as a "friendly beggar" to architect Benjamin Henry Latrobe, who had served as the surveyor of public buildings while Jefferson was president of the United States; Jefferson included within the text a site plan showing his original scheme, which still indicated three equally spaced pavilions along the North Range. He asked Latrobe, much as he had asked Thornton, simply "to take up your pencil, and sketch for us some general outlines of designs no matter how loose, or rough, without the trouble of referring to scale or rule" for "snug and handsome lodges" for the professors. Jefferson asked Latrobe just to think about "the general idea of the external" and hoped he might supply a "few sketches such as shall take you not more than a minute apiece, mere impressions of a first trait of imagination."[7] Latrobe replied at once, commenting on Jefferson's "entirely novel plan of an Academy," agreeing that the plans of other colleges were "radically defective," and promising to transmit to Jefferson soon "all that my professional knowledge enables me to suggest and design towards the execution of Your plan."[8]

As promised, Latrobe replied at the end of June, having "found so much pleasure in studying the plan of your College" that he had spent considerable effort on developing sketches of the scheme and now found "that the drawings have grown into a larger bulk than can be conveniently sent by the Mail." He had "put the whole upon one very large sheet"; he did not want to double up and fold the sheet, and rolling it around a stick would "make it inconvenient for the Mail bag." He hoped to send it along with people traveling to Richmond.[9] Jefferson, who had been at Poplar Forest in Bedford County, did not respond until mid-July. He was very eager to receive Latrobe's drawing and urged him just to double the drawing and put it in the mail, assuring Latrobe that any folds "may easily be obliterated by the screw press which I possess."[10] Construction was scheduled to begin soon on the first pavilion, Jefferson explained. He also mentioned to Latrobe that "leveling the ground into terraces will take time and labor." There was to be "a distinct terras for every 2. pavilions and their adjacent dormitories, that is a pavilion at each end of each terras."[11]

Latrobe sent his reply almost immediately, on July 24, 1817. Since he had not yet dispatched his large drawing, he used it as the basis of a sketch that he now incorporated into the letter. The sketch showed that Latrobe had retained Jefferson's idea of three buildings separated by dormitories along the north side of the Lawn, but he transformed Jefferson's middle pavilion into a large, domed structure with a portico facing south and apses to each side. Latrobe referred to this building as the "Center building which ought to exhibit in Mass and details as perfect a specimen of good Architectural taste as can be devised." Inside, it would have a lower level with "a couple or 4 rooms for Janitors or Tutors, above a room for Chemical or other lectures, above a circular lecture room under the dome."[12]

On August 3, 1817, the day after he received Latrobe's letter with the sketch of the Pantheon-like building, Jefferson wrote to Latrobe again. By that time Jefferson knew that the width of the Lawn could be only about 200 feet, not the nearly 800 feet that he had originally intended. Thinking ahead, Jefferson wrote Latrobe in early August, incorporating into his letter a sketch of a site plan showing the east and west rows of pavilions and dormitories. This time he left the north end of the Lawn open on the drawing, so "that if the state should establish" on the site of Central College "the University they contemplate, they may fill it up with something of the grand kind."[13]

Latrobe and Jefferson corresponded more during August 1817 about the orientation and the elevations of the pavilions but without again referring to the central building.[14] Latrobe delayed writing again until October 6, when he explained that his large drawing of the University, still in his office, had been damaged by storm-driven water during the summer and that he had recently spent time repairing it and redrawing sections. Once again Latrobe did not mention the central building, but he did send "perfectly studied" sketches of the pavilions and offered to make working drawings.[15] Within a week Jefferson had received Latrobe's letter and thanked him for the "beautiful set of drawings accompanying it." He assured Latrobe that he would "select the fronts" for the next two pavilions from Latrobe's drawings, but he did not mention the central building.[16] In a May 1818 letter updating Latrobe, Jefferson noted that the first pavilion (now known as Pavilion VII) would be finished during the summer and explained that the other pavilions and the dormitories would be built next, but another $100,000, still to be appropriated, would be needed to complete them. Although there were no funds for its construction, Jefferson did refer to the domed building, crediting it to Latrobe as "your central one, which would be reserved for the Center of the ground."[17]

The Rockfish Gap Report, 1818

Meanwhile, the bill establishing a state university for Virginia was passed in February 1818. The wording regarding its location stated only that it was to be "convenient and proper." A board of 24 commissioners was assigned the task of determining the site of the University, its construction, and its curriculum. The commissioners met at the tavern at Rockfish Gap early in August 1818, with Jefferson as chairman, and reached a consensus that Central College was "a convenient and proper part of the state" for the new university. They agreed as well to the general arrangement of its facilities, which were described as follows in the report of their proceedings, which had been drafted by Jefferson:

> it should consist of distinct Houses, or Pavilions, arranged at proper distances on each side of a Lawn of a proper breadth, and of indefinite extent, in one direction at least, in each of which, should be a lecturing Room, with, from two to four apartments for the accommodation of a Professor and his family; that these pavilions should be united by a range of Dormitories, sufficient each for the accommodation of two students only . . . and that a passage of some kind under cover from the weather should give a communication along the whole range.[18]

This was, of course, the plan that had already been adopted for Central College, but the Rockfish Gap report also set forth publicly, evidently for the first time, Jefferson's latest thinking about the treatment of the north end of the Lawn. "A building of somewhat more size, in the middle of the grounds," the report stated, "may be called for in time, in which may be rooms for religious worship, under such impartial regulations as the Visitors shall prescribe, for public examinations, for a library, for the schools of music, drawing and other associated purposes."[19]

The University of Virginia is Established, 1819

The Virginia House of Delegates and then the Senate finally passed legislation stipulating that Central College be the site of the new university in January 1819. Jefferson welcomed this news, but he was disappointed with the financial support that the state had pledged. Only $15,000 a year was allocated, and Jefferson feared that "we shall fall miserably short in the execution of the large plan displayed to the world, with the short funds proposed for it's execution." The pavilions already authorized would accommodate only four professors, and with the proposed level of new state funding, he worried, "we can add but one a year; without any chance of getting a chemical apparatus, an astronomical apparatus with it's observatory, a building for a library with it's library, Etc." "In fact," he wrote, "it is vain to give us the name of an University without the means of making it so."[20]

The University's first Board of Visitors held their first meeting on March 29, 1819. Four of the members had served on the Board of Visitors of Central College—Joseph Carrington Cabell, of Edgewood in Nelson County, a strong supporter of the University in the state senate and Jefferson's collaborator; John Hartwell Cocke, a very close friend of Cabell and owner of Bremo plantation in Fluvanna County; James Madison, the fourth president of the United States, who had retired to Montpelier in 1817; and Jefferson. The other three members were all graduates of the College of William and Mary—James Breckenridge, of Fincastle, an attorney and former congressman; Chapman Johnson, an attorney in Staunton and a state senator; and Robert B. Taylor, of Norfolk, also a lawyer, who had served in the state militia during the War of 1812 as brigadier general. Jefferson was appointed rector, and he and John Cocke became the two members of the committee of superintendence. The Visitors also appointed Alexander Garrett as bursar and Arthur S. Brockenbrough as the proctor of the University. The property belonging to Central College was inventoried and transferred to the new University. In the annual report for the University that he prepared in October 1820, Jefferson recited the language about the library that had first appeared in the Rockfish Gap report—a "building of somewhat more size, in the middle of the grounds"—and noted that it would cost "about 40,000 dollars, and its want will be felt as soon as the University shall open."[21] Without additional funding, construction of the library would have to wait until the buildings already underway—the pavilions, dormitories, and hotels, where students would dine—were finished.[22]

Jefferson's Drawings and Specifications for the Rotunda

Benjamin Henry Latrobe, who had promoted having a more massive building at the center of the north end of the Lawn, had died in 1820, leaving Jefferson to work out the further design of the library on his own. Several of Jefferson's drawings survive. His plan of the first floor shows a large oval room on the east side of the building and another on the west side. To the north was a smaller oval room; in the center of the building was a hallway; and curved stairways were placed in the area to the south. The first-floor plan also shows the portico on the south side of the Rotunda. The portico of The Pantheon in Rome has eight columns across the front and two additional columns and a pilaster on each side; Jefferson designed the portico for the Rotunda with a similar arrangement on the sides but with six columns across the front, perhaps following the hexastyle portico that Latrobe had shown in his July 1817 sketch. The portico is further detailed in Jefferson's south elevation of the Rotunda.

Jefferson's drawings also include a plan of the second floor, another of the proposed roof framing, and a building section, which shows the arrangement of the inner colonnade and galleries on the top floor. Also among Jefferson's papers is a fragment of a study for the first-floor plan.[23] The Rotunda would be 77 feet in diameter, half that of the Pantheon. Unlike the Pantheon, where the base of the idealized sphere, based on the diameter of the dome, would be tangent with the ground floor, the base of the idealized sphere of the Rotunda would fall well below ground, in the basement.[24]

On the back of his drawings, Jefferson had worked out specifications for the building. Its overall height would be 58 feet 4¼ inches, with the basement story 7 feet 6 inches high, the first floor 16 feet high, and the height of the walls of the library 29 feet 6 inches, with the dome rising an additional 19 feet. The shafts of the columns would be 3 feet in diameter and 23 feet 6 inches high. He calculated the number of bricks that would be needed for the exterior wall, as well as for the two "massive chimnies, serving as buttresses," the thick walls at the north and south sides that would also be buttresses, and the columns of the portico, together making a total of 1,112,675 bricks. Adding a half brick to thicken the walls would require another 84,702 bricks, for about 1,200,000 total, which he thought would be "advisable." For the dome room he worked out the placement of the paired columns and the spaces in between. Finally, he laid out the measurements for the curved plate of the roof and for its ribs, which were to be made of four thicknesses of 1-inch plank 18 inches wide, cut into pieces 4 feet long and having breaking joints at every foot.[25]

Jefferson's specification book contained notes on sizing the windows for the Rotunda. "The rule for apportioning the area of windows to the volume of the room is to take the cubic contents of the room in feet, and the square root of that for the area of all of it's windows." He calculated that the "large oval room below" had 17,600 cubic feet; since its square root was 132 square feet and there were to be four windows, then each window should measure 33 square feet. From that information he decided that each window for that room should be 4 feet wide by 8 feet high. To confirm that size, he noted that the "body of the house (shaft & entablature)" was 34 feet 1½ inches high and that the "voids of the 2 windows (below & above)" of the two stories measured 16 feet. Since the voids were "nearly one half" of the total height, he determined that the 8-foot-tall windows were "in good proportion."[26]

Jefferson's drawings were sufficiently worked out by March 1821 that Arthur Brockenbrough, the proctor of the University, could make the following calculations:

Estimate of the cost of the Library –	
1,050.670 bricks at 11$. p M	11.567.37
10 Bases, 8 half do—24 Window sills—2 door do—1,056 feet of steps running Measure—Pedestal Coping & base & flaging for portico	2.884.30
Covering Dome & Portico with Tin	1,840.00
Carpenters Work & Materials 20 circular Window frames 2 door—4 front Window do—2 floors Joists & the entire external finish of Portico, Entablature, Dome roof, Attic &c &c	9,031.19
Total for the Walls & external finish	25,322.86
Carpenters & Joiners work internally 2 Stories	
do do and materials	7,176.30
for terras on each side	2,500.00
Iron railing	1,500.00
Painting & Glazing	1,800 --
Plastering	2,000.00
Iron mongery about	1,000.
	$41,299.16 [27]

Jefferson's drawings for the Rotunda were placed before the Board of Visitors at their April 2, 1821, meeting, and they agreed that "it is expedient to proceed with the building of the Library, on the plan submitted to the board." However, because the state of the University's finances was not at all clear and because some members questioned the accuracy of the construction estimates, the Board made some stipulations: the committee of superintendence was "to ascertain as accurately as may be the state of accounts under the contracts already made, the expences of compleating the buildings begun & contemplated." The committee was directed "not to enter into any contracts for the Library until they are fully satisfied that, without interfering with the finishing of all the pavilions, hotels & dormitories, begun and to be begun" they had funds "also adequate to the completion of the Library so far as to render the building secure & fit for use."[28] Funds for the library were to be sufficient "to put up the walls cover it in, & render it secure and fit for use—in which security and fitness for use, are contemplated at least doors, windows, floors, and stair cases."[29]

Strategies for Beginning Construction of the Rotunda, 1821–1822

Some of the Visitors feared that starting construction of the library would leave the other buildings unfinished and the contractors unpaid,[30] but Jefferson remained optimistic, writing that the legislature's approval of a $60,000 loan meant that the pavilions, hotels, and dormitories could be finished and the library begun.[31] He explained to John Hartwell Cocke, who had not been able to attend the meeting, that the others "were all anxious to begin it this year, but equally agreed not to begin it until we have so clear a view of our funds as to be sure they will suffice to finish it so as to be in no danger of asking

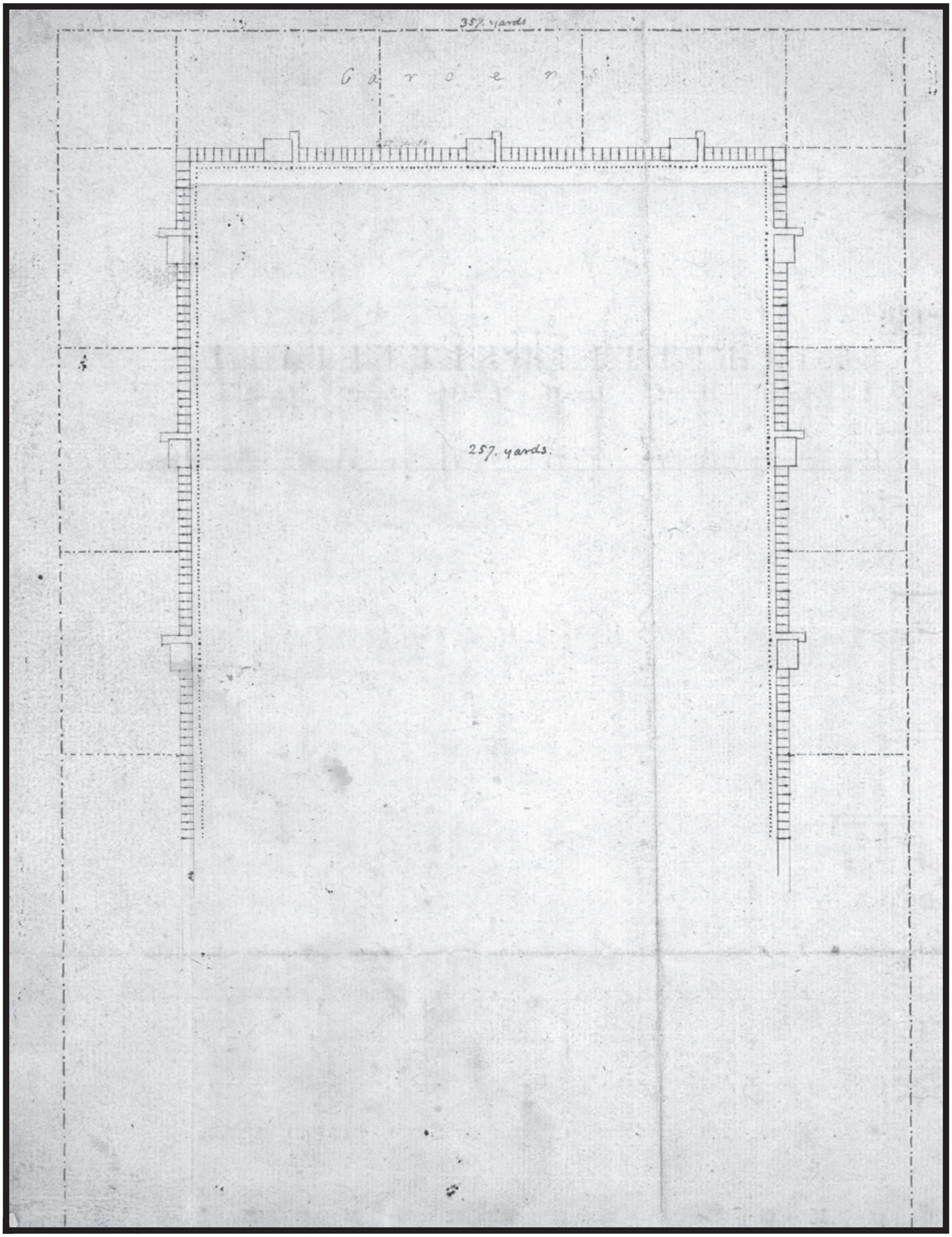


FIGURE 2. *Thomas Jefferson, site plan for Albemarle Academy, showing his ideas for an Academical Village, August 1814.*

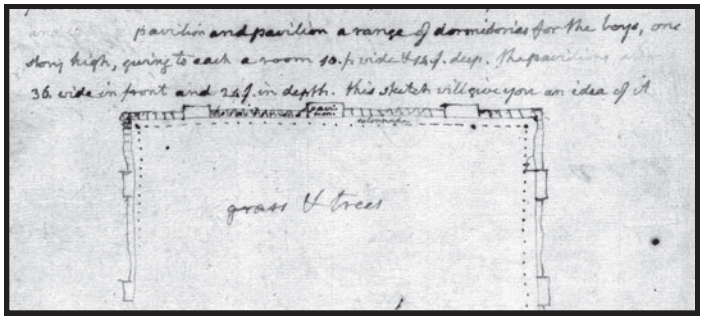


FIGURE 3. *Thomas Jefferson, sketch of site plan for Central College (later the University of Virginia), showing the Lawn, in a letter to William Thornton, May 9, 1817.*

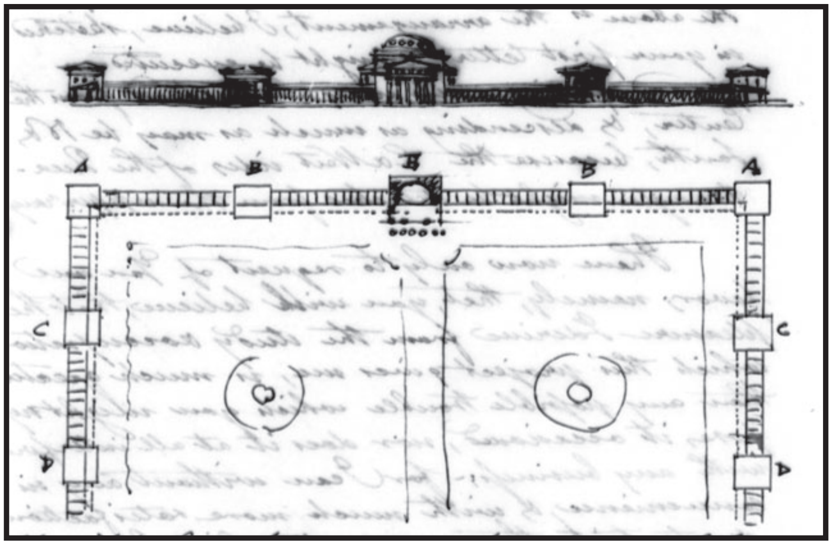


FIGURE 4. *Benjamin Henry Latrobe, sketch proposing a rotunda at the center of the Academical Village, in a letter to Thomas Jefferson, July 24, 1817.*

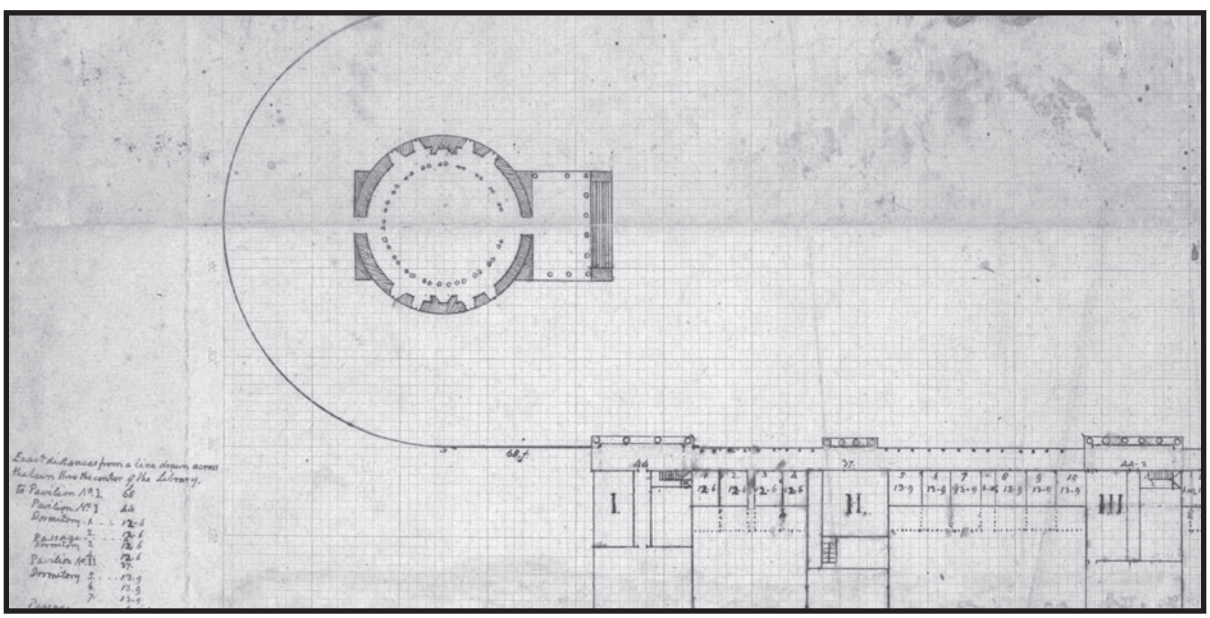


FIGURE 5. *Thomas Jefferson, study for the Lawn showing the Pavilions and the Rotunda, 1818-1819.*

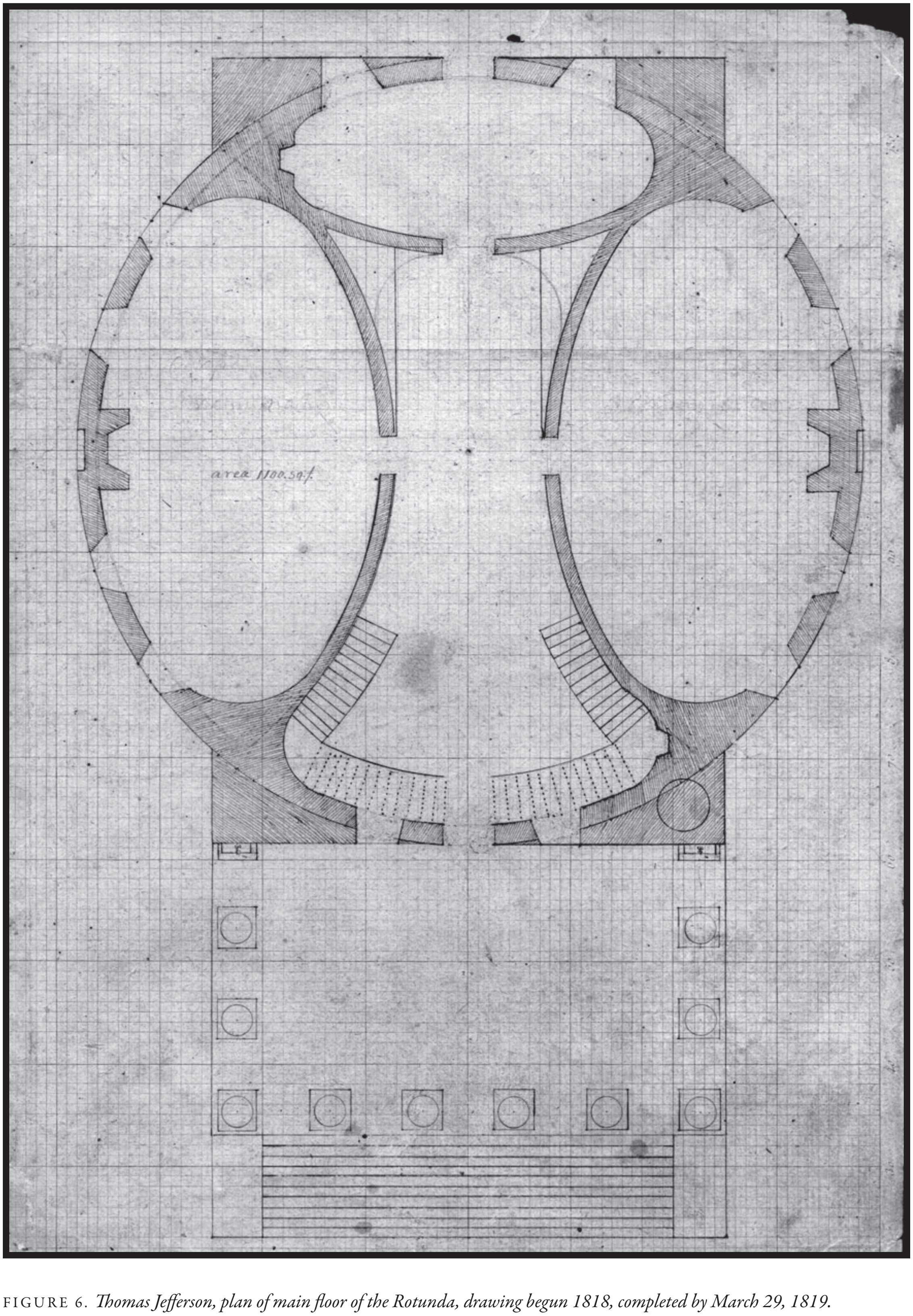


FIGURE 6. *Thomas Jefferson, plan of main floor of the Rotunda, drawing begun 1818, completed by March 29, 1819.*

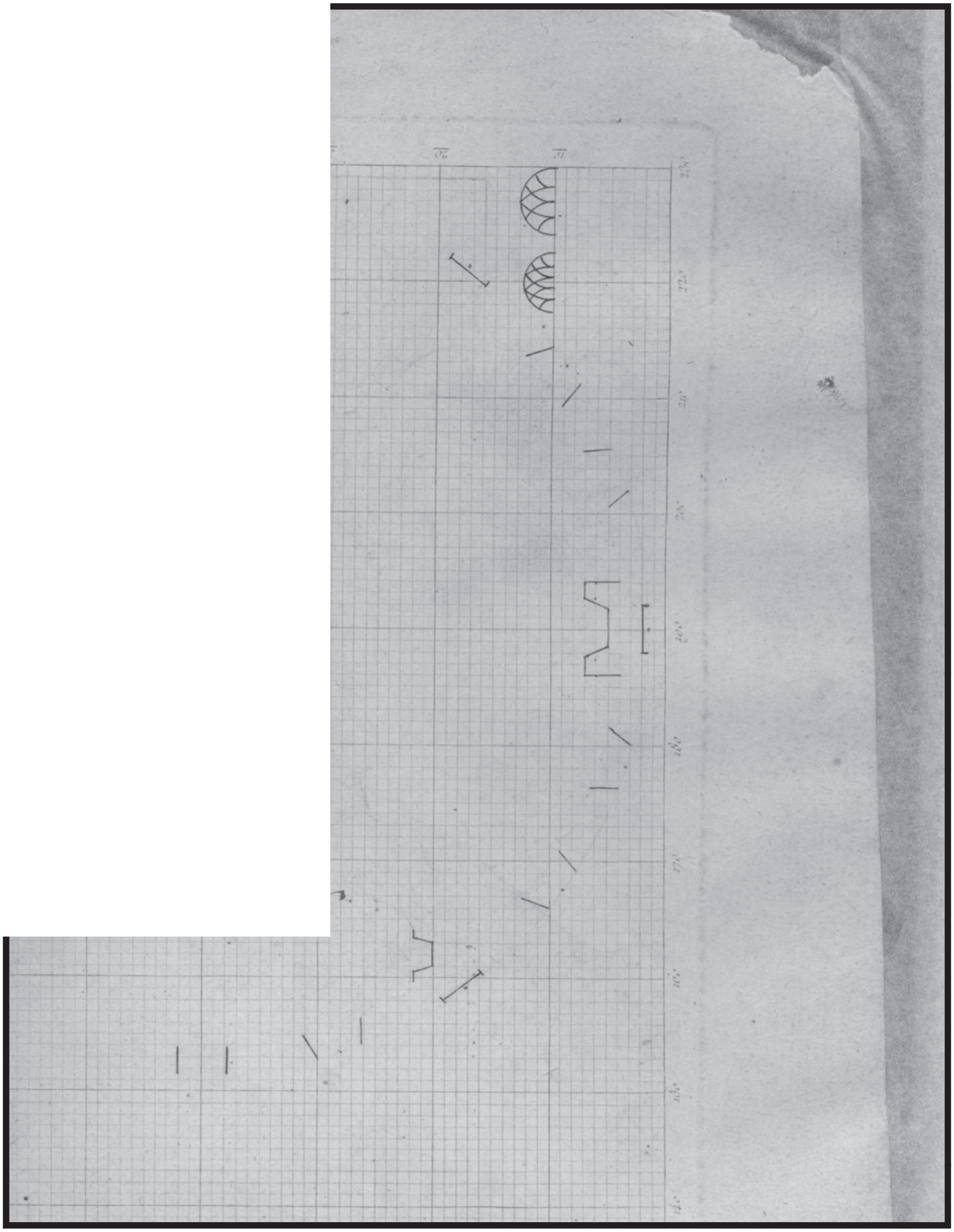


FIGURE 7. *Thomas Jefferson, study for the plan of the Rotunda.*

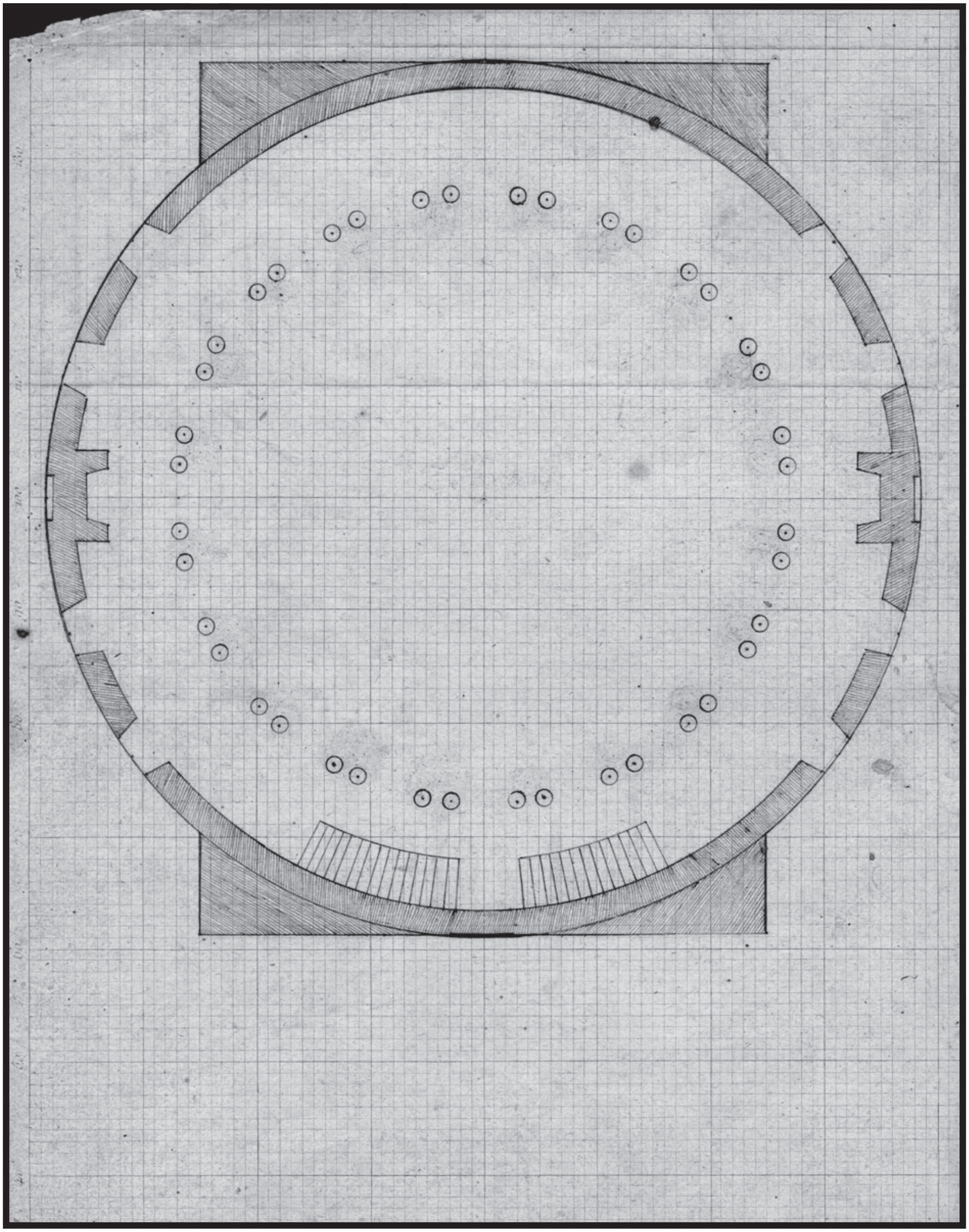


FIGURE 8. *Thomas Jefferson, plan of the Dome Room of the Rotunda, drawing begun 1818, completed by March 29, 1819. Note absence of openings in the north and south walls.*

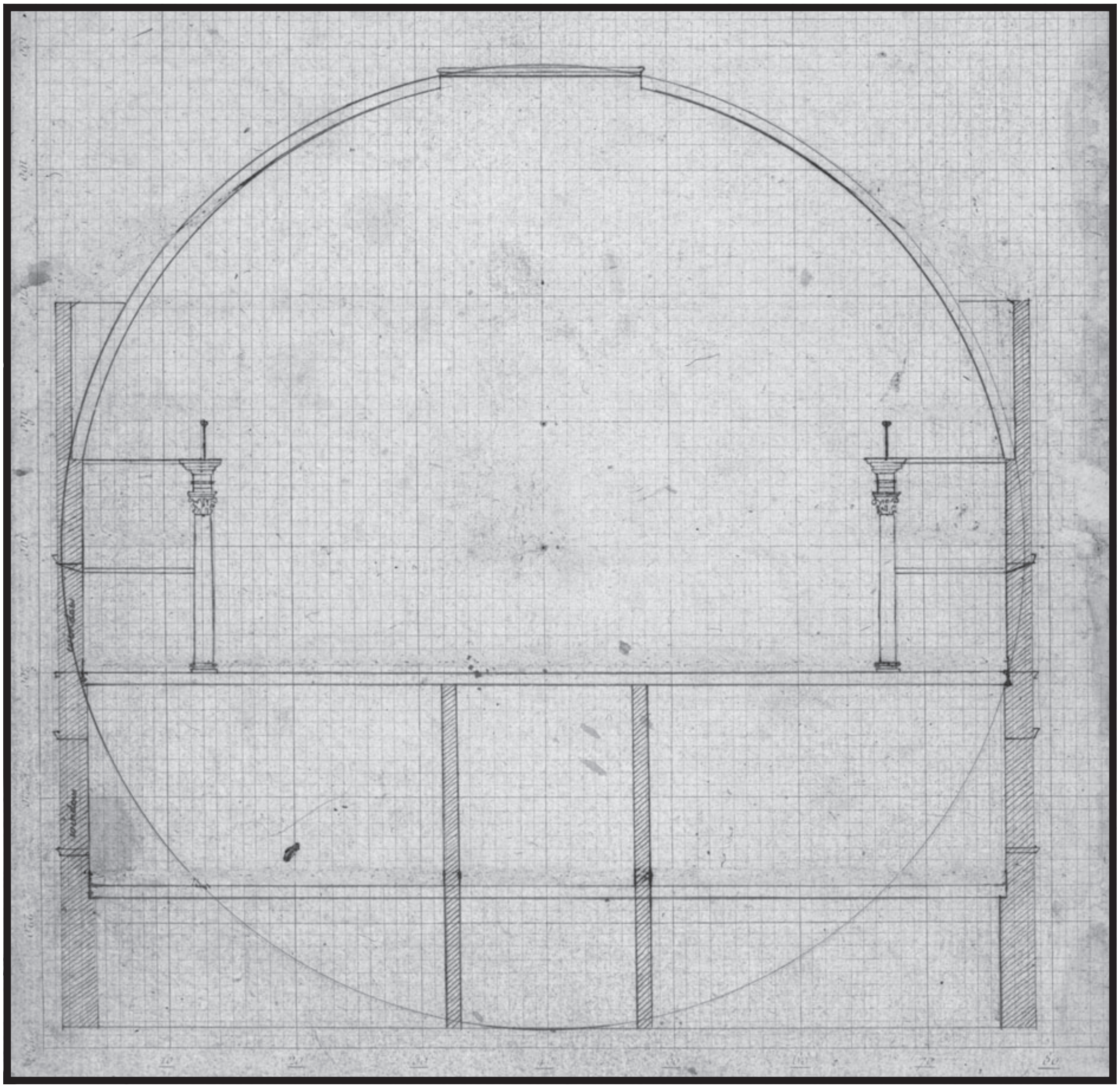


FIGURE 9. *Thomas Jefferson, building section of the Rotunda, drawing begun 1818, completed by March 29, 1819.*

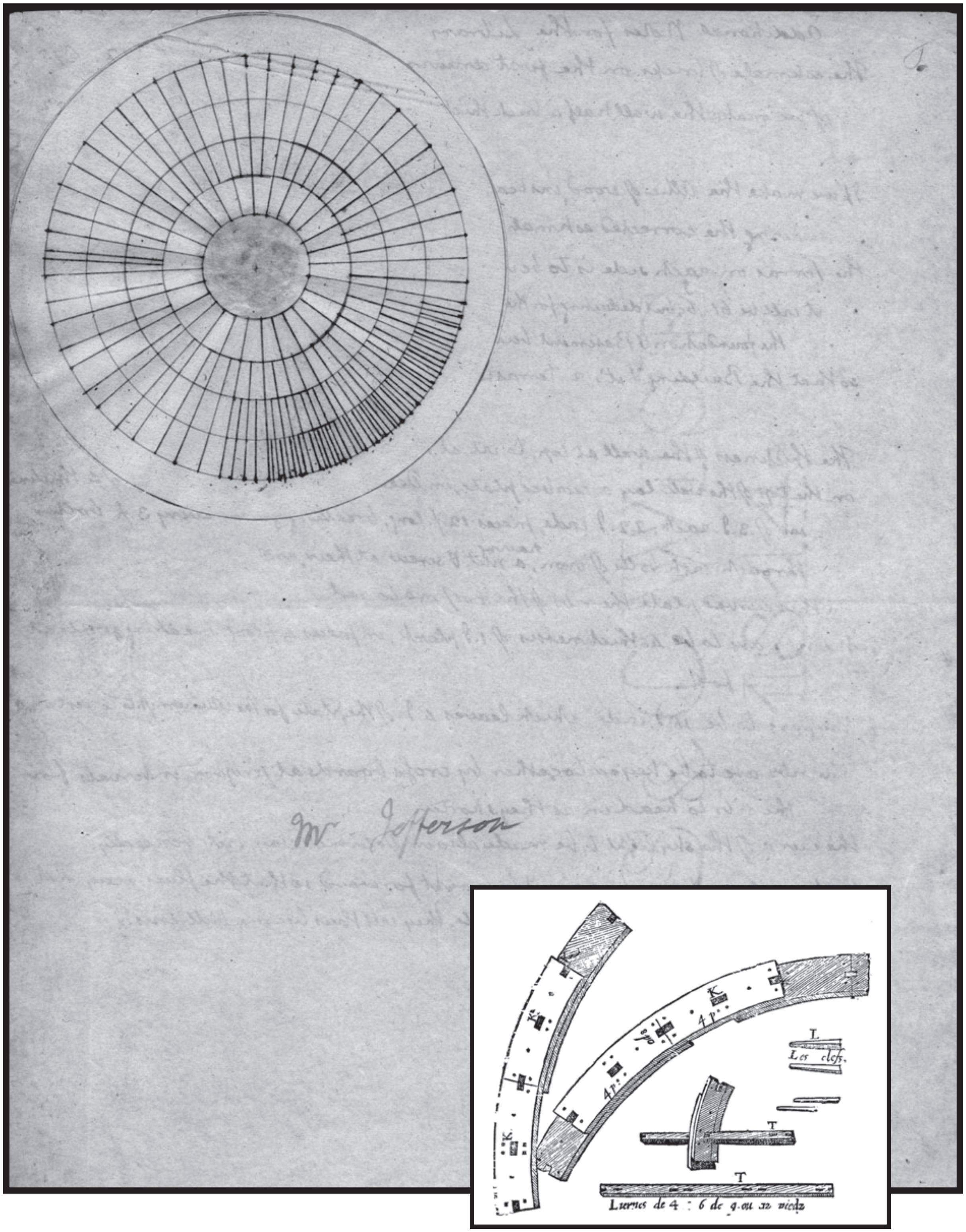
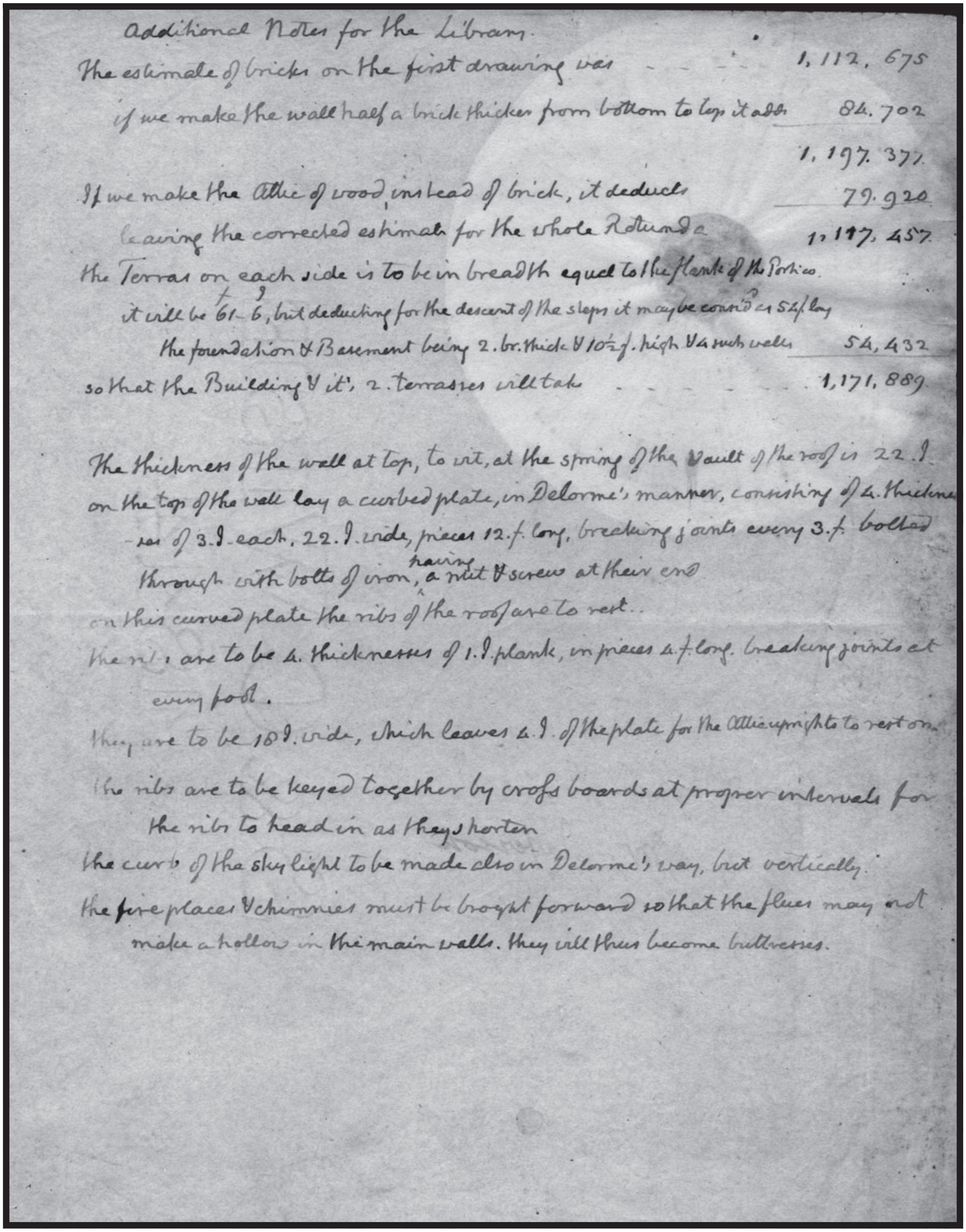


FIGURE 10. *Thomas Jefferson, framing plan for the dome of the Rotunda.*
FIGURE 11. *Plate 24 from Philibert Delorme,* Nouvelles inventions pour bien bastir et à petits fraiz, trouvées, n'agueres par Philibert de L'Orme *(Paris, 1576), showing framing for the Delorme dome.*



Additional Notes for the Library.
The estimate of bricks on the first drawing was - - - - 1,112,675
if we make the wall half a brick thicker from bottom to top it adds 84.702
1,197.377.
If we make the Attic of wood, instead of brick, it deducts 79.920
leaving the corrected estimate for the whole Rotunda 1,117,457
the Terras on each side is to be in breadth equal to the flank of the Portico.
it will be 61 f. 6 I., but deducting for the descent of the steps it may be consid^d as 54 f. long
the foundation & Basement being 2. br. thick & 10½ f. high & 4 such walls 54,432
so that the Building & it's 2. terrasses will take - - - - - 1,171,889.

The thickness of the wall at top, to wit, at the spring of the vault of the roof is 22. I.
on the top of the wall lay a curbed plate, in Delorme's manner, consisting of 4. thicknesses of 3. I. each, 22. I. wide, pieces 12. f. long, breaking joints every 3. f. bolted through with bolts of iron, having a nut & screw at their end
on this curved plate the ribs of the roof are to rest.
the ribs are to be 4. thicknesses of 1. I. plank, in pieces 4. f. long. breaking joints at every foot.
they are to be 18 I. wide, which leaves 4. I. of the plate for the Attic uprights to rest on.
the ribs are to be keyed together by cross boards at proper intervals for the ribs to head in as they shorten
the curb of the sky light to be made also in Delorme's way, but vertically.
the fire places & chimnies must be brought forward so that the flues may not make a hollow in the main walls. they will thus become buttresses.

FIGURE 12. *Thomas Jefferson, specifications for the framing of the Rotunda, written on the back of the framing plan of the dome.*

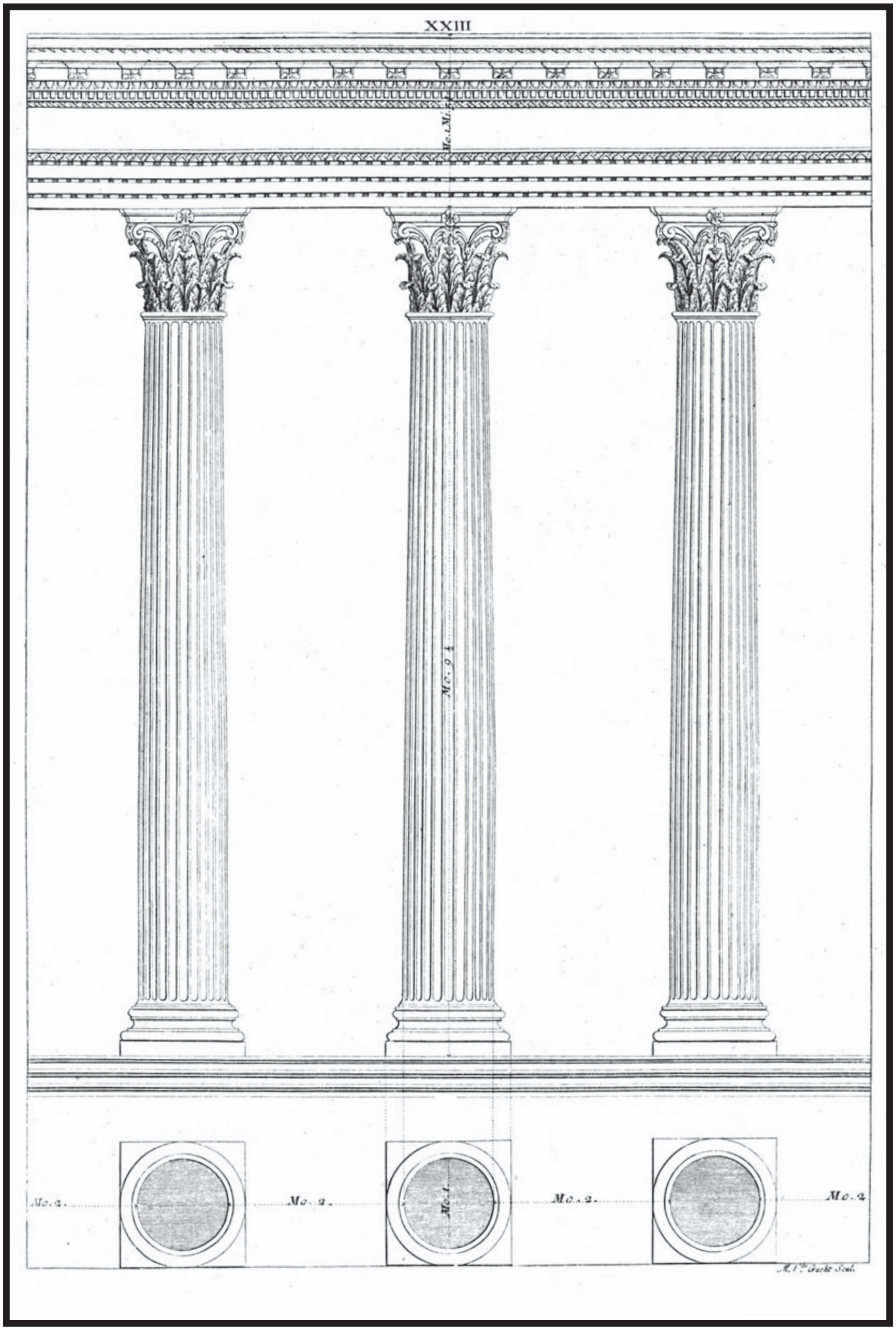


FIGURE 13. *Book I, Plate XXIII, from Giacomo Leoni,* The Architecture of A. Palladio *(London: 1721).*

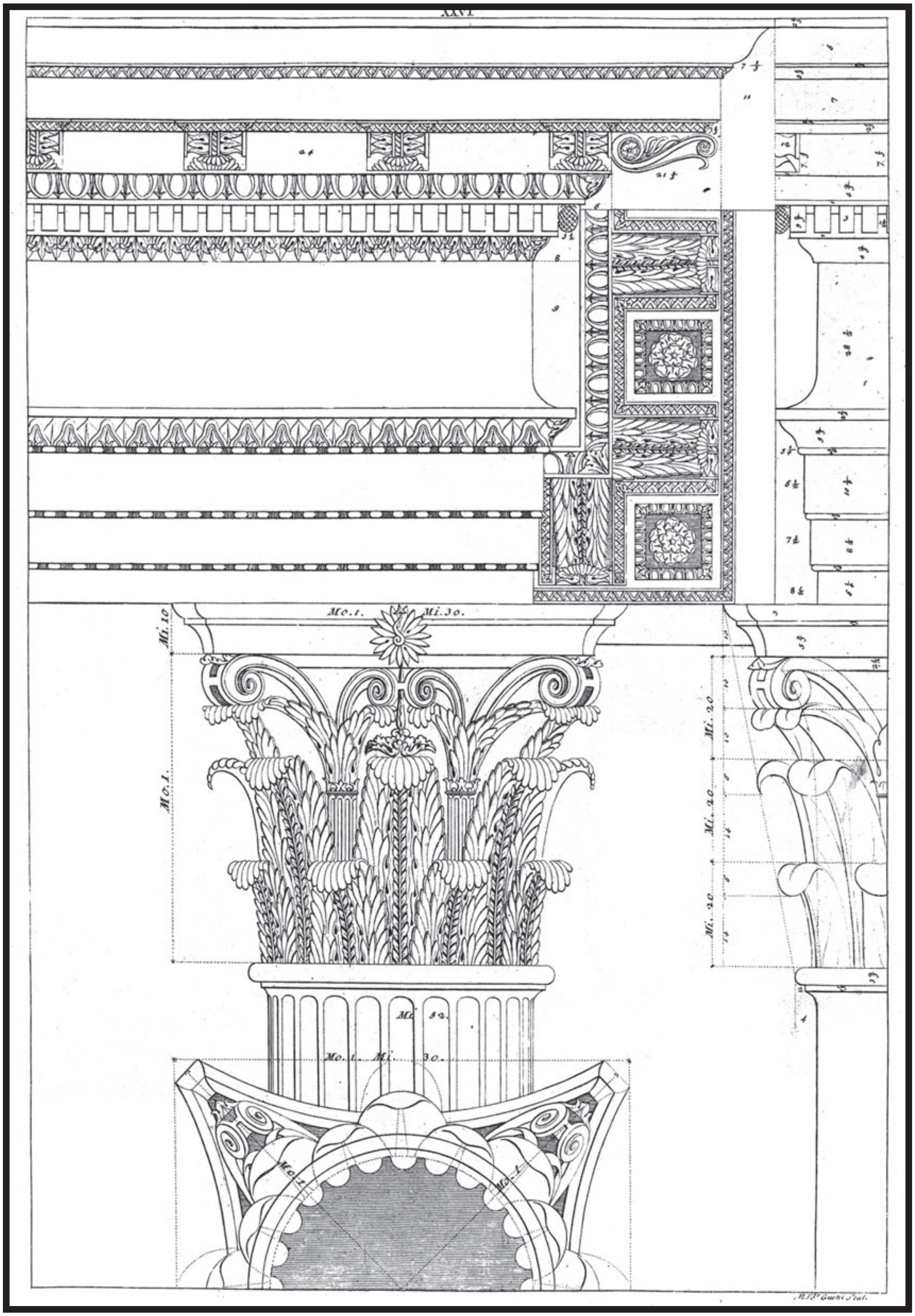


FIGURE 14. *Book I, Plate XXVI, from Giacomo Leoni,* The Architecture of A. Palladio *(London: 1721).*

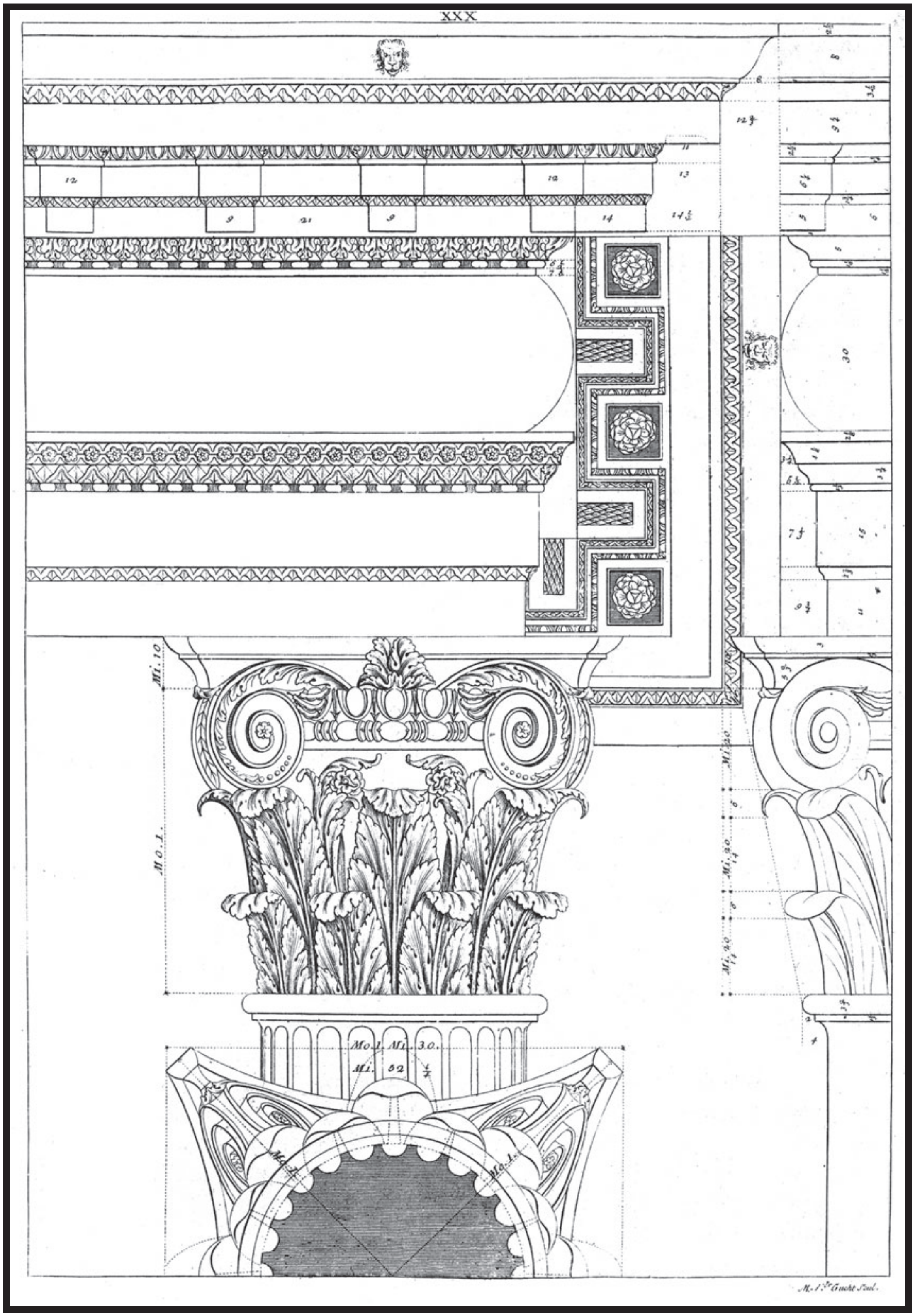


FIGURE 15. *Book I, Plate XXX, from Giacomo Leoni,* The Architecture of A. Palladio *(London: 1721).*

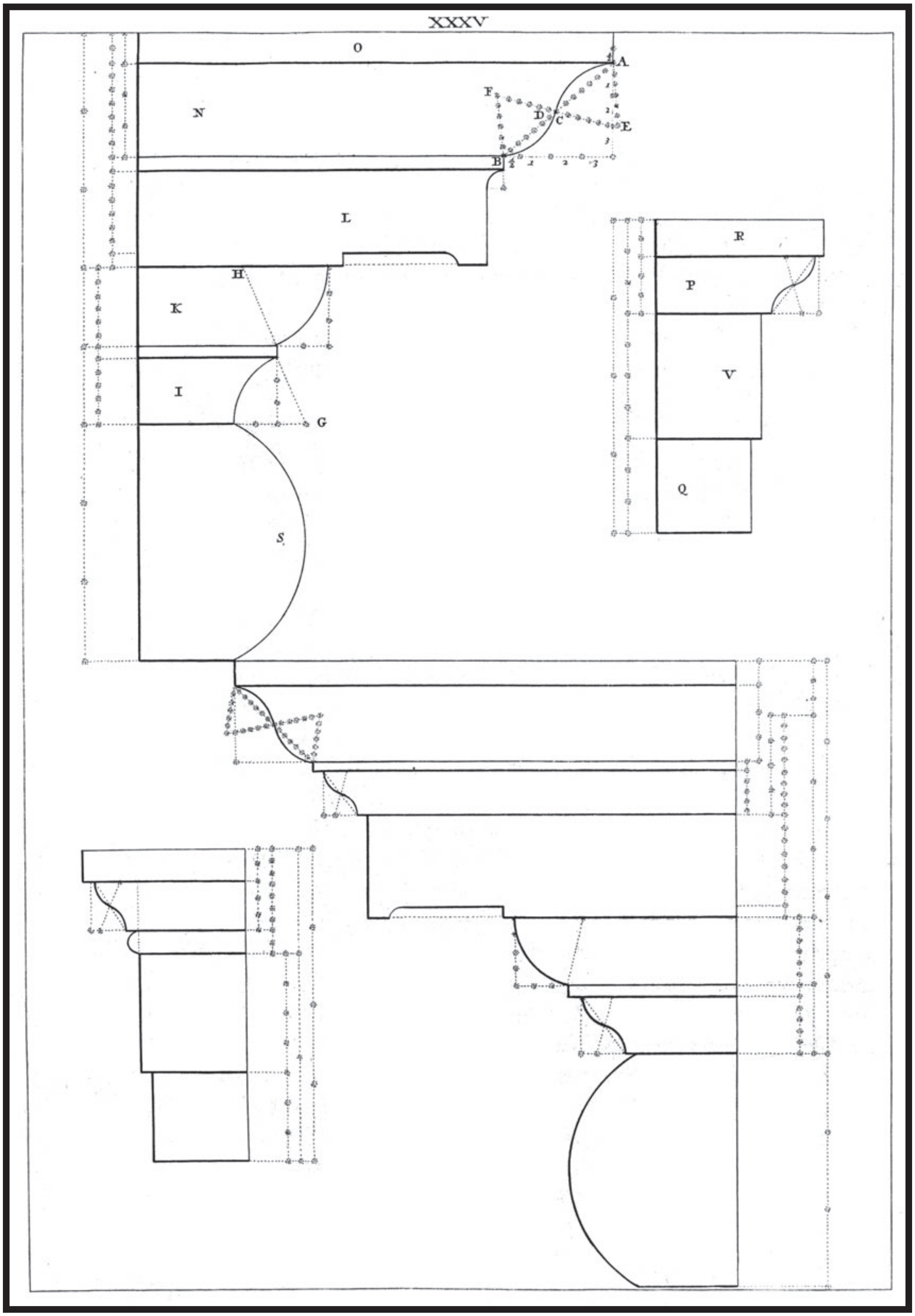


FIGURE 16. *Book I, Plate XXXV, from Giacomo Leoni,* The Architecture of A. Palladio *(London: 1721).*

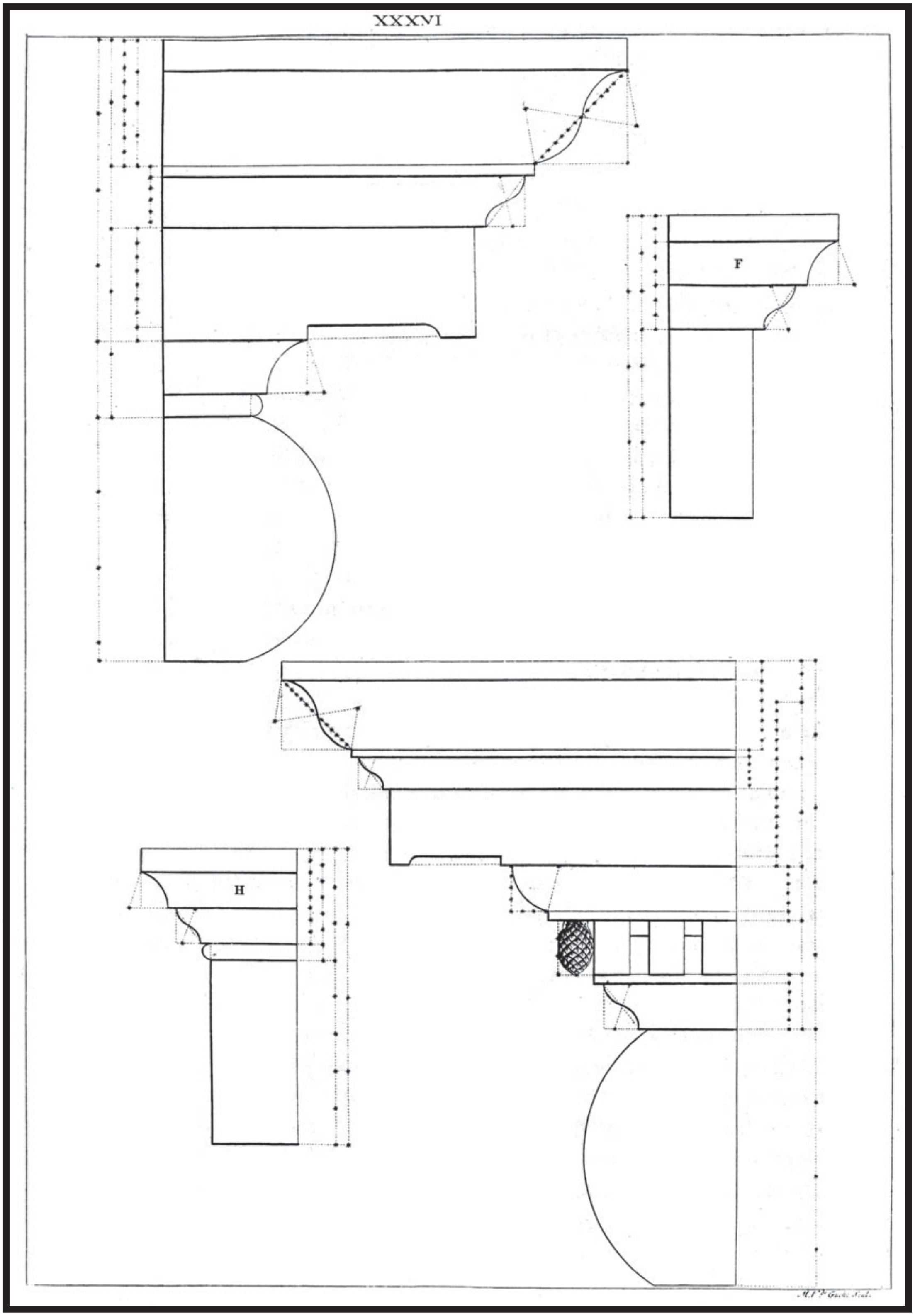


FIGURE 17. *Book I, Plate XXXVI, from Giacomo Leoni,* The Architecture of A. Palladio *(London: 1721).*

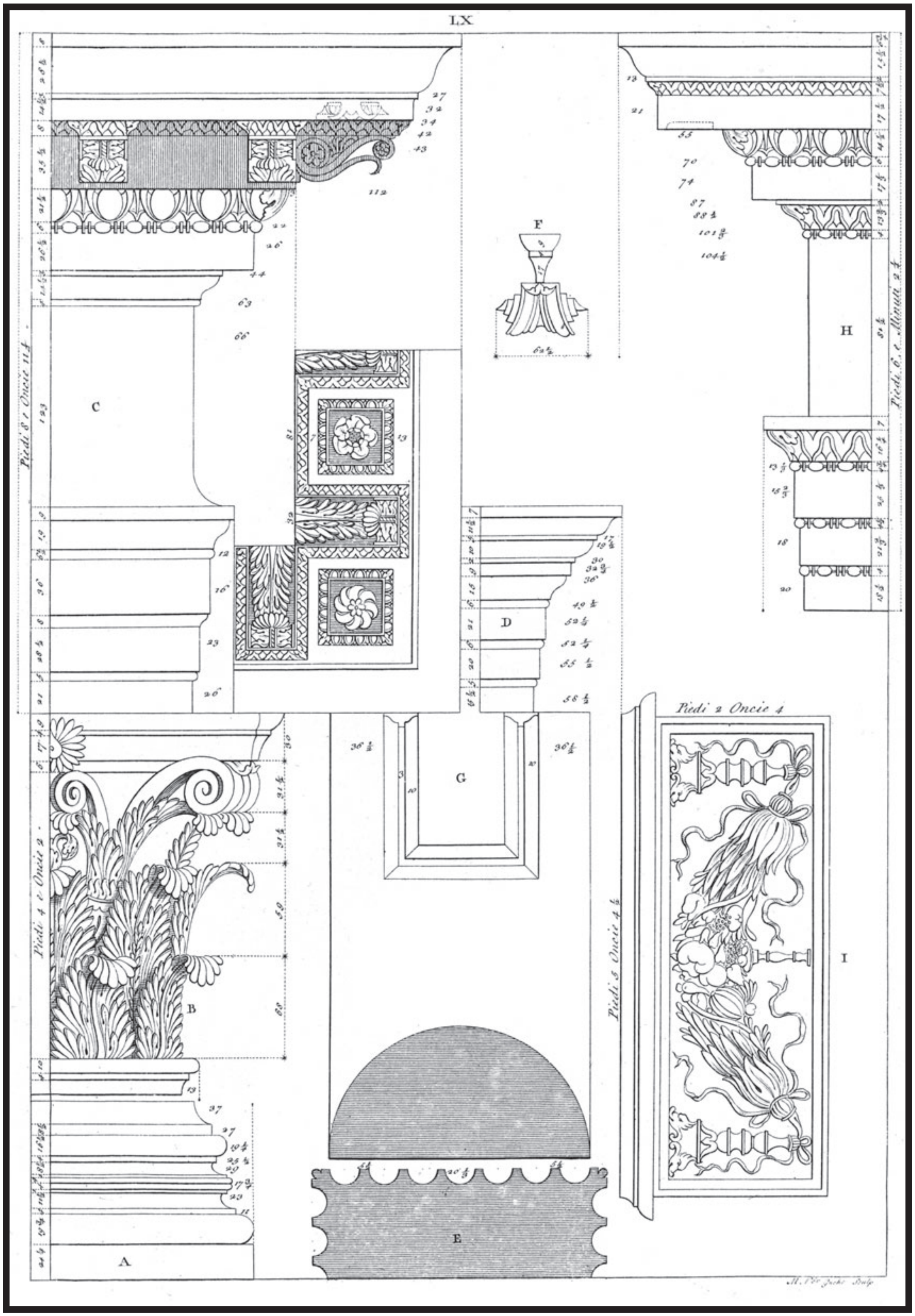


FIGURE 18. *Book IV, Plate LX, from Giacomo Leoni,* The Architecture of A. Palladio *(London: 1721).*

more money for the buildings." Much of the uncertainty lay with the proctor's bookkeeping; he had kept the accounts by individual contractor, rather than by building, making it difficult to project how much it would cost to finish the pavilions and how much would be left for the Rotunda.[32]

Within a week of the Visitors' April 1821 meeting, Jefferson wrote Cocke that he was hoping to move ahead with making the million bricks that would be needed for the walls of the Rotunda.[33] A few days later Jefferson wrote to Thomas Appleton, the U. S. consul based in Leghorn, Italy, about the capitals for the south portico of the Rotunda, believing that they "would cost in marble there not a third of what they would in stone here." He asked Appleton for a price on ten Corinthian capitals for columns having a 32 $^{4}/_{10}$-inch diminished diameter and eight "half capitals" for the pilasters; they were "to be copied from those of the Rotunda or Pantheon of Rome, as represented in Palladio." Jefferson wanted the capitals to be done within a year, but Appleton, who was surprised at their large size, replied that they would take nine months to carve once the actual order was received. However, five years would pass before the capitals would finally arrive in Charlottesville.[34]

Meanwhile, Brockenbrough had been busy with his account books, and in September 1821 Jefferson wrote his fellow Visitors that actual costs plus the estimated amounts to complete the pavilions, hotels, and dormitories would total $195,000 and that it would be necessary to use the promised private contributions toward that work. He estimated the cost of the Rotunda to be $43,675, with the "hull" costing $30,200 and the balance needed for the interior. By the time Brockenbrough had compiled the financial information, it was too late in the building season to begin construction of the library. It was also clear that the funds for the library would have to come from the state monies promised for the upcoming three years, not from current funds.[35]

Jefferson wrote James Madison, another of the Visitors, that he was "decidedly of opinion" that they should nevertheless push ahead with the library. "If we stop short of the compleat establishment, it will never be completed." he argued. "On the other hand," he continued, "the stronger we make the mass, the more certainly will it force itself into action. The world will never bear to see the doors of such an establishment locked up."[36] Joseph Cabell, whose support as a member of the state Senate had been critical to the progress of the University, agreed that it was politically important to complete the construction work, writing that "the nearer you now get to the end the better." If the Visitors decided instead to keep the small remaining funds in hand, he thought, that sum "would strike the eye by its insignificance." If construction were completed or nearly so, however, "the great establishment will stand forth a monument to gratify the pride of its friends, & deter the further opposition of its enemies." Rather than going back to the General Assembly for more money, Cabell advised, "a quick, silent march seems to be the most proper, at this time. Presently we shall be done with the buildings, and all complaints on that hand will vanish."[37]

Jefferson's pride in the overall progress so far was apparent in a report that he sent in November 1821 to his former secretary, William Short, telling him that "All its buildings except the Library will be finished by the ensuing spring. It will be a splendid establishment, would be thought so in Europe, and for the chastity of its architecture and classical taste leaves everything in America far behind it." The library, though, was "essentially wanting to give it unity and consolidation as a single object." It was, he continued, "to be on the principle of the Pantheon, a sphere within a cylinder of 70 feet diameter,—to wit, one-half only of the dimensions of the Pantheon, and of a single order only."[38]

Meanwhile, Brockenbrough was preparing a detailed report for the Board of Visitors to review at their upcoming meeting. He explained that "the balance required to complete the present building, exceeds the former estimates." "If this was a novel case in building, I should feel much chagrined at it," he continued, "but as we have numerous precedents before us in all great public works, and indeed in all large private buildings, (occasioned by innumerable contingent and other expenses that man cannot foresee, and which is known to all that are any way conversant in building.) I am the better satisfied.[39]

At their special meeting, held at the end of November 1821, the Board of Visitors agreed to commission an engraving made of the "ground plat of the University including the library," even though work on the library had not begun.[40] The Visitors' annual report for 1821 stated that the "buildings of accommodation" were well along: six of the pavilions were complete and four more "nearly finished"; two hotels were done and four more almost completed; and 82 dormitories finished and 27 nearly so. The total cost to date of the buildings and the land stood at $201,550.70, with another $53,494.79 needed to finish those structures. The library was now estimated at $46,847.[41]

John Cocke reported to Joseph Cabell that before the meeting Jefferson had been convinced that the library should not be begun because of the financial situation,[42] but in a letter early in 1822 Jefferson restated the strategy—to complete all buildings, including the library, before opening the institution, "because, once opened the funds will all be absorbed by salaries Etc. and nothing left to compleat the buildings." "The moment therefore of going into operation," he wrote, "is as uncertain now as it ever was."[43] Later that spring he told Madison that the Rotunda funding had become entangled in the dispute over moving the capital from Richmond to Staunton.[44] The results of the elections held later in 1822, however, promised that new legislators who were more favorably disposed toward the University and the Rotunda would be in Richmond for the next session and thus enhanced the possibility of funding for the Rotunda. Jefferson saw the Rotunda as "the key stone of the arch."[45]

By the fall of 1822 the Board of Visitors could report proudly that ten pavilions facing the Lawn, six hotels, and 109 dormitory rooms had been completed except for a few details. The bills for this work would have been fully paid except that some private subscriptions were still outstanding. These buildings represented all the construction that had been proposed in the Rockfish Gap report of 1818, with the exception of the library. To move ahead on that front, the Board of Visitors agreed at their October 7, 1822, meeting to direct the proctor to "enter into conferences with such skilful and responsible undertakers as he would approve, for the building of the Library, on the plan heretofore proposed, and now in his possession." He was "to procure from them declarations of the smallest sums for which they will undertake the different portions of the work of the said building, each portion to be done as well, in materials, manner and sufficiency, as the best of the same kind of work already done in the preceding buildings, or as well and sufficiently as shall now be agreed on." The proposals were also to include prices by line item and a phased schedule.[46]

At the same October 1822 meeting the Visitors approved the draft of their annual report, including in it an appeal for the means to complete the Rotunda, which was "to contain rooms for religious worship, for public examinations, for a library, and for other associated purposes." Still fearing that opening the University would mean that the "whole income of the University will be absorbed by the salaries of the professors, and other incidental and current expenses" and would preclude further construction, the Visitors felt that "it is still better to postpone, for a while, the commencement of the institution, and then to open it in full and complete system, than to begin prematurely, in an unfinished state, and go on, perhaps for ever, on the contracted scale of local academies, utterly inadequate to the great purposes" that had been put forth in the Rockfish Gap report and intended by the state legislature. "In its imperfect state," the annual report continued, the University would "offer little allurement to other than neighbouring students, and that professors of the first eminence in their respective lines of science, will not be induced to attach their reputations to an institution, defective in its outset, and offering no pledge of rising to future distinction." The "present state of the funds," the report continued, rendered the "prospect of finishing this last building indefinitely distant." Half of the University's income was already devoted to interest on funds that had been borrowed. If the state would forgive the loans and if the customary annual funding could be applied to the construction of the library, it could be completed in three to four years and the school then opened. Better yet, more funding would make it possible to push the library construction more quickly and open the school even sooner.[47]

Jefferson sent Brockenbrough a copy of the Visitors' resolutions of October 1822, directing him to solicit bids for constructing the Rotunda and to place a newspaper advertisement appealing to subscribers to fulfill their commitments to the school.[48] By December the proctor had secured prices from the contractors, but the news must have been somewhat discouraging: the earlier estimate of $46,847 had not included the "two considerable appendages necessary to connect it with the other buildings," and these terrace wings could push the estimate up by a third.[49] Some of the news was even worse. Joseph Cabell had seen a letter from contractor James Dinsmore stating that the Rotunda would cost at least $70,000;

Cabell had insisted that the letter be burned so it would not to fall into the hands of the University's enemies. While Jefferson hoped that the new legislature would be more liberal with the University than the previous one, Cabell still thought it prudent not to ask the legislature for more than $50,000. A proposal for $70,000, he warned Jefferson, "would probably blow up all our plans," although a "conditional contract for $60,000, might not do harm." Cabell wanted to "ask boldly to be exonerated from our debts by the powerful sinking fund of the state."[50] William Cabell Rives suggested another approach, that unappropriated funds ($66,663.79) then held by the state Literary Fund be sought to build the Rotunda, either as a loan or a grant; once the Rotunda was done and the University opened, he argued, the legislature could not refuse to forgive the loans. Rives urged Jefferson to send the annual report of the Board of Visitors to Richmond immediately: the "sooner we can bring the subject to the view of the Legislature, the better will be our chance of success."[51]

Jefferson dispatched the report to Richmond on December 23, 1822, just four days after Rives had written, and it noted that the earlier estimate for the Rotunda had not included the cost of the terrace wings.[52] Rives had also asked whether it would be a better strategy to push for the remission of the debt or for funds for building the library; Jefferson replied that "of all things the most important is the completion of the buildings. The remission of the debt will come of itself." "To stop where we are is to abandon our high hopes, and become suitors to Yale and Harvard for their secondary characters, to become our first," he wrote. The Rockfish Gap report, he reminded Cabell, "authorised us to aim at much higher things; and the abandonment of the enterprise where we are would be a relinquishment of the great idea of the legislature of 1818, and shrinking it into a country academy." Opening the University "in a half-state of readiness," he continued, would put it "on a subordinate character in the outset, which never would be shaken off." Instead, "taking our stand on commanding ground at once will beckon every thing to it, and reputation once established will maintain itself for ages."[53]

Jefferson thought that Cabell's "idea of a loan and placing it on the sinking fund an excellent one," and he challenged Dinsmore's $70,000 estimate, saying that it was evidence of Dinsmore's "greediness." Jefferson stood by Brockenbrough's carefully calculated estimate. Even with the added cost of the terrace wings, Jefferson believed that "we are safe in saying that another loan of 60,000. D. will place us beyond the risk of ever needing to ask another Dollar on that account."[54] By December 30 Cabell had drafted a bill for the loan to build the Rotunda, but he wondered about what dollar amount to propose, worrying that other members of the legislature might question the differences among the various estimates.[55] By February 5, 1823, the loan, for $60,000, had been approved by both houses of the General Assembly.[56]

A few months earlier Jefferson had written his friend Maria Hadfield Cosway that he had been spending his time "laying the foundation of an University in my native state." "I have been myself the Architect of the plan of it's buildings, and of it's system of instruction," he told her. "Four years have been employed in the former, and I assure you it would be thought a handsome & Classical thing in Italy. I have preferred the plan of an Academical village rather than that of a single, massive structure. The diversified form which this admitted in the different Pavilions, and varieties of the finest samples of architecture, has made of it a model of beauty original and unique." There was, he continued, "still one building to erect, which will be on the principle of your Pantheon a Rotunda like that, but of half it's diameter and height only."[57] With the loan now approved, Jefferson could move ahead with that final structure.

Signing the Construction Contracts and Beginning Work, 1823

On February 18, 1823, Alexander Garrett, the University's bursar, wrote to John Hartwell Cocke about how Jefferson had received the good news that the General Assembly had authorized a loan of $60,000 to the University for the construction of the Rotunda: it had given Jefferson "heart felt pleasure," Garrett explained, with "his manner, conversation, and countenance" all depicting "the joy of a father on the birth of a first and long-wished for son; the day after receiving the news he rode to the University (for the first time he had been on horse back since breaking his wrist)." Jefferson was hoping that the workmen would be able to begin preparations for construction at the University immediately, because otherwise they would be "obliged to be looking out for other work for the season, if their employment here is not soon decided on."[58] "The big house is still his first object," Garrett reported.[59] John Neilson, one of the contractors at work elsewhere at the

University, wrote to Cocke a few days later, confirming that he, too, had found Jefferson "in high spirits in consequence of the mony granted by the Asembly."[60]

Neilson also told Cocke that Jefferson was already busily moving ahead, "full of brickmaking ideas at present" and having already engaged, or about to engage, a superintendent for the brickyard, a "Mr. Thorn (a brick-layer who came here in partnership with Mr Ware)." Jefferson, Neilson told Cocke, had been "better pleased" with the color of the bricks that were used in Pavilions II and IV. Neilson, already worried that the construction of the Rotunda would be "an unprofitable job," advised Cocke that all the contractors for the Rotunda should be required "to give security for the faithfull performance" of their work "to the full amount of the mony they are to receive"; when work was done imperfectly, a reduction in the price would be "but a small consolation" to the owner. A responsible guide for estimating the brickwork, Neilson stated, would be $9 per 1,000 bricks. Perhaps somewhat obsequiously, he added that he sincerely wanted to see the work "executed in a manner that will reflect credit on all who are concerned with it"; "in short," he wished that the construction work be "equal to the grandeur of the design, which I have never seen equaled."[61]

Jefferson, according to Neilson, was well aware that the $60,000 loan would "barely enable" workers "to close in the building and complete the exterior part of it." Neilson consequently suggested to Cocke some cost-cutting strategies. The exterior steps, for instance, could be built temporarily of brick, and the stonework put off "until a future day." The basement story could be finished "in a very plain manner, that would afford ample convenience for lecture rooms" and could be used while waiting for funds to complete the upper stories.[62]

Jefferson was indeed ready to move ahead. Early in January 1823 he had told his fellow Visitor James Madison that if the loan bill passed, then a special meeting would be necessary, especially in order "to engage our workmen before they undertake other work for the ensuing season."[63] Jefferson wrote to Madison again in late February, stating that the "acceptance of the loan" was "now approved by five of us." He told Madison that he planned to "proceed immediately to have the workmen engaged." Since "there are some very important points to be decided on previously to embarking in such a building," Jefferson had tried to get Cocke "to join me in setting the thing agoing," but Cocke could not help because he could not leave home. Since "the case admits no delay," Jefferson wrote, he would therefore "proceed according to the best of my judgment, and with the aid of mr Brokenbrough, and with all the caution the case admits."[64]

In less than two weeks Arthur Spicer Brockenbrough, the proctor of the University, had entered into the two key contracts for the Rotunda: one with Abiah B. Thorn and Nathaniel Chamberlain, dated March 8, 1823, for the masonry work and the second with Dinsmore and Neilson, executed on March 11, 1823, for the carpentry work, including the domed roof.

The agreement with the masons stated that the University was to supply the bricks, the lime and sand for the mortar, and the scaffolding. Thorn and Chamberlain agreed "to have the work done on the following manner, viz they are not to put in the wall any samel bricks, nor to use more than one bat to five whole bricks, the bricks to be layed in what is called flemish bond that is header & Strecher alternately." The walls were "to be solidly grouted from bottom to Top and in every course if deemed necessary by the Proctor with cement of a fourth lime and three fourth good pure sand." The mortar for the exterior work was "to be made of a third lime and two thirds good sharp sand." The bricks used on the exterior walls were "to be of the best rubed stretchers and equal in quality and regular colour to the fronts of the Pavilions No 2 and 4." All walls were "to be run perfectly plum and true, under the penalty of being taken down and put up correctly by other persons" if the contractors refused to redo the work. Thorn and Chamberlain were to put up the scaffolding "in a good & substancial manner" and to leave it in place for the carpenters to use. The masons were responsible for finding the "labourers to make up the mortar and attend the brick layers." Only "experienced and compitent workmen" were to be engaged in laying the brick. The masons were to be paid $2.75 for every thousand bricks laid. The measuring system used to determine payments was to follow the standard procedure at the University, "with one half of the openings deducted from the solid contents." In a postscript to the contract, Thorn agreed to provide the "necessary instructions" for setting up the brickyard and then to supervise the making of all the bricks for the Rotunda.[65]

The contract with Dinsmore and Neilson provided similar stipulations about the carpentry and joinery. They were to provide the centering for the brick work, the framing and sheathing of the portico and the roof, the "Corinthian entablature all round complete," the cornice, and the "steping on the roof" at the base of the dome. They were also responsible for "All the Window frames & sashes, the two principal floors, the out side doors including the outside finishing," the staircases, and "the wood bricks and bond timbers &c that may be required hereafter for the finishing of the inside work." All of their work was "to be executed in the best and most substantial manner." As in the masonry contract, the University was to provide the construction materials, but Dinsmore and Neilson were to handle the contracts for the lumber, which were to be negotiated "on the best possible terms"; they were to have the lumber "well seasoned before it's used, to take care of the same and see that there is no unnecessary waste."[66]

Brockenbrough planned to rely upon the carpenters as inspectors of the masonry work, giving them the "right to examine into the correctness of the work as it goes on and to notify the Proctor if any thing be going on wrong in time for correction." In addition, the brick work was "to be layed off at the commencement" by Dinsmore and Neilson, and they were "to examine the correctness of it as it progresses, and if not done agreeable to their directions to notify the Proctor in time for correction, but if any part of the brick work done agreeable to the directions of the said Dinsmore & Neilson or either of them, should be found wrong," then they had to "pay for the necessary alteration of the brick work, including the loss of materials & labour."[67]

The pricing for the carpentry contract had taken some thought on Brockenbrough's part and presumably some negotiation. The prices were "to be governed by the average prices of work in Philadelphia undertaken between the time of signing this contract and the completion of the work." Two mutually-agreed-upon measurers from Philadelphia were to travel to Charlottesville to calculate the completed work; the prices were to "be fixed agreeable to the present prices of work in Philadelphia that is at the percentages above or below their price Books." For work not covered in the price books, the measurers were to "be guided by what they shall deem justice to both parties." In the meantime the carpenters were to receive payments periodically for their workers and themselves.[68]

Brockenbrough sent the contracts off to Jefferson immediately, with a special explanation about the Dinsmore and Neilson agreement. The plan for measuring the work, Brockenbrough explained, offered advantages over other methods: it would ensure the "faithful performances of the work, by Men competent to the task"; otherwise, even reliable contractors like Dinsmore and Neilson would have had to bid high to protect themselves, and any alterations would have proved very costly to the University.[69] Brockenbrough was betting that the current pricing in Philadelphia was then 10 to 25 percent below the price books and that there would not be much change before the Rotunda was completed. It must have been a relief to Brockenbrough when Jefferson returned the carpentry contract, agreeing with Brockenbrough's reasoning and adding that it was important to have benchmarks "at certain stages of the work to ascertain the exact state of our funds, that we may stop where they fail." Jefferson thought that bringing in measurers from Philadelphia might present "some obstruction" but expected that it could be worked out.[70]

Jefferson followed up on March 12, 1823, with a letter to his fellow Visitors, telling them that he had "authorized Mr. Brockenbrough to engage the work of the Rotunda and have it commenced immediately." There were "only two bricklayers and two carpenters capable of executing it with solidity and correctness," he explained. All had limited financial resources, so instead of asking them to put up the capital for "so great an undertaking" or having the University risk giving them a 50 percent advance with little security, Brockenbrough had settled on terms that would, Jefferson thought, "make our money go the farthest possible, for good work." The contracts were "only for the hull compleat," in other words for the foundations, walls, floors, and roof.[71]

The construction was expected to take three years, Jefferson explained: "we can pay for it, see the state of our funds and engage a portion of the inside work so as to stop where our funds may fail, should they fail before it's entire completion." Jefferson's strategy was that once the envelope of the building was complete, then it could "rest ever so long, be used, and not delay the opening of the institution."[72]

Madison told Jefferson that he approved Jefferson's plan, "in order to avoid a loss of time in executing the Rotunda,"[73] and Joseph C. Cabell, too, agreed, writing that "I am at all times disposed favorably to every thing which you think best for the University." Cabell warned Jefferson, though, that at the upcoming meeting of the Visitors Cocke might propose adopting "a course of proceeding somewhat different from the one you seem to have adopted": to pay off existing debts and then "adapt the plan of the Library to the residue of the funds." Cabell also warned Jefferson to avoid another appeal for funds to the Legislature, where, he had heard, patience with the University's building plans was wearing thin.[74]

When the Visitors met on April 7, 1823, Cocke was not in attendance to present any objections, and Jefferson's plan prevailed: the Visitors agreed to accept the loan of $60,000 from the General Assembly and to request $30,000 of that amount immediately.[75] Jefferson had calculated that $14,000 of that sum was needed to pay off debts and that the balance of $16,000 was needed "for lumber & other advances for the Rotunda." Further requests would be made in January 1824 and January 1825.[76] The day after the meeting Cabell wrote that "we had a pleasant meeting, and the Rotunda goes on, and Mr. Jefferson is delighted."[77] At the same time Jefferson recognized that the $60,000 loan was not enough to complete the Rotunda, and he believed that it would be "prudent to contract only for a part at a time, so as never to go beyond our funds."[78]

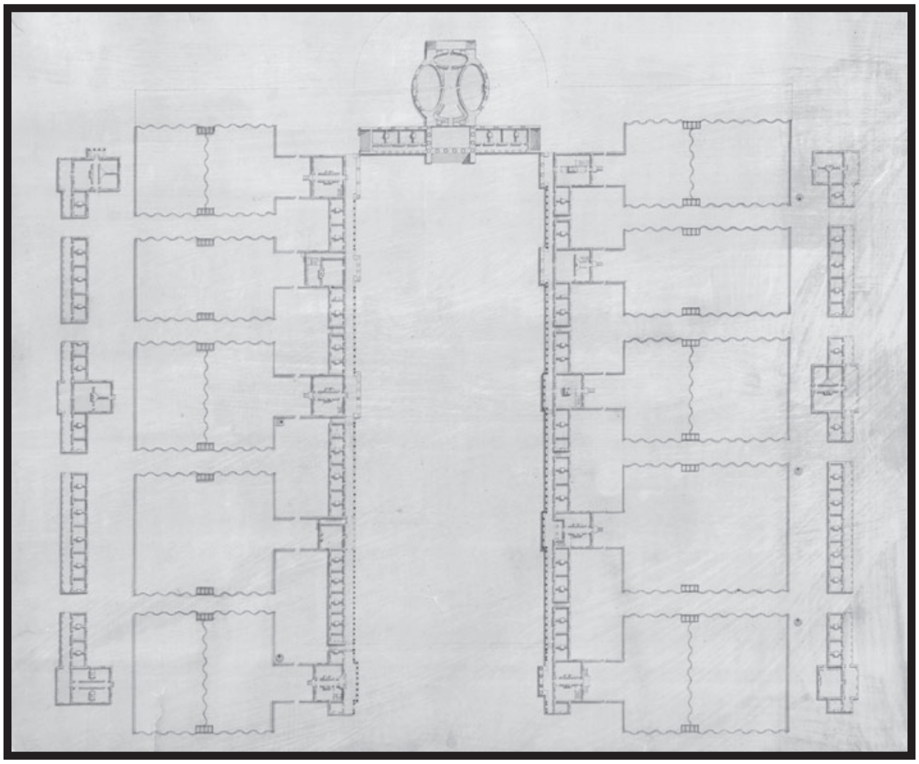
Meanwhile, Brockenbrough was busy lining up additional workers for the job, including enslaved people owned by others. Writing John Cocke on March 13, 1823, that he would like to hire from him the "one or two brick moulders and a few boys that would answer as bearers off." Brockenbrough had estimated that, not including the terrace wings, a million bricks would be "amply Sufficient for the building." He had already contracted for 400,000 hard bricks, with 120,000 scheduled to be ready soon, "by the time the weather will permit their being laid."[79]

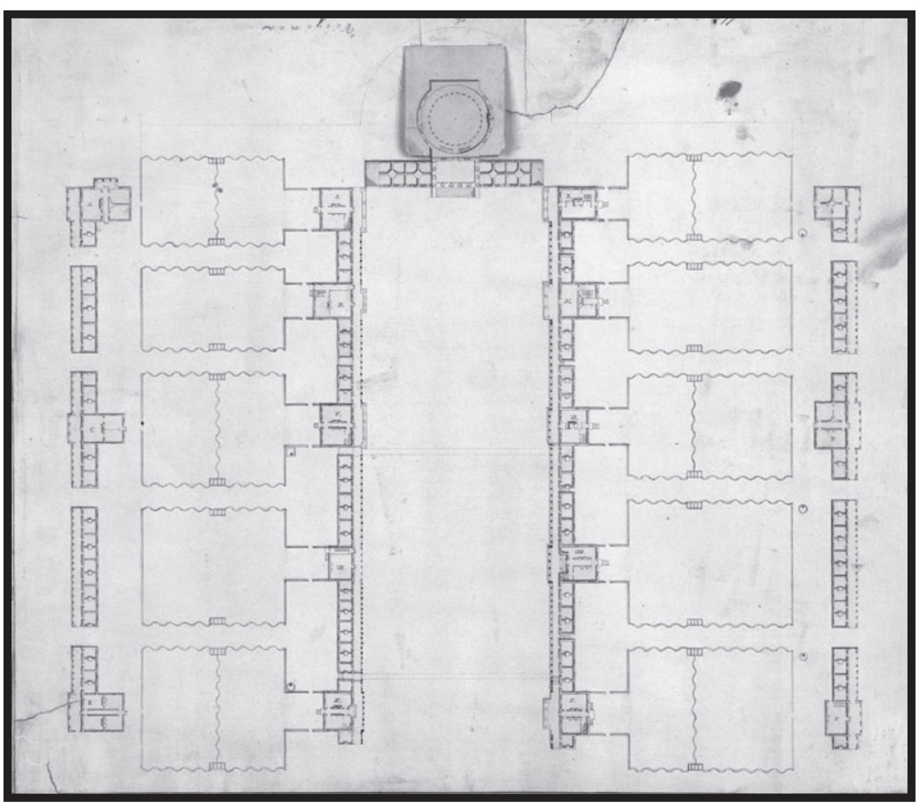
By the end of the first week in April 1823 Brockenbrough was able to report to Cocke that "we have commenced making bricks and hope in one week more to get well underway." He wrote Cocke twice again, asking him to "send up your Moulder and Six boys as soon as possible." He had tried to get a "first rate moulder" from the North but so far without success.[80] Cocke replied that he was sending along Charles, who apparently was a brick moulder, and six "boys," probably enslaved men—"Anthony, Giles, Mike, Frank, Mat, & Ben." All except Ben had had "more or less experience in bearing off bricks." Cocke intended that another "boy," Gilbert, would help carpenter John Neilson; if, however, there would be an opportunity for the helper to have "occasional employment with tools," then Cocke requested that Anthony work with Neilson, because "he is an industrious & Steady boy." Cocke agreed to part with another moulder in about two or three months, particularly if he would gain experience laying bricks at the University.[81] By the end of November 1823 Brockenbrough was able to report that so far the University had produced between 800,000 and 900,000 bricks for the Rotunda.[82]

Brockenbrough also told Cocke that "Mr Gorman wants one or two of your stone cutters, and wishes to know on what terms you will let him have them."[83] Cocke replied that his stone cutters were then busy doing work at his own properties but that they could be available after a couple of months. One, he wrote, was "adequate to cutting any plain moulding," but the other two were only "rough hands."[84]

Refining the Design of the Rotunda

Jefferson's plan for the Rotunda provided that both the ground and first floors would have two large oval classrooms, one on the east side and another on the west side, with a smaller oval classroom filling in the north portions. The top floor would be a domed space, intended for the library. While traveling together after the April 7, 1823 meeting at the University, Joseph Cabell and George Loyal, a fellow Visitor, had spoken about the planned arrangement of the classrooms. Cabell, writing later to Madison about the discussion, suggested—provided it "not interfere too much with Mr. Jefferson's views"—that one or two of the classrooms be "fitted up with seats running around the rooms parallel to the walls & rising one above another, so that the Lecturer's eye & voice would distinctly reach the eye & ear of every student present." Cabell proposed that more "convenient accommodation for the greater classes of Chemistry, Natural Philosophy &c. which from their numbers





Opposite:

FIGURE 19. *John Neilson, plan of the University of Virginia, ca. March 1821, showing the Lawn, Rotunda, pavilions, hotels and ranges. Note north porch and steps of Rotunda.*

FIGURE 20. *John Neilson, plan of the University of Virginia, with an overlay of the plan for the Dome Room, November 1821.*

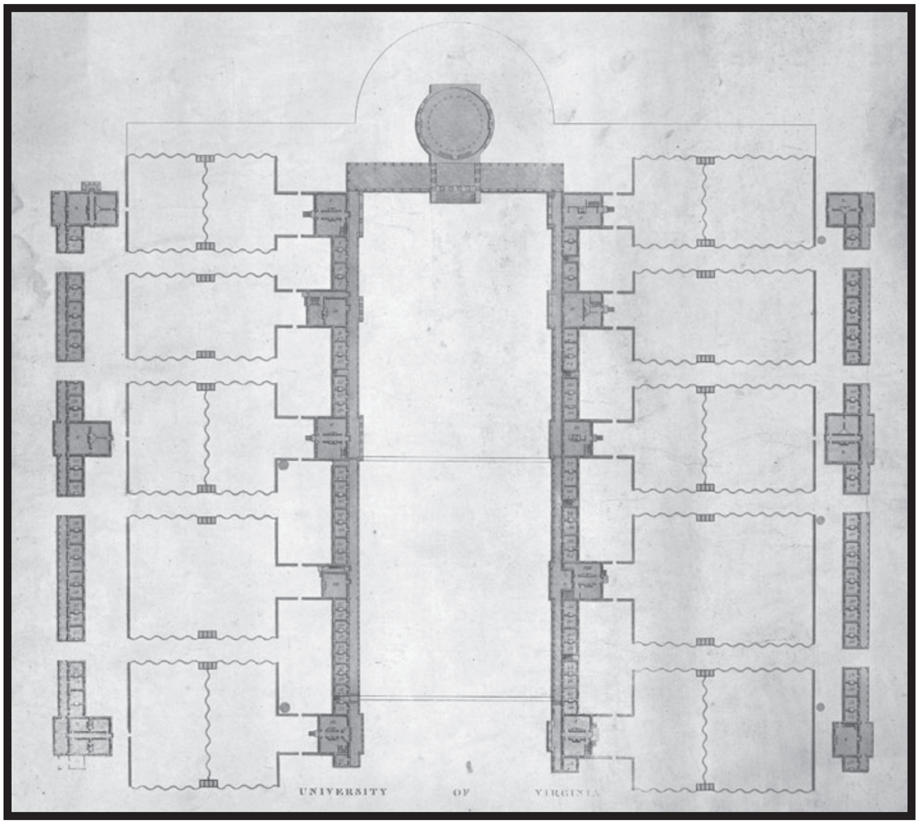
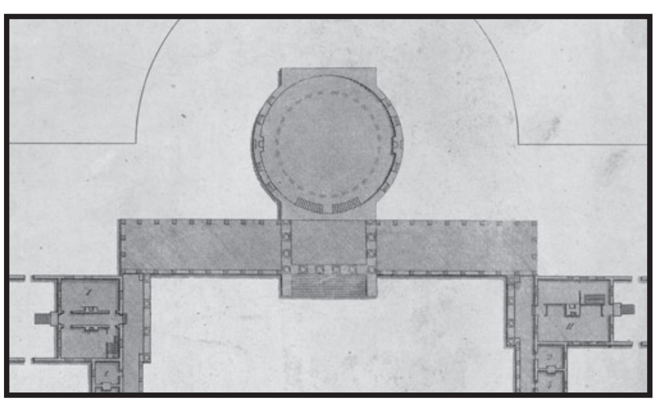


FIGURE 21. *Peter Maverick, plan of the University of Virginia, 1825, engraving based on John Neilson's plan.*

FIGURE 22. *Detail of Maverick plan, 1825.*



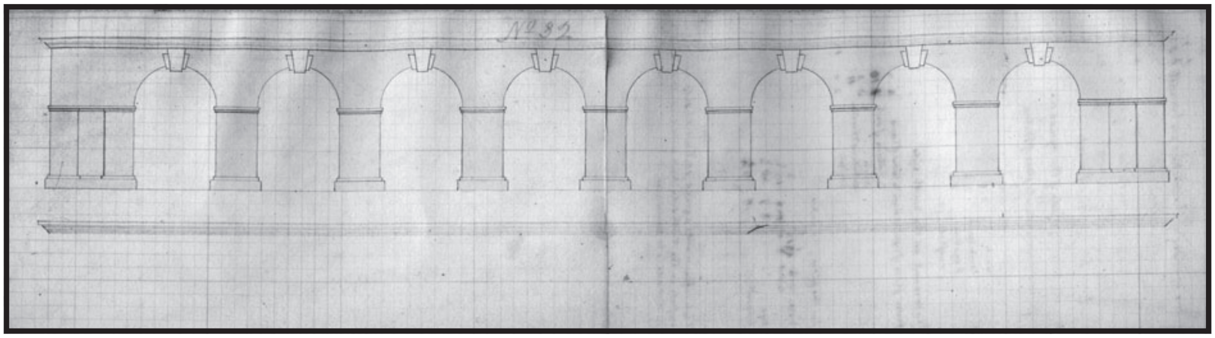


FIGURE 23. *Arcade, north elevation of the south terraces, attributed to John Neilson, March 1824.*

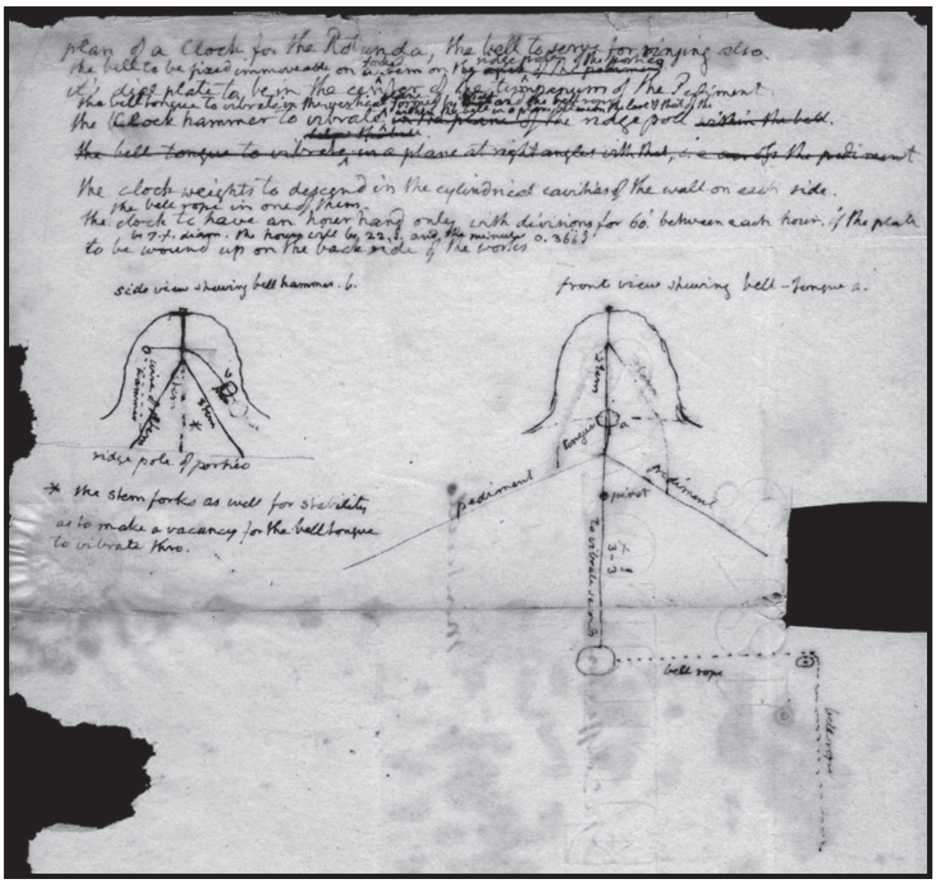


FIGURE 24. *Thomas Jefferson, sketches and instructions for the clock and bell.*

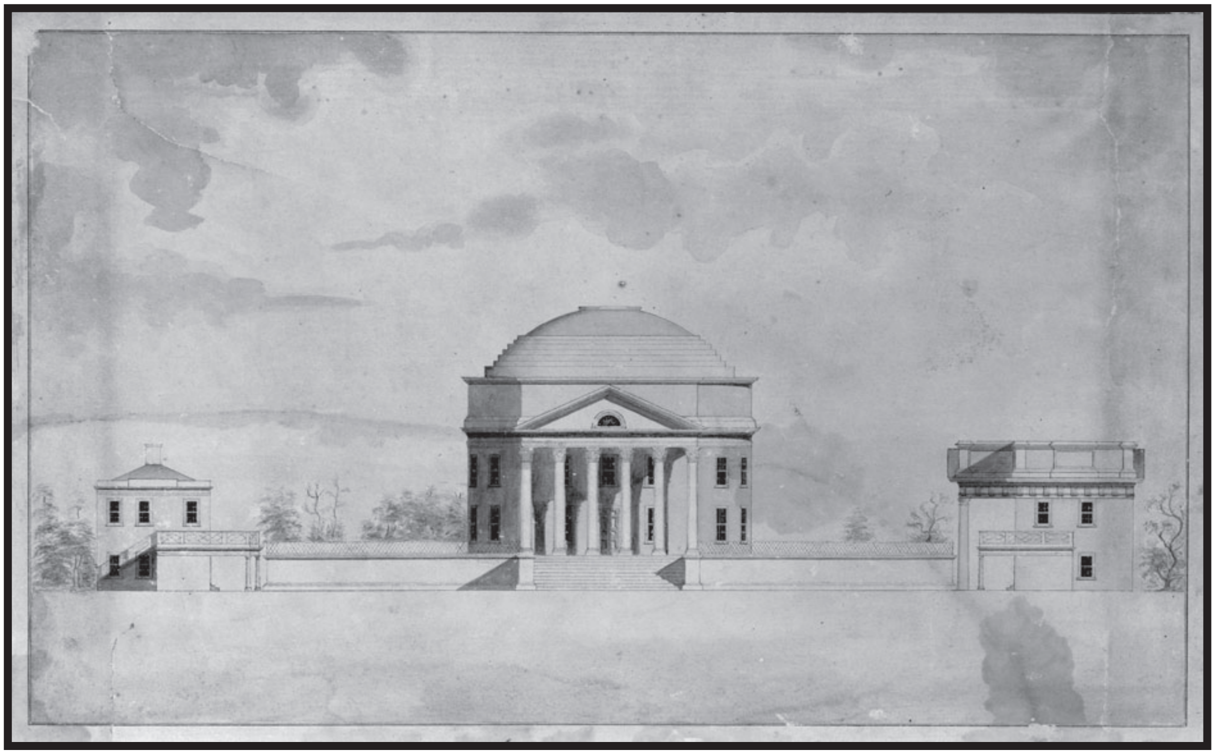


FIGURE 25. *Study of the Rotunda and Pavilions IX and X, February 1823. This sketch has been variously attributed to Cornelia Jefferson Randolph, John Neilson, and Benjamin Henry Latrobe.*

FIGURE 26. *Benjamin Tanner, University of Virginia from the south, 1826, engraving based on an 1824 drawing.*

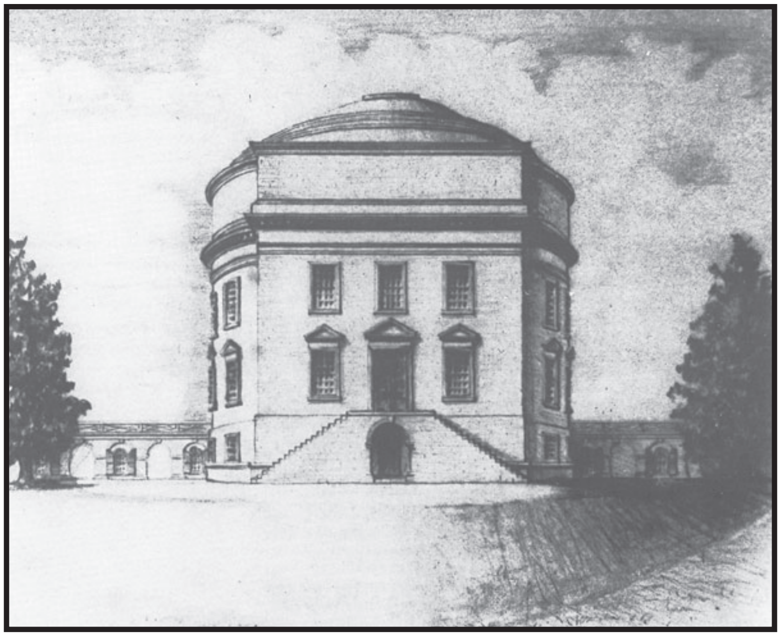


FIGURE 27. *Conjectural north elevation of the Rotunda, developed by Peter Hodson and drawn by Calder Loth, 1966.*

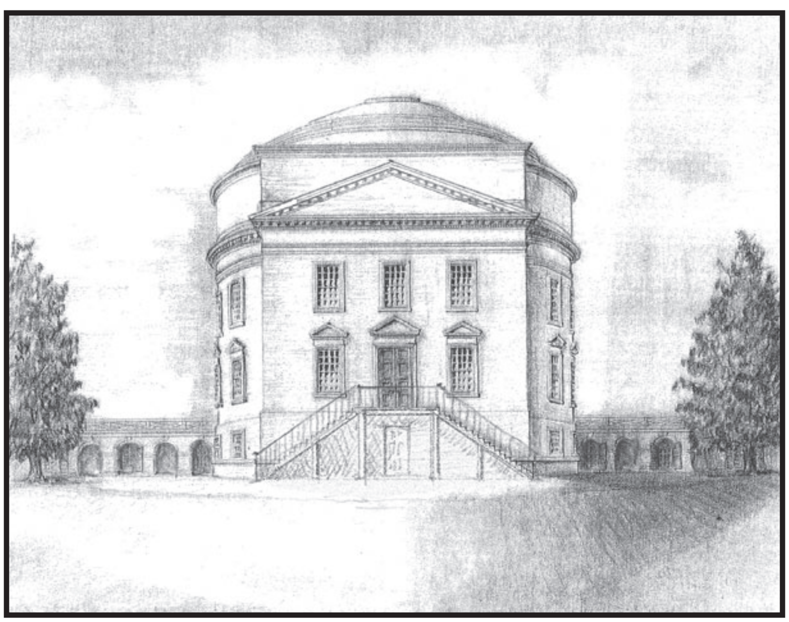


FIGURE 28. *Revised conjectural sketch, by Douglas Bucher, John G. Waite Associates, Architects, 2021. Note the pediment, the wood framing for the north platform and stairs, and the open arcades of the south terrace.*

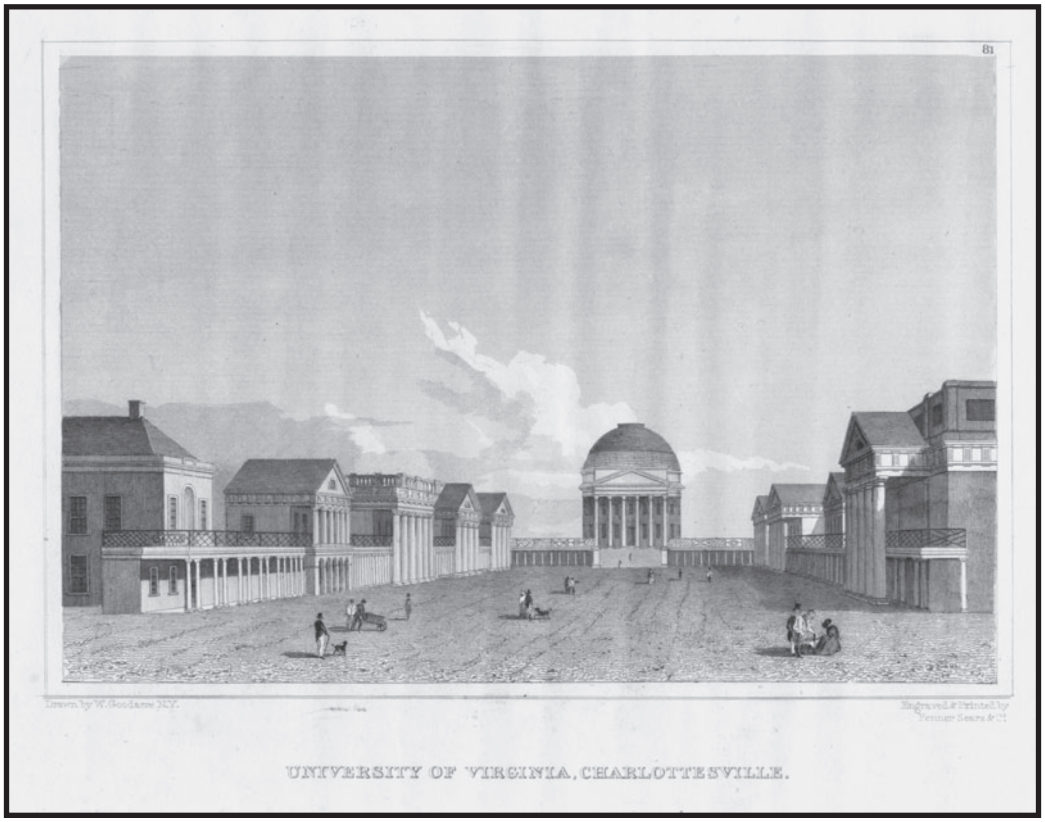


FIGURE 29. *University of Virginia from the south, drawn by William Goodacre and engraved and printed by Fenner Sears and Co., 1831.*

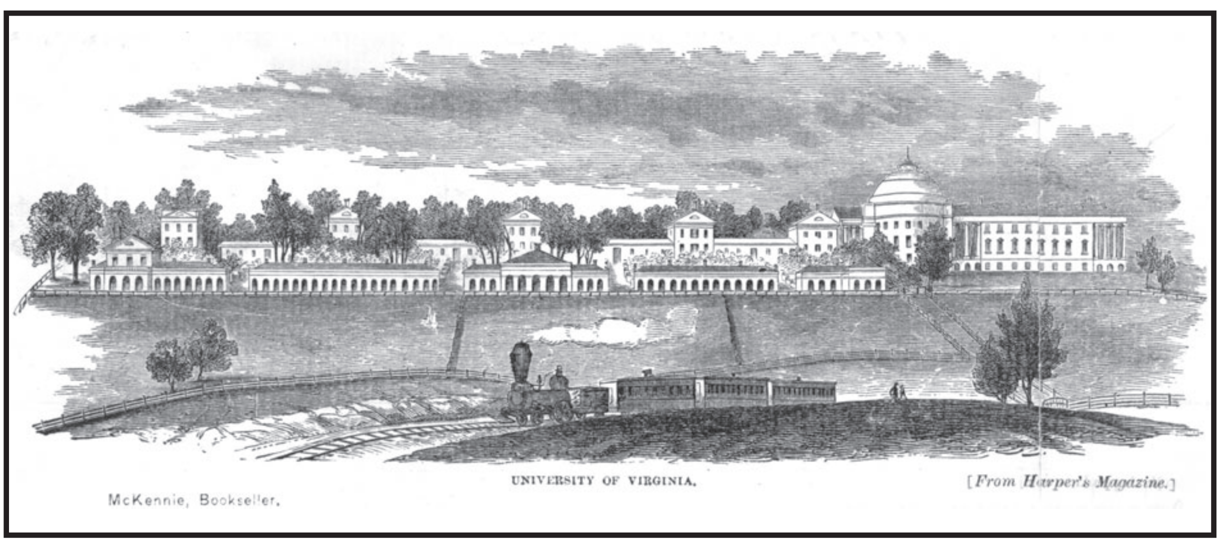


FIGURE 30. *University of Virginia from the east, by Porte Crayon, published in* Harper's New Monthly Magazine, *August 1856.*

require space, & from the necessity of witnessing experiments demand seats rising one above another." This configuration was, he explained, "the approved modern construction of large lecturing rooms at the principal Universities in Europe & in this country." The only disadvantage of such an arrangement, according to Cabell, was that the classrooms would not be appropriate for dancing, which, he thought, "should be taught rather more in the background of the scene." Based on his observations during travel in Bologna and elsewhere in Europe, Cabell believed that the scientific apparatus itself would probably also require more space than Jefferson had allotted.[85]

Jefferson responded in some detail to these suggestions. If University officials had known how many students would attend the University and what classes they would take, then the classrooms could have been designed quite precisely. However, these numbers were not known, so the lecture room in each of the professors' pavilions had been designed for approximately 150 students. The oval rooms in the Rotunda, on the other hand, were large enough to hold 300 students, Jefferson stated, making them "too large for the Lecturing voice." "No human voice can be habitually exerted to the extent of such an audience," he wrote: professors cannot be expected "to bawl daily to multitudes as our strong orators do once a year." Instead, he thought, a large class should be divided, and the lecture repeated.[86] It is difficult to understand Jefferson's high estimates of the capacity of these spaces.

Jefferson acknowledged that while lecture rooms for some disciplines, such as natural philosophy, chemistry, and anatomy, would "be better with rising seats," that arrangement would be "not at all necessary for lectures in languages, history, ethics, metaphysics, belles Lettres, Law, Politics Etc." Once it was known which classes would be held in the pavilions and which would meet in the Rotunda, then "the rising benches can be readily set up" for classrooms where the "*eyes* as well as the ears are to be employed."[87] With the numbers of students uncertain, their "conjectured accommodations" would undoubtedly be found to have been "miscalculated" and "require modifications"; meanwhile, Jefferson wanted to have a plan that would "admit much facility of adaptation to varying circumstances."[88]

With regard to the space for the scientific equipment, Jefferson suggested that that the professors who offered lectures in their pavilions and needed more space should take over an adjacent dormitory room. Of the apparatus needed to teach natural philosophy, he wrote, "even the fullest does not occupy much space, not more than may be arranged on shelves

FIGURE 31. *University of Virginia from the east, printed by H. Weber and published by C. Bohn, 1856.*

along the walls of the lecturing rooms." The furnaces and stoves needed for experiments by the professor of chemistry could be placed "under the Oval rooms of the ground floor of the Rotunda where there will be abundant space."[89]

Meanwhile, James Dinsmore had been consulting with Jefferson about the exterior entablature of the Rotunda and the windows. Jefferson had found "no reason to substitute any other than that of my original drawing for the main entablature," which he had based on plate XXVI in the first book of Palladio. The base was to come from plate XXIII. Jefferson noted that he had "examined carefully all the antient Corinthian in my possession, and observe that Palladio, as usual, has given the finest members of them all in the happiest combination." Palladio's "plates 35. [and] 36. give the handsomest entablatures for windows that I can find any where," Jefferson continued, "but I would adopt the architrave at the left hand bottom corner of pl. 35, give it a plain frize instead of his swelled one, and the dentil cornice at the bottom of pl. 36." Assuming there would be no disagreement from Brockenbrough, Jefferson asked that he send word of these decisions along to Dinsmore and Neilson, who were waiting for the instructions to go ahead.[90]

Over the next two weeks John Neilson was working out more specifics related to construction and studying drawings of the north facade and the "flank view." He wrote to Jefferson in early May about exactly how high the base of the idealized sphere shown on Jefferson's drawings should be from the actual ground level of the building. In the drawing of the north facade the "lower edge of the Architrave" was aligned with the center of the idealized sphere, making the base 10 feet high. If this height were too great, then Neilson proposed to Jefferson either elevating the idealized sphere, thereby showing a "greater portion of the roof above the Steps" of the dome, or making the portico columns taller.[91] Neilson did not suggest "depressing the Sphere in the earth," for he understood that Jefferson would not approve of that alternative. A month later Jefferson initiated a change in the hallways to eliminate the acute angles formed by the intersections of the elliptical walls of the large classrooms with the those of the small north rooms.[92]

The top floor of the Rotunda, an open, domed space with a gallery, would house the library. In August Jefferson discovered a flaw in his design for this story, telling Brockenbrough that he had "omitted to place a door in front, opening under the Portico." With the brick walls not yet having been built up to that level, Jefferson had fortunately noticed the mistake "in time to correct it." He provided Brockenbrough with detailed instructions about the door: "it should be of the width of the main door below, and it's soffite of the height of the soffites of it's coordinated windows." There should be a "folding sash door so as to give light when shut," but there should not be any type of gallery in front of the door, for such a projection "would injure the grandeur of the portico." Instead, across the lower part of the opening there should be an "open panel either Chinese or iron."[93] Brockenbrough had already had made a "stone Sill & window frame" and thought that a window would be better than such a door, but Jefferson disagreed, saying that a door would be "greatly preferable to a window both as to appearance & use, exactly such as in my parlour, except that the bottom panels had better be of wood."[94]

Jefferson's plans for the Rotunda also included two broad, one-story wings, or terraces, each about 30 feet deep, which extended out from the portico about 80 feet to connect with the porticos of Pavilions I and II. The facades of the terrace wings were open arcades, with the interiors intended to be used as gymnasia by the students. Martha Jefferson Randolph, Jefferson's daughter, explained to her son-in-law how in these covered areas the "young men may exercise in bad weather protected equally from the sun & the rain" and that "manual exercise will be a regular branch of their education." This scheme, she wrote, "occurred to my Father during a fever that confined him upon the sopha. he immediately sent for Mr Brockenbrough and gave him every direction onto the plan when he was actually so weak that he could not sit up to draw it himself."[95] John Neilson prepared a drawing of the north facade of the arcade on hand-ruled graph paper; on the back of the drawing Jefferson noted in late April 1824 that there were actually nine arches rather than the eight shown.[96]

Completing the Masonry Shell of the Rotunda, 1823

The contractors were soon at work at the construction site. Jefferson was able to tell Cabell on July 4, 1823, that "the Rotunda is rising nobly,"[97] and Brockenbrough reported at the end of July that the "walls are partly up to the upper floor."[98] A month later Neilson reported that "the work of the Pantheon goes on rapidly" and that "we have set our last window frames." After a visit to the construction site, Jefferson wrote on August 27 that the walls would "reach full height in the course of another month."[99] Because the dome would transmit a strong outward thrust on the walls, the plan was to allow the masonry to cure until the summer of 1824 and then construct the dome. The interior, Jefferson thought, would take another year to complete.[100]

Jefferson's pride in the progress was evident in a letter that he sent to artist John Trumbull, who was planning to visit Monticello. Jefferson promised that a visit "to our university" would prove to be "well worth the trouble of your journey." "I can assure you," Jefferson continued, "that, as a specimen of architecture strictly classical, you will find it unrivalled in this country, and possessing the merit of pure originality in the design." He was eager to have it "seen and judged" by men like Trumbull. He warned Trumbull that the Rotunda, the building that "is to be it's greatest ornament, and in fact the key-stone which is to give Unity to all that is already done, will only have it's walls compleated the present year, and will not recieve it's roof until the next: but this your experience eye will supply." He hoped that Trumbull would find it "a subject worthy of your pencil and of the burin of Mr. Durand," even suggesting that "it would be a very popular print."[101]

Meanwhile, Jefferson had compiled the annual report of the Board of Visitors to the state Literary Fund, submitting it on the same day as the Board's fall meeting, October 6, 1823. Over the past building season the masons had completed the shell of the Rotunda, and Jefferson stated in the report that the "walls are now ready to receive their roof." However, he also explained that since the roof was "of hemispherical form, and pressing outward in every direction, it has been thought not advisable to place it on the walls, in their present green state, but rather to give them time to settle and dry until the ensuing season, when the roof will be ready, and the walls in proper condition to receive it." He now predicted that finishing the interior would take longer than the upcoming year.[102]

The financial reports that accompanied the annual report detail the first expenses, which include payments in April and May 1823 to Martha Terrell for hauling sand, to Moses Green and others for carting brick and sand, to Thorn and Chamberlain for brick work, and to various vendors for cords of "brick wood" to fire the kilns. Beginning in May payments were made for lumber, most frequently to Robert McCulloch, and in June for scaffolding materials and installation. William B. Philips was paid $500 for bricks in June, and John Laurence was paid $350 for lime in July. At the end of June a ship captain was paid for "freight of 10 window sills," and in September Thomas B. Conway was paid for 21 window sills.[103] Payments were made later that fall for flooring and other lumber, for hauling more sand and lime for mortar, to John Neilson, to Thorn and Chamberlain, for the services of blacksmith Uriah Leonard, and for one and a half tons of iron.[104]

As 1823 drew to a close, Arthur S. Brockenbrough prepared an estimate of the annual cost of labor and recommended to Jefferson that the work force be reduced for 1824: in 1823 many of the laborers had been focused on making the upwards of 900,000 bricks needed for the walls of the Rotunda. Those workers would not be needed in 1824, he believed, "unless we go into the brick making business again the next year."[105] Jefferson, however, thought the labor force should remain at the same level, since there was still a "great deal of work to be done yet on the grounds."[106] Over the winter of 1823-24 payments were made for various vendors for lumber and lime, to the masons and carpenters, and to William B. Phillips for bricks.[107]

Ordering the Marble Column Capitals and Bases from Italy, 1823

By early September 1823 Jefferson had drafted a contract with Giacomo Raggi, an Italian sculptor who had come to do work at the University in 1819, for the ten bases for the columns of the portico and for the two "half bases" for the pilasters, and on September 8 Raggi had signed a contract with the University for this work. The bases were to be of Carrara marble, equal in quality to that in the capitals that had recently been received from Italy for the pavilions. According to the contract, the bases for the Rotunda columns were to be "proportioned to a column of three English feet in diameter, to be modeled with the utmost exactness according to the Bases of the Pantheon in Rome as drawn by Palladio in his book of architecture." Since the columns of the Rotunda would be made of brick, the bases were to incorporate a cavetto and listel, the quarter-round, concave molding and the narrow, flat band at the top of the base that were normally considered part of the shaft of a stone column. The bases were to be dressed, "polished and finished in the best manner," and each base was to be carved from "a single and sound piece of Marble." The two bases for the pilasters were to have "a front & flank with returns of ten minutes at each angle" where they joined the wall. All were to be packed well and put on board a ship for the United States by June 1, 1824. Raggi was to be paid $65 for each column base and half that for each pilaster base.[108] When the Board of Visitors met on October 6, 1823, they not only confirmed this contract but also recommended that the capitals of the columns be made of Carrara marble and further suggested that the portico be paved with marble if the cost would be competitive with paving of "country stone."[109]

On October 8, 1823, just two days after the Visitors' meeting, Jefferson dispatched a letter to Thomas Appleton, the U. S. consul based in Leghorn, Italy, asking him to arrange for the carving of the Corinthian capitals, which were "to be copied exactly from those of the Pantheon, as represented by Palladio. B. 4. chap. 20. pl. 60. Leoni's edition." Jefferson explained that the "diminished diameters" of the columns and pilasters both would be "2 feet 8 4/10 inches English measure" and sent along a sketch showing how the pilasters were to be "cut diagonally thus so as to present a front and flank each at the corner of the building." Since the columns were to be made of brick rather than stone and therefore could not be carved, Jefferson also detailed how the astragal, including the cavetto and listel would have to be made part of each capital. In the same letter Jefferson asked Appleton to provide prices for paving the portico floor with marble tiles, each one foot square, to be "polished and accurately squared ready to be laid down." He also asked Appleton to superintend Raggi's work on the bases.[110] In November 1823 the University sent Appleton $4,000 as a progress payment for the carving of these capitals and bases.[111]

Jefferson's letter did not reach Appleton for more than three months, but by February 8, 1824, Appleton had "given all the requisite instructions, to the Artist" who would be doing the carving of the twelve capitals. He carefully explained to Jefferson that each capital would weigh at least 10,000 pounds and that therefore large capitals "are never, nor Can they be work'd in a Single peice; for to Sculpture them, they must be intirely Suspended, So as to be turn'd at the will, and Convenience of the Sculptors, and to prevent any possible Contact of their foliage with any other body." "All the great Capitals of Rome and of Italy," he continued, "are of two, and many of three pieces." The capitals for the Rotunda thus would be made of two parts, with the division made horizontally, with the "upper member falling into the ornaments & foliage below." The separation, he promised, would "not be visible, even to a near examination and of consequence, to the Smallest injury, or Detriment to its beauty, or Solidity." Undoubtedly trying to forestall objections from Jefferson, Appleton pointed out that the capitals already received at the University for the pavilions were the "largest ever made, in Carrara, of a Single block." Carving the astragals, cavettos, and listels would add $20 to the earlier estimate for each capital, and the shipping fees brought Appleton's revised estimate to $6,140, substantially more than the $4,000 that the University had sent to Appleton. Since the work would have to be done during the short days of two winters, Appleton thought the June 1824 shipping schedule would be difficult to meet.[112]

The squares of Italian marble for paving the portico would cost $22.50 per hundred.[113] In May Brockenbrough supplied Jefferson with an estimate of the marble paving that would be needed: 1,150 square feet for the portico floor and 160 square feet for the "Platform of the back Steps." Another 40 square feet should be added to the order to cover breakage, making a total of 1,350.[114] Jefferson dispatched a letter two weeks later, on May 17, to Appleton, asking him to send 1,400 squares of marble, each one foot square.[115]

Framing the Interior and the Dome and Covering the Roof, 1824

At the end of March 1824 Brockenbrough wrote Jefferson that Dinsmore and Neilson had "proceeded to purchase scantling and have framed the upper gallery floor of the library" beneath the dome without consulting him; they were "now about to raise it," even though this work was not part of their contract. Meanwhile, Jefferson told Brockenbrough to warn Neilson and Dinsmore "that if they do any thing more than what was proposed to be first done, there will be no funds to pay for it."[116]

In any case, before the carpenters did much more, Brockenbrough wanted to suggest a change in the design of the library room to Jefferson. Brockenbrough was concerned that the upper of the two galleries, or balconies, for books would conceal part of the dome itself; instead, he proposed a single gallery with columns 10 feet tall.[117] With the circumference of the library room being about 229 feet and the height of the wall to the spring of the arch about 18 feet, there would be more than 4,000 square feet for bookcases with just one gallery. Jefferson told Brockenbrough that he had "considered maturely" this suggestion but nevertheless saw "no advantage in altering the original plan," explaining that "besides the 4000 feet for presses below the entablature of the columns, we can have another tier of presses above the entablature, of one half more of the space." Furthermore, the "original peristyle by it's height & projection from the wall has the advantage of hiding a portion of the vault of which too much would otherwise be seen," Jefferson stated.[118]

Jefferson was worried about how the frame for the dome would be constructed, writing to General Joseph G. Swift in May 1824 asking for help in supplying a copy of a 1576 book entitled *Nouvelles inventions pour bien bastir et a petits fraiz, trouvees n'agveres*, which illustrated Philibert DeLorme's scheme for making the ribs of domes of laminated wood members. Jefferson explained that he had "once owned this book, and understood the principles of his invention," but he had sold his copy to Congress and now his recollection of DeLorme's illustration was "not particular enough in every thing"; the "workmen are strangers to it," and, Jefferson feared, "we may go wrong."[119] (In notes dating from 1823 Jefferson had described "the ribs of the roof to be compleat semicircles of four thicknesses breaking joints."[120]) Swift loaned the book to Jefferson, who had consulted it and was ready to return it by June 21.[121] In the end Jefferson may have relied substantially on his memory and the carpenters' expertise, for on May 31 he had reported that work on the Rotunda was advancing well: "the frame of the roof is up, and nearly the whole wooden work ready to put up." He expected that it would be put into condition "of safety and use this season."[122]

Meanwhile, Arthur Brockenbrough was busy trying to locate sheet metal for covering the roof of the dome. In response to his query, the Richmond firm of D. W. and C. Warwick told Brockenbrough that they had copper available in both 18-ounce and 20-ounce weights, but that they did not stock sheet zinc.[123] To install the roof Brockenbrough was planning to hire Anthony Bergamin, who, he told Jefferson, had been "strongly recommended as an excellent workman." A Frenchman, Bergamin had installed the roof on the dome of the Richmond city hall. He was expected to arrive in Charlottesville on May 5, 1824. Since he was not very fluent in English, Brockenbrough asked Jefferson to come to the University the next day to interview him; "the job," Brockenbrough knew, "requires a man well skilled in the working of metal."[124]

John Brockenbrough, Arthur's brother, wrote that he had convinced the Warwick firm to sell sheet copper to the University at a substantial discount, provided that they ordered a considerable quantity. If Bergamin would use 18-ounce copper (at 10 cents a pound), John Brockenbrough assured the proctor, "you cannot have a better covering than he will make you in this way." Instead of gutters he advised extending the "copper over the parapet wall." The proctor, however, was also investigating the possibility of using tinplate, which the Warwick firm offered to furnish for $11.50 a box.[125] John Brockenbrough told his brother on May 3 that "zinc might be somewhat cheaper, provided it could be procured sufficient thin, but we know nothing of its' durability." The University finally decided to use tin, and by June 14 Warwick had shipped to the University thirty boxes of tinplate.[126]

A week letter Bergamin wrote Brockenbrough that he had been delayed by work in Richmond but would leave on June 25; meanwhile, his colleague would travel to Charlottesville and could "proceed to the preparative" of the tin.[127]

On June 14 Warwick had also sent along 20 sheets of copper, each measuring 30 by 60 inches and weighing 16 pounds. This may have been the "Brazier's copper . . . for gutters or pipes" that Bergamin had said would be needed.[128] In early July Warwick sent another 75 sheets of brazier's copper and 50 sheets of copper sheathing.[129] In mid-July more tin and copper were dispatched from Richmond.[130] In mid-September Bergamin was paid $283.69 for his work on the Rotunda and another $225.15 at the end of the month, indicating that a substantial amount of roofing work had been accomplished. Bergamin's work included "Copper Roof Gutters, tining on Dome, Cover to Level Cornice, Cutting out Mortar to let in Tin, Gutters to Gymnasia."[131] More tin was sent from Richmond during October and November.[132]

At their April meeting the Board of Visitors agreed that it should "take such preparatory measures as can be taken at this time" to fulfill the state government's directive that the University "be brought into operation with as little delay as practicable."[133] In a letter written a few days after the meeting Jefferson noted that the walls of the Rotunda would be "covered in within the course of the summer, and finished so far as to be in a state of safety and use until funds may occur to compleat it." The capitals and bases would not arrive until 1825, so the portico columns would not be constructed until that time.[134]

On May 25, 1824, John M. Perry, a brick maker who had worked on other buildings at the University and on the serpentine garden walls, signed a contract with the University to make 300,000 "hard well shaped bricks" for $4.50 per thousand bricks. The order included the specially shaped bricks for the Rotunda columns (to be "shaped agreeable to a mould to be furnished") and "smooth well shaped bricks" for paving at the Rotunda and the gymnasia. Perry was to pay the proctor for the wood already gathered to fire the kilns and for the clay already dug by the University's laborers. Perry was entitled to use the University's brickyard, shelters, and clamps to make the bricks.[135]

At the beginning of June, Thorn and Chamberlain were starting "to lay bricks of the attic of the Rotunda," and Brockenbrough had another new proposal for Jefferson: "had we not as well," he wrote, "put reservoirs in the two North corners of the Attic by arching over the present openings, thereby making the reservoirs nearly the depth of the Attic and as large in diameter as the space will admit of." In case of a fire, the water could be diverted "to any part of the building below the domes by pipes or hose." He asked for Jefferson to let him know as soon as possible if he approved of this scheme. Information on whether these reservoirs were installed in 1824 was not located, but later records indicate that reservoirs were built in 1855.[136]

On April 5, 1824, doubtless in conjunction with a meeting of the Board of Visitors held that day, Brockenbrough prepared a report of actual costs to date for constructing the Rotunda and of the projected expenses to complete the work. To date, Brockenbrough reported, the masonry work had cost $9,761.72, with $6,905.47 of that amount being for materials and the balance paid to Thorn and Chamberlain; he calculated that another $1,000 would be needed to complete the brick work. The column bases and the capitals and the freight from Italy would cost about $10,165. The sum of $255 had already been paid for the stone window and door sills, and another $1,200 would be needed "to complete the stone steps on the back & Terras Stonework." The cost of other materials, including iron and nearly all of the lumber, so far was $6,165. He estimated the expense of covering the roofs of the portico and the dome with tin and copper at $2,000 and the cost of glass and glazing, including the skylight atop the dome at $500. The total of these expenses was $31,046.72; not included were nails, other hardware, painting, and bills from other workers, but he assumed that they would not push the cost much over $41,000.[137]

The University's account books show that during the spring and summer of 1824 substantial amounts of lumber were procured for the Rotunda, some probably for the framing of the dome. In June a bill for sheeting plank, probably for sheathing the dome, was paid. Neilson and Dinsmore received a substantial amount, $6,000, for their work.[138] At the end of September Uriah Leonard was paid for blacksmithing at the Rotunda.[139] John Gorman, a mason, also worked on the Rotunda in 1824, apparently on the north steps.[140]

By September 1824, with the exterior entablature now in place, Jefferson was finally ready to order architectural ornaments for the soffit from William J. Coffee, an English sculptor working in New York City. "Composition will not stand the weather," Jefferson noted in his letter to Coffee, "and lead is expensive. We conclude therefore in favor of the material of which you made those for us before," probably a reference to Coffee's "burnt composition." He instructed Coffee that the ornaments should take the form of roses, and the design was to be copied from plate LX in the fourth book of the Leoni edition of Palladio, which contained details of the exterior of the Pantheon, the same plate that Jefferson had told Appleton to use for the capitals of the portico. Jefferson explained to Coffee that, of the two forms of rosettes shown in that plate, he liked "the corner one best," in which the petals were overlapped rather than being separated. He also sent along to Coffee "a paper on which the pannel to receive the rose" had been drawn to full size; it measured "6.9 wanting 1/16." The roses, Jefferson thought, "should not quite fill" the panels. Then, he continued, "We shall plant these roses on plain panels not figured ones like those of Palladio."[141]

Jefferson had tabulated that 330 rosettes would be needed, plus 10 or 15 more to allow for breakage. He asked Coffee to undertake them with "the greatest dispatch in your power, because the rest of the entablature is put up, and the soffite reserved till we can receive these ornaments."[142] Coffee replied that he could not "Say at the moment the time you may expect the Ornaments" but would "Say for your Satisfaction that no other business Shall Interrupt your 'roses' till the number is Compleat." He requested information on the distance at which the ornaments would be seen, so that he would know how bold to make the relief.[143] Jefferson responded that the soffit was "32. f. above the floor of the portico & platform of the terrasses, and 40. f. above the level of the lawn" and explained that the rosettes "will be principally & equally viewed at these two heights."[144]

The Visitors gathered in Charlottesville for their fall meeting in early October 1824, and Jefferson again submitted the board's annual report to the Literary Fund. A year ago, he noted, the walls of the Rotunda had been nearly completed, and during the present building season it "has received its roof, and will be put into a condition for preservation and use." The interior, however, was not yet finished.[145]

During the same meeting the Board of Visitors officially decided that the "upper circular room of the Rotunda shall be reserved for a Library," while the "larger elliptical rooms" on the second floor were to be used "for annual examinations, for lectures to such schools as are too numerous for their ordinary schoolrooms, and for religious worship." Other rooms on that level could be "used by schools of instruction in drawing, music, or any other of the innocent and ornamental accomplishments of life; but under such instructors only as shall be approved and licensed by the Faculty." A chemical laboratory was to be located in the basement, but the other rooms were not assigned. The "open apartments," in the terraces at the ground level on each side of the portico, were set aside for "Gymnastic exercises and games of the Students," including military exercises. The Visitors also approved a proposal that faculty could hold its meetings "in an apartment of the Rotunda."[146] Later that year Brockenbrough supplied Jefferson with the dimensions of the dome: it was 27 feet 5 inches "from the top of the last step to the center of the Sky light."[147]

A few days after the October 1824 meeting of the Visitors, a young man en route to South Carolina, Henry Marshall, passed through Charlottesville and recorded his impressions of the buildings of the University in his diary. With regard to the Rotunda he wrote:

> The rotunda is said to [be] modeled after the Pantheon at Rome. It is 75 ft in diameter & about 80 ft or more from the ground to the top of the dome. It has a portico fronting towards to the college yard. On the ground floor are two elliptical rooms 50 ft by 30 ft (guess) & one much smaller. There is the same arrangement in the second floor. The 3[rd] story with the dome is all in one. From the college yard you go up steps the whole breadth of the portico directly into the second story. From the lower story is a covered way & terrace to the dormitories. The rotunda is decidedly the most elegantly proportioned building I ever saw. It is the only public building I have seen in this country that is high enough.[148]

Entertaining Lafayette at the University, 1824

For Jefferson one of the unquestionable highlights of 1824 was the visit by the Marquis de Lafayette to Monticello and the University of Virginia as part of his sixteen-month-long triumphal tour of the U. S. The two men had not seen each other for thirty-five years. In August 1824, not long after he had arrived in New York, Lafayette wrote Jefferson that he was now "on American ground, welcomed in a manner that exceeds the power to express what I feel."[149] Lafayette's plan was to visit Boston and the Hudson Valley and then go on to Philadelphia before heading south to Virginia. In early October, as he awaited Lafayette's visit to Charlottesville, Jefferson wrote to Thomas Appleton in Italy that the "arrival of genl. La Fayette in this country has kindled a flame of enthusiasm such as hardly ever was seen before," with town after town presenting "manifestations of affection which shew the gratitude of our country for his former services & sacrifices."[150] Jefferson's plan was to host Lafayette and his traveling party at Monticello and entertain him with a public dinner at the University, where, Jefferson stated, the "Rotunda is sufficiently advanced to receive him." The Rotunda, however, was far from finished. The domed roof had been completed, but the windows had not yet been glazed; Jefferson later described the building as "open and uninclosed."[151] The "academical village," Jefferson explained to Lafayette, "this Athenaeum of our country, in embryo, is as yet but promise," since it was not yet open to students.[152]

Lafayette traveled from Richmond for Monticello, where he arrived on the afternoon of November 4. The next day Jefferson, James Madison, and Lafayette rode in a landau drawn by four gray horses to Charlottesville, where they were welcomed by hundreds of villagers. A procession that included the Board of Visitors, cavalry, junior volunteers, and citizens on horseback and on foot escorted the three honored men along the road at the east side of the University to the south end of the Lawn. At the top of the Lawn stood the Rotunda, where one eyewitness stated, the "first objects that struck the view, were three flags floating on the top of the Rotunda." The largest flag read "Welcome our Country's Guest." The procession, on foot, then "moved slowly up the lawn to the steps of the Rotunda, the General gracefully bowing to the ladies as he passed." An official walked down the steps of the Rotunda to address Lafayette, calling the University "their future temple of literature and of science" and "a fruit of our glorious revolution." Lafayette responded that he was very pleased "to receive the kind welcome of the citizens of Albemarle . . . under the beautiful pantheon of this rising University."[153]

Lafayette, having rested for a short while in the "apartments prepared for him," then "walked on the terraces, among the ladies" along with Jefferson and Madison. At three o'clock the party climbed the stairs to the top floor of the Rotunda, where four hundred people were gathered for a dinner. The tables were arranged in three concentric circles, and over Lafayette's seat was an arch of laurel, "entwined around two columns, that supported the gallery." The first toast to Lafayette was enthusiastically cheered, and the "lofty dome of the Rotunda re-echoed back the sound," rolling "in billowy volumes around the spacious Hall, and sunk in the deep stillness of enthusiasm."[154]

Scores of other toasts followed. In responding to the toast in his honor Jefferson recounted how, during his service as America's minister to France, Lafayette proved to be his "most powerful auxiliary and advocate"; Jefferson urged the guests to honor Lafayette "as your benefactor in peace, as well as in war." Lafayette, "moved to tears," grasped Jefferson's hand and "sobbed aloud." James Dinsmore, the contractor, offered another toast to Jefferson as the founder of the University. The banquet concluded at six o'clock, and a hundred cavalrymen escorted Jefferson, Madison, and Lafayette back to Monticello.[155] Writing to his family in France a few days later, Lafayette mentioned the "beautiful and good university," whose establishment and construction was occupying "the honorable old age of our illustrious friend."[156]

Opening the University But Not the Library, 1825

While the construction of the Rotunda had been "sufficiently advanced" to receive Lafayette in November 1824, many components were still incomplete. A month after the festivities, for example, Jefferson was still prodding William Coffee to deliver the rosettes for the soffit. Jefferson complained to Coffee that the "whole scaffolding of the building is obliged to be kept standing only to enable the workmen to put up these small ornaments." The University would "certainly be opened" to students on February 1, 1825, Jefferson wrote, and it was essential that the Rotunda be finished.[157]

Coffee replied from New York that the ornaments were ready to be packed and shipped; he had made the quantity ordered (the 330 actually needed with 15 extras "to meet Chances" on site) and was also sending an extra 10 to cover any breakage by the shippers. Coffee thought it unnecessary to provide any instructions for the University's craftsmen, except to say that it would be "proper to use round headed Screwes for the purpose of Puting them up" and thus avoid splitting the rosettes during installation. If other types of screws were used, he explained, then the "heads must be filed off on the Side."[158] Coffee claimed that the rosettes were "very hard and will be found to last as long as any Part of the Building." The ornaments were shipped on December 29 and evidently arrived safely: Coffee was reimbursed $45.67 a month later, probably for freight,[159] and another $150 in April 1825 "for composition ornaments for rotunda."[160]

The tin roofing was also presenting problems. In March 1825 John Brockenbrough wrote from Richmond to his brother the proctor that roofer Anthony Bergamin had told him that the "roof was perfectly tight during the September rains, and that the leaking must be owing to the screws, since put in the Tin, to fasten the supports to the *steps* raised around the base of the Dome." Bergamin also alleged that "he remonstrated against perforating the tin when he was about the work" and now believed that the "roof will never be secure unless the steps are covered with metal."[161]

Meanwhile, Jefferson was becoming anxious that the university would not be able to meet its goal of opening on February 1, 1825, since three of the professors had not yet arrived in Charlottesville.[162] Jefferson was at last able to report that while the delay had prompted some students to enroll elsewhere, "we began on the 7th of March with between 30. and 40" students; since then, he continued, "they have been coming in and are still coming almost daily. They are at this time 65." He confided that he hoped "they may not get beyond 100 this year, as I think it will be easier to get into an established course of order and discipline with that than with a greater number."[163]

The window glass for the Rotunda arrived at about the same time as the students. The windows had not been glazed at the time of Lafayette's celebratory dinner the prior November, and in April 1825 Jefferson described the building as still being "open and unenclosed," in part because of a mix up with the University's order at the glass factory.[164] In early January 1825 Thomas May, the Richmond-based agent of the Boston Glass Manufactory, told Brockenbrough that he had just received nineteen boxes of glass; the order included 236 panes measuring 16 by 12 inches, 354 panes measuring 15 by 12 inches, and 176 panes measuring 20 by 13 inches. They were shipped to Charlottesville that same month. By mid-February Brockenbrough had returned the four boxes of 20-by-13-inch glass, and May acknowledged that the factory had made a mistake while "making the transfer of the order to their order Book, there putting it down 20 x 13 instead of 14 x 12." By March the 14-by-12-inch replacement lights had arrived in Richmond, along with 24 other pieces to replace glass that had been broken en route and a crate of 6 sheets of double-thick glass, perhaps to be used in the skylight.[165] Another shipment was made in late July, three boxes of double crown glass "Cut to pattern," which included 2 pieces measuring 21 by 14, 16 pieces measuring 18 by 14, 16 pieces measuring 17 by 12, 1 piece at 14 by 10 inches, 12 pieces at 13 by 9 inches, 5 pieces 12 by 9 inches, and 3 larger sheets; since it was cut into some special sizes, some of this glass may have been intended for the skylight.[166]

On August 15, 1825, Benjamin Blackford, of the Isabella Furnace, submitted an invoice for 104 large sash weights, another 34 sash weights that apparently were somewhat larger, some of which may have been intended for the Rotunda. Blackford also shipped "6. Boxes with grates," perhaps to be used in the fireplaces in the Rotunda and in the chemical ovens.[167]

Despite the arrival of the students the domed library room in the Rotunda was not yet finished. At their March 5, 1825, meeting the Visitors agreed that once more funds were received, then up to $6,000 should be advanced "for the purpose of finishing the interior of the library room."[168] Soon after the meeting Jefferson wrote Brockenbrough that it would be "worse than useless to procure books without a place to arrange them in." It would be acceptable, he thought, to use other government funds for bookshelves, tables, and "other necessaries for the library room."[169] James Dinsmore and

John Neilson estimated the cost of finishing the woodwork in the library at about $3,000; in addition the columns would cost about $2,000, and the plastering and painting another $1,000.[170]

In January 1825 Jefferson had told Cabell that it would cost another $25,000 to complete the Rotunda.[171] A week after the Visitors' March 1825 meeting, Jefferson, ill and very worried about the overall finances of the University, asked Brockenbrough to bring to Monticello the data needed to prepare a financial report of past and projected expenses and income.[172] Jefferson drafted the report on March 15. It included $3,000 still outstanding to be sent to Italy for the marble capitals, bases, and pavement and the $6,000 to finish the library room.[173]

The Arrival of the Italian Marble Capitals and Bases, 1825

Jefferson had written to Appleton in mid-May 1824, urging him to superintend Raggi in his work on the bases of the columns. Jefferson wanted to have the bases delivered to Charlottesville during that same summer so that the workers could "get up our columns this season" and so that the "columns may have time to settle before their Capitels are put on them."[174] Raggi finally arrived in Leghorn in May, penniless and in debt, but with an "ardent Desire" to carve the bases, and Appleton told Jefferson that they would probably be finished in August. Raggi made good progress in the first weeks, but one June evening while asleep in a chair after supper, he tumbled to the floor, breaking his clavicle and becoming unable to use his arms for several months. Appleton therefore directed his own sculptor to proceed with the bases and hoped they would be ready to be shipped, along with the marble paving squares, in October. The capitals would be finished in February 1825 and would probably arrive in Charlottesville in May; thus, Appleton told Jefferson, the bases and columns "will follow each other in just proportion of time."[175] Jefferson, recognizing that another building season had been lost, reluctantly told Appleton in October 1824 that if the bases did not come until the spring of 1825, "we must be content," but he hoped that by then also the "capitals and paving squares will be coming to us."[176] In an update posted to Jefferson in October Appleton reported that the capitals were moving along "fully to my satisfaction" and asked Jefferson to send him an urgently needed progress payment.[177]

Thomas Appleton had dispatched a letter from Leghorn to Jefferson on May 12, 1825, announcing that the marble elements for the Rotunda were finally complete. On board the first ship, the *Caroline*, were nineteen cases holding 1,400 marble tiles for paving, and another twelve cases containing the bases for the columns and pilasters. Appleton, who had taken the responsibility of engaging his own sculptor to carve the bases when Raggi was not able to fulfill his contract, paid his sculptor half of his usual fee and hoped that Jefferson would not object to that additional cost. A second vessel, the *William Gray*, also bound for New York, would carry the capitals, which Appleton boasted, "are pronounc'd by the most intelligent, of uncommon beauty of marble, & Superior workmanship" and would "be found of a Superior Stile of workmanship, to any in the United States."[178] They had been packed, Appleton told Jefferson, "with most extraordinary care & Attention; they are so firmly fix'd inside the Cases, with appropriate Supports of wood, that it is impossible they should move a hair's breadth—they might even be rol'd over, like a barrel, if there was necessity, without Danger of injury." As the time for sailing approached, however, the captain of the *William Gray* refused to carry the crates with the capitals, having seen "their great size & weight." In June Appleton finally convinced the master of the brig *Tamworth* to accept them, but he was bound for Boston, not New York, resulting in more delay.[179]

Three months passed before the paving squares and the column bases had safely crossed the Atlantic. Jefferson had written Brockenbrough in late July 1825 that the bases should be arriving soon and advised him that "everything should therefore be got in readiness to run up the columns immediately."[180] He alerted Brockenbrough at the end of August 1825 that the bases were now in New York and warned that transporting the marble from Richmond to Charlottesville would be "extremely difficult and expensive" and that "special measures should be provided for it." The marble itself would weigh thirty tons, plus the heavy cases. He instructed Brockenbrough to ship the marble bases first, so that "instantly on their arrival" workers could start work erecting the columns.[181]

In early September 1825 Henry A. S. Dearborn, son of Jefferson's Secretary of War and collector of customs at Boston, wrote Jefferson that the *Tamworth* had arrived in Boston with the capitals, "nicely packed, in strong boxes," and that he would "ship them by the first vessel, bound to Richmond" with instructions that they should "be handled with great caution." Appleton had told Dearborn that the capitals "will be found, probably inferior in dimensions, but certainly equal in architectural perfection, to any in the U.S., & that they were copied from those of the Pantheon at Rome."[182] By September 20 the capitals were aboard the schooner *General Jackson* en route to Richmond. Since he considered this "a boisterous Season of the year," Dearborn had taken out insurance on the capitals.[183] Dearborn also told Jefferson that he thought that Congress should exempt the University from all of the import duty on the capitals just as it would duty on books, philosophical apparatus, and sculpture imported for schools of higher learning; he felt that "while they are to embelish the University," they would also "present Superb models of antient Architecture."[184] The University paid $885.08 on October 17, 1825, for the freight and related charges incurred at Boston.[185]

The Board of Visitors passed a resolution in October 1825 to petition Congress for a remission of not only a new fifteen percent duty imposed on imported marble (arguing that the capitals had been ordered before the duty was enacted) but also from the preexisting duty as well, in the interests of "a just encouragement to science." The Visitors agreed to execute a bond for the duties due in order to have time to make an application to Congress, but at the same time they also ordered the proctor to have funds available to pay the duty, in case their application failed.[186] In November 1825 Jefferson was still expecting that the federal government would be charging a tariff of $2,700 for the capitals and bases, but a few months later he received word from Washington that Congress had approved the remission of all of the duty on the marble.[187] The Visitors intended to authorize the purchase of a clock and bell, to be placed in the Rotunda, if the duty was retracted.[188] It had been two years since Jefferson had written Appleton to order the capitals, and now another building season had passed, precluding the construction of the portico until 1826.

Securing a Bell and a Clock for the Rotunda

Meanwhile, Jefferson pushed ahead with other tasks to complete the Rotunda. In April 1825 he contacted Joseph Coolidge Jr., who lived in Boston and was married to Jefferson's granddaughter, asking for help with securing a bell; Jefferson wrote that it was his understanding that the "art of bellmaking is carried to greater perfection in Boston than elsewhere in the U.S." He explained that the University needed a bell that could "*generally* be heard at the distance of 2 miles, because this will ensure it's being *always* heard in Charlottesville." A larger bell would be unnecessary: greater size would only "add to it's weight, price and difficulty of management."[189]

Jefferson had drawn up specifications for the bell, as well as for a clock, for the Rotunda, and sent them along to Coolidge. The bell was to weigh 400 pounds and be capable of being heard "with certainty" for one and a half miles, as he had explained to Coolidge. The face of the clock was to be made of metal and be approximately 6 feet 2 inches in diameter; it was to be placed in the tympanum of the south portico. The dial plate was to be about 5 feet in diameter. The weights for the clock were to be about 100 feet long; they were to extend straight back for about 30 feet, then turn at a right angle for about 21 feet, and then descend through a 5-foot-diameter hole for 50 feet. The rope for ringing the bell was to follow a similar path on the opposite side of the portico.[190]

Joseph Coolidge replied in August 1825 that the clock would cost $800; he had obtained this price from "the best clock-maker in this place," Simon Willard, who had made clocks for Harvard College and for the House of Representatives. He promised to produce "as good a clock as can be found in america"; the movement would be made "of purest brass, and of cast steel." It would take two months to manufacture, and Willard would travel to Charlottesville to install it.[191] Jefferson, disappointed, replied that the cost was beyond the present means of the University, especially if Congress insisted on collecting the duty on the Italian capitals and bases for the portico, so the University would be "obliged therefore to do without until our funds are improved."[192] As a interim measure Jefferson directed Brockenbrough to hang a "temporary bell" atop Pavilion VII, which was being used as the interim library, and to place a clock in the same building with its "face so near the window as that it's time may be read thro' the window from the outside."[193]

Jefferson had promised that the contract for the clock would go to Willard, hopefully in February 1826, but it was spring before Jefferson knew that Congress had remitted the duty on the marble.[194] In May he told John Cocke that "we are now to take measures as to the clock"[195] and at about the same time reported to Brockenbrough that he was prepared to "write to Boston to engage a clock and bell"; first, though, he needed "very exact measures of the dimensions of the tympanum" and "the diameter & depth of the well, for the descent of the weights."[196] On June 4, 1826, just a month before his death, Jefferson told Coolidge that he was "now authorised to close with mr Willard for the undertaking of the clock" and asked Coolidge to act as the University's intermediary for this project, to "abridge the labors of the written correspondence, for there will be many minutiae which your discretion can direct, in which we have full confidence, and shall confirm as if predirected."[197]

In less than three weeks the arrangements had been confirmed, and Jefferson confirmed to Brockenbrough that "Mr Willard undertakes our clock, and, without regard to price, says that it shall be as good a one as the hand of man can make." Willard would travel to Charlottesville to "set it up, observing that the accuracy of the movement of a clock depends as much on it's accurate and solid setting as on it's works." He would also purchase a bell on behalf of the University, estimating that one weighing 400 pounds would be sufficient. The total cost, Jefferson estimated, would be about $1,000, with $800 for the clock, $150 for the bell, and the balance for Willard's travel expenses. The work was to be finished in September 1826.[198] This letter may have been Jefferson's last written communication about the University.

More Work on the Interior, 1825

Arthur Brockenbrough, meanwhile, was trying to complete the interior of the Rotunda. In June 1825 he asked Jefferson about how he wanted to safeguard the entrance to the library room: did Jefferson want to have a "partition around the well hole of the Stairs and a door in the front of landing or a lobby extending to the rear of the columns next the stairs?"[199] Jefferson replied that the "wells of the staircases are to be secured by a ballustrade" and sent along "a very beautiful form of a balluster" to be used there and on the staircases.[200] Brockenbrough, though, felt that Jefferson had not understood the security issues related to the library, so he wrote to Jefferson again, explaining that "without a partition at the head of the stairs any person entering the building, will have free access to the Library." People using the basement classrooms, he pointed out, would be able to mount the stairs and gain easy access to the books at times when the library was closed. It would be necessary, Brockenbrough wrote, to have some arrangement "to prevent any & every person from Enteri[n]g except with the Librarian." No response to this letter from Jefferson has been located.[201] At the end of June 1825 Thomas Fadley was paid $16.50 "for turning executed for the rotunda, &c.," perhaps for these balusters.[202]

Meanwhile, Dr. John Emmet, the chemistry and natural history instructor, stated that he was "much dissatisfied" with the proposed facilities for his laboratory and lecture space in the Rotunda. He first suggested that a separate building having a lecture room and a wing with a furnace be constructed, but this proposal did not meet with approval. Looking again at the Rotunda, Emmet maintained that the small room that had been set aside for his laboratory would "not answer the purpose for the want of room & light."[203] Jefferson acquiesced to Emmet's appeal that he have use of both large oval rooms in the basement, writing that they should be "arranged as he pleases for his chemical purposes." One of the basement oval rooms had been intended for use as a museum, but Jefferson now told Brockenbrough that the museum could simply be moved to one of the upper oval rooms.[204] These changes were evidently not finished at the end of 1825, for Emmet told Brockenbrough in January 1826 that the space "should be looked to—the tin-man promised most seriously to have the stove-pipe made & put up—as well as the dampers, grate-doors &c—In raising the Stove pipes—let him secure the hanging shelf with Sheet iron—he may then fasten the pipe to the shelf."[205] Charles Bonnycastle, professor of natural philosophy, wished to use a lecture room in the Rotunda, rather than in his pavilion, so that his students could see experiments being done with instruments; he also needed a secure room in the Rotunda for storing the valuable instruments, so they would not have to be carried back and forth from his pavilion for each lecture. Despite the sanction of the Board of Visitors for this work and the fact that it was a minor request, the work was still not complete in April 1826, when Bonnycastle complained to Brockenbrough that "No preparations are yet making for plastering—or, I believe, for any thing else."[206]

Jefferson and Brockenbrough were also busy with arrangements for the decoration of the Dome Room. This matter had been on Jefferson's mind for some time: two years earlier, in October 1823, for instance, Jefferson had told Thomas Appleton that "40. Composite capitels of *wood*, for columns whose dimished diameters are 15 11⁄16 Inches English, to be copied from Palladio B. 1. c. 18. pl. 30." would be needed for the library room of the Rotunda.[207] Appleton, however, rebuffed this idea, recommending marble or mastic-covered columns because they would be more durable; furthermore, he wrote, "in no temple, or public edifice I have Seen, are there any Capitals of wood.—in the interior of all our churches in Italy, there are columns of brick or Stone, over which, is cover'd a mastic, which imitates So precisely every Species of marble, that it is utterly impossible, without being prob'd, to Distinguish, if they are marble, or of mastic." The cost, however, would be 100 dollars each, making a total of $4,000 for the carving alone. Even forty wooden columns, which would cost $44 each to carve, would be expensive.[208]

In June 1824 Brockenbrough had written to Philip Sturtevant of Richmond about carving composite capitals of wood for the library. Sturtevant was eager to do the work, proposing to carve the capitals including the "Neck Moulding in Every respect Out of the Best Timber and in the Best Manner" after plate thirty in the first book of Palladio. Sturtevant was so interested in the project that he begged Brockenbrough not to award the contract to anyone else without contacting him first; despite his "Extremely Low" price of "Seventy five Cents Per inch Measured By Girting the Collum or Capital at the Neck," he would do the work at a lower price "Rather than Miss of the Job."[209]

Sturtevant finally began work in 1825, telling Brockenbrough in June that he had been very fortunate in securing white pine from Maine for the capitals; he had already measured the "Smallest Part" of the column as being 14¾ inches, but asked that Brockenbrough or Neilson confirm that dimension to him. In the same letter Sturtevant reported that he had already "Drawn the Capital and Shall Commence Cutting up my Stuff tomorow."[210] He was paid $500 in February 1826 and another $700 in August for the capitals.[211] He told Brockenbrough in November of that year that he had "never worked so Hard in all My Life Before" and had "Worked Nights till 12 and 1 Oclock Even in July and August until I Got them done."[212]

Other architectural ornaments for the museum room were discussed with William J. Coffee, whose composition rosettes had been installed in the soffits outside. Joseph Antrim, who had done much of the plastering at the University, had visited Coffee in New York early in the summer of 1825, bringing along drawings of the work to be done in the Rotunda. Coffee then provided prices for composition and lead elements for a Corinthian cornice, including husks, leaves, rosettes, and ox skulls.[213] Brockenbrough told Jefferson that Antrim had reported after his trip to New York that "there is so little of that kind of work done there, he could not find any other person in the habit of making composition-work."[214] Jefferson, however, suggested that if Brockenbrough thought Coffee's prices were "extravagantly high," then he might be able to locate other "workmen in that line" in Washington, Baltimore, Philadelphia, or even Boston. He also suggested that a motif incorporating "the spread eagle of Delorme would be best."[215]

Coffee, meanwhile, had been offered a contract to make ornaments for a new cathedral in Montreal and pressed both the proctor and Jefferson for a decision on the work for the Rotunda.[216] Having learned from Jefferson that Brockenbrough thought his prices were too high, Coffee wrote the proctor in September that while his proposal was "not higher than w[h]at such work commands at this time in this city," he would offer a discount of twenty percent, because he had "done all the other ornaments" and "should not wish that any other work of this kind [be] introduced in the University."[217] Brockenbrough was eventually able to eke out an even better deal with Coffee, boasting to Jefferson that he had negotiated a fifty-percent discount. Coffee now proposed that he would "execute those Ornaments [for] the whole of the frieze (except a very small Part of the small Parts)," as well as the rosettes in his "Burnt Composition." The leaves of the modillions would be of "thick Lead." He was eager to move ahead, since the project would take him three months, and he already had commitments for other projects beginning in March 1826.[218] Brockenbrough still hesitated, though, wondering whether the expenditure "would be prudent or not in the present low state of our finances."[219] Coffee had not mentioned the spread-eagle motif, but in October, soon after Coffee had submitted his revised proposal, Jefferson had made a note to Brockenbrough "get Ne[i]lson's drawing of the Eagle ornament for Frize."[220] Documents on whether or not the University proceeded with a contract with Coffee for this interior work were not located.

In September 1825 Jefferson had sent Brockenbrough a list of questions pertaining to various University matters. One question dealt with the amount of money needed to complete the Rotunda. Brockenbrough replied that $42,000 had been spent so far, "exclusive of the circular room," and that another $15,000 would be needed to complete it.[221] As the year drew to a close, Jefferson acknowledged that he was failing in tracking financial matters: "I have so completely lost sight of our accounts that I do not understand these papers," he told Brockenbrough, "and must hereafter depend entirely on your self and the committee of accounts for such general statements as it may be necessary to give to the public."[222] Jefferson's fragile health had also precluded his attending the reception at the University and the "sumptuous dinner" in the Rotunda when General Lafayette returned to Charlottesville late in August 1825.[223]

At the end of 1825, as he compiled his annual expenses for the University, Brockenbrough again proposed to Jefferson that the labor force be reduced, noting that in the past year workers at the University had made 800,000 to 900,000 bricks for the Rotunda. The University's accounts for 1825 show substantial expenditures for lumber and for masonry, including payments to bricklayers Thorn and Chamberlain in March and April. Contractors Dinsmore and Neilson were paid $2,000 in September 1825. Other expenses, in addition to the costs related to the Italian marble, included tin work done by James Clarke, plastering by Joseph Antrim, and $1,000 paid to D. W. & C. Warwick for tin, copper and other supplies.[224]

The 1825 annual report to the Literary Fund stated that the "indispensable" uses for the spaces in the Rotunda at that time were the library, two rooms for the chemical laboratory, a museum of natural history, and a room "for examinations, for accessory schools and other associated purposes." At the time of the report, early October 1825, Jefferson wrote that, along with an anatomical hall, the university was "endeavouring to put them into a bare state of use, although with some jeopardy as to the competence of the funds."[225] The 1822 annual report of the Board of Visitors stated that the Rotunda was intended to be used for religious worship; this topic was brought up again in 1824, but by 1825 Jefferson had changed his mind and dissuaded Brockenbrough from pursuing any use of University buildings for religious gatherings.[226]

Jefferson's Final Push to Complete the Rotunda, 1826

The dome room was still not operational as the library during the winter of 1825-26, and Jefferson was impatient, writing Brockenbrough on January 3, 1826, that "it is high time to have our bookcases in hand, and to be pressed as the books cannot be opened until the shelves are ready to recieve them." He had recently learned that the books from France had already arrived in New York and been shipped on to Richmond.[227] With little hope of winning additional funds from the Virginia General Assembly, Jefferson wrote Joseph C. Cabell in early February that he had gone "immediately to the University and advised the Proctor, to engage in no new matter which could be done without, to stop every thing unessential in hand, and to reserve all his funds for the book room of the Rotunda and the Anatomical theatre." "Till the latter is in condition for use there can never be a dissection of a single subject," Jefferson wrote, "nor until the bookroom and cases be completely done can we open another box of books." Crates of books were arriving from abroad and piling up: "we have now 5 boxes on hand from Paris unopened, 5 more from the same place are supposed to be arrived in Richmond, 7. from London are arrived at Boston, and a part of those from Germany are now in Boston," Jefferson wrote. Still more boxes were expected, and they all had to "remain unopened until the room is ready, which unfortunately cannot be till the season will admit of plaistering." Moreover, Jefferson continued, the "joiner's work goes on so slow that it is doubtful if that will be ready as soon."[228] Between November 1825 and March 1826 Thomas Fadley was paid $108 for "turning columns" and other turning for the library room."[229]

In April 1826 Jefferson was charged with the task of telling Brockenbrough that the Board of Visitors was losing confidence in him. Apologizing for being the bearer of the news, Jefferson wrote that the Visitors were "not satisfied with the slowness with which the buildings have been conducted the last year, and particularly with respect to the Library, and the Anatomical theatre," which, they thought, "ought to have been done before this, the books remaining packed so long in their boxes it may be feared are at this time, in a progressing course [of] injury, in add[ition] to the loss of their use to the Professors & Students." "A greater force of workmen," he continued, "ought to have been employed, and it is now requested that all which can be employed be immediately put into action first for the completion of the Library room & Shelves, and next the Anatomical building." Furthermore, transporting the marble capitals to Charlottesville called "pressingly for exertion."[230]

Jefferson expanded on his views about the slowness of the work in a letter of May 20, 1826, to John Cocke: he was "extremely dissatisfied" with the "pain in which our works at the University are going on, and were it not for my great confidence in the integrity of those we employ, I should be unable to resist the suspicion of a willingness in them to make the job last for life." Jefferson was too ill to visit the University as frequently as he felt was necessary, so he sent along to Cocke "some notes of things of strong urgency" and urged him to come to Charlottesville to review the situation. Even though Jefferson found himself "always injured by the ride there," he still hoped to accompany Cocke and "endeavor to apply a spur to those needing it."[231]

The crates packed with the marble bases and capitals had finally made their way to Virginia; payments for freight were made in February and April 1826, but they still had not been installed. Jefferson wrote Brockenbrough in early May that the bases should be hauled first and then he should get the "bricklayers immediately to begin the columns." Then, while the shafts were being built, the capitals could be hauled up to the University.[232]

Meanwhile, by the spring of 1826 the roof on the Rotunda was leaking. Jefferson told Cocke that "the Dome leaks so that not a book can be trusted in it until remedied." Jefferson's own opinion was that it would be best to install "another cover of tin laid on the old one." He felt strongly that A. H. Brooks, of Staunton, "whose competence to it we know," should be employed for the repairs, not the original installer, Anthony Bergamin, telling Brockenbrough that "we ought not to trust to people of whose skill we know nothing, the ignorance of the Frenchman is what costs us a new roof." Jefferson estimated that the price of a new roof would be $800 to $900.[233]

At the end of May Jefferson drew up a list of instructions for Brockenbrough. Included was the directive that he was to hire Brooks "to come immediately & put another cover of tin on the Dome-room of the Rotunda, without disturbing the old one."[234] Brockenbrough carried out this order in a timely manner, asking Brooks to come to Charlottesville and to give him a price for the work. Brooks replied immediately, telling Brockenbrough that he could not provide an estimate because he had never "done any work of the kind" and because he would need to see "what is to be done." Brooks suspected that the "old Covering must Come off," but in the end he may have simply patched it, for the annual reports show that in August 1826 he was paid only $23.86 for "covering the dome of the Rotunda," much less than what a complete new covering would have cost.[235] Meanwhile, in June 1826, the University purchased ten boxes of tin plates "of the next quality better than those formerly Sent."[236]

As soon as the roof was repaired, Jefferson wrote, the completion of the dome room was "to be pushed by every possible exertion."[237] He instructed Brockenbrough that "we must cover the ill appearance of the plaistering," evidently meaning the water stains on the interior surface of the dome, "by a whitewash, either of lime or Spanish white."[238] In another document Jefferson wrote that the plaster ceiling was then "to be coloured uniform with Whiting."[239] These instructions are at variance with Jefferson's undated notes specifying that the "Concave cieling of the Rotunda is proposed to be painted skyblue and spangled with gilt stars in their position and magnitude copied exactly from any selected hemisphere of our latitude." Jefferson had provided detailed instructions on how to determine each star's "exact position" and specifications for "a seat for the Operator movable and fixable at any point in the concave." However, the planetarium scheme was apparently not carried out.[240]

Visitor John Cocke and Alexander Garrett drew up a statement of anticipated expenses for the University at the end of May 1826. Among the items included were $120 for William Phillips to build the portico columns of brick, $100 for John Gorman to install the bases and capitals, and $500 for Joseph Antrim, the plasterer, to put a smooth finish on the columns.[241] Antrim was paid $350 for plastering at the Rotunda in July 1826.[242] Payments were made for lumber in the spring and summer of 1826.[243] Other payments that may have been for work at the Rotunda included $2,000 in April and another $1,000 in July to Dinsmore and Neilson.[244]

Jefferson had been in ill health for much of the time that the Rotunda was being built, often unable to travel from Monticello to the University to follow the construction progress or to meet with the proctor and the contractors. Writing from Monticello in late October 1825 Jefferson described his current condition to an acquaintance: "Eighty two years old, my memory gone, my mind close following it 5. months confined to the house by a painful complaint, which, permitting me neither to walk nor to sit, obliges me to be constantly reclined, and to write in that posture, when I write at all." "The little of the powers of life which remains to me," he continued, "I consecrate to our University. If divided between two objects it would be worth nothing to either."[245]

Five months later, in early March 1826, Jefferson told architect Robert Mills, who would later design the Annex to the north of the Rotunda, that his "health is quite broken down." For the past ten months he had "been mostly confined to the house, and now nearly ending my 83d. year, my faculties, sight excepted are very much impaired." Problems with his wrists meant he could "write but slowly & laboriously." Nevertheless, he invited Mills to visit Charlottesville: "I wish your travels should some day lead you this way, where from Monto. as your headquarters, you could visit and revisit our Univy 4 miles distant only. The plan has the two advantages of exhibiting specimens of every fine model of every order of architecture purely correct, and yet presenting a whole new and unique."[246]

Jefferson died four months later, on July 4, 1826. His death, James Madison, the new Rector, wrote, "clothed the whole land in mourning" and had fallen "with peculiar force" on the University. Even in retirement, Jefferson had not ceased "to cherish that love of country and of liberty, which had been the ruling principle of his life." "Reflecting more particularly on the great truth, that as no people can be happy but with a free government, so no government can long be free, without knowledge for its conservative element," Madison wrote, Jefferson had "determined to close his illustrious career, by devoting the resources of his genius and his vast acquirements, to the erection of this monument to science and liberty: indulging to the last hour of his protracted existence, the gratifying confidence that under the auspices of the State to which it was dedicated, it would more than re-pay whatever might be done for it, by the lights it would diffuse, and the characters it would rear, for the service and the ornament of the republic."[247]

True to his 1805 promise, Jefferson had bequeathed his library to the University and had also stated less formally that a "marble bust of him by Caracchi, with the pedestal and truncated column on which it stands, should be presented to the institution." However, according to his grandson Thomas J. Randolph the "deeply embarrassed state in which his affairs were left" meant that Jefferson's assets would not be adequate to cover his debts. Because he was fearful that settling the estate would "leave the library exposed to injury," Randolph hoped to be able to "deposit" the library at the University but with the understanding that it might be necessary to sell the books in the future. The bust, not having been a specific bequest, would probably have to be sold.[248] Madison, in a report to the Literary Fund, expressed the hope that the library could become a permanent gift, citing the "pain which would be felt from a loss, and that from such a cause, of a gift so acceptable to the University." The bust, Madison argued, would be a "fine image of its illustrious Father, which would be at once an appropriate ornament, and a spectacle ever reminding the ingenuous youth, of the love of science which they ought to cherish, and the dedication of its fruits to the cause of their country, of liberty and of humanity, which they ought to emulate."[249]

Jefferson had not lived to see the Rotunda completed. The clock and bell had not yet been delivered, and the plasterwork was not finished. In August 1826 Joseph Antrim sent a proposal to Brockenbrough stating that he would "put stucco cornices and do the plastering that remains undone inside of the rotunda" and extend credit for the work for up to two years.[250] In September Cocke asked Brockenbrough to get estimates, along with "details of their models," from Dinsmore and Neilson for constructing the "internal Cornice" in wood and from Antrim for creating it in plaster.[251]

Finishing the Rotunda, 1826–1828

At the time of Jefferson's death work was also still needed in the library. Brockenbrough, turning now to John Cocke for advice and confirmation of his decisions as he had to Jefferson, wrote in late August 1826 that the "Faculty wish to be arranging the books in the Library." However, Dinsmore and Neilson had told him that they would "not be able to get up the hand rail & Balasters to the Stairs so as to secure the room" within a fortnight, as was desired. Brockenbrough complained that "if we are to be governed by their former promises and engagements, it will probably be double that time." To secure the library Brockenbrough suggested instead that "a temporary partition be put up at the head of the Stairs." There was already a "sufficiency of Book cases" available, so the actual work of arranging the books could get underway. "Unless some plan of this sort is adopted," Brockenbrough feared, "the Library will not be in place before the meeting of the Visitors" scheduled for early October 1826.[252] Evidently arrangements of some sort were worked out, for by the time the Visitors gathered at the University that fall, the new Rector, James Madison, was able to report that the "library room in the Rotunda has been nearly compleated, and the books put into it."[253] It was not until 1827, however, that payment was made for "two dozen chairs," and the "circular tables in the Library" were put in place.[254]

In the first annual report filed after Jefferson's death, Madison stated in a commentary dated October 7, 1826, that the "Two rooms for the Professors of Natural Philosophy and of Chemistry, and one large Lecture room, have also been fitted for use." Outside, the "Portico of the Rotunda has been finished, with the exception of the flight of steps, and the laying of the marble flags, which have been received and paid for." What remained to be done was the "finishing one other large oval room, one small one, and the entrance hall of the Rotunda."[255]

At their October 1826 meeting the Visitors passed a resolution asking the faculty "to cause the small room on the first floor of the rotunda to be finished & fitted for the reception of the natural and artificial curiosities given to the University" by Jefferson and "to have them suitably arranged for preservation & exhibition."[256] Two years later these materials were to be moved to the small oval room in the basement.[257]

Several small invoices were paid between the fall of 1826 and the summer of 1827. George Wolfe was paid "for turning for the rotunda," and J. Fitz was paid for "wire work" for the library. Joseph Forsett was paid "for bolts, &c. for rotunda" in March 1827.[258] Joseph Antrim was paid in September 1827 for plastering in the Rotunda,[259] and John Vowles had supplied "draw locks" for the library. Large sums were paid to Dinsmore and Neilson in 1827, but it is not clear whether the payments were for work on the Rotunda.[260]

In August 1826 the University had made a partial payment to Joseph Coolidge of $250 toward the clock and bell, but it was not until late March 1827 that Coolidge was able to tell the proctor that the clock and its dial had been shipped from Boston and was en route to Richmond.[261] Willard left early in April to "superintend the removal of the clock &c from the vessel to the Canal boat."[262] The order for the bell was not placed until August 1827. Coolidge confirmed the instructions that it was to be "cast, of purest metal, to weigh about 450 lbs." Although Coolidge had said that the bell would be ready in early September, it was not delivered until several months later. Coolidge was finally paid $159.25 in February 1828 for a "large bell."[263] The bell was hung above the ridge of the portico roof, adjacent to the attic.

In July 1827 the Visitors had authorized the proctor to install "a neat iron railing . . . on the right and left of the portico of the Rotunda & adjacent to the same"; its purpose was "to exclude access for the purpose of walking over the gymnasia" housed in the terrace wings.[264] The Visitors, however, failed to communicate this order to Brockenbrough until mid-September; when the order was finally conveyed to Brockenbrough, he was told to confer with the executive committee before determining placement of the railing.[265] Brockenbrough duly asked John Cocke about the best location and whether it should be made of cast or wrought iron; Brockenbrough evidently thought the railing was to be "on the right & left of the Rotunda & adjacent to the same," presumably at the east and west ends of the terrace nearest the Rotunda.[266] Cocke, however, suggested placing the railing "as near to the Pavilions as will be consistent with the object for which they are to be erected," that is, "to secure the privacy of these Buildings."[267]

If Lafayette's 1824 walk on the terraces included walking atop the arcaded wings of the Rotunda, wood railings may have been in place along the north and south sides of the terrace wings for reasons of both aesthetics and public safety. While the drawing of the arcade attributed to John Neilson did not indicate a railing, other early views of the university, such as the 1826 engraving by Benjamin Tanner, do show railings with fretwork.

In August 1827 Brockenbrough had given Cocke an update on the construction work, stating that "We are going on tolerably well with our jobs" and noting that "the plastering of the Rotunda will be finished during the vacation." Meanwhile, the iron work was "nearly completed."[268] Brockenbrough had also "written to Philadelphia for a stone cutter to come on & undertake the Steps." However, he had found that since that man "asks rather more than I am willing to give," he wanted to find an artisan in Richmond.[269] Brockenbrough had calculated that "it will take about 700 feet running measure" of stone for the steps, which in its rough state would be approximately 18 inches wide and 8½ inches thick." No contract for the stone steps was written at this time, however.[270]

There were problems with the performance of the chimneys, making rooms on the west side of the Rotunda "useless." In a November 1827 memorandum Brockenbrough noted that "Some of the visitors looked at tops of the Rotunda chimneys at their last meeting, but I beleive came to no decisive determination what should be done to prevent their smoking." Cocke reminded Brockenbrough in November 1827 that he should experiment with a "Sheet iron Funnel" atop the chimneys and suggested that Brockenbrough consult with Dr. Emmett, who knew of "a late improvement in the Construction of these Funnels."[271] Cocke also sent along a scheme developed by Professor Bonnycastle "for Curing Smoking Chimneys."[272]

Apparently either the skylight at the Rotunda or the one at the anatomical hall had been leaking in 1827, and Cocke received the following advice from Coleman Sellers of Richmond about a corrective measure that had worked elsewhere: "take off all the glass, and have them well cleaned, and Rubed with whiting so as to Remove any grease that might get on by handling &c then take white lead putty, (made with drying Oil and Tapan) and bed each glass well into it—so as to Cement their edges together."[273] The terrace roof over the gymnasium was also leaking.[274]

Environmental conditions in the Rotunda, according to the faculty, were proving to be less than ideal for both the students and the books. In January 1828 the faculty passed a resolution directed to the Board of Visitors that "the Books in the Library especially those in the Gallery are now materially suffering from damp, and that it is impossible for any person to remain in the Library with comfort during the Winter season." The faculty also recommended that heating stoves be installed in the lecture rooms, "the fire places having been found insufficient for warming and drying the apartments," making them "exceedingly disagreeable and unwholesome especially in the morning."[275]

In July 1829 the Visitors authorized the executive committee to carry out some minor repairs in the Rotunda: the "pillars in the chemical lecture room" were "to be cased," and the benches were "to be fixed to a rising platform, as in the lecture room of the Professor of Natural Philosophy." In addition, the fireplace in the chemical laboratory was "to be altered, so as to improve the draught, in the mode thought most expedient by the Professor of Chemistry."[276]

Despite these problems out-of-town visitors to the University often found the overall ensemble, with the Rotunda as its centerpiece, enchanting. In 1828 novelist and diarist Margaret Bayard Smith wrote to her sisters from Charlottesville that "Never have I beheld a more imposing work of Art"; she called the domed library "a magnificent apartment—larger & more beautiful than the library in the Capitol." She and Professor John T. Lomax "sat in the Library looking over books & conversi[n]g on literary subjects for more than two hours, while the young people were roaming about & climbing to the dome or roof of the Rotunda."[277]

Repairs and Improvements, 1830s

The stairs leading up to the south portico may not have been constructed until 1832. The stone was quarried by William Leitch, and he was paid in small amounts by the University at various times beginning in September 1830, with the final payment made in January 1833.[278] An undated contract between the University and Leitch stipulates that Leitch would "undertake to quarry all the stone for the steps of the Rotunda on Gen'l Cocke's land." All stone was to be "of good quality and sufficiently hard so as not to be damaged by weather" and was to be "18½ inches wide on top and 8½ inches thick for the front and no less than three feet long."[279] In the spring of 1833 more stone was quarried and hauled to the site by wagon. By April 1833 "81½ feet of coping stone for the basement of the Rotunda" was quarried at a cost of $.40 per cubic foot, for a total of $32.60. In 1834 "stone work about the basement of the rotunda, under contract made in 1831" was carried out for a total of $129.60.[280]

Leaking in the Rotunda's skylight and dome would prove to be a persistent problem. In July 1833 the Board of Visitors passed a resolution stating that the proctor should take "immediate measures to stop leaks in the roof of the Rotunda.[281] A list of repairs and improvements published in the annual report of the Rector and the Board of Visitors in 1836 indicates that a modest $.50 was spent "repairing the sky-light in rotunda" in July 1835 and that $131.82 was spent for "tinning" on the Rotunda and the pavilions in August.[282]

At its August 17, 1837, meeting the Board of Visitors agreed that the "blocking course of Wood on the dome" needed to be repaired and painted. In November 1837 the University paid George W. Spooner of Charlottesville $181.81 for repairs made to the dome of the Rotunda. The Board had also directed in August 1837 that a "marble pavement" be "laid in the Portico of the Rotunda" and that the "Cistern at the Rotunda, now a cause of material injury to the walls of the building" be removed, but there is no record that year of the paving work or removal of the cistern or a clear indication of where the cistern was located.[283] Additional repairs to the roof, specifically to the "copper covering" of the dome, were made by James B. Rogers in October 1839, for $37.00.[284] It is not clear whether the $145.62 spent in May 1837 on "sheet lead, tin and glass for skylight" or the $11.50 spent in February 1840 for the "glazing sky light and painting" was for the skylight in the Rotunda or the one in the Anatomical Hall.[285]

The Board of Visitors had called for alterations to the skylight of the Rotunda in 1840 to stop the leaking, and a glass and tin lantern was installed over the skylight that year. The lantern and accompanying weathervane are clearly depicted in a lithograph of the Rotunda viewed from the south executed sometime between 1846 and 1851. The same components appear in several other lithographs that show the grounds from the east and west, made during the 1850s, 1860s, and early 1870s, though the weathervane, which was in the form of a quill some 8 to 10 feet long, was removed by William A. Pratt, the University's first Superintendent of Grounds and Buildings, in 1860.[286]

George Spooner installed new bookcases in the library in October and November 1838 and January and February 1839, at a cost of $500.00. John Day and Company painted the cases and installed their glass doors in March 1839, at a cost of $59.57.[287]

University records reveal little else about specific repairs and improvements made to the Rotunda during the 1830s, suggesting perhaps that no major repairs were made during that time.

In December 1840 the Rector, Chapman Johnson, submitted a summary on the state of the University's physical plant to the Virginia House of Delegates, reporting that during 1839 and 1840 the "buildings in the university have been put in a good state of repair; and they, with the public grounds, the library, the apparatus belonging to the several schools, and the other property of the university, are in good condition." Johnson further noted that the University was flourishing "to a gratifying extent," and though the country was mired in an economic depression, "the number of students has been nearly as great as at any prior time."[288]

A Growing University, 1840s and 1850s

By the middle of the nineteenth century the University was operating beyond full capacity and was essentially bursting at its seams: in the fifteen-year period between 1842 and 1857 enrollment swelled from 128 to 645 students. As of 1850 the University buildings—both dormitories and classrooms—were able to accommodate only 200 students. The University's growth can be attributed in part to increasing prosperity in the Southern states, which put more Southern parents in the position to send their sons to school. Escalating ante bellum tensions with the North further expanded the student body, as young Southern men seeking an education declined to enroll in Northern colleges and universities and opted to attend the University of Virginia instead. Furthermore, the extension of railway facilities connecting Charlottesville and Richmond in 1850 improved access to the University. The growth of the student body forced the University to rescind its policy that all students live in University housing, and the overflow of students sought lodging in Charlottesville's inns and boarding houses. Twelve new dormitories built at the University in 1848 brought only a little relief.[289]

The increase in enrollment soon outstripped available classroom space as well. While a few departments, such as chemistry and natural philosophy, had their own classrooms, the five schools of ancient languages, modern languages, mathematics, moral philosophy, and law had to share only two lecture halls in the Rotunda. By the early 1850s the English department shared this space as well. As the student body grew, faculty members complained that their ability to teach effectively was seriously hampered by the crowded conditions. The mid-century growth of the university also meant that Jefferson's plan—a more intimate arrangement wherein professors conducted classes primarily within their residences—was changing.[290]

In response to the ever-increasing need for more classroom space, the University decided to convert the two open gymnasia wings projecting from the southeast and southwest sides of the Rotunda into lecture rooms. As early as July 1833 George Spooner had submitted specifications for this work, but evidently the plan was not seriously considered until July 1840, when the Board of Visitors decided to advertise for proposals and contractors based on plans submitted that year by Visitor John Hartwell Cocke. The Board stipulated that the plan should include the following:

> The excavation of a space at least four feet wide parallel with the South walls, of the said Gymnasia, & extending from the steps of the Rotunda to the porticos of the Pavilions 1 & 2 respectively. This excavated passage to be sunk six inches below the level of the floors of the new rooms, to be faced with a brick wall laid in hydraulic cement up to the level of the Lawn & capt [*sic*] with cut stone & the bottom paved with hard brick, inclining from the walls of the rooms half an inch to the foot, with a graduated blind drain at the base of the outer wall to deliver the water by a continuation of the drain beyond the arched entries at the east & west ends of the said lecture rooms.[291]

Meanwhile, George Spooner was selected to make the alterations in the Rotunda's wings. The work of enclosing the gymnasia and installing lecture rooms began in the spring or summer of 1841, but some aspects of the new construction were quickly deemed unacceptable. On July 1, 1841, the Board of Visitors reported that the "roofs which have recently been erected over the halls at the former gymnasia obstruct the view and are injurious to the aspect of the buildings of the University." The Visitors ruled that the roofs should be altered and noted that it had been "ascertained that they may be reduced without injury to the apartments beneath." The Board recommended "that the proctor be instructed to cause the upper portions of the aforesaid roofs to a perpendicular depth of thirty inches to be removed and substituted by flat roofs covered with copper or zinc, and that he proceed, as soon as practicable, to procure the proper materials for the change hereby required."[292]

Spooner made the alterations between late July and November 1841, during which time the University paid him a total of $2,116.76.[293] The entire project of "converting the gymnasia into lecture rooms" was finished in the summer of 1842, and in July Spooner submitted an additional itemized bill for $6,115.36.[294]

At its July 1, 1841, meeting the Board of Visitors had discussed the uses of the new lecture rooms, as well as the uses of some of the rooms in the Rotunda. The Board resolved that the newly enclosed "apartment" that replaced the "Eastern gymnasium" should be "fitted up and appropriated to the general meetings of the University & as a place of religious worship for the professors, officers & their families and of the Students of the University, & that it be placed under the direction of the Faculty." The "western hall" would serve as a "Lecture room for the professor of Natural Philosophy & for the reception of the philosophical apparatus and of the objects of natural History &c bequeathed to the University by Mr. Jefferson." Furthermore, the "two apartments in the first story of the Rotunda, now occupied by the philosophical Apparatus, & by objects constituting the aforesaid donation of Mr. Jefferson" were to be used as additional lecture rooms once the apparatus was removed to the new lecture room in the western hall. The Board also discussed the arrangement of the rooms for instruction in chemistry:

> It being represented to the Visitors that the present lecture room of the professor of Chemistry in the basement story of the Rotunda is not as well adapted for the purposes of a lecture room as the opposite apartment in the same story, now used as a chemical laboratory.
>
> Resolved that the Proctor, under the directions of the professor of Chemistry, be instructed to cause those apartments to be altered in their interior arrangements so as that Eastern apartment be used as a chemical lecture room & the western apartment as a chemical Laboratory.[295]

In July 1840 the Visitors specified that the "Hall and galleries of the Library be newly painted" and that the floors of the Rotunda's "hall and galleries" be "swept once every day" and "scoured immediately preceeding [*sic*] the opening of each session of the University and at the commencement of each succeeding quarter thereafter, and as much oftener as may be necessary to keep them in a clean & neat condition."[296]

The Rotunda roof was painted with "soapstone paint" during 1842 at a cost of $17.60, and John Day submitted a bill for $27.75 for painting the "stonework" in the "Rotunda chapel" and the lecture rooms in March 1842.[297] The University paid Joseph Points a total of $750.00 for unspecified "repairs to the dome of rotunda" in July and October 1844.[298] In July 1845 the Board of Visitors resolved that the proctor "be directed to have wooden flooring placed over the metal covering at the base of the dome of the Rotunda, and cause the ornamental blocking around the dome to be protected by a covering of sheet iron."[299]

The addition of the lecture rooms in the former gymnasia deferred the problem of overcrowding for only a few years. "The duty of arranging the lectures in the different schools of the University so as to prevent any interference or serious inconvenience to the Students has become from year to year a more difficult task," the faculty reported to the Board of Visitors in October 1849. In fact, by that time it had become "utterly impossible to make such an arrangement, owing partly to the considerable increase of the number of Students, and partly to the number of schools attended by each one of them." In response to the problem the faculty proposed that classes be shortened to one hour, "by which room for at least one additional lecture, daily, would be gained" and "once more lay before the Board of Visitors the urgent want of additional lecture rooms." The Board adopted the proposal for shortened classes only temporarily, "until further order [could] be taken upon the subject" of new construction.[300] Though plans for additional space had not been formalized, the Board of Visitors ordered the manufacture of 300,000 bricks at the end of June 1850, in anticipation of the "erection of such additional buildings as may become necessary for the successful operation of the University."[301]

The inadequacy of the existing conditions became even more apparent when the Rotunda was inspected by an unnamed "competent architect" in 1850, and it was found that the "*large room in the rotunda was insecure*, and could no longer with safety be used for *public exhibitions, as it had been for past years*."[302] In October 1850 Rector Joseph C. Cabell presented the following report on the state of the dome room:

> [T]he necessity of speedily providing another apartment for the general meetings and public exhibitions, cannot be too often repeated or too strongly enforced. These meetings and exhibitions have heretofore been held in the large upper apartment in the rotunda containing the library, which is the largest in the University, and in some respects admirably adapted to the purpose. The practice has been attended with some injury to the library by reason of the dust arising on such occasions; but if this were the only objection, it might be continued still longer without very material injury or inconvenience. This apartment, however, having been planned and constructed merely for the purposes of the library and its appropriate uses, the floor is not calculated to sustain the pressure of the great additional weight thrown upon it at the period of the annual exhibition, which is estimated to be generally not less than 100 tons, and at the time of great excitement in the audience, to be augmented by oscillation to quadruple this amount.
>
> From indications in the ceiling of the story below, there is evident danger of the floor yielding to the superincumbent pressure arising from this cause, especially as the circle of pillars by which the library is supported, is not sustained by corresponding pillars in the story underneath. A proper regard for the safety of the auditory, as well as of the building, suggests the necessity of as little delay as practicable in transferring the general meetings and exhibitions to another and more suitable position in the University.[303]

Making Plans for Additional Space, 1850–1851

By the early fall of 1850 the Board of Visitors was sufficiently convinced that the existing buildings were "totally insufficient for the accommodation of the increasing number of students," and it was of the opinion that "no time should be lost in taking immediate measures for the erection of such needful buildings." At its September 25, 1850, meeting the Board of Visitors appointed a two-man committee, composed of Andrew Stevenson and Thomas J. Randolph, to investigate the cost and logistics of constructing a new building that would hold a public hall and space for additional lecture rooms and laboratories. The construction project had a modest budget of around $25,000, and the committee was authorized to engage an architect to superintend the work. On December 28, 1850, Stevenson informed Rector Joseph C. Cabell that he had written to "two eminent architects . . . to ascertain what they would charge to come up & visit me & draw plans &c. for the Building." The architects that Stevenson had contacted were Robert Mills of Washington, D.C., and prominent New York City architect James Renwick, who had recently won the competition for the design of the Smithsonian Institution Building in Washington, D.C.[304]

By mid-October 1850 Stevenson had written twice to both Mills and Renwick. Both architects were "willing to come at a moment's warning." Renwick stated that he would work only on the following basis: that he "do the drawings & attend the work for two percent of the whole amount expended." "This is too much," Stevenson reported to Cabell and suggested that it would be "best to get Mills" to "slip up to the University" from Washington and "help us fix a plan."[305]

Mills visited the University in early December 1850, and he and Stevenson inspected the grounds together to determine the most suitable location for the new construction. It is not known what further communications were had with James Renwick, but Stevenson and Randolph quickly selected Mills to undertake the work: "Mills was the "most reasonable," of the two candidates, Stevenson wrote to Cabell on December 28, reporting that Mills stayed "not two days, & we agreed on the plan." "I think," Stevenson assured Cabell, "you will approve of the plans of the Building & its location . . . It will add to the appearance of the Rotunda, & the whole of the Buildings."[306] On the other hand, Randolph, who was seen as "loyal to the artistic spirit of his grandfather," had reservations about the design for the Annex and feared the fire damage that such a large building could pose. Nevertheless, the need for space and economy overruled the aesthetic concerns, and Mills's design went forward.[307]

Robert Mills had studied under Thomas Jefferson, James Hoban, and Benjamin H. Latrobe and is often credited with being the first American-born architect to be professionally trained entirely in the U.S. Born in Charleston, South Carolina, in 1781, Mills worked as an architect in Charleston, Philadelphia, Baltimore, and Columbia, South Carolina, until 1836, when President Andrew Jackson appointed him architect of public buildings in Washington, a position he held until 1841. In Washington Mills designed and supervised the construction of the U.S. Treasury Building in 1836 and the U.S. Patent Office and General Post Office, both begun in 1839.[308] He also won the competition for the design of the Washington Monument in 1836. By the time he was selected to undertake the work at the University of Virginia in 1850, Mills had been living and working in Washington, D.C., for twenty years and was sixty-nine years old.[309]

Within weeks of visiting the University, Mills submitted full specifications and six sketch plans. He had wanted to publish the full specifications in newspapers, but Andrew Stevenson thought that venture too costly, so copies of the specifications were instead made available to potential bidders through the proctor's office.[310]

The specifications, dated January 3, 1851, indicate that Mills had designed a four-story addition extending north from the Rotunda. The building would include a sub-basement, a basement, a "principal" story, and an "upper" story. The main portion of the addition, which would soon become known as the Annex, would be 105 feet long and 55 feet wide. A covered colonnade would extend 25 feet from the north side of the Rotunda, connecting it to the south side of the Annex; a 25-foot-deep portico would span the Annex's 55-foot-wide north facade. Overall, the structure, including its two porticos, would extend 155 feet from the Rotunda.[311] The sub-basement and basement would have 14-foot-high ceilings. The principal story would have 21-foot-high ceilings, and the upper story "to eaves and cove of roof" would be 18 to 20 feet high. A later account indicates that Mills's original plans called for the basement, first, and third floors to be occupied by several "average size" lecture rooms and by "one large apartment, in addition, for the storage of the costly apparatus belonging to the School of Natural Philosophy." The second floor would be reserved for a 1,200-seat public hall.[312]

Mills's specifications stipulated that the joists of the interior structural system be "framed into girders supported by cast iron pillars or columns." The roof was to be framed with "principal rafters, with Queen posts, to admit of a cove ceiling to be executed" and covered with either tin or sheet iron. The outside walls were to be faced with "pressed brick, laid in Flemish bond" with "flat joints well settled down and bound with the interior part of the wall and prepared for painting." The "other parts of the walls" were to be "laid in American bond (3 stretchers to one header.)" The columns in the new portico were to match the columns on the Rotunda's south portico, extending "up to the eaves of the roof" of the "present Portico." The bricks in the columns were to be "solidly laid in hydraulic mortar, the facing prepared for stucco work, and the bases and caps of these columns (to be formed of cast iron) to be built in with the brick work." All wood floors throughout the building were to be constructed of the "best quality heart stuff."[313]

Controlling the costs of the new construction was a constant concern. In late January 1851 Stevenson reported to Rector Joseph Cabell that he had "urged Mr. Mills to reduce the general estimate to under $25,000—whether he shall be able to accomplish it is to be seen, but I shall struggle hard." Stevenson expected that the University would have to look to foundries in Baltimore or Philadelphia "to see about casting the capitals and the pillars." "I hope to succeed in getting rich & handsome capitals," Stevenson wrote, "equal in appearance and as durable as those of the Rotunda for about $100 each, including the Bases," whereas the marble ones at the Rotunda had cost "$1100 & upwards, each." Stevenson anticipated a savings of "$5 to 6 thousand dollars" if they could get the capitals and bases made of cast iron for the desired price.[314]

Robert Mills was in Charlottesville in February 1851 to review his drawings with Stevenson and Randolph. At this time the committee "commissioned him to prepare forms of contract and issue the requisite advertisements." Mills met with the committee and potential contractors on April 3, at which time "the work, in all its departments, was let to undertakers of respectable standing, upon terms satisfactory to the committee and to the board of visitors."[315] The firm of Hudson and Lushbaugh of Staunton, Virginia, was selected as the contractor, and George Spooner was appointed to superintend the work.[316]

The first expenses for the project dated to May 1851. Fifty dollars went toward reimbursing Mills for his travel expenses to Charlottesville, and $100 was paid to him for his professional services thus far. He did not charge a fee for preparing the plans and specifications but was paid a monthly salary of $83.33 from December 1851 to October 1852 and was reimbursed for travel expenses.[317] The sum of $40.62 was paid for advertising in May 1851, and in June and early July 1851 an additional $101.87 was spent placing notices to contractors in the *Richmond Times-Dispatch*, the *Richmond Examiner*, and the *Jeffersonian*.[318]

Construction of the Annex, July 1851–1854

Ground was broken sometime in late June or early July 1851. The firm of Sowell and Seay carried out the excavation work, while Hassan and Boyle began stone work, and Word and Brown did brick work.[319] By mid-August 1851 work was reportedly moving along well, and there was "every reason to believe the building will be covered in by the ensuing winter." Andrew Stevenson and Thomas Randolph reported to Rector Joseph Cabell that work appeared to be "well executed and the materials of excellent quality." Stevenson and Randolph credited George Spooner with the smooth progress, reporting to Cabell that in Spooner they had "an entire confidence." "He examines daily, and indeed hourly the whole work as it progresses," Stevenson and Randolph reported, "and it is executed under his immediate approbation. So far everything has gone on as well as we could have expected; and if no unforeseen occurrence turns up to prevent it, we anticipate that the exhibition room will be ready for public exercises in June next, and the lecture rooms in the course of 12 or 14 months."[320] In late September 1851 construction was reportedly "advancing regularly. The first story is built up & the arches for the portico to the same height, excepting a part of one side."[321] The sum of $11,701.78 was expended on the project in 1851.[322]

The Annex was not completed according to schedule, nor was it finished within budget; Robert Mills's estimated cost for the building proved to be too low. The University petitioned the General Assembly to borrow $25,000 to put toward the construction costs, and the loan was granted in February 1852.[323] On May 8, 1852, Stevenson told Cabell that he was "not entirely satisfied" with Mills's estimates, and he was "disappointed to find <u>so much</u> to do & so much <u>money expended</u>." "The Proctor tells me that $20,000 has been paid," Stevenson reported, "and I fear that it will take 15 to 20,000 more. But it is too late to look back & the work must be completed."[324]

In their annual report the Rector and Visitors indicated that the new building "was not finished at the annual meeting in June [1852], as was anticipated in the last annual report." It was, however, "far advanced towards completion at that time, and sufficiently so for the public exercises at the close of the session to be held in the largest apartment," which was, presumably, the public hall. The lecture rooms in the basement were already occupied by the schools of chemistry and natural philosophy. The "upper story and the surrounding embankments" remained to be done as of September 1, 1852, but George Spooner assured the University administration that the "whole structure and its appurtenances" would be completed by October 1, 1852.[325]

The same annual report included a detailed list of expenditures related to the construction of the Annex made between May 31, 1852, and May 31, 1853, for a total of $20,332.54. Sowell and Seay continued with excavation work, as did Hassan and Boyle with the stone work, and Word and Brown with the brick work. Joseph Points did the tin work; Watson and Diviney did some of the iron work, while Samson and Pae of Richmond cast the iron capitals; Frank and Clover did the glazing; Terrell and Carter did the plaster work; and T. C. and S. M. Keller undertook the painting. Regular salaries were paid to Mills and to Spooner, and various other men were paid for hauling materials and for "labor." Some of the men or firms on the payroll were also paid for hiring out slave labor.[326] In a report made the following year, the Rector and the Board of Visitors indicated that $13,730 was spent on the project between July 2, 1853, and April 4, 1854, including payments made to the same firms employed the previous year. Furthermore, Edmond, Davenport and Company supplied cement; Hezekiah Taylor made the cast-iron railings for the porticos; George McIntyre supplied "glass, paints, oils, &c."; J. L. Maury did blacksmith's work; William S. Johnson supplied stoves and pipes; and Flannagan, Abell and Company supplied the carpeting for the platform in the "public room."[327] Curtains for the "exhibition room windows" and "chairs and cushions for the exhibition room" had been purchased in August and September 1852.[328]

Joseph Cabell reported on the usage of the various rooms of the completed building in October 1853:

> It has in the subbasement a chemical lecture room and laboratory, not surpassed, if equaled, in point of extent and convenience, at any other institution in our country: in the basement, a spacious philosophical lecture room, besides two other commodious apartments for instruction, and convenient passages for interior and exterior communication; in the first and second stories, a hall and gallery of capacity sufficient for the largest assemblages that will probably ever attend the public exhibitions; and in the third story, an apartment for a museum, running, like the hall immediately below it, through the whole length of the building, and furnishing extensive accommodation for collections in natural history.[329]

The chemistry laboratory was a point of particular pride, with its "perfect ventilation system" and "proper arrangement of furnaces, sand baths, water baths, &c." The laboratory's water supply was also "well accomplished at less expense and with vastly more convenience than by the former plan of digging a well near the Laboratory." The water supply was "brought from the cistern back of the Chapel," located on the north side of the Rotunda's southeast wing, "by a leaden pipe & distributed in a fitting manner over the Lecture room and Laboratory." The Board of Visitors also touted the adaptability and the vastness of the new space:

> Connected with the latter is a portion of the north arcade, that has been enclosed and is now used as a cellar for coals &c., but your Committee understand that this arcade, with the portion now used by the Janitor, can be fitted up at any time (by enlarging the windows) so as to furnish an extension to the Laboratory, whenever required and could be made in any respect not much behind the present Laboratory, & when thus extended it might be made to accommodate forty or fifty working students.
>
> It appears to your Committee that the whole building capacity of the lecture room, laboratory &c is not surpassed by any institution of the kind, and equaled probably by very few. Indeed there is nothing in the opinion of the Committee to prevent its development for the most perfect instruction in agricultural, manufactural & pharmacopeial Chemistry.[330]

Upon the completion of the Annex, the Rector and Visitors described its relationship to the Rotunda:

> It is connected with the rotunda, so as to bring all the lecture rooms, scientific collections and apparatus in the academical department under a common roof, in graceful and commodious distribution; and this completes the architectural accommodation for instruction by lectures and examination in this principal and important portion of the institution. The cost of the building, although considerable, is lost sight of in the contemplation of the great benefits and advantages resulting from its construction.[331]

The final cost for the entire project, as reported in 1853 and including $3,000 for "grading and finishing the surrounding embankments, &c.," would eventually total $53,228.74, or more than twice the initial cost estimate and budget.[332]

Cabell and the Board of Visitors defended the final cost, arguing that "a building of the same character and extent could scarcely be erected, in the same locality and under the same circumstances, with greater economy and of more faithful execution." Still, seeds of doubt about the integrity of the design evidently had already been sewn; the Rector and Board of Visitors stated in 1853 that "a more eligible position for such an addition could not have been selected" but that "if the new building detracts at all, it detracts as little as possible from the general aspect of architecture of the university."[333]

In spite of the initial support for the design, the Annex, even before it was constructed, was acknowledged by some as being out of harmony with the style of the other buildings on the campus. Once built, the Annex would prove to be a hulking appendage, and upon completion it was described as "ugly and incongruous" in comparison to the perfect proportions of the Rotunda. Furthermore, concerns were raised about connecting such a large building to the Rotunda as a fire hazard. Ultimately, however, the need to economize had won over all aesthetic suggestions.[334]

Attempts to Increase the University's Water Supply, 1854–1855

As the student body increased, so did the need for a more voluminous water supply. The water was needed not only for domestic purposes but also to extinguish fires, which were a constant threat to the buildings. In an attempt to solve the water problem at least three new cisterns were constructed at the University in 1851 or 1852, but these small reservoirs did little to alleviate the situation.[335]

In 1854 the University engaged engineer Frederick Erdman of Philadelphia to devise a scheme to pipe water to the University from creeks located to the southwest of the grounds. Erdman's proposal proved too costly. In June 1856, the University engaged prominent engineer Charles Ellet Jr. to "examine into the best means of providing an ample supply of water for the University and to report a plan or plans for the same, with an estimation of cost."[336] Over the next two years Ellet surveyed and studied the University's existing water supply system, ultimately providing the University with a plan. In September 1858, the Board of Visitors ordered that Ellet's water supply plan be executed "with as little delay as practicable."[337]

Ellet's plan for supplying the University with a sufficient supply of water continued to rely upon a supply of original and expanded reservoirs of spring water located on Mount Jefferson, also commonly called Observatory Hill. However, Ellet replaced Jefferson's three-decades-old aging and leaky wooden water lines with cast-iron water lines. The gravity-fed system supplied water from the springs to a new reservoir or pond located northwest of and adjacent to the Rotunda. From this reservoir, water was drawn into a subterranean vault where it was filtered and then brought up to the Annex via a steam-powered No. 5 Worthington pump installed in the basement level of the public hall. From the Annex, water was then pumped up to the Rotunda's dome and stored in two tanks. The water was then supplied to University buildings such as the pavilions, hotels, and other important structures via gravity.

The precise location and capacity of the water tanks in the Rotunda's dome are still not known. Various post-1859 sources describe the tanks as being "over the library," "upon the Rotunda building immediately above the Library," "on the Rotunda," "above the Rotunda," "in the Rotunda attic," "on top of the Rotunda," and "within a cavity of the bricks that supported the bottom of the dome in the rear." Likewise, the tanks are also described as having "30,000 gallons capacity placed 60 feet above the highest grounds" and "a capacity of seven thousand gallons, . . . elevated at least seventy feet above the surface of the Lawn."[338] Based on the historic descriptions and an analysis of historic maps and pre-fire historic photographs of the Rotunda, it is likely that the tanks were placed in the spaces above the two northern cylindrical shafts at the interface between the Rotunda and Annex. The capacity of these small spaces, however, was likely significantly less than 7,000 gallons of water.

In the immediate post-War period, the faculty and officers of the University complained that the water tanks in the Rotunda were injuring the building and damaging its books: "Grave reasons exist for apprehending that the tanks placed on the Rotunda may, sooner or later, produce serious injury to the building, and to the Library, if indeed some mischief has not already taken place." They urged the Commonwealth of Virginia to pursue a study of obtaining additional water sources.[339] Green Peyton, proctor and superintendent of buildings and grounds, was ordered to study the matter of obtaining additional water shortly after his hiring in 1867. Peyton devised a plan to construct a new, larger reservoir on Observatory Hill and pipe the water to the University. The construction of a new reservoir was approved by the Board of Visitors in June of 1868.[340] According to Peyton, "I constructed a reservoir in the mountain at an elevation sufficient to distribute water over the buildings by gravity alone." The 2 million-gallon capacity reservoir was built in a ravine and a brick dam 20 feet high and 100 feet long, the interior of which was filled with concrete. Charcoal-filtered water was supplied to the University in a 5-inch-diameter iron pipe and to the numerous buildings in 3-inch-diameter iron pipes. Following the completion of Peyton's new reservoir in 1869, the Rotunda tanks were disconnected. In 1882, however, Peyton reconnected the Rotunda tanks to the new water-supply system as an insurance against drought and "as a supplement to the new."[341] With the construction of the Ragged Mountain Reservoir between 1885 and 1886 and completion of a new Ernest W. Bowditch-designed water supply system for the University and the city of Charlottesville, the Rotunda's water tanks were disconnected permanently, and the boiler and pump in the basement of the Annex disassembled and sold.[342]

Repairs to the Rotunda, 1850s

In June 1853 the library's collection was reportedly arranged and catalogued in an orderly manner, but other sections of the Dome Room were crowded with "forty or fifty engravings and prints . . . hung upon nails driven into the columns, and badly arranged and detracting from the appearance and beauty of the room." The executive committee of the Board of Visitors argued for the removal of the artwork and its installation in the museum space in the Annex.[343] Some pieces may have been removed around this time, but most stayed in the dome room until 1895.

By June 1853 the steps of the Rotunda were again in need of repair. "In their present state the bases of the columns are in danger," Visitor Andrew Stevenson reported, and he and the executive committee recommended that the steps undergo "immediate reparation." In August the University paid Lou Flannery $90 for "resetting of rotunda steps (in part)," and on October 3 Robert R. Prentis was paid $133.06 "for repairs to rotunda steps and other masons' work and for repairing pumps, &c." It is unclear whether the "other masons' work" and pump repair were related to the Rotunda.[344] Apparently the repairs made in 1853 were not sufficient: in June 1854 the Board of Visitors reported that it was "aware of the immediate necessity of repairs, and it is earnestly recommended that the steps before the Rotunda be reset at once as a few months may result in the entire destruction of the Portico unless these repairs be made." The Board resolved that the steps of the Rotunda should be "reset immediately, in such a manner as to prevent the destruction of the vault by the rain and frosts of winter."[345] In February 1857 C. M. Warren and Company worked on the "composition roofing to the terrace floor at rotunda portico" for a fee of $75.40.[346]

At the end of the 1850s the Rotunda's roof was also in need of repairs. Thomas J. Vaughan was paid $64.42 in April for "tin work on lantern and dome of rotunda." The University paid George Spooner $55 for "repairs to rotunda lantern" on June 17.[347] Nevertheless, the librarian reported "leaks in the Library" in late June 1859, and the lantern was removed in 1860.[348]

The construction of the Annex alleviated the problem of crowding brought on by increased enrollment for only a few years. By 1857, with enrollment nearing 650, still more space was needed for academic purposes. The Board of Visitors did not have "even a room in which to transact their business, without interference with the operations of the University" and were forced to meet in a hotel "two miles distant." The Board declared that the "physical wants of the university" had become "so pressing as to present serious obstacles to the proper conduct of the schools, and they must of course increase with the increasing number of students."[349] In response to this Buildings and Grounds Superintendent William A. Pratt suggested that two wings be added to the Annex, "each of which should be a precise pattern in style, though apparently not in size, of the Annex itself." Though the wings were never built, the plan was seriously considered by the faculty. In his history of the University Philip Alexander Bruce commented that had this plan been carried out, it would have created a "bulky cluster of buildings, together with the Rotunda and the Annex," and "if it had been practicable to enhance the incongruous ugliness of the Annex in any architectural way, this scheme would undoubtedly have accomplished it."[350] Perhaps the expansion was not carried out because of a sudden drop in enrollment triggered by outbreaks of typhoid fever and measles during the 1857–1858 academic year. Several students died, and many more left the University to avoid the pestilence. Many of the students returned by the end of the term, but by then the Civil War was looming on the horizon, and there would be no time or resources for a building campaign.[351]

Montgomery C. Meigs's Steam-Heating System

Early Heating of the Rotunda

As originally constructed, the Rotunda was designed to be heated by wood-burning fireplaces. Most of the major rooms on each floor possessed centrally located fireplaces. Wood was cut from University lands and provided to the public rooms by enslaved African Americans and was the dominant fuel for heating the University through the mid-nineteenth century. Within two years of the University's opening, however, Faculty members began to complain of the inadequacy of the fireplace heating within the large lecture rooms of the Rotunda. In the fall of 1827, the faculty instructed the chairman to request of the Board of Visitors "stoves in the Lecture rooms and the Anatomical Theatre the fire places being found by experience to be insufficient to warm the rooms in the Rotunda—there are no fire places in the Anatomical Theatre." Only four months later, in January 1828, the faculty again ordered the proctor to request of the Executive Committee of the Board of Visitors "to have the lecture rooms furnished with stoves—the fire places having been found insufficient for warming and drying the apartments—hence they are exceedingly disagreeable and unwholesome—especially in the morning."[352]

The use of stoves began to supplement many University buildings, predominantly in the spaces of the Rotunda and the anatomical theatre by the early 1830s. In 1833 the Board of Visitors approved adding a "stove of proper size to heat it" to the chemical laboratory in the ground floor of the Rotunda. In addition, the Board of Visitors approved the placement of a Pyramid stove "on metallic plates in the Philosophical Lecture room so as to give it a proper temperature in the colder seasons of the year." Lastly, the proctor was authorized to furnish the public lecture room "with a suitable stove."[353] The system of heating the Rotunda and other public spaces with stoves continued until the immediate pre-Emancipation period. By December of 1857, William Pratt reported that the Rotunda was recorded as possessing 16 stoves, 13 of which required wood as a fuel.[354]

Between 1857 and 1858, the Board of Visitors hired architect and engineer William A. Pratt to conduct a study of the library (the Rotunda) and the public hall (the Annex) "with a view to the adoption of a method of warming more consistent with the wants of the gentlemen using them than the present stove system." Pratt recommended the heating of both the Rotunda and Annex by hot air through the installation of several Chilson furnaces in the ground-floor levels of both buildings (Pratt also used Chilson furnaces in the infirmary at the University). Pratt argued that such furnaces would heat the entire building through "an ascending volume of hot air" sufficiently warming the spaces in the floors above.[355] In a subsequent report to the Board of Visitors Pratt reported on information he had received upon inquiry from other professionals and regional facilities that had installed heating systems. He also reviewed several methods of heating the Rotunda and Annex including hot air and steam, looking at comfort, construction and fuel cost; he ultimately compared the costs of the existing system of stoves with the proposed construction and cost of hot air and steam heating. Pratt concluded that steam heating was more expensive in terms of equipment and fuel costs but that steam heat was more healthful than hot-air systems.[356]

The Meigs Plan for Heating the Rotunda and Annex

In the fall of 1858, the Board of Visitors utilized Pratt's preliminary research on heating the public buildings and forwarded the information to Charles Ellet Jr. and Montgomery C. Meigs "for their advice and if necessary to procure one of them to visit the precincts and prepare a plan."[357] Charles Ellet Jr., a nationally prominent engineer, had already submitted a plan to the Board of Visitors for supplying the University with water. The Ellet water supply plan was adopted by the Board of Visitors on September 3, 1858, and construction began soon thereafter.[358] Montgomery C. Meigs, a captain in the Corps of Engineers, was also a nationally prominent engineer. He had had an extensive career with the Army Corps of Engineers building the Washington Aqueduct works (1852 to 1860) and the extension and new dome to the U.S. Capitol (1853 to 1859). Most importantly, Meigs designed the heating and ventilation for the Capitol extension, adopting a steam-heating method patented by Joseph Nason and utilizing boilers, coils, and large fans to force the steam-heated air through brick masonry ducts and vertical flues or chimneys to floor vents.[359]

Meigs responded positively to the Board of Visitors request and subsequently began work on preparing a plan.[360] Dated February 16, 1859, the Meigs plan consisted of a single drawing displaying plan views of all floors of the Rotunda and Annex, and a single section view. In each plan and section, Meigs illustrated the existing location of a steam pump and boiler, and the proposed location of all distribution ducts and chimneys. Meigs proposed a forced-air system that utilized an existing boiler to generate steam that was supplied in pipes to coils. Air would be forced through brick constructed ducts (horizontal) and chimneys (vertical) by a fan, passing over the steam-heated coils in specific locations and ultimately vented in rooms on each floor. Return pipes collected the condensed steam and deposited it in a proposed well in the basement level of the Annex. Meigs's plan for heating the University's Rotunda and Annex was identical to that used in the U.S. Capitol, albeit on a much smaller scale. Both plans used forced circulation of steam-heated air to heat large public buildings. In the spring of 1859, Superintendent of Buildings and Grounds William A. Pratt reported to the Board of Visitors that he had come up with a plan "to carry into partial effect the plan of Capt. Meigs for heating the public buildings" by utilizing the "surplus steam power of the water works." The waterworks in question was Charles Ellet Jr.'s plan for supplying water to the University. Under Ellet's plan, a steam-powered pump drew water from an adjacent reservoir to tanks in the top of the Rotunda. Given the limited capacity of the tanks in the Rotunda, the boiler and pump were required to work one to two hours a day, thus creating a significant surplus of steam power. The Board of Visitors charged the Executive Committee with ascertaining whether the partial implementation of the Meigs plan could be undertaken for the amount Pratt noted. If so, the Executive Committee was authorized to "carry the plan into effect."[361]

In the 1859 annual report of the Rector and Board of Visitors, Rector Thomas J. Randolph emphasized the general need for "suitable, comfortable and wholesome lecture rooms, recitation rooms and society halls" at the University. "The lecture rooms," he noted, "are too few in number, too small in size, and very deficient in ventilation – so much so, that the Visitors, upon the representation of the faculty and students, have felt it to be necessary to expend recently about $3,000 in heating and ventilating the lectures rooms and library, upon a plan furnished by Capt. [Meigs] of the U.S. Army."[362]

Implementation of the Meigs Heating Plan

The partial implementation of the Meigs plan, as proposed by Superintendent Pratt, was formally approved by the Board of Visitors' Executive Committee at their July 1859 meeting. "It is ordered that the Superintendent of Public Buildings proceed as soon as practicable to carry into execution the plan for warming and ventilating the lecture rooms, library, &c as submitted to the Board of Visitors at its last meeting & by it referred to this Committee, provided the expenses do not exceed the sum of three thousand & twenty dollars ($3,020)."[363]

Over the course of the next twelve months, the Executive Committee's minutes and the University's bursar's accounts record the approval and allocation of payments from the "steam heating account." Following the completion of Charles Ellet's water-supply system and the installation of a boiler and steam pump in the basement of the Annex in September 1859, Proctor Robert Prentis drew from the bursar a total of $2,800 between October 1859 and February 1860 for "steam heat apparatus." This accounting suggests that construction of the Meigs heating system was well underway in the first half of 1860.[364] In their June 1860 meeting, Superintendent Pratt reported to the Board of Visitors that John Smith, the University's janitor, had been assigned the responsibility for "working the steam heating and pumping machinery" in the Public Hall, implying that it may have been operational at this date.[365]

Because it was only partially implemented, it is not known which design elements of the Meigs plan were constructed between 1859 and 1860 or how closely they were followed. Given the expenses spent on "steam heat apparatus" during this period, it is likely that piping, coils, and a fan were purchased. To make the Meigs system at least partly operational and assuming the lecture rooms in the Rotunda were targeted as a priority, the fan, iron piping, and brick-ductwork and chimney connecting the basement level of the Annex to the ground floor of the Rotunda would necessarily have to have been constructed. It is not yet clear whether the ductwork connecting the ground floors of the Rotunda and Annex with their upper stories or with the south wings of the Rotunda were constructed.

The proposed forced-air heating and ventilation system in the Rotunda and Annex was indirectly mentioned in a November 1859 issue of the *Virginia University Magazine*, a student-edited publication. In a sarcasm-laced complaint regarding the delay of Commencement exercises from June 29th to July 4th, a ceremony that took place in the University's public buildings, the editor noted the ways in which the Board of Visitors intended to make the students comfortable during this hot time of year:

> Mr. Pratt has received instructions to have the ceiling of each lecture room perforated with small holes, so that a continual supply of cool water from the cisterns on top of the Rotunda maybe poured down upon the students during lecture hours. As this would be apt to injure their note-books, the professors are strictly ordered to finish all their examinations before the 29th, so that afterwards each one, during the hour usually devoted to his lecture, may employ himself in turning the crank of a newly-invented air mill, in order to supply the students with enough fresh air to enable them to breathe.[366]

Declining student enrollment during the Civil War significantly impacted the operating budget for the University and the ability of the faculty, proctor and superintendent of buildings and grounds to carry out necessary functions including general repairs and maintenance. The Board of Visitors summarized the dire fiscal situation in their annual report for 1861. "In view of the difficulties of the times, the Board of Visitors have determined to curtail every expense of the University which is not absolutely indispensable. The most rigid economy will be invoked to meet the diminished income of the next session." In addition to a freeze on the hiring of new faculty, all non-essential work, including proposed improvements, was terminated. In particular, the Board of Visitors noted that the imposed fiscal restraints would impact the expansion of the Meigs heating system: "Nor will the anticipated number [of students] pay for . . . an enlarged system of heating the public rooms. These will be suspended, to be renewed without loss when the number of students will permit."[367]

The Rotunda during the Civil War and Reconstruction, 1861–1877

On record the University remained loyal to the Union until May 7, 1861, when Virginia followed South Carolina, Mississippi, Florida, Alabama, Georgia, Louisiana, and Texas in seceding from the Union and joining the Confederacy. Before that, however, rumblings of succession had already been felt on campus. On March 16, 1861, faculty chairman Socrates Maupin recorded in his diary that on the previous night the Rotunda had been broken into and the Confederate flag draped across the dome. The flag was quickly removed, though students were permitted to form military companies and perform drills on the Lawn. It was not long, however, before the faculty itself ordered the Confederate flag raised over the Rotunda, after the fall of Fort Sumter on April 13, 1861. Shortly thereafter the University buildings, including the Rotunda, were conscripted for use as hospital space, and tents were set up on the grounds to accommodate the overflow of sick and wounded. Following the July 21, 1861, Battle of Bull Run 1,200 casualties overwhelmed the University; another 1,400 troops wounded in the Battle of Port Republic arrived the following June.[368]

In spite of its occupation by thousands of casualties and battles raging across the state throughout the war years (with a total of 123 battles, Virginia saw at least three times as much action as any other state), classes at the University continued virtually uninterrupted.[369] Maintenance and repairs, however, necessarily fell by the wayside as the University struggled to maintain its academic schedule while reluctantly playing host to the Confederate Army.[370] During the war years the faculty received a mere "shadow of compensation" or sometimes no salary at all, and the positions of proctor and superintendent of buildings and grounds were eliminated.[371] Still, in July 1863 the library was reportedly in a state of "neatness" and "good condition," though there was a "bad leak in the room from the sky-light which ought to be promptly attended to." There is no record of repairs having been immediately made; in July 1865 the skylight again, or still, required "immediate attention."[372] Perhaps minor repairs were made in an attempt to solve the problem, but leaks in the roof and skylight and pleas for their repair were reported repeatedly in the years following the war. In June 1867 the Board of Visitors resolved that the reinstated proctor be "instructed to make a prompt and efficient alteration in the sky-light of the Rotunda so as to secure it against leaks." Still, a year later, the Committee on Grounds and Buildings reported that "all the roofs of the Rotunda buildings are said to be in leaky condition."[373]

The war had taken both a physical and financial toll on the University. In 1866 the Rector and the Board of Visitors reported that although the University had "escaped total destruction and ruin" during the war, "its buildings needed many and costly repairs," and the library was "sadly deficient in all the more recent works of general literature," having received no new books in six years. By the war's end the University's financial situation was in a "truly discouraging condition," and it had not "a dollar to meet the necessities." There simply were no funds to make the repairs to the Rotunda, which was "seriously endangered by the presence of the steam engine used to fill the tank—the tank itself is defacing the walls of the building." In 1868 the water tanks in the Rotunda continued to be a problem; the balustrades on either side of the portico on the south side of the Rotunda were in need of repair; and the "walls of the new building attached to the Rotunda seem to be giving away."[374] Modest repairs were made to the Rotunda's roof sometime between the end of June 1868 and June 1869.[375]

At the end of June 1870 the Committee on Grounds and Buildings reported that the "Rotunda has been much improved by the removal of decayed cornice and the substitution of new work, and by the addition of paint on those parts which were in immediate want of it." Still "much remained to be done to put that building and Hall connected with it in good order," and the committee recommended an appropriation for that purpose as soon as the University's finances would allow.[376] An inspection of the library in June 1872 showed it to be in "good condition," but it was agreed that the "procurement of glass doors for many of the cases" was essential for the protection of the library's collection. However, the University's post-war financial situation rendered the request "inexpedient" at that time.[377]

In June 1873 the Committee on Grounds and Buildings requested that the "water tanks over the library" that had been installed under Charles Ellet in 1855 be inspected. Either overflow or leaking of the tanks had caused damage to the roof, and the leaks had "seriously injured" some of the books in the library so that they were rendered "unintelligible and worthless." Upon inspection the committee determined that the leaks in the Rotunda's roof were caused by overflow of the tanks and resulting standing water on the roof, and within a few days pipes were "laid on the roof of the Rotunda as to prevent a recurrence of this overflow."[378] A report on the condition of the library dating from July 1874 observed that "everything connected therewith" was then in "excellent condition."[379]

In July 1874 the Board of Visitors discussed the continued use of the Rotunda as the site for University social events. Concerned about the risk of fire and the increased cost of insurance, the University librarian requested that public balls no longer be held in the dome room of the Rotunda, as they had been since the early years of the University. However, a report made by Micajah Woods of the Library Committee on June 30, 1874, had indicated that the "danger arising from the use of candles has been obviated by the laying of gas pipes around the galleries, and the jets are so arranged that the lights will project from the galleries and be entirely out of reach of parties on the main floor." Woods successfully argued for continuing some social events in the Rotunda, writing that the annual ball was "one of the chief items of attraction of the session, and it is particularly proper that the handsomest Hall at our command should be used for the occasion."[380] In late June 1877, the Library Committee reported that the dome room, bookcases, and books, were all in "good order."[381]

The Rotunda at the End of the Nineteenth Century

As the Rotunda aged, its reputation as a hallowed space deepened. Along with this phenomenon, the University librarian seems to have grown weary of sharing the dome room with *fin de saison* revelers. In June 1880 the question of the use of the dome room for non-academic events was again raised, this time by J. L. Maryee, chairman of the Library Committee. "For two or three years past," Maryee complained, "the young ladies & gentlemen attending the commencement exercises have occupied the Library during some hours of each day as a dancing hall. This use of the Room, during the daytime of

Commencement week, is disapproved by many of the earnest and influential friends of the University, as incongruous & unseemly, and in the opinion of your Committee tends to create injurious misconceptions as to the judgment and aims of the Authorities controlling the Institution." The Library Committee requested that "dancing and other social diversions" in the dome room be restricted to the annual ball on the evening of commencement, and the Board of Visitors agreed.[382]

Throughout the 1860s and 1870s the University continued to struggle with maintaining an adequate supply of water on campus. In November 1882 Proctor and Superintendent of Grounds and Buildings Green Peyton reported that though he had recently "constructed a reservoir in the mountain at an elevation sufficient to distribute water over our buildings by gravity alone" by way of a "4-inch pipe," the system could not provide enough water for the University during the dry season. Peyton had recommended "making new connections with the disused rotunda tanks," which had evidently been abandoned sometime before, and "refitting the steam-pump, thus keeping the old system as a supplement to the new." Though refilling and using the tanks would pose a threat to the Rotunda's walls, the need for more water was evidently dire enough that the Board of Visitors approved the plan. The work was carried out in 1882 at a cost of $397.94.[383] Despite these efforts the water supply was again reported to be inadequate the following year. The University employed the services of well-known sanitary engineer and landscape architect Ernest W. Bowditch, of Boston, to devise a water-supply, drainage, and sewer system. Bowditch estimated that a "thorough system" could be installed on the grounds for a cost of $31,300.[384] The University, however, was operating under "straightened means" due to the "heavy debt entailed upon the institution by our predecessors, in their efforts to sustain its reputation." The University's financial situation had become "so embarrassing" that the Rector and Visitors appealed to the General Assembly for relief.[385]

In June 1883 the Committee on Grounds and Buildings reported upon inspection that it would take "many thousand dollars" to put the University's grounds in "thorough repair." Because funds were scarce, the committee recommended doing only "such things as seem absolutely indispensable and requiring immediate attention." The first item on the list of critical repairs was the Rotunda's roof, which was in "bad condition." The committee recommended that the roof "be repaired and painted with Iron paint" and that such repairs would cost $100. The "Arch north of the Annex" was reportedly also in "very bad condition" and needed to be repaired "immediately." This cost was also estimated to be $100.[386]

In March 1884 the General Assembly granted the University a $40,000 annuity for maintenance of the grounds; the first installment was to be used "for constructing a system of sewers and improving water supply."[387] By the end of November 1885 "a reservoir of ample dimensions for the storage of a year's supply [of water] and the delivery pipes" were finished and were in "successful operation," at a cost of $20,177.57.[388]

On May 31, 1886, the skylight in the dome of the Rotunda was reportedly once again leaking and "in need of attention." Also at this time "nearly 100 of the marble slabs of the floor of the south portico have been cracked or broken and should be replaced." The skylights in the Annex were also reported to be in "bad condition" and leaking, causing damage to the walls in the public hall, "to the ceiling over the north portico, and in the walls in the Drawing Room." Repairs to the Annex were approved, but repairs to the leaking skylight in the Rotunda were deemed "not urgent" and, therefore, likely not immediately carried out.[389]

That same spring the original bell cracked, reportedly after students removed it from the mounting, turned it upside down, and filled it with water, which froze, splitting the casting and leaving its original tones "harsh and discordant." A new bell was ordered from McShane and Company, of Baltimore. Later, as plans were being made to reuse the original bell in the university chapel, three faculty members reportedly bought it for $100 and "presented it to the Board of Visitors on condition that it should be kept forever as a relic in one of the public buildings of the University." The cracked bell was placed in the Brooks Museum at some point before 1896, then moved to the Bayly Memorial Museum in the late 1940s, and in 1956 to Clark Hall. After it was rediscovered in 1964, it was placed on display in the Rotunda.[390]

Electric lights were installed on the University grounds and in its public buildings and dormitories in the spring of 1888.[391] Between 1888 and 1890 "extensive" improvements were made to the University's buildings and grounds but not to the Rotunda.[392]

FIGURE 32. *The Rotunda and the Lawn from the south, 1868. This image is the earliest known photograph of the Rotunda.*

FIGURE 33. *Detail of the 1868 photograph, showing the bell centered at the base of the dome.*

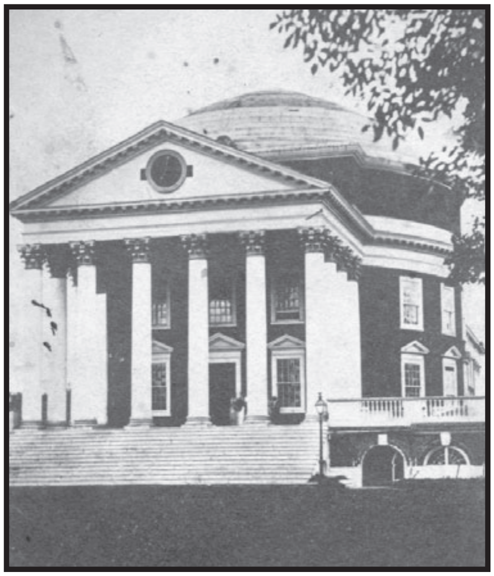


FIGURE 34. *The Rotunda from the southeast, early 1870s, showing the dome steps in place.*

FIGURE 35. *The Rotunda from the south, mid-1870s, photograph by George Heustis Cook. In this view, the steps at the foot of the dome have been removed.*

FIGURE 36. *Steps along the west side of the Annex, looking toward the Rotunda, ca. 1876.*

FIGURE 37. *The Rotunda from the southeast, ca. 1880, photograph by Tyson and Perry.*

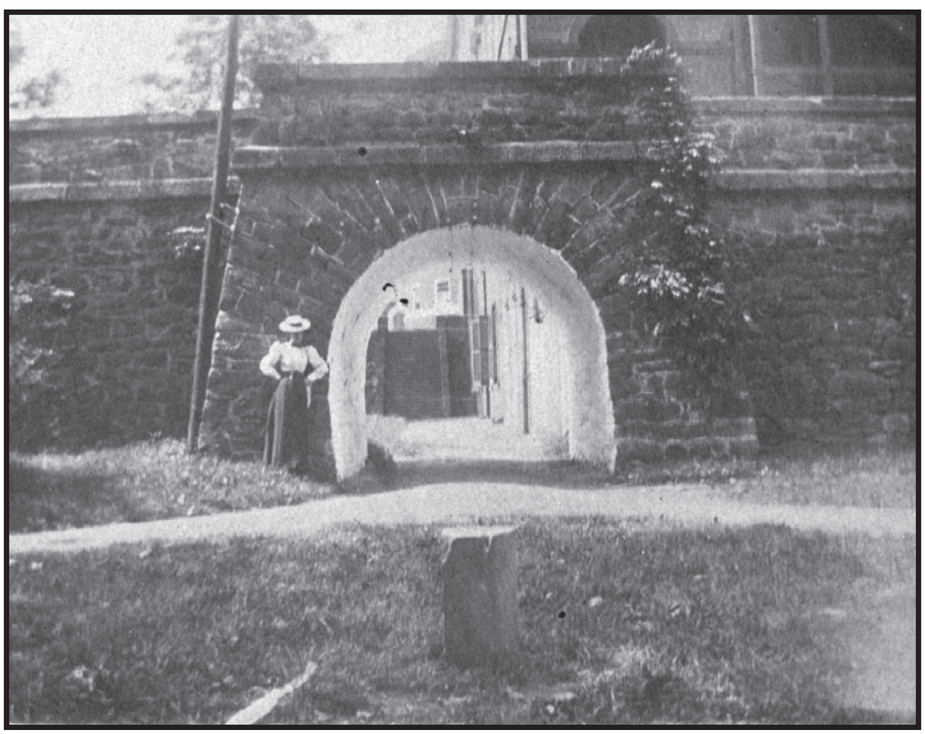


FIGURE 38. *Northeast arched entrance through the rampart, looking south, ca. 1891.*

FIGURE 39. *The Rotunda from the southwest, 1892, showing the lantern over the oculus of the dome. The balustrades have been removed from the terrace wings.*

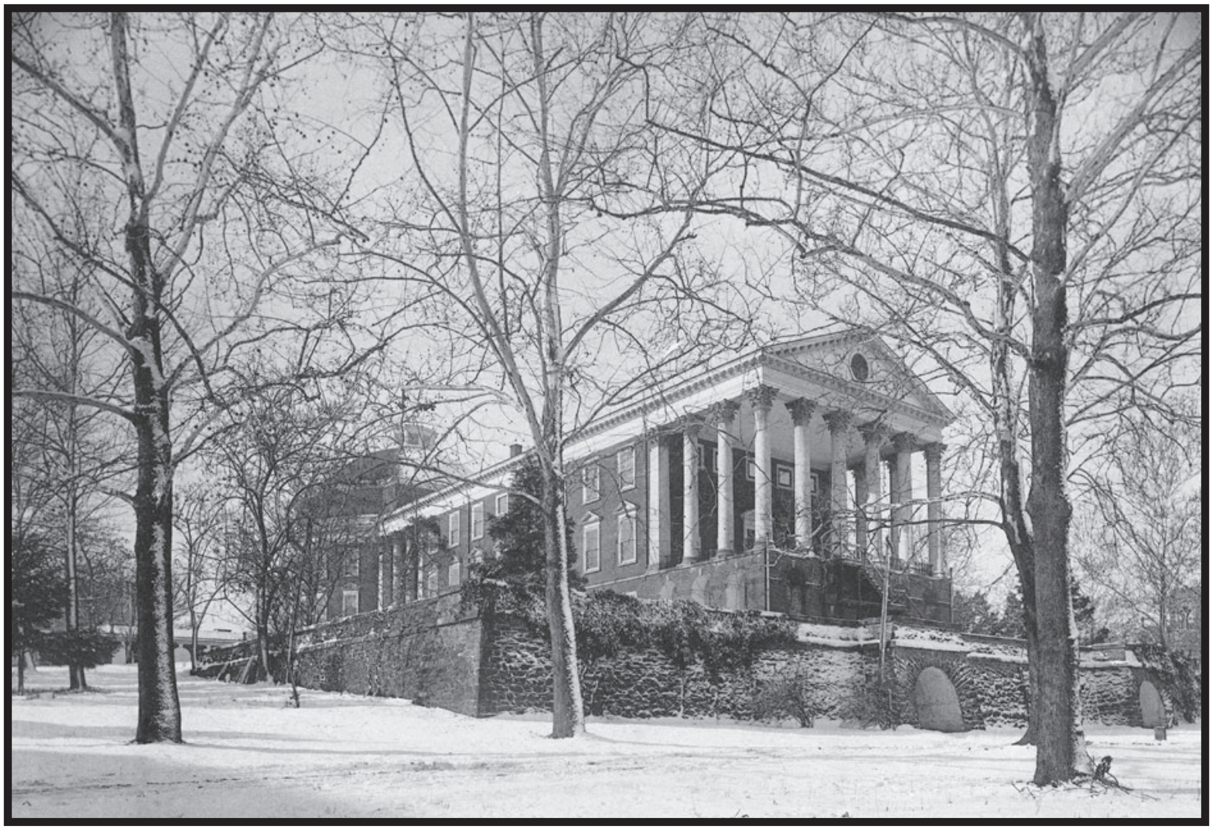


FIGURE 40. *The Annex from the northeast, 1892, from Joseph Everett Chandler,* Colonial Architecture in Maryland, Pennsylvania, and Virginia.

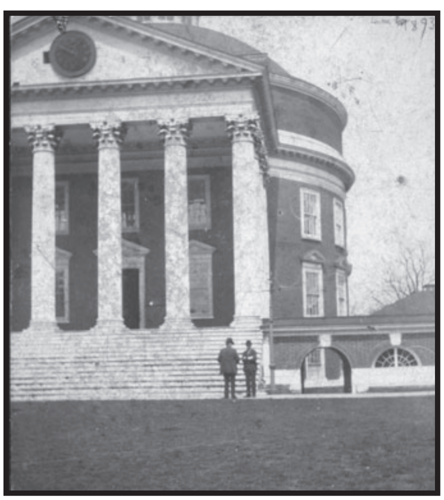


FIGURE 41. *The Rotunda and east terrace from the south, 1893.*

FIGURE 42. *Areaway in front of the southwest terrace before the 1895 fire.*

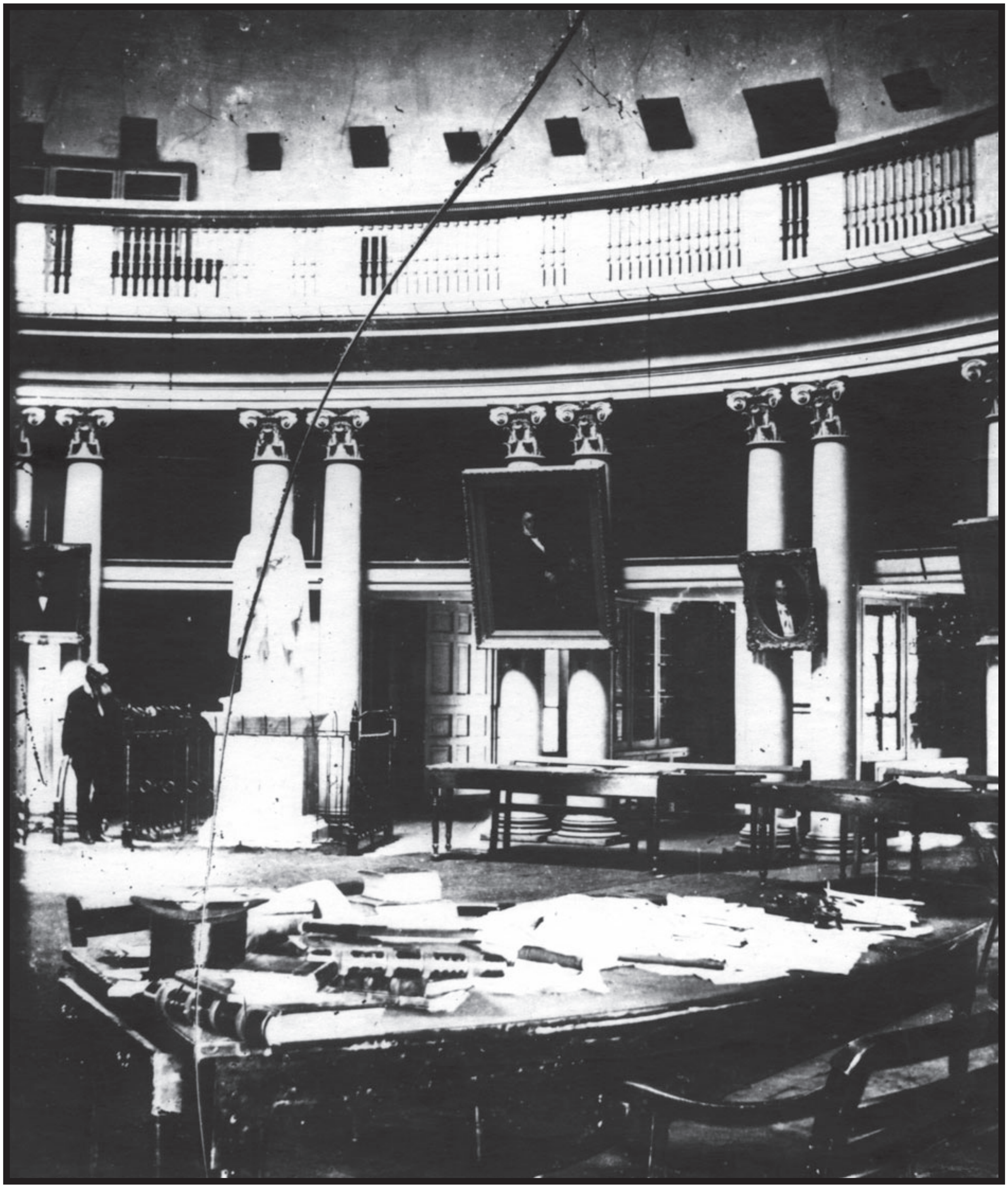


FIGURE 43. *Interior of the Dome Room before the 1895 fire. This may be the earliest photograph of the library, since the clock is not yet in place. The original curved tables date from 1827.*

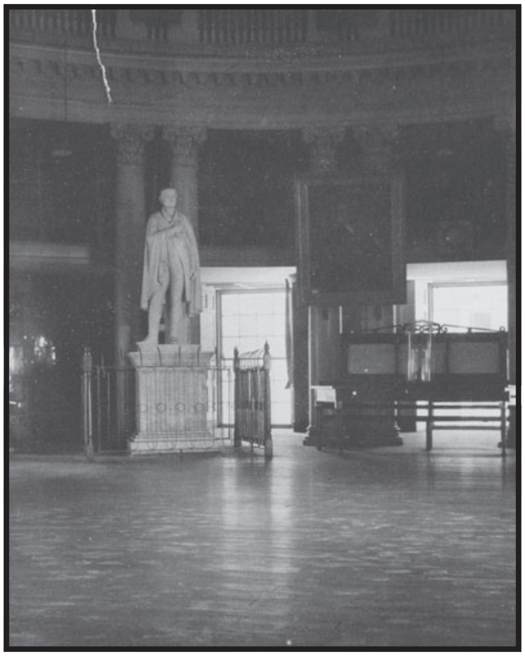


FIGURE 44. *The Dome Room, 1890, showing the floorboards laid east-west.*

FIGURE 45. *The statue of Thomas Jefferson by Alexander Galt in the Dome Room before the 1895 fire.*

FIGURE 46. *The statue of Thomas Jefferson by Alexander Galt in the Dome Room before the 1895 fire, showing an original bookcase.*

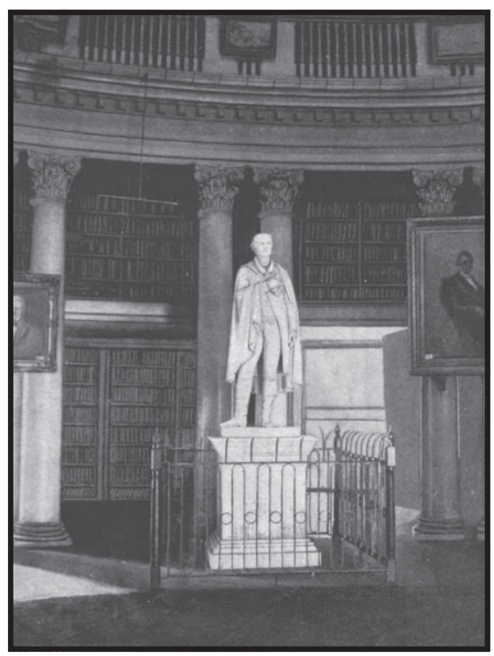


FIGURE 47. *The Dome Room before the 1895 fire, showing the bookcases against the north wall, engraving by Moss Eng. Co., New York.*

FIGURE 48. *The Dome Room, from* Corks and Curls*, 1894.*

FIGURE 49. *The Public Hall in the Annex, looking towards Paul Balze's copy of S*chool of Athens*, April 13, 1867.*

A report on the Rotunda, published in the University yearbook, *Corks and Curls*, in 1891, describes the building as the "most prominent figure among the buildings" on the grounds and the "real hub of the University, where flows all day the stream of professors and students, as it were, the life blood circulating through the heart of the University world." The description continued, claiming that the "veriest rustic cannot fail to be struck with its beauty and impressed with its completeness; he does not comprehend it, still he perceives its effect. High above all towers is the red Roman dome, announcing to the scholastic pilgrim afar off that the Mecca, toward which he journeys, has been reached."[393] The reference to the Rotunda's dome in this passage suggests that the roof had been painted with red iron oxide, as the Committee on Grounds and Buildings had recommended in 1883.

Along with the increasing flow of students and professors that followed the war and Reconstruction came many shipments of new books. In December 1892 the Library Committee reported that additional shelf space was needed to house the ever-expanding collection. "The gradual absorption of the entire Rotunda" for use as library space, the committee suggested, was thought to be the "best ultimate disposition of this building."[394] Nevertheless, in June 1894 the faculty recommended that a new building be erected to house the University's library and that the Rotunda be transformed into a memorial hall for alumni.[395]

The Rotunda Is Destroyed by Fire, 1895

On October 27, 1895, a clear, bright Sunday morning, second-year student Mason Foshee of Brewton, Alabama, decided to forgo church services in favor of a visit to the Fayerweather Gymnasium. As Foshee leisurely made his way along the nearly deserted University Avenue toward Rugby Road, he noticed a "thin wreath of smoke curling from the northwest corner of the Annex." A fire had broken out at the rear of the top story of the building, in an area used as a drawing studio. It was later determined that the fire had probably originated in a "large closet filled with old papers and in the wall and floor of this closet," where "electric wires had been run."[396]

Within three hours the forty-three-year-old Annex, which also housed the University's law school, as well as the schools of physics and modern languages, was reduced to a smoldering ruin. A bucket brigade of men and women, university students, faculty, and neighbors formed in an attempt to douse the flames, and the "University hose" was brought out, but due to insufficient water pressure and a "lack of skill and excitement of those who were handling it," the apparatus proved useless. Meanwhile, crews from the Southern and the Chesapeake & Ohio railroads, along with the fire departments from Charlottesville, Staunton, Lynchburg, and Richmond, were deployed to the scene. As onlookers watched the flames devour the Annex, fear that the fire would spread to the Rotunda and other buildings on the Lawn escalated.[397]

In an attempt to prevent the fire from reaching the Rotunda, dynamite was detonated in the wood-frame roof of the portico connecting the Rotunda and the Annex. Despite repeated attempts with dynamite and the columns being "battered down," the portico continued to stand, providing a direct avenue for the encroaching flames. The east and west wings of the Rotunda, which housed the old chapel and the YMCA reading room and directly connected the Rotunda with the pavilions and dormitories, were dynamited in the race to stop the fire.[398]

In spite of these drastic efforts, the fire was not contained; it advanced to the Rotunda, filling the building with "thick clouds of acrid, suffocating smoke, which poured in from the openings in the rear of the dome." Still, a "stubborn Southern spirit" prevailed on campus as masses of volunteers scrambled to empty the Rotunda of its contents:

> The door, like all the other doors in the University, was locked, but it soon gave way before the vigorous shoulders which were applied to it. The pictures of the Professors and distinguished Alumni of the University which ornamented the walls were the first things saved . . . The men going up and down the stairs were at first very much in each others way, until, by the effort of Prof. Mallet, Mr. Forsyth, and some others, a semblance of order was introduced into the crowd, and from then until the flames came into the dome the students went up one stair and down the other in a ceaseless stream.

FIGURE 50. *The Rotunda during the fire, October 27, 1895, photograph by Holsinger Studio.*

> The men dipped their handkerchiefs in water and tied them over mouth and nose and groped through smoke to the books and pictures. The glass cases holding the books were all locked; the students broke them open with fist and foot and threw the books out of the windows into blankets, which others held below, or carried them down stairs in their arms.[399]

Some of the students then turned their attention to the mid-1850s marble statue of Jefferson carved by Alexander Galt that stood on the main floor of the Library:

> A squad of men, under Dr. Kent's direction, saved the cases containing the catalogue of the library, while others tried to lift the statue of Jefferson from its pedestal with their hands, an attempt which was naturally unsuccessful . . . .finally ropes were secured and attached to the neck of the Statue. These ropes were then carried up into one of the galleries and from thence willing hands lifted the statue from its

FIGURE 51. *Detail from the October 27, 1895, photograph by Holsinger Studio.*

FIGURE 52. *The Rotunda from the east, during the 1895 fire.*

FIGURE 53. *The Rotunda immediately after the fire, October 28, 1895.*

FIGURE 54. *Detail of the October 28, 1895, photograph. The locations of the original nailing grounds and the outlines of the pediments are clearly shown above the first-story openings. Fragments of the original interior finishes can be seen through the openings.*

> pedestal and lowered it onto mattresses which had been placed under it. The mattresses with the statue on them were dragged to the door and the statue slid down the steps on an inclined plane of planks; the whole work being done in stifling smoke and under inconceivable difficulties.[400]

According to the student newspaper, *College Topics*, as the men rushed in and out of the burning building, women at the scene "met the blinded and choking men as they emerged with the books from the Rotunda and took their burdens from them that they might return more quickly to their work. Many ladies carried across the lawn loads of books which had taxed the utmost strength of athletic men."[401] Morgan Poitiaux Robinson, one of the many students struggling to save the Rotunda that day, reported that women, too, worked feverishly inside the Rotunda, rescuing books and art alongside the men:

> They kicked the glass out of the bookcases—in many instances breaking it out with their own bare hands—and worked side by side with the men long after the fire was in the Library. The boys would get down on their knees and hold out their arms, while the women piled the books as high as they could reach on the outstretched arms; or again, the men would fill the women's silken (for it was Sunday) skirts with books and in each case the one carrying the books would take them to the window . . . and dump them down to the portico of the Rotunda, while others on the portico would carry them down to the Lawn and away from further danger. At first the men had tried to drive the women away, telling them that they would save all the books, etc., but they would not go, but worked everywhere that the men worked.[402]

Years after the fire Robinson vividly recalled the chaotic scene inside the Rotunda as the fire raged. "It was an awful scene," he wrote in 1908; the glow of the fire through the thick smoke "cast a dull, red, fiendish glow over everything." This phenomenon, combined with the crackling of burning timbers and the sounds of breaking glass, crashing beams, and dynamite explosions, created a "veritable hell" inside the Rotunda before the "whole plaster ceiling of the dome . . . came down to the floor."[403]

Over the next few hours the fire burned uncontrollably, and at about one o'clock that afternoon the "great dome of the Rotunda slowly and majestically sank into the raging flames." Bell Dunnington, the twelve-year-old daughter of Professor Francis P. Dunnington, witnessed the fire, and in a letter to her sister the following day wrote that she had never seen a "more magnificent or more awful sight than when the dome caught fire. All of the top part of it was one terrible, glowing mass of flame, and the tin [roofing] had a curious reddish look, though it did not blaze but wrinkled up." Photographs taken in the days after the fire show that much of the Rotunda's interior was destroyed, leaving little more than a charred, brick shell. All that was left standing were the "walls, the front and back porches, and some blackened pillars." Fortunately, there were no fatalities, and no serious injuries were suffered.[404]

Morgan Robinson painted a doleful picture of the scene at the University the night of the fire:

> The Lawn was littered with books, instruments from the different laboratories, book-cases, desks, benches, and whatnot, while near the steps of the Rotunda, its recent home, lay the statue of Jefferson, enshrouded in a large canvas and guarded by special watchmen. When the moon came out, as though to take a last look at the pride of Jefferson's latter days, it was a ghastly and heart-rending sight to see the blackened walls and hollow windows, and the tall white pillars, with their marble capitals all smoked up, standing as silent sentinels, on the old portico, where had stood so many men of note in this country, beneath the shadow of the dome of the Old Rotunda, it was certainly a sad, sad sight.[405]

Even though the fire wreaked havoc and the "embers glowed for several days," classes, remarkably, continued uninterrupted. The fire was under control by half-past two on that Sunday afternoon, and by three o'clock the faculty, wasting no time, assembled in the chemistry lecture room "to devise ways and means for carrying on the work of the University without interruption." That night University mechanics, who had spent the entire day tirelessly battling the fire, "kept hammer and saw and plane going in order that lecture rooms might be ready for morning lectures." The day after the fire "all work of the University went right on without a break. All classes met at their usual hours, and all lectures were delivered, though in improvised lecture rooms, society halls, etc., just as if nothing had happened." Morgan Robinson later observed that the "University probably never saw the time when lectures were better attended than they were that day after the fire," even though "everyone wore a fatigued, worn-out, weary and sorrowful expression as though he had just lost his most valued friend."[406]

Taking Measure: Losses and Opportunities

At the time of the fire the Rotunda housed, in addition to the library, the lecture rooms of the schools of ancient languages, mathematics, moral philosophy, and English.[407] Initial reports indicated that while some of the materials stored in the Rotunda and the Annex were severely damaged in the fire, "the larger part of the library's contents," including books, paintings, and statuary, including a bust of the late Professor John B. Minor, were removed from the library in the Rotunda in time to be saved, as were the contents of the law library in the Annex. In fact, however, by early January 1896 the University calculated that while 11,694 books had been rescued, approximately 30,000 others, valued at $50,000, including some given as gifts to the University by Jefferson himself, were lost. It was later reported that as many as 50,000 volumes were lost. Most of the books that burned were housed in the middle and upper galleries of the Library.[408] During the months following the fire, the surviving books were recatalogued, arranged on the shelves in Brooks Hall, then the University's natural history museum, and made accessible to the student body by early May 1896.[409] While much of the art displayed in the Rotunda was also saved, the University's beloved copy of Raphael's painting *The School of Athens* by Paul Balze, purchased by the University in 1853 and which hung in the public hall of the Annex, was destroyed.[410]

A report of the faculty dated October 31, 1895, and the Rector's annual report of 1895–96 offer conflicting information about the surviving apparatus used to teach physics and engineering. The faculty report indicated that some of the instruments suffered damage, but that much of the equipment had been removed from the physics lab in the Annex and stockpiled in the Brooks Museum. The Rector's report, however, stated that the "apparatus of the Physical Laboratory and Engineering Department was almost entirely destroyed."[411]

Though undeniably a tragedy, the fire nonetheless opened a window of opportunity to improve the University: the outmoded and cramped spaces could now be replaced with "facilities more ample and splendid" than those that the student body and faculty had previously known. From the disaster the University community took a positive tack, likening their beloved, burned institution to a phoenix, rising from its ashes. The faculty called upon the Board of Visitors to unite with them "in the most active and earnest efforts," not only to restore the "beauty and conveniences" of the fire-ravaged buildings but also to make significant improvements to the University as a whole.[412] Faculty members were extremely concerned that the fire would lead to a fall off in enrollment and agreed that it was necessary to act quickly to restore the campus to full—and improved—working order and to assure the student body that the University was as strong as ever.

In its report the faculty declared that the Annex's "contiguity to the rotunda" was the "cause of more than half of [the] disaster" and that the building had been an "architectural blunder" in the first place; the Annex, the report stated, was "devoid of true architectural merit and very costly for the accommodation secured." The Rector, Dr. W. C. N. Randolph, reminded people how his father, Thomas J. Randolph, who was on the building committee for the Annex, had "bitterly opposed" its construction, predicting that "it would lead to the burning of the Rotunda."[413] Further concerns over the possibility of a fire in the Rotunda itself and a call for a safer place to house the library had been voiced in the *Alumni Bulletin* just eight months before the Rotunda was destroyed: "The greatest need is a fire-proof library building. Our present valuable collection is constantly exposed to fire."[414]

With Thomas Randolph's prediction sadly realized and the Annex and Rotunda burned, the faculty immediately suggested erecting a free-standing "Academical building" constructed of fireproof materials on another site, removed from

FIGURE 55. *The Rotunda from the west after the 1895 fire, photograph by Wampler.*

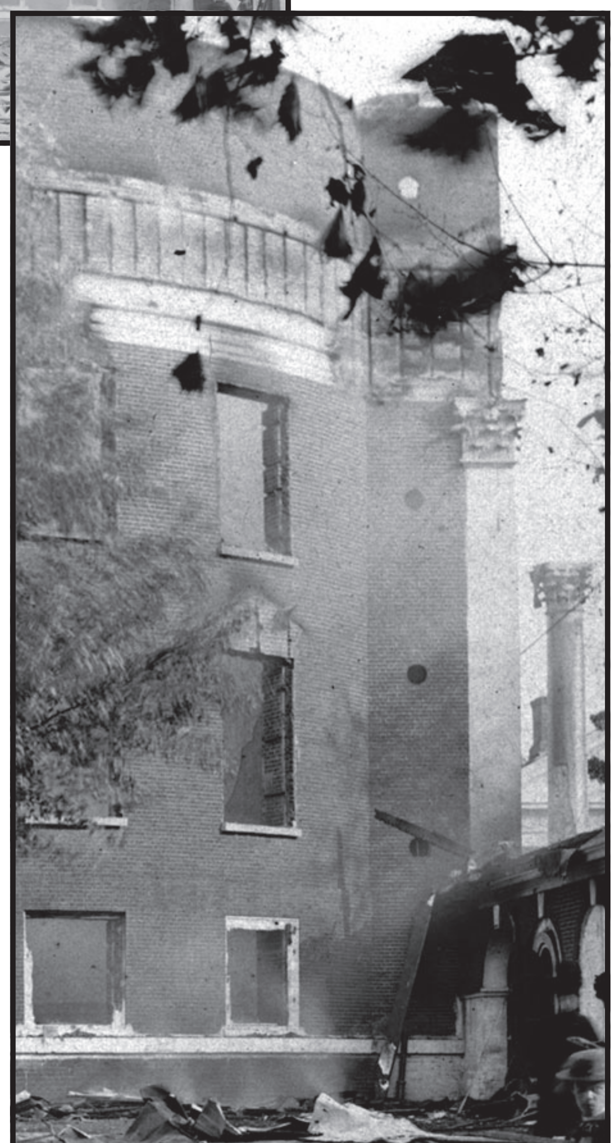


FIGURE 56. *Detail of the 1895 view from the west, showing evidence of the window reveals and the round openings in the west face of the south portico.*

FIGURE 57. *The Rotunda from the east after the fire, 1895.*

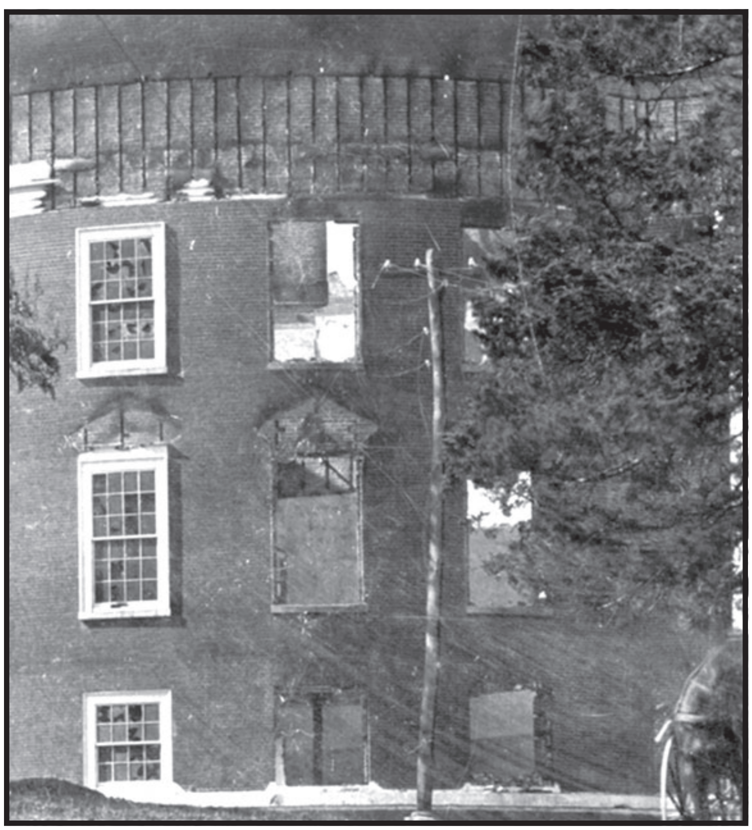


FIGURE 58. *Detail of the view from the east after the fire. Surviving interior finishes are visible through the window openings.*

FIGURE 59. *The Annex and Rotunda from the north after the fire, 1895.*

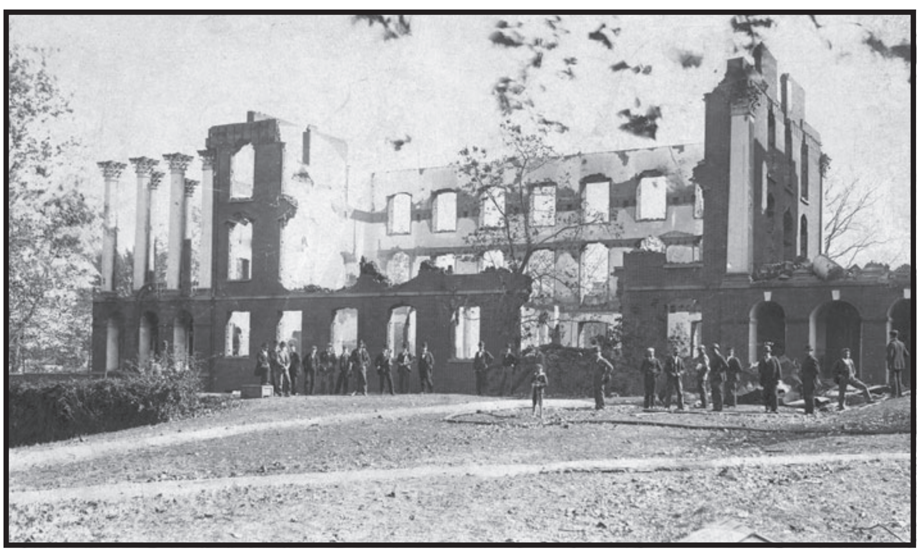


FIGURE 60. *The Annex after the fire from the southwest, 1895, photograph by Rufus Holsinger.*

the Rotunda and the other buildings in Jefferson's Academical Village. They recommended that the ruins of the Annex be demolished immediately, that any "useful material" be moved to the yet-to-be-determined new site, and that the "depression occupied by the old building" be "backfilled with earth." The cost for the completion of a new academic building was estimated at $90,000.[415]

Meanwhile, though, in preparation for a meeting of the Board of Visitors on November 4, 1895, the faculty consulted with Harry McDonald, of the McDonald Brothers architectural firm based in Louisville, Kentucky, to determine the condition of the ruins and to develop cost estimates for rebuilding. McDonald was in Charlottesville at the time, overseeing the construction of Christ Episcopal Church. After his investigation McDonald stated that the exterior walls of the Rotunda were "sound" and could be reused in reconstruction. He reported that the walls were in need of "little repair," though they should be "at once protected against damage from weather" with a new roof, which, he recommended, be installed immediately.[416] Soon after the fire Margaret Lewis Randolph, a great-granddaughter of Thomas Jefferson, had viewed the ruined buildings, noting that the Rotunda then looked like "any other burned out building. The North wall of the Annex has fallen for about halfway down." The walls of the Rotunda, she reported, "they think are all right . . . the Capitals of the front columns are probably destroyed by the fire, the ornamental parts are dropping off in great many places . . . Carts are already busy cleaning up the debris and the ashes are smoking inside."[417]

While the faculty, students, and Board of Visitors agreed that it was crucial that the Rotunda's original proportions be faithfully observed in the reconstruction, there was debate over the intended use and interior arrangement of the building.[418] Over the years the library had become "so crowded with books that the orderly arrangement of them was impossible, and the consequent utility of the collection was seriously impaired." In order to accommodate a pleasing, spacious, and modernized library facility within the Rotunda, some members of the faculty suggested that the entire interior—"the whole capacity from the dome down to the portico floor"—should (unlike Jefferson's multi-story Rotunda with the Library in the domed space on the top floor) be used entirely for the purposes of the library.[419] However, some members of the faculty disagreed with this plan, arguing that such an arrangement deviated from the original as-built scheme and was therefore unacceptable. The question of how the interior of the new building would be arranged was not settled until after another architect was selected and final plans were drawn, several months later.[420]

The faculty had recommended in its October 31 report that the Rotunda's east and west wings, or terraces, on the south end of the building should be "at once reconstructed in their former proportions . . . and assigned to the use of the library and the School of Natural Philosophy, respectively."[421] In addition to commenting on the arrangement of the interior of the Rotunda, the faculty suggested that a portico, similar to the one of the south facade, be constructed on the north side, "with proper flights of steps descending to the esplanade to be formed over the site of the old Annex, and thence at the Ramparts to the level of the ground." The faculty recommended this though the north portico was not part of Jefferson's as-built design.[422]

Raising the Funds Needed to Repair and Improve the Campus

Even while smoke was still rising from the "crumbling walls and smoking ruins," students and faculty had gathered to discuss ways to raise the money to rebuild the destroyed buildings. Initial speculation about the cost of repairs, improvements, and replacement of lost equipment ranged from $100,000 to $300,000.[423] The faculty claimed that the funding could "easily be raised if every friend of the University" did his "duty in [the] matter" and that the "funds requisite for this reconstruction" were "already on hand or immediately in sight." However, fundraising proved more difficult than initially expected.[424] Moreover, the University buildings were woefully underinsured: the firm of Peyton and Sinton of Richmond, which carried the insurance, estimated coverage at about $150,000 for all of the University's buildings, and the damaged buildings were covered by only $25,000 in these policies. The *Charlottesville Daily Progress* provided the following breakdown of the insurance coverage of the damaged buildings and materials:

Rotunda	$8,000
Library and pictures	8,000
Public hall or annex	3,500
Scientific apparatus, etc	3,500
School of Athens	1,000
Old chapel	500
Y.M.C.A	500
	$25,000 [425]

In its October 31, 1895, report the faculty urged that the "work of design be pushed rapidly to its completion and the work of construction begun at the earliest practicable moment."[426] In this same report the faculty also proposed that sites be selected and plans designed for a new physics laboratory and separate engineering building. The faculty wanted both of these new buildings to be "isolated from all others."[427] In short, the task that lay ahead of the University was monumental: "buildings, projected on a larger scale than had been before attempted" at the University had to be "located, designed, and erected within twelve months," and the funding had to be secured "with even greater promptness." Moreover, "the equipment of the Library and of the other departments devastated by the fire" had to be "renewed, and, as far as possible, modernized and enlarged."[428]

At its November 4 meeting the Board of Visitors assembled a building committee to oversee the restoration of the Rotunda and the construction of new buildings that would satisfy the need for classroom space formerly housed in the Annex. The committee was composed of the Rector, William Cary Nichols Randolph, who was Thomas Jefferson's great-grandson; two Visitors, W. Gordon McCabe and Armistead C. Gordon; and faculty members William M. Thornton, professor of applied mathematics and chairman of the faculty, and William H. Echols, a civil engineer who served as an adjunct professor of mechanical engineering and was also the University's superintendent of buildings and grounds in 1895.[429]

Within days of the fire contributions from individuals and offers of financial aid from sympathetic alumni and friends and from other universities around the country began to arrive via telegraph at the University. By November 8, 1895, the fund for the new construction exceeded $12,000, each dollar from private subscription.[430] Two days after the fire a mass meeting, spearheaded by Virginia Governor Charles T. O'Ferrall, was held in Richmond with the aim of organizing a fundraising program.[431]

William M. Thornton, an alumnus of the University who had been a member of the faculty since 1875, traveled to New York and Boston in late December 1895 and early January 1896 to appeal to University of Virginia alumni in those cities for contributions. It was a difficult task: he bemoaned his "almost unbroken record of defeats" and "numerous absolute failures" in his campaign; people with the means of making large donations, he found, were "harried by constant appeals from every quarter and for every cause." Nevertheless, he managed to secure several large gifts, ranging from $2,000 to $25,000, as well as many smaller donations. By January 6 Thornton estimated that he had raised more than $42,000 during his trip.[432] In the February 1896 issue of the *Alumni Bulletin* Thornton recounted some of the donations: "The largest gift," of $25,000, he wrote, "has been that from the generous and public-spirited Charles P. Rouss, of New York City." This gift would be appropriated for the construction of the physical laboratory at the south end of the Lawn, and the building would be named in Rouss's honor. Other contributions included $2,500 from a Mrs. Sinclair, also of New York City, and $5,000 from a "liberal friend of the University in Boston." In addition, Thornton reported, "there have been obtained from general contributions in the Northern and Western States, $1,718; from the District of Columbia, $2,881; from the Southern States, $4,048."[433] An additional $33,053 had been received from sources throughout Virginia: the cities of Richmond, Norfolk, Lynchburg, Staunton, Lexington, Winchester, and Roanoke contributed a combined $18,575, and the town of Charlottesville and Abermarle County together contributed $7,886. The Southern Railroad and the Chesapeake and Ohio

Railroad gave $2,000 and, $1,000, respectively. Other donations from the "State at large" amounted to $619, in addition to more than $1,500 collected by public-school children from throughout Virginia. Thornton further reported an additional $2,930 from the University of Virginia itself.[434]

While on his trip Thornton received word of "several gifts of books," including "fifteen hundred volumes from Columbia College" in New York City; a "fine collection of the older editions of the Greek and Latin classics, and of works in general History and Literature from the library of the late Dr. Torrey, of Cambridge, Mass.; and the entire medical library of the Boston Athenæum, containing many of the older classics in the medical sciences." "Many publishers," Thornton reported, "were also induced by our New York alumni to make smaller contributions of books."[435] While in New York and Boston, Thornton solicited for contributions in local newspapers, including the *New York Post*, *New York Times*, *New York Sun*, *New York World*, *Home Journal*, *Boston Herald*, and the *Boston Transcription*.[436] By the end of 1897 the University would have in hand approximately 40,000 volumes, thus restoring about one half of the original library.[437]

In securing the necessary funds, the University turned not only to loyal alumni but to the Virginia State legislature as well. The Visitors urged alumni associations to lobby the legislature for "as liberal an appropriation as possible towards rebuilding and re-equipping the University." Though the University had hoped for a $200,000 lump-sum grant from the State, the State instead permitted the University to borrow the desired $200,000 and awarded an additional $10,000 annuity to enable it to pay the interest on the debt.[438] The legislature claimed it could not justify giving $200,000 outright to the University when Virginia was mired in debt and severely impoverished in some regions. One senator argued in support of reducing the annuity to $5,000 (an amendment that was defeated 30 to 5):

> I come from a section of the State where, while we are honestly in favor of an appropriation to the University, we are not able in consequence of any sentimentalism to subscribe more than we are able to do. We are confronted with the fact, however, that the interest upon the State debt is to be paid; our lunatic asylums are needing appropriations, and I cannot conceive how, in the estimation of any senator upon this floor, we can in our present condition subscribe the sum of $200,000 to the University of Virginia.[439]

The following retrospective review of the fundraising was published in the *Alumni Bulletin* in 1898:

> By January 18, 1896, there had been raised in cash and pledges from the alumni and other friends of the university about $75,000, which amount was increased by later gifts to $86,000. There was in hand from the original Fayerweather bequest and from the Shields bequest enough to raise this sum to $140,000. The conditions of the litigation with reference to the residue of the Fayerweather estate justified the expectation of about $120,000 from this source. And the bill of relief before the Virginia Legislature had been so far assured as to give reasonable assurance of $200,000 from the bond issue, which they finally voted. Altogether there was about $440,000 in sight for the work of reconstruction.[440]

Selecting the Architect

Harry McDonald had acted as the initial architectural consultant in the Rotunda's reconstruction and carried out preliminary work, including taking measurements of the surviving walls of the Rotunda and then using these measurements, along with Jefferson's original drawings, to prepare a set of designs for the restoration of the building. Five of these drawings survive, including ground-floor and first-floor plans, front and side elevations, and one section.

McDonald Brothers' plans depicted a very different interior from that of the original Rotunda. In order to create more space for the University's growing library collection McDonald Brothers designed the new Rotunda without the floor dividing the dome room from the main level below, creating a single, large room that stretched skyward from the main floor to the dome and oculus. A new skylight would be framed in cast iron and have a higher, more conical shape than its predecessor. The plans included three annular levels of galleries for books: the first gallery level would be supported by twenty pairs of Ionic columns, the second gallery by twenty pairs of Corinthian columns, and the top gallery would be defined by an arcade with Doric pilasters. The drawings indicate that ornament, not included in the drawings, would continue around the circumference of the room between each of the levels. The smooth surface of the interior dome destroyed in the fire would be replaced with coffers set in plaster.[441]

Though McDonald Brothers' plans eliminated the oval rooms on the main floor, these rooms, as well as the "dumbbell" hallway, were retained on the ground-floor level. Staircases with a semi-circular end return connecting the ground and main floors were placed at the north and south ends of the building.[442]

In their designs, the McDonalds included, as was requested by the faculty, a portico on the north side of the building. This north portico would resemble the south portico, with six Corinthian columns across the front and three columns along each side. The new columns on both porticos were to be fluted. The bases of the columns, the shafts, and the capitals were designed with the same dimensions as the old ones on the south portico. There would be a lecture room under the north portico to help make up for the classroom space lost by removing the three oval rooms on the main floor. The presence of the south terrace wings is vaguely indicated on McDonald Brothers' plans; the north terraces are not included.

The McDonald Brothers' plans indicate a wide use of cast iron throughout the building. The exterior window casings and lintels would be recreated in the "same design" as the old wooden ones but would now be of more fireproof cast iron. Window sills would be made of stone.[443]

The new roof of the Rotunda was to be constructed of tin and galvanized iron. The cornice and the steps of the dome would be galvanized iron and the curved part of the dome between the top step and the cast-iron–and–glass skylight would be covered in tin plate. Overall, the McDonald Brothers' drawings were heavily annotated with dimensions. The firm began work reconstructing the Rotunda's terrace wings soon after the fire, working in partnership with local builders, the Spooner Construction Company of Charlottesville.[444]

McDonald Brothers had been, at least initially, seriously considered for the entire reconstruction project: the Board of Visitors had resolved at its November 4, 1895, meeting to secure McDonald Brothers "at once" and "with their advice and assistance proceed to rebuild the Rotunda and the Wings thereof."[445] Although they created the detailed drawings and engaged in work on the Rotunda in late 1895 and early 1896, McDonald Brothers was, nevertheless, passed over for the commission.[446]

The faculty had stipulated in its October 31, 1895, report that in order to ensure that the architectural character and classical proportions of the Rotunda be retained, the architect selected to undertake the project should be "not of local repute only but of broad and national consideration." Furthermore, the faculty requested that the architect take into account "not merely the convenience and elegance of the single structure, but its effect as a member of our general architectural system."[447] The faculty was convinced that it was important to follow the "classical types of design" in the new construction and to locate the new buildings "so as to create a harmonious combination with the original Jeffersonian group"; previous additions, the faculty felt, had "not added in the least degree to the harmony and beauty and magnificence of the original composition." When creating new plans for the Rotunda, the architect should also "give special attention to the problems of *heating*, *lighting*, and *ventilation*, which in the old building were inadequately solved."[448]

Professor William Thornton had written to William Rutherford Mead, partner in the New York-based architectural firm of McKim, Mead and White, on October 29, a few days after the fire, just as Mead was returning from Europe. Back in New York, Mead replied to the news of the fire on November 5, writing "I can only say how much we all regret the calamity which has befallen the University in the loss of a building that was one of the architectural monuments of the country—and our hope that its reconstruction has fallen into reverent hands." "It would indeed be a misfortune," Mead continued, "if some one tried to be original and improve on what has gone before—except perhaps as to interior arrangement" of the Rotunda. Mead clearly indicated the firm's interest in working on the project, telling Thornton that "if no final arrangements have been made, we can only say we should consider it an honor to be associated with the work and

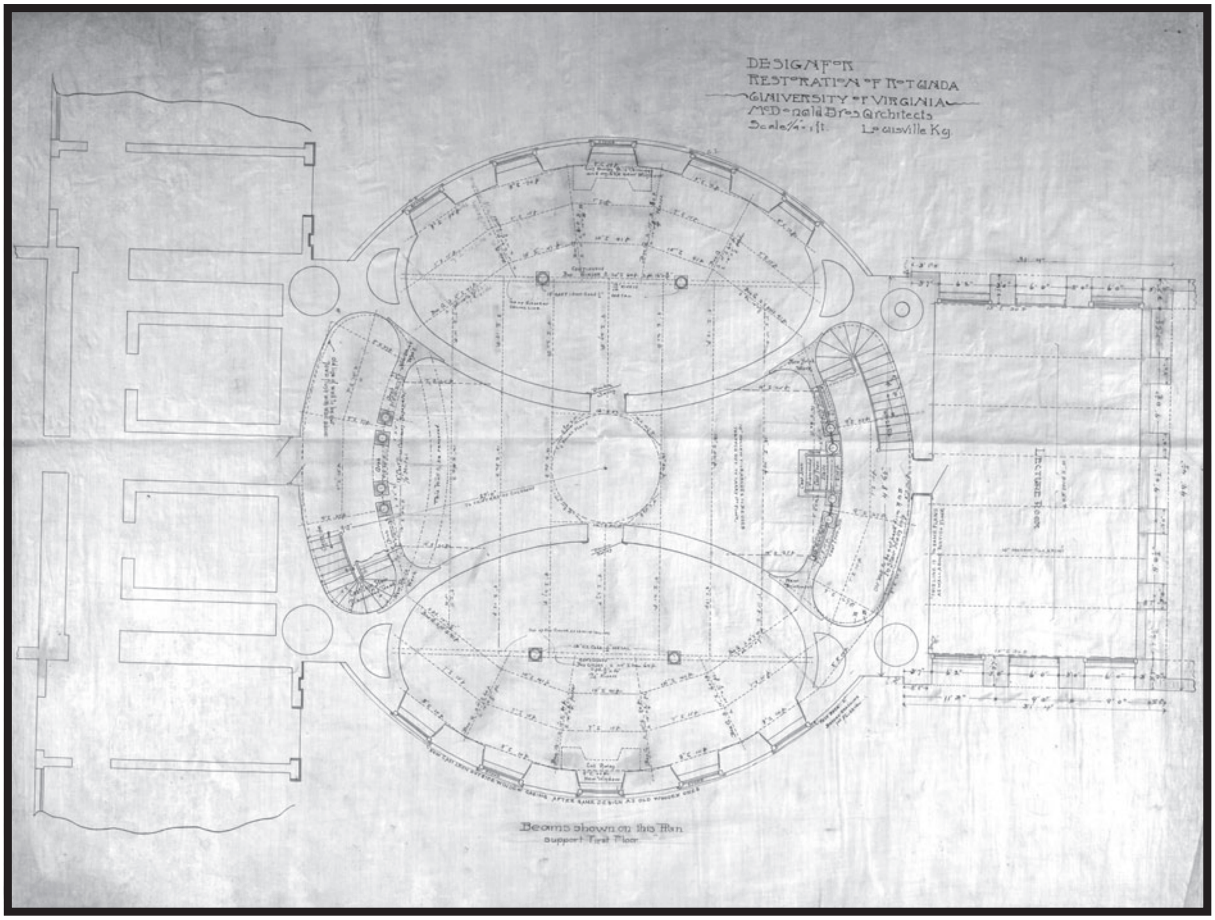


FIGURE 61. *McDonald Brothers, ground-floor plan, ca. 1895.*

apart from our actual expense should not consider the money side of the matter." The expenses, he added, would be about three percent of the construction costs.[449] Coincidentally, when Mead responded to Thornton, Mead's partner, Stanford White, was in Richmond to attend the fashionable wedding of a close friend, artist Charles Dana Gibson, and Virginia socialite Irene Langhorne. White returned to New York on November 8 and was likely already aware of his firm's expression of interest in the project by that time.[450]

Though McDonald Brothers had already begun work on the reconstruction of the Rotunda's terrace wings and the building committee had been in communication with McKim, Mead and White, there also was talk of holding an architectural competition.[451] Several prominent firms—including Barney and Chapman, and Carrère and Hastings, both of New York; E. G. Lind of Baltimore; Edgerton S. Rogers of Richmond; and Shepley, Rutan and Coolidge of Boston—all contacted the University expressing their interest in the massive, high-profile project. However, the University quickly scuttled the idea for a competition in the interest of expediency. The faculty feared that students would not return to the University for another session unless they could see "some sign of active preparation for the new buildings & some proof that they will have new lecture-rooms for their next sessions' work," and a competition would undoubtedly delay the start of construction.[452] This concern was further illustrated when, on January 18, 1896, William Randolph wrote to architect

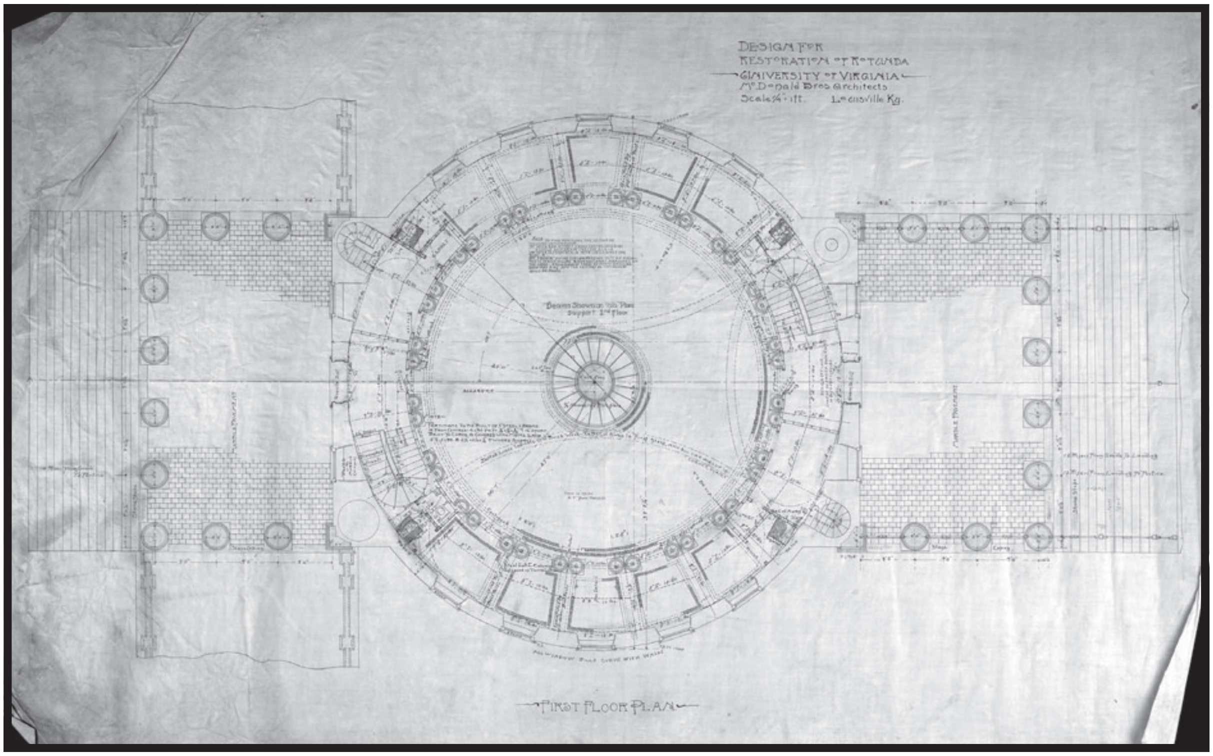


FIGURE 62. *McDonald Brothers, first-floor plan, ca. 1895.*

John Carrère of Carrère and Hastings, thanking him for his interest in the work at the University but also explaining that because time was so short, "it would not be wise for us to risk the delays almost necessarily consequent upon an architectural competition"; the members of the building committee had felt "compelled to entrust the work to the hand of one chosen man of undoubted professional eminence."[453]

By the end of the nineteenth century McKim, Mead and White had become the preeminent architectural firm in the U.S., renowned in both the professional and popular press. In his 1931 biography of Stanford White, Charles C. Baldwin described the firm as "vigorous, versatile and interested" and noted that the partners "were part and parcel of the times, entering into the activities of their clients, designing homes, clubs, churches, museums, memorials and office buildings, for a whole generation." At the time of the fire at the Rotunda McKim, Mead and White had a "near monopoly on prestigious projects" in the U.S., and they had, among other things, recently designed the new campus at Columbia University and New York University's Bronx campus, both of which included rotunda-form libraries.[454]

On January 18, 1896, eschewing the competition and offers from other firms, the University of Virginia formally offered McKim, Mead and White the commission for the reconstruction of the Rotunda, as well as for the construction of a complex of three new buildings across the south end of the Lawn, including the general "Academical Building," physical laboratory, and mechanical-engineering building. With this decision and invitation, McDonald Brothers was officially

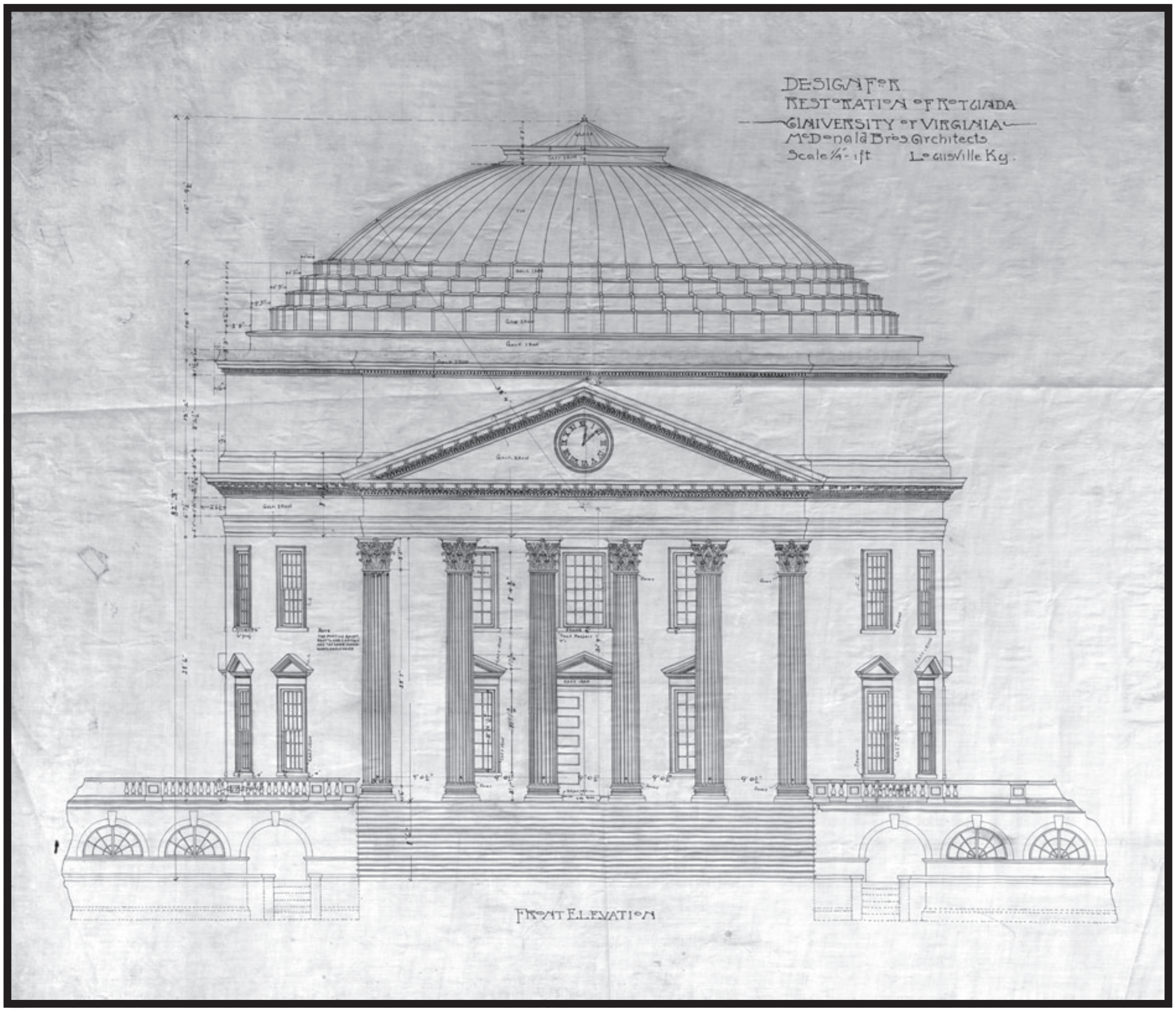


FIGURE 63. *McDonald Brothers, drawing for the restoration of the south elevation, ca. 1895.*

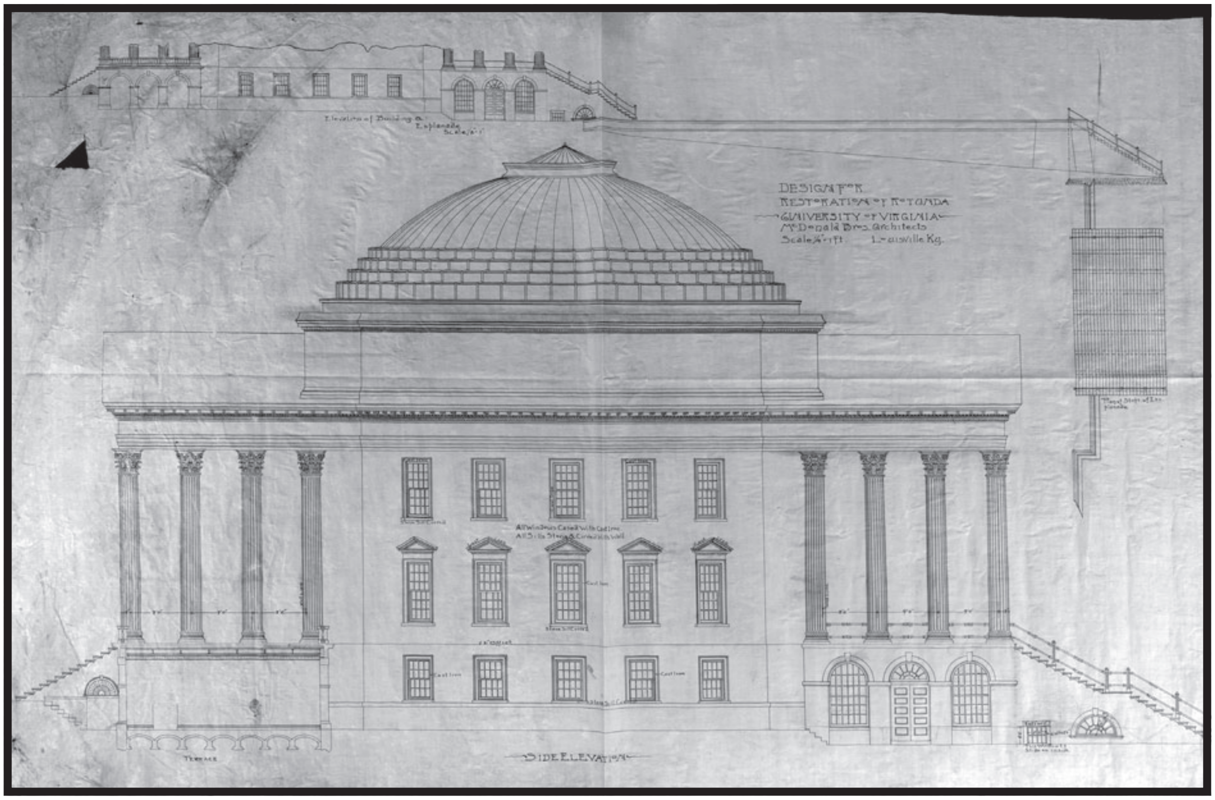


FIGURE 64. *McDonald Brothers, drawing for the restoration of the east elevation, ca. 1895, showing a proposed north portico mirroring the south portico.*

supplanted. Randolph, as chairman of the building committee, and Thornton, as chairman of the faculty, conveyed the news to Stanford White that the building committee was inviting him "to become the architect for the reconstruction of the Rotunda and the erection of the new buildings." Partner Charles F. McKim was indefinitely laid up, recovering from a bicycle accident, and William Mead was more involved in managing the firm than in creating architectural plans.[455] The building-committee members later admitted that they had "exceeded their authority" in directly offering the appointment to McKim, Mead and White, but their action was speedily confirmed by the Board of Visitors.[456] Stanford White immediately accepted the commission.

In his letter of invitation Randolph urged White to make arrangements to visit the University at "the earliest possible date" with the goal of "inspecting its possibilities or architectural development."[457] Thornton reminded White that when they had met the previous fall, probably soon after the fire, he had explained the "limitations of our resources and the simplicity of the materials in which your work must be done." Thornton wrote White that he would have to rely "mainly on bricks and mortar" but also pointed out that "Jefferson shewed [*sic*] in our old buildings how much could be done by proportion and composition, and we shall trust you to broaden his demonstration." Thornton also told White that McDonald Brothers had "retired from the work which they had undertaken" and that White would "not be intruding upon an occupied field, and we desire to give you a free hand in all your work."[458]

Before the contract was awarded to McKim, Mead and White, McDonald Brothers had worked on the Rotunda for a total of 79 days, from around November 1, 1895, until January 18, 1896. During that time they informally employed

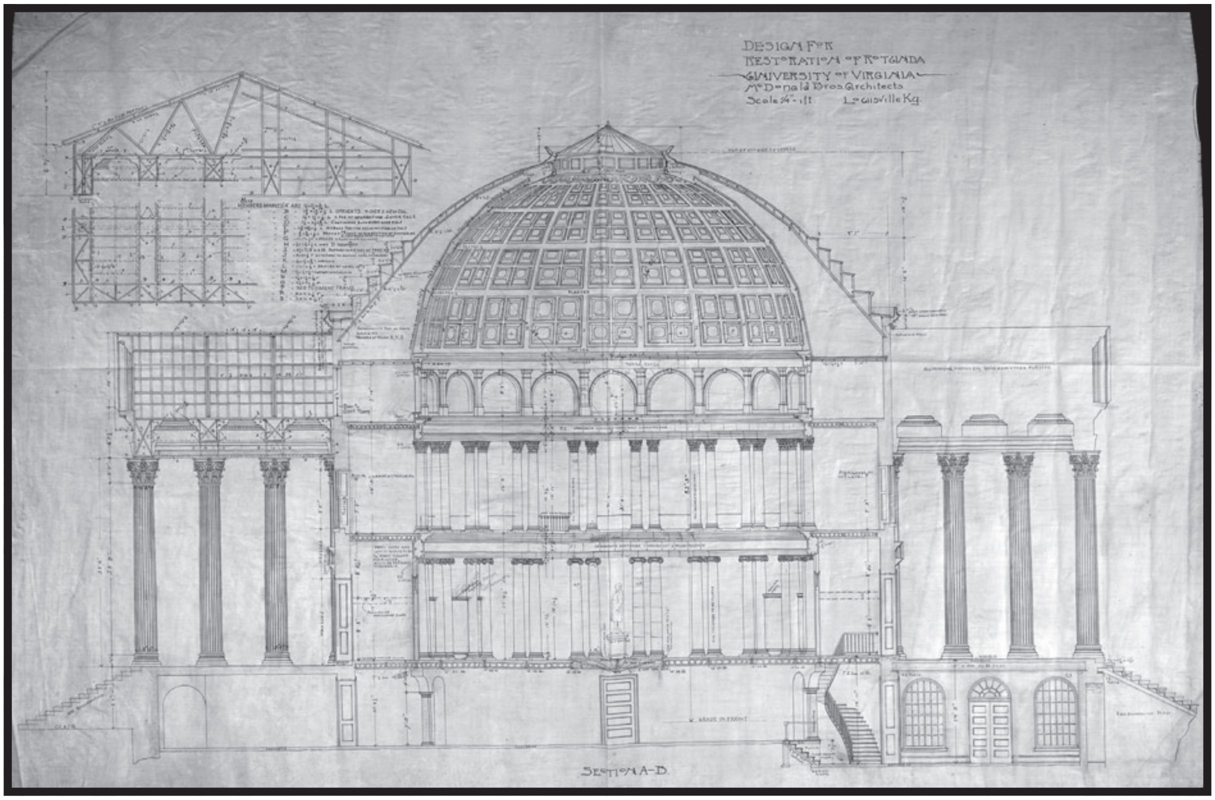


FIGURE 65. *McDonald Brothers, building section looking west, ca. 1895.*

the H. L. Cranford Paving Co. to cover the Rotunda with a temporary roof, which was "speedily done and in a satisfactory manner."[459] They also oversaw Cranford's rebuilding of the walls of the "adjacent terrace rooms" and then covering them with "flat, fire-proof roofs." William H. Echols of the building committee later wrote that the McDonald firm "had made the complete design for the restoration of that building and of the present wings east and west, and had completed the east wing in its present condition before they resigned."[460]

Though much of the work overseen by McDonald Brothers was deemed sufficient, there were some problems that ultimately may have led to the dissolution of the firm's relationship with the University and the hiring of McKim, Mead and White. The new roofs that were built over the terrace rooms were made of concrete in order to fulfill the University's desire for fireproof construction. These new roofs, which were much heavier than their sheet-metal-over-wood-frame predecessors, were built upon the remains of the terrace walls, and there were concerns about their structural safety. An independent engineer called in to examine the work determined that the "steel beam framing supporting the upper concrete terraces was overloaded and that the new structure had begun to crack and sag." The engineer found that the carrying capacity of the steel beams was inadequate. Ostensibly, on the grounds of this engineering miscalculation, McDonald Brothers was relieved from their work at the University.[461]

It seems, however, that McDonald Brothers' miscalculations may not have been the only reason they were let go from the job: the State legislature dictated that the University would need to engage a large, nationally renowned architectural firm for the work in order to secure the necessary funds for the reconstruction project. Harry McDonald later disclosed that at the January 18, 1896, meeting of the building committee he distinctly stated with regard to the terrace roofs that he intended to "thoroughly strengthen this work, no matter what the cost," at his own expense. In response, however, William Randolph reportedly told McDonald that the University was "in a hole"; they were being criticized for having made a hasty selection of an architect, and the University would jeopardize its chances of securing State funding if it engaged a local architecture firm, as opposed to a nationally recognized one.

McDonald acquiesced on the condition that his resignation be presented in such a way that it would not damage his or his firm's reputation. Randolph and the building committee responded with a letter officially informing McDonald Brothers that Stanford White, an "architect of the highest eminence," would be offered the commission but that the termination of the University's relationship with McDonald Brothers was a friendly one.[462]

On January 22, 1896, Stanford White wired both Professor William Thornton and Rector William Randolph to announce his acceptance of the invitation.[463] A little more than two weeks later, on February 8, the University sent McDonald Brothers' drawings and specifications for the Rotunda to White in New York. Thornton stated at this time that McDonald Brothers would be paid for the plans and told White that he "may as well use them for what they are worth."[464] In their drawings for the Rotunda, McDonald Brothers had removed the intermediate floor to make the dome room into a two-story space. Their scheme included three tiers of columns with intermediate cornices, which approximated the size and proportions of Jefferson's individual columns.[465]

Thornton asked White to "preserve and return" the McDonald drawings, as they had constituted the firm's formal report to the building committee. Thornton also reiterated to White that it was important that work on the Rotunda begin quickly. "Much of the ironwork" needed for the structural work, Thornton suggested, "could be pushed under cover of the temporary roof regardless of the frost or other bad weather." "Send any instructions you think necessary about the portico floor," he added.[466]

In preparing to hand over their drawings to Stanford White, McDonald Brothers composed a lengthy and detailed explanation of the drawings and the calculations and decision-making that had gone into creating them. "We were directed to follow the old design closely, in the exterior at least," the firm wrote. While the columns retained their overall height of 28 feet 6 inches in the new plans, McDonald Brothers had adjusted the sizes of the bases and capitals to more closely reflect the proportions of the columns at the Pantheon:

> Measurements taken from the old walls show the height of the columns of the portico, including base shaft and capital to be 28'6". The survey also shows the diameter of the columns at the base to be about 2'11". Mr. Jefferson's estimations to the marble cutter called for a base for a 3' column with a diminished diameter of 2'8" and a height of 3'5" for the capital. The height of the base of the old columns measured from the floor to the top of the torus is 17⅞", within ⅛" of the proportions of the same members on the Pantheon. The total height of the entablature and attic base, measured from the [imprint ?] on the building is 8'9½". Taking the proportions of the Pantheon, the diam. of old columns measured at the base being 3' would require a total height of 29'4".
>
> A column 28'6" high should have a diam. of 2'11" at the base and 2'6½" at the neck. The height of the capital should be 3'3½" and the height of the base from the floor to the top of the torus 17½".
>
> By referring to our drawings it will be found that we have adhered to the proportions for diams. at the base and neck, the total height, the height of capital and that of base, given by Mr. Jefferson.
>
> We think the design would be improved if the diams. of cols. were placed at 2'11" and 2'6½", the height of the capital at 3'3½" and height of base at 17½", leaving the total height of column unchanged as measured from the old building.
>
> We have taken the liberty of fixing the height of the entablature at 6'7½", which bears the same relation to the height of the columns in the Rotunda portico as the entablature of the Pantheon portico

bears to its columns. To do this we had to encroach on the height of the attic base, which was, judging from the photographs, a little higher than we have it. We moved the top of the attic base up two inches, thereby increasing the height (combined) for the entablature and attic base to 8'11½". This is so slight that I don't see how it can be objected to.

The cornice in the Pantheon portico had no dentils, but as the Rotunda had these we have put them back. The columns of the old Rotunda and of the Pantheon had no flutes, but with your approval, we have designed the columns with flutes.

We have removed the antifixae from the attic cornice and replaced them with a parapet. We concluded that it would be a mistake to have the sides of the north portico without railing and have therefore left the protection which we had originally, hoping you will finally approve our action.[467]

McKim, Mead and White's Plans for the Rotunda

The reconstruction of the Rotunda was only one part of the multi-faceted work that Stanford White was to undertake at the University, and officials were eager for him to arrive in Charlottesville to begin the design process. By their calculation the University had "less than eight months in which to plan and erect the needed buildings."[468] Thornton wrote to White on January 24, 1896, stressing how important it was to move ahead quickly and assuring him of the willingness of the University personnel to assist:

> We shall try to have ready for you all the preliminary information necessary to accelerate the work. The various members of the Faculty are engaged now in drawing up memoranda and sketches showing the needs in each of the department buildings. As soon as you are able to trace out your plans for these and determine the best location for them, we should like to begin work on the excavation and to collect materials for the foundations and have everything in readiness for beginning actual building operations as soon as spring opens.[469]

White, however, had fallen ill in late January 1896 and could not travel to Charlottesville.[470] He promised, though, that he would be there on February 4. He could stay for only one day, but he assured Thornton that the purpose of his trip was to "expedite matters and arrange for a later appointment."[471]

In anticipation of White's visit Thornton sent to him the "data for the several buildings," including McDonald Brothers' measurements of the Rotunda and drawings showing "sections of the old cornice."[472] Furthermore, W. C. N. Randolph informed White that he would convey to him Thomas Jefferson's "original drawings of the buildings of the University." The drawings were "quite in detail and perfect as to all the buildings," Randolph wrote, except for the drawing of the Rotunda, which was "not so perfect and not so in detail." Still, he wrote, the drawing of the Rotunda would serve as "a very good guide as to the original designs of the modifications of the Pantheon."[473]

Back in New York, White was visibly concerned about the larger design issues of adding to Jefferson's complex. Edward Simmons, a painter and fellow member of The Players, a men's club in Manhattan, recounted how he had met with his good friend White soon after the latter had returned from Charlottesville. "As we sat together over something to drink," Simmons recalled, "he seemed to be puzzled, confused, and silent. I asked him what was the matter. He started and came out of his mood, saying it was the job down South. 'I've seen *his* plans,' he said, speaking with great deference. 'They're wonderful and I am scared to death. I only hope I can do it right.'"[474] In preparation for the work, White studied Jefferson's original drawings, sketches of the Lawn, elevations and plans of the Rotunda, and a bird's-eye view of the grounds.[475]

On February 21, 1896, White wrote to Thornton from New York, reporting that he was "now ready, as far as my drawings are concerned, to present the scheme for the Rotunda, and also the scheme for the lay out of the new Campus" but that he still wanted "to investigate the cost more thoroughly" before presenting his plans to the building committee.[476]

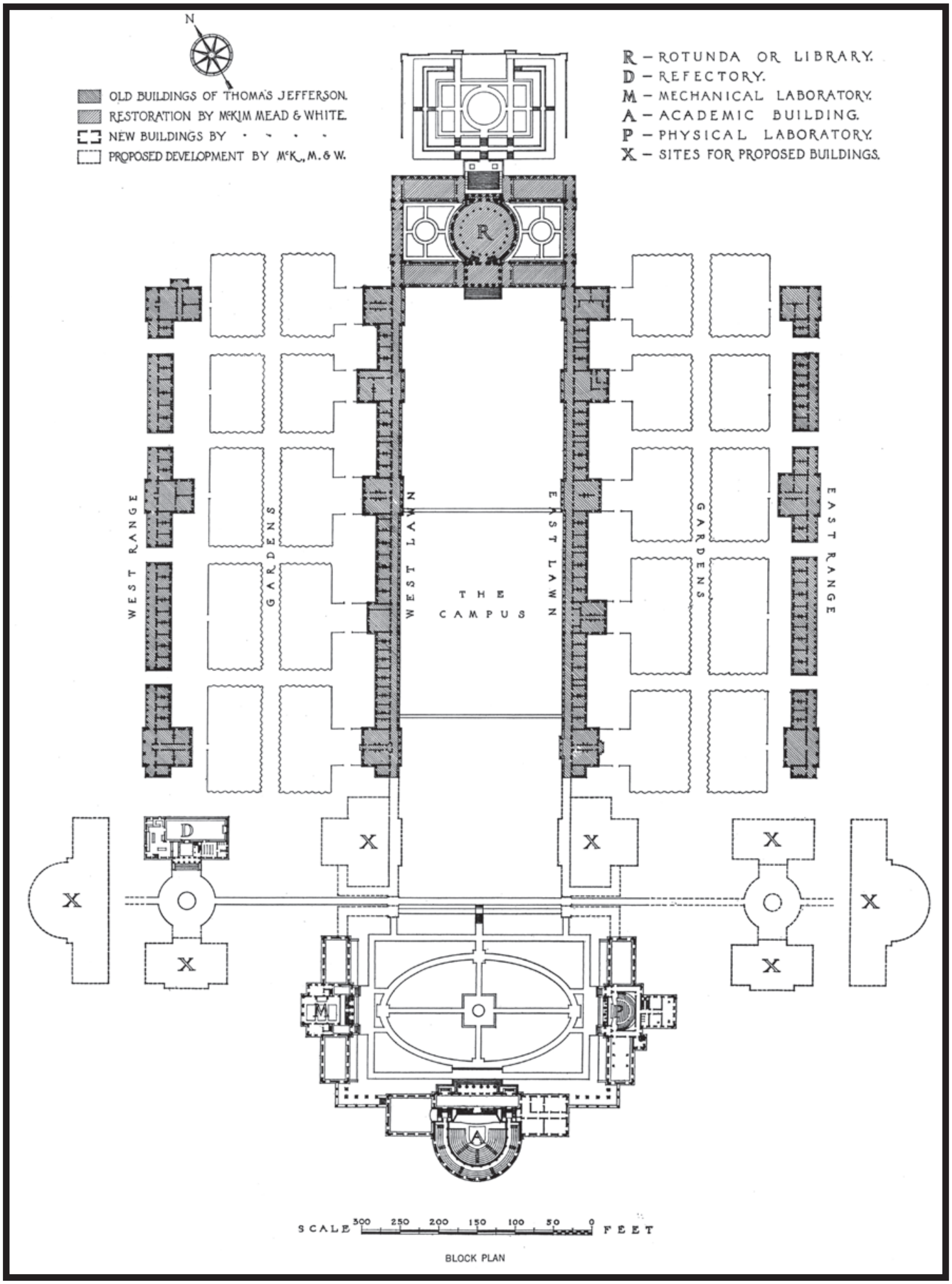


FIGURE 66. *McKim, Mead and White, plan for the University of Virginia, including Cabell, Cocke and Rouss Halls, from* A Monograph of the Works of McKim, Mead and White, 1879-1915 *(1915-1920; reprint; New York: Dover Publications, 1990), 1898.*

White elaborated on the difficulties he faced in reconstructing the Rotunda within the constraints of the University's budget:

> The approximate estimates which we have made upon the work are far in advance of those which have already been stated for the buildings. I cannot understand how such an estimate of $90,000 could have been made upon the Rotunda, for a fire-proof building; using limestone instead of cement for the columns, and metal for the window trim, cornice, and roof. We have found it impossible here to construct such buildings as you require for less than 25 cents per cubic ft. fire-proof.[477]

On February 26 White sent his drawings of the Rotunda to Thornton in Charlottesville. "We have endeavored to restore the building exactly to its former state," White wrote in an accompanying letter, "or rather exactly to the state which we believe Jefferson contemplated finishing it at the time the building was built." At this time, the scheme for the restored Rotunda, presented in "eight scale studies," was reportedly more fully developed than the studies for the new buildings to be built at the south end of the Lawn.[478]

Two of the eight studies that White sent to Charlottesville were of the Rotunda's interior. One study endeavored "to preserve the room in the Rotunda practically as designed by Jefferson—using the lower story as a storage room for books, with a small circular hall for reading-room." The alternate scheme that White proposed, which depicted the large, open plan similar to the McDonald scheme, was, White wrote, "a nearer approach to the classic and ideal treatment of the interior of such a rotunda. It is the one also which is much the most sensible where a library and reading room to meet the enlarged needs of the University is required." White strongly advocated the adoption of this alternate scheme, writing that it was "the one which we believe Jefferson himself would have adopted had the Rotunda been intended solely for use as a Library." White further elaborated on the plans:

> The scheme of re-building would contemplate the preserving as far as possible all exterior work in fit condition to use; the substitution of cut limestone and copper where wood and plaster has been heretofore used, and the use of as little wood as possible.
>
> The approximate estimates we have received upon this work run from $130,000 to $150,000. We think when working drawings are made and careful estimates are given by Southern firms that these figures will be reduced. At the same time, the amount of cut stone upon the building is so great that we should recommend the adoption of cement for the columns and balustrades, window trim, etc., should we be unable to obtain a sufficiently low figure upon the Rotunda.[479]

White's plans for the rebuilt Rotunda also included east and west terrace wings on the north side of the building, mirroring those on the south. The terraces would be connected by colonnades, running north-south, creating courtyards on each side of the building. Assisting White in preparing the drawings were William Mitchell Kendall and Bert Fenner, both from McKim, Mead and White's New York office, who later became partners in the firm.[480]

White presented his plans for the redesigned Rotunda and the new buildings to the University's building committee on March 2, 1896. The committee adopted the plans but on the condition that White pare down the cost of the entire project, including the new buildings—estimated to be more than half a million dollars, or double the budget—to $250,000. White's plans had called for constructing all of the new buildings of fireproof materials and installing central heating and a mechanized ventilation system in the Rotunda. In White's revised plans, only the Rotunda would be constructed of fireproof materials; central heating was retained, but the ventilation system was eliminated. After a few other adjustments not related to the Rotunda, the cost estimate was brought down to the necessary amount, and White's plans were approved at the March 13, 1896, meeting of the Board of Visitors.[481]

At this same meeting the building committee reported that, to date, $1,370.47 had been spent on repairs to the Rotunda proper; $3,465.93 on the terraces and wings; $629.49 on cleaning, hauling, and stacking bricks from the

Annex; $895.95 on constructing temporary lecture rooms; and $2,690.57 on "incidental expenses," for a total of $9,052.41. The repairs included the carpenter ($778.19), day laborers ($138.59), watchmen ($13), removing debris ($71.95), and materials—lumber ($284), hardware ($66.94), cotton cloth for windows ($10), and rope ($7.80).[482]

The Board of Visitors authorized the building committee to enter into construction contracts but with an important caveat: "in no event shall the cost of the completion of the said buildings, ready for use," exceed $250,000, exclusive of architectural fees. The architects were responsible for supervising, directing, and inspecting construction and for providing "complete specifications and details."[483]

White, for his part, had agreed to deduct from his commission the fee that the Board had already paid McDonald Brothers, and the Visitors thanked him for the interest and enthusiasm in the project. White presumably accepted the University's thanks graciously, but a few days later he wrote in a private letter that he was being "driven crazy by the University of Virginia work . . . they are driving everything to get four buildings finished before the 15th of September, and with McKim away, and in addition to the other loads, it does not leave me with much mind left."[484]

In his March 20, 1896, "Report of the Architects to the Building Committee," White explained that the remodeling of the interior of the Rotunda was given "most careful study." "Reasons of sentiment," he wrote, addressing the question of the arrangement of the interior posed by some members of the faculty in the days after the fire, "would point to the restoration of the interior exactly as it stood." White, however, successfully lobbied for making the interior of the central part of the building one open space for use as the library. It was an "unquestionable fact," White wrote, "that it was only practical necessity which forced Jefferson at the time it was built to cut the Rotunda in[to] two stories." White convinced those initially opposed to a single large space beneath the dome that Jefferson would have "planned the interior as a simple, single, and noble room" without the division into two stories, if it had been possible.[485]

White's design also made provision for the growth of the library, including four terrace rooms that would project out at ground level and could be occupied by offices or reading rooms until such time as they were needed to house the library collection. The terraces at the southeast and southwest edges of the Rotunda would stand on the sites of the YMCA reading room and old chapel that had been deliberately destroyed by dynamite during the fire. The "two oval rooms in the basement," which were to be in "direct connection with the main floor of the Library," could be used as "ordinary reference and reading rooms."[486] Rector W. C. N. Randolph, the building committee, and the Board of Visitors "most heartily" adopted White's plans and specifications for the Rotunda, which were finalized on April 25, 1896.[487]

After their plans were approved McKim, Mead and White prepared another set of eleven drawings that are dated April 7, 1896. These drawings, eight of which survive, show that Stanford White had adopted several of the elements outlined by McDonald Brothers in their plans, including the large open space from the main floor to the top of the dome, the levels of annular galleries for books, the coffered ceiling, and the addition of the north portico. In White's plans, however, the north portico was shortened from three-columns deep to one-column deep. Though this one-column-deep scheme was ultimately adopted, the portico area was enlarged from that shown on the drawings, as evidenced in photographs taken after construction was complete.[488]

The north terraces appear on the April 7 plans and elevations, but, curiously, they differ in design and dimension between the firm's site plan and the ground-floor plan of the same date. The site plan shows terraces that extend further out from the building than those in the ground-floor plan, thus creating larger courtyards between the Rotunda and the colonnades that connect the north and south terraces. Ultimately it appears that the scheme on the site plan was followed.[489]

White's plan eliminated McDonald Brothers' inclusion of pairs of Ionic and Corinthian columns on the first and second levels of the interior. Instead, White implemented a twenty-column peristyle of single, larger Corinthian columns that rose from the main level up three stories to support the architrave between the second- and third-level galleries. White's plan for the ground-floor level resembled McDonald Brothers' in that White, too, retained the east and west oval rooms and "dumbbell" hallway. However, the site plan again reveals a different design and includes a smaller north oval room that was actually built in the reconstruction. White eliminated McDonalds' semi-circular staircases at the north and south ends of the hallway and included two sets of curved staircases on opposite sides of the south end of the hallway, similar to Jefferson's original plan. Lavatories were planned for either side of the north entrance on the ground level, abutting the north facade.[490]

White's plan also included four spiral staircases that connected the main floor to the upper galleries at the corners of the Rotunda. According to the plan, bookcases on the first and second gallery levels would be installed perpendicular to the columns, projecting into the gallery walkway from the columns, as well as against the walls, between the windows. Ultimately, the bookcases on the main floor were arranged like this, but the cases on the first and second galleries were installed against the Rotunda's walls, between the windows. The third gallery level, which ultimately would contain a series of closets around the perimeter, had a simple balustrade, the design of which was later changed to be more ornate. White's April 7 scheme also included a fourth level of the gallery, but this plan was ultimately abandoned.[491] The April 7, 1896, side elevation depicts the "16 oz. copper tiles made in special design" later indicated in the specifications, dating April 20, 1896.[492]

During the winter of 1895–1896 Stanford White solicited an estimate for work for the Rotunda's dome, floor vaulting, and other interior work from the R. Guastavino Company of New York City.[493] Rafael Guastavino, who had immigrated to the U.S. from Spain in 1881, created a structural system for building floors and ceilings that used flat clay tiles set in cement mortar. His structures were stronger than concrete structures of comparable weight and were more fire resistant than concrete or steel. Guastavino's system was also impervious to rot, insects, and damage by the elements. Guastavino had worked extensively with McKim, Mead and White, and his vaulting system had won attention when he worked with them on the vaulted roofs and floors of the Boston Public Library in 1892.[494]

On March 11, 1896, Rafael Guastavino had sent McKim, Mead and White an estimate for work on the Rotunda. For labor and material for the erection of "ceiling floor of vestibule for Library Building," for the "ceiling support of the main front stairs," and the "ceiling and rough roof of the pediment," the estimate was $4,666. This price included "rough tile work and iron necessary." Guastavino specified that no concrete was included for the vestibule and stair arches, but it was included for over the pediment. For an additional $2,710 Guastavino proposed "to furnish labor and material for Dome step rings built of porous terra-cotta to allow nailing of metal roof architrave and frieze for the pediment of front elevation." "No moulding or cornice are figured for this pediment," Guastavino specified, "but iron is included." The price for concreting the vestibule and over the stair arches was $600.[495]

Also on March 11, 1896, the W. H. Mullins Architectural Sheet Metal Company of Manhattan submitted to McKim, Mead and White an estimate of $9,504 for the copper roofing for the Rotunda. The estimate included the "cornice and gutter round dome skylight, copper fill roofing, steps and cornices on dome, main cornices and gutters on Rotunda and tympanums, interior porch cornices, and window casings and heads all as shown on drawings."[496]

Stanford White received an estimate for carving the column capitals and bases for the Rotunda from the Piccirilli Brothers' studio in Manhattan on April 15, 1896. The firm gave three estimates for the work: "each cap with base in first quality Italian monumental marble would cost $850; each cap with base in #2 Vermont $1,100." If the Vermont marble was too expensive, then they proposed a "less expensive marble, saving about $250 each set, which probably would answer to the purpose."[497]

Meanwhile, in preparing to begin construction in the early spring, Thornton had asked White to assess the quantity of bricks that the University should have readily available "on the ground when the building operations begin." Thornton estimated that between 300,000 and 400,000 "old bricks" from the burned Rotunda were available for reuse in the reconstruction, but Thornton pressed White on the number of new bricks that would be needed for "face work." "Mr. Echols," Thornton reported, "is looking into all the details and getting ready to make bricks on our own grounds, and I hope that work will soon be begun."[498] By the time of the March 13, 1896, meeting of the Board of Visitors "clay almost identical with the clay of the original bricks" had been found, and enough for a half million bricks had been "gotten out and exposed to the weather."[499]

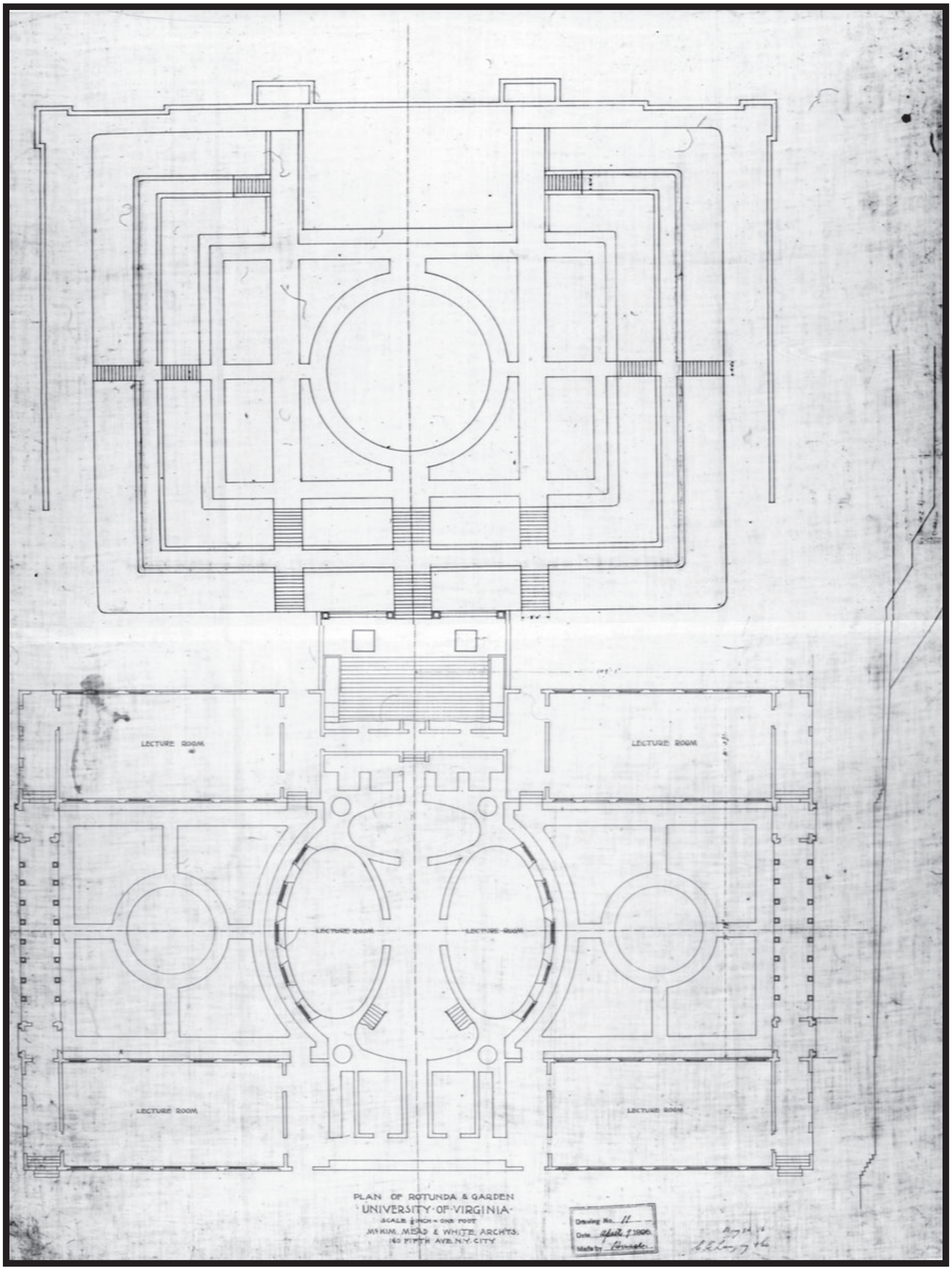


FIGURE 67. *McKim, Mead and White, site plan for the Rotunda, showing proposed north terrace and east and west courtyards, April 9, 1896.*

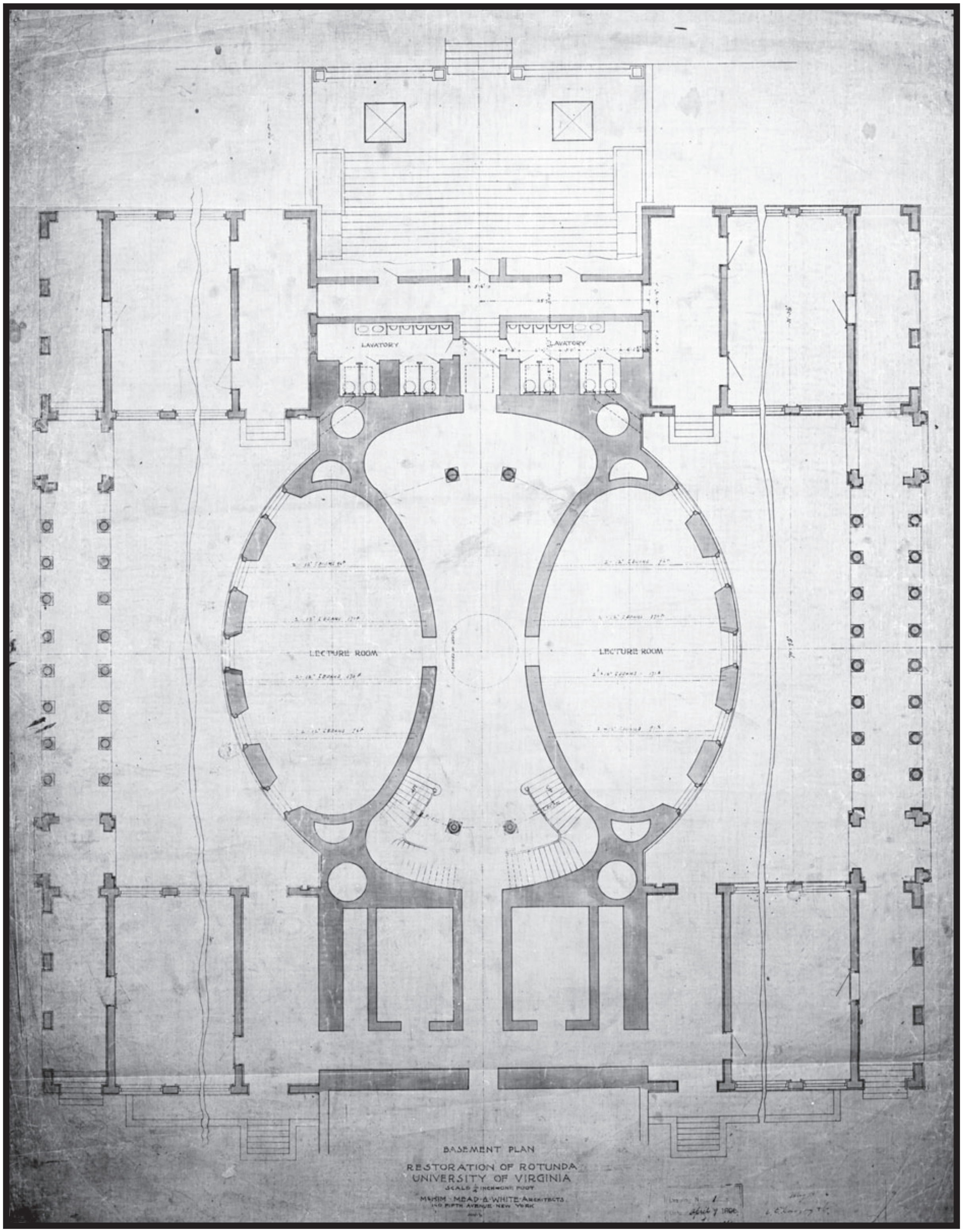


FIGURE 68. *McKim, Mead and White, ground-floor plan, April 9, 1896.*

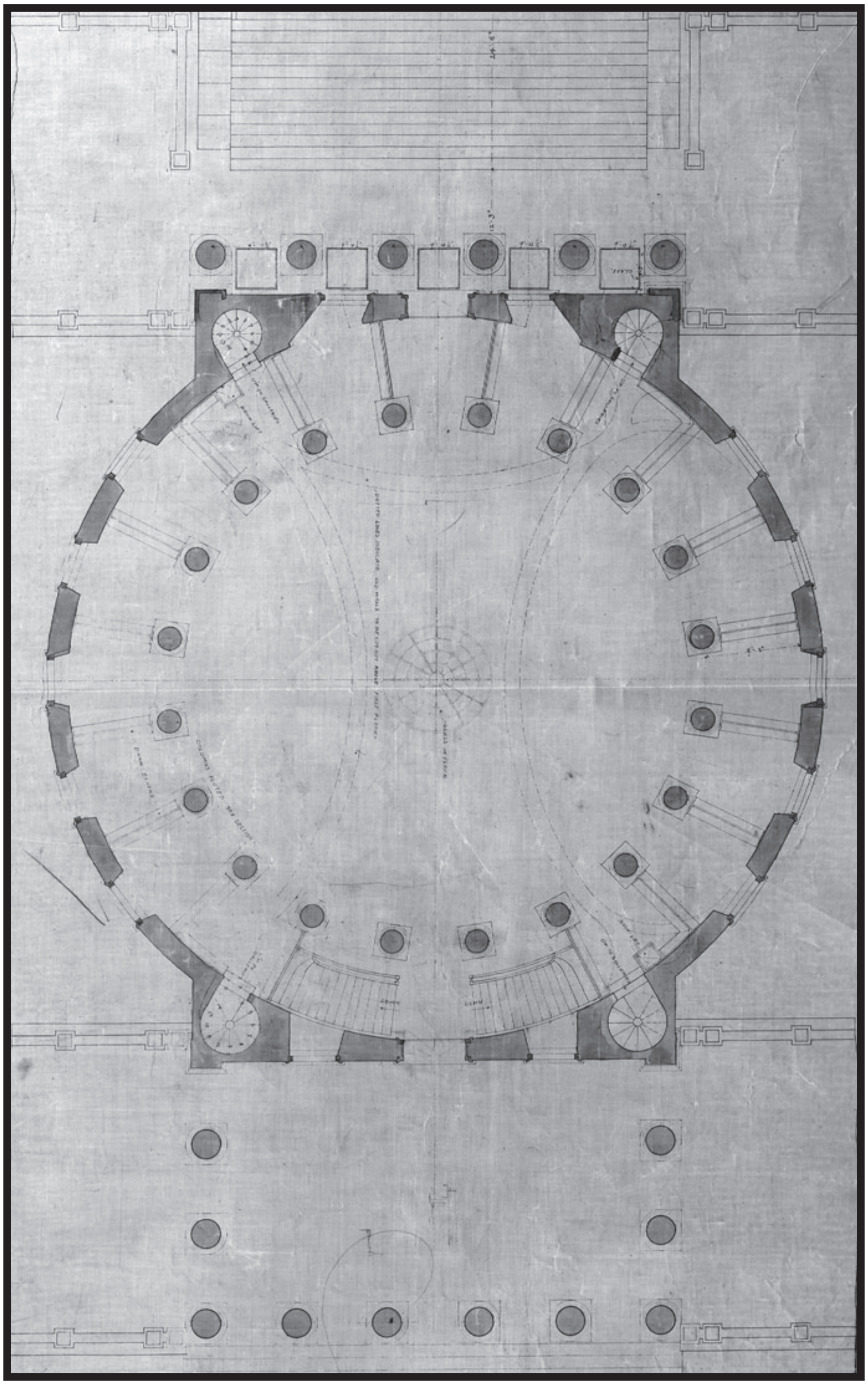


FIGURE 69. *McKim, Mead and White, plan of the Dome Room.*

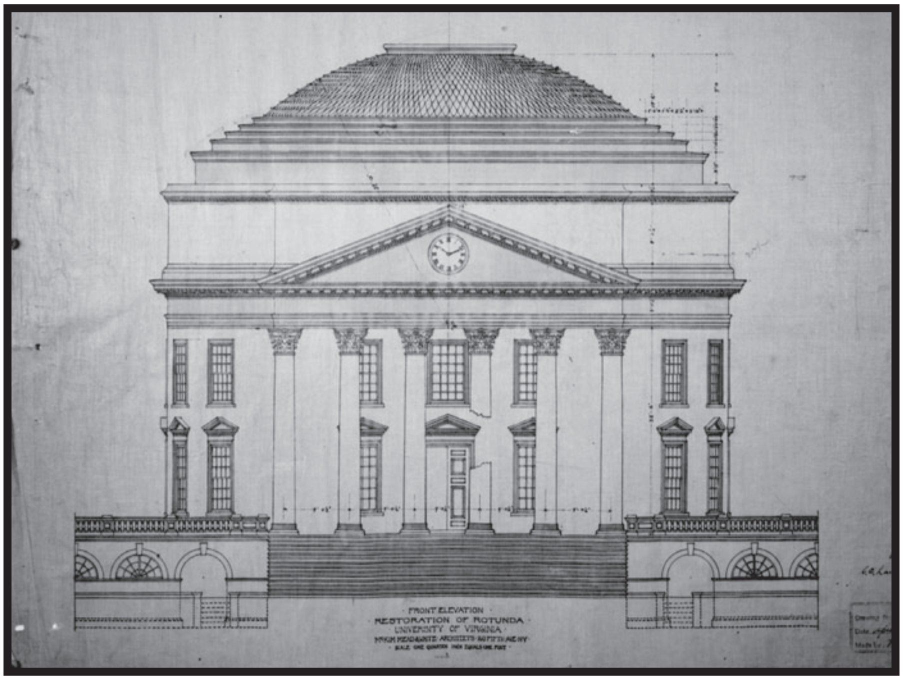


FIGURE 70. *McKim, Mead and White, south elevation, April 9, 1896.*

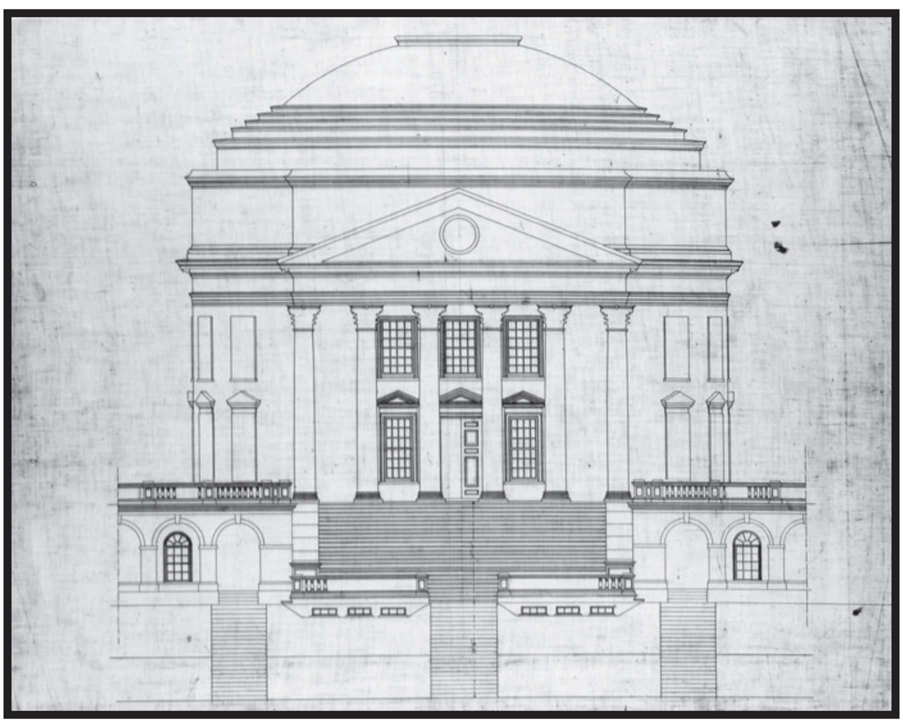


FIGURE 71. *McKim, Mead and White, north elevation.*

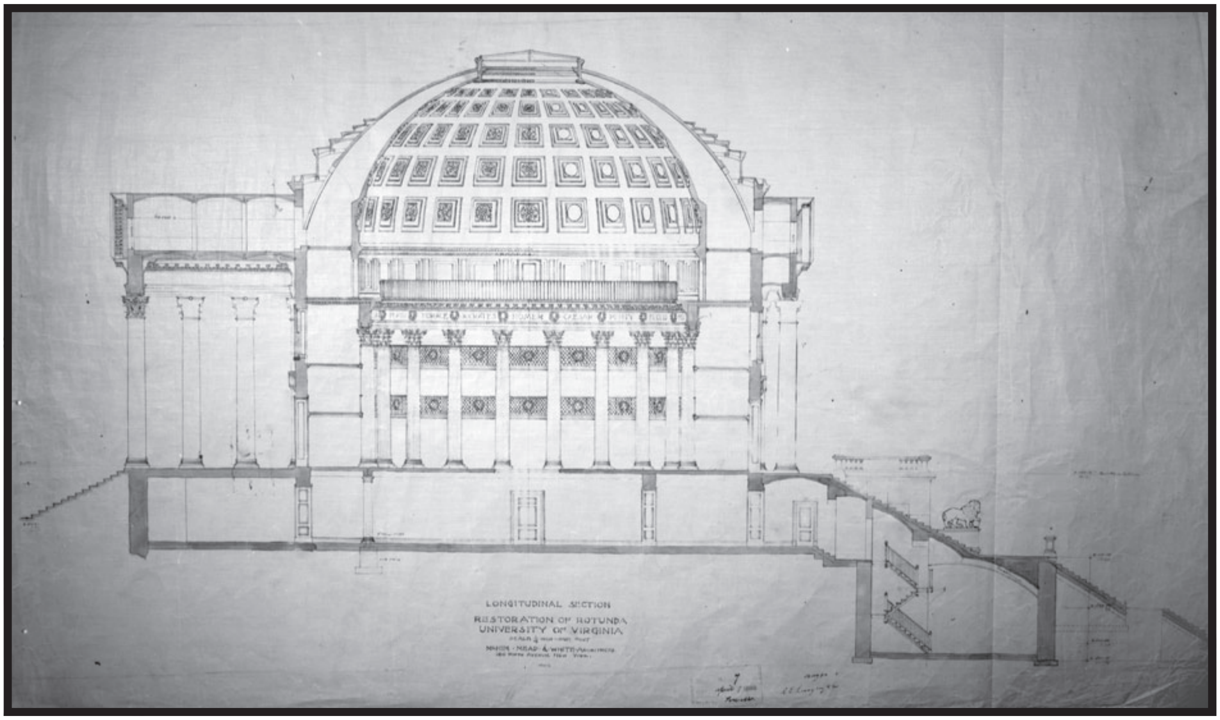


FIGURE 72. *McKim, Mead and White, building section looking west, April 9, 1896.*

FIGURE 73. *The Rotunda from the north during construction, August 27, 1896*

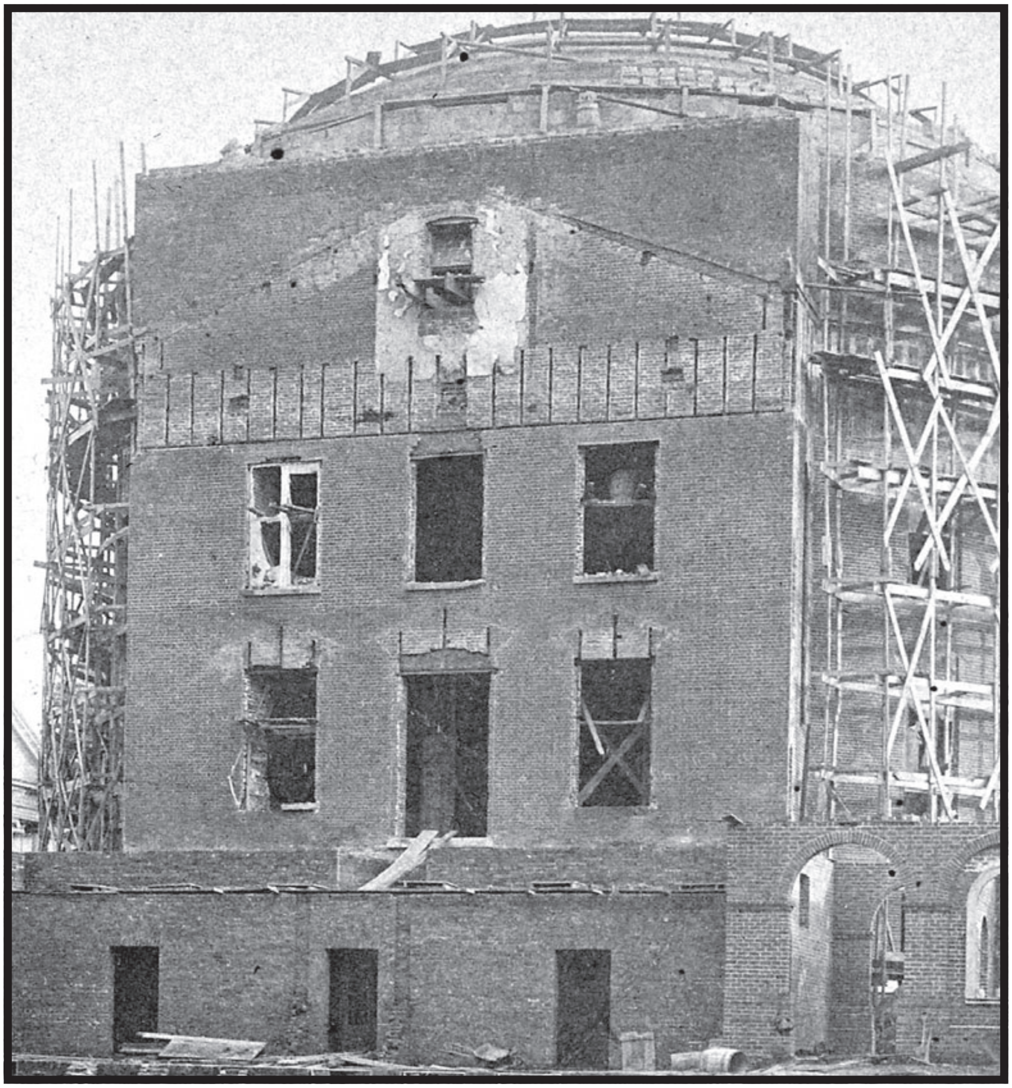


FIGURE 74. *Detail of the August 27, 1896 photograph. This photograph reveals that the upper section of the original entablature did not wrap onto the north elevation; rather, Jefferson placed a full pediment on this elevation.*

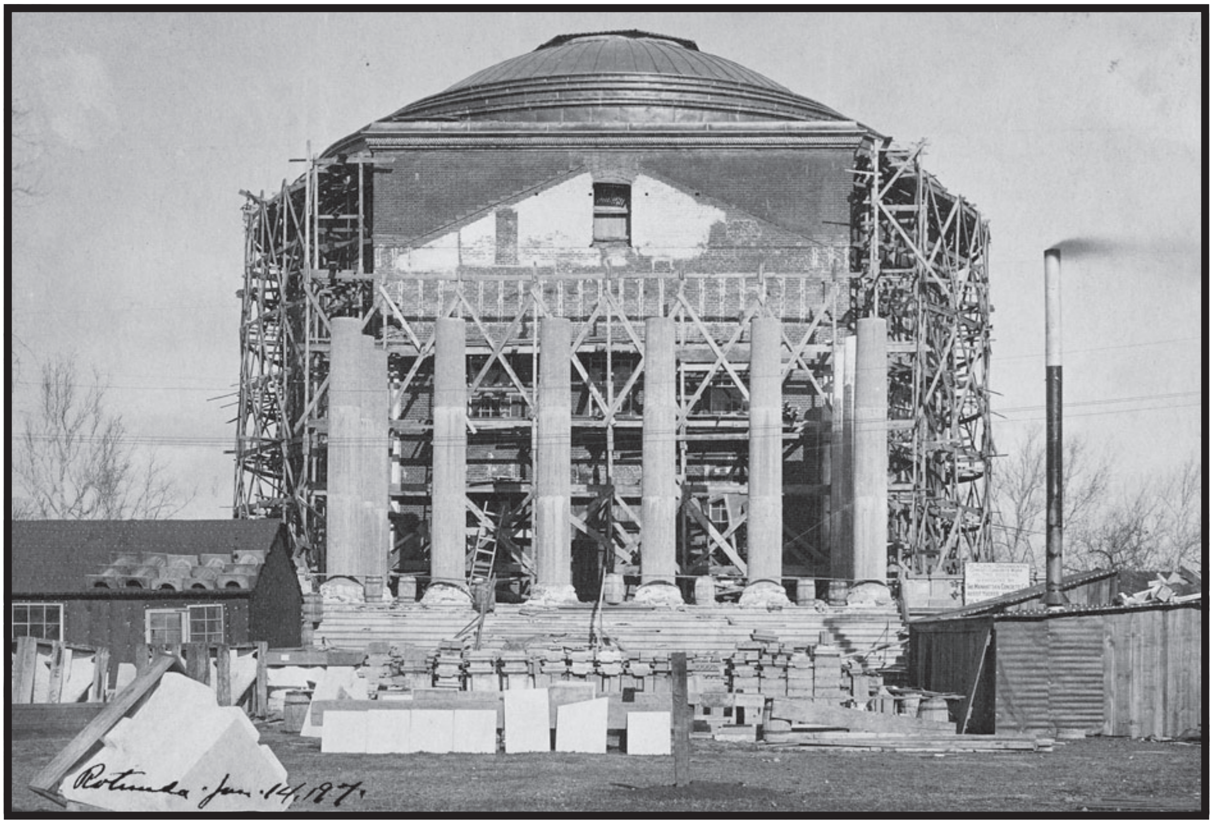


FIGURE 75. *The Rotunda from the south during construction, 1896.*

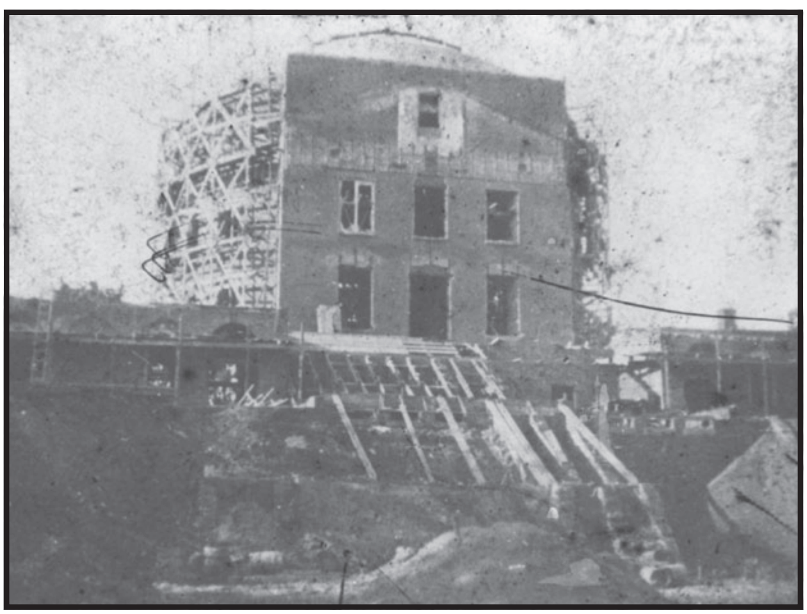


FIGURE 76. *The Rotunda from the south during construction, 1896.*

FIGURE 77. *The Rotunda and colonnade from the east, after the post-fire construction. Note that the column capitals have not yet been carved.*

FIGURE 78. *The Rotunda and terraces from the north, 1898.*

FIGURE 79. *Dome Room under construction.*

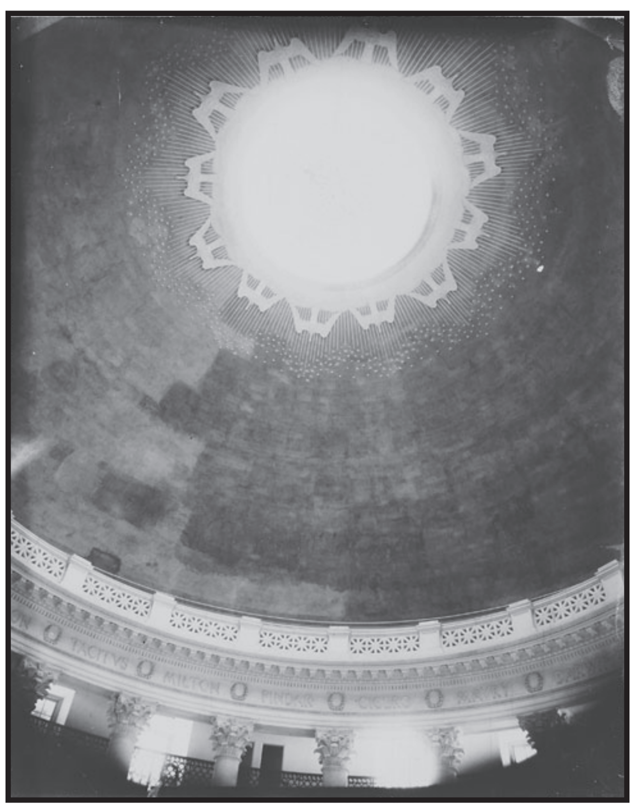


FIGURE 80. *Dome Room, ceiling and skylight, November 8, 1897.*

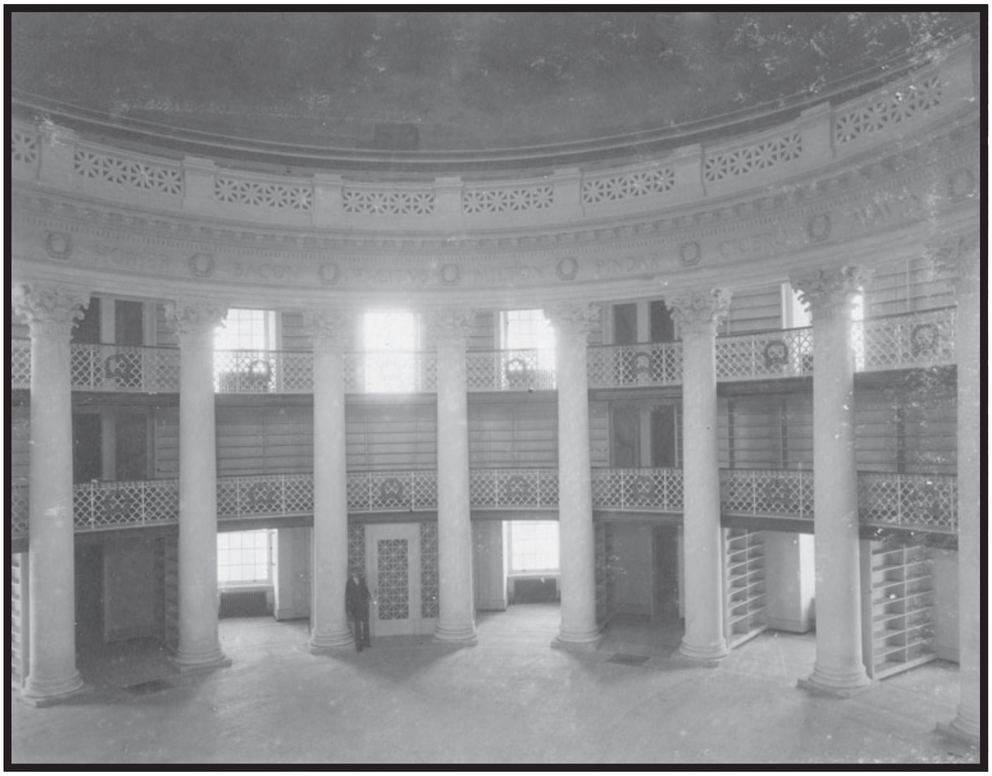


FIGURE 81. *Dome Room, ca. 1898.*

FIGURE 82. *Dome Room, showing the upper galleries, ca. 1898.*

FIGURE 83. *Dome Room, before books were placed in the gallery bookcases.*

FIGURE 84. *Dome Room, perhaps before 1938.*

FIGURE 85. *Ground-floor stair hall, looking south.*

FIGURE 86. *The Rotunda and Pavilion I, looking west, March 16, 1914.*

On April 27, 1896, William Echols informed White that the University had hired the firm of Adams Brothers and Payne of Lynchburg to produce 1.5 million bricks. Theodore Skinner, the on-site superintendent from McKim, Mead and White, wrote to Echols that same day, indicating that the estimate for the brick fabrication did not include "face brick to be used in Rotunda." "These bricks," Skinner reminded Echols, needed to be "exactly the same size as those used in the old walls of Rotunda and must have the same smooth texture and color." The new bricks for the Rotunda would be "wanted as soon as any," Thornton added, "so it is important that you begin their manufacture at once."[500] Echols responded to Skinner's letter two days later: "The bricks we are now making at the University yard are the size of the Rotunda brick and will cost $7.00 per m. delivered at Rotunda. How many of these brick do you need? Let me know this, so I can change moulds to 8 x 4 x 2½ as soon as we have made enough of the smaller size."[501] On May 4 Echols wrote to White, informing him that so far they had made 100,000 new bricks the size of the Rotunda brick and that he needed to know how many more bricks they would need. The building committee was evidently anxious for White to come to Charlottesville. Echols wrote to White: "Expected you here Saturday. When will you come down and take charge of the work?"[502]

To help manage construction costs, several railroad companies—the Southern, the Chesapeake and Ohio, and the Norfolk and Western—promised the University a 50-percent reduction on shipping the construction materials. Temporary tracks were laid to the University for ease of delivery of construction materials.[503]

William Thornton's description of the planned restoration work on the Rotunda was published in the February 1896 issue of the *Alumni Bulletin*. The south facade of the building would be a reproduction of Jefferson's original design, "as exact as the skill of the builder can achieve." The Rotunda's "stately columns, with their graceful Corinthian capitals of white marble, the cornice, the pediment, the swell of the noble dome," would all be "consciously restored." Thornton elaborated on the plans for the exterior, including the new portico on the north side of the building:

> The same materials will be used, save that the combustible timber will be replaced by incombustible cement and copper. In like manner woodwork will be eschewed in the interior construction, and even steel will be used to a very limited extent, the columns, floor arches, and the dome itself being reconstructed of tiles under the Guastavino patents. The northern face will show an elevation similar to the southern, but the portico will be much less in depth, in order to not detract from the dignity of the southern front, the steps descending between the two new wings, added to correspond with the terrace rooms on the south. The side elevations will present a novel and dignified aspect. The two terrace rooms are to be connected by a colonnade in continuation of that on the Lawn. The flat roofs of the wings and the connecting colonnades, guarded by a handsome balustrade, will furnish a pleasant promenade about the main building, while the vistas between the columns prevent apparent reduction of its height to spectators approaching from east or west.[504]

The report in the *Alumni Bulletin* also included a description of the new interior of the Rotunda:

> The interior partition walls will be removed to the level of the portico floor . . . and at that elevation will be bridged with heavy steel beams, between which the Guastavino floor arches will be thrown. Upon this floor will be supported a handsome Corinthian peristyle, whose entablature carries the main gallery at a height of 28 feet above the floor. From the entablature springs the inner shell of the dome; from the main wall springs the outer. The two meet at the eye in the crown and are tied together by intermediate braces. The space between the wall and the peristyle is subdivided by perforated iron floors into five book tiers, three below and two above the gallery, the latter being lighted from above through sheets of heavy glass set in alternate panels with the tile into the roof. The capacity of this main library room will be between 90,000 and 100,000 volumes.[505]

McKim, Mead and White had designed a steam-heating and ventilation system for the Rotunda that relied upon an independent power source.[506] As early as November 1895, the Board of Visitors began to plan for the construction of a separate "engineering" facility. Realizing that such a facility would contain complex and dangerous equipment, the Board of Visitors began to plan for its construction some distance from the Academical Village and between the university and Canada, a predominantly African American neighborhood on the other side of what is now Jefferson Park Avenue. "An establishment involving necessarily the existence of coal sheds, boiler house, engine room, and so on, ought on grounds of safety to be isolated from all others." The University boiler room, or "power house" as it came to be known, was built directly behind and south of what would become Cabell Hall. The new power house contained a coal-fueled boiler that generated steam to heat the University and eventually also provided power for light and electricity.[507]

According to the 1896 specifications, steam produced in the boiler house was to be conducted under high pressure in 3-inch pipes to the Rotunda's blower room, and condensed steam was to be returned to the boiler house in a 2-inch diameter pipe via a pump.[508]The University was to provide "a suitable tunnel or conduit" in which the supply and return were routed. Once in the Rotunda, the steam was reduced to low pressure and then distributed throughout the building via 3- and 5-inch supply lines and 3-inch return pipes. The main supply line was to be conveyed in the ceiling of the ground floor and then rise to the floors above. Steam heat conveyed to the Rotunda was piped to a total of 78 floor-mounted sectional radiators[509] installed in various locations. Return lines from the individual radiators would gather the condensed steam that was piped down to brick chases in the ground floor of the Rotunda's rooms and ultimately conveyed to the pump.

Chases conveying all return pipes in the ground floor of the Rotunda and in the old and new lecture rooms or wings were to be constructed of brick and cement mortar and have an interior cavity of 12 inches by 12 inches. Cast-iron covers ½-inch thick, 14-inches wide and of varying lengths, were to rest on the top of the brick walls of the chase. The specifications anticipated that approximately 1,400 linear feet of trenches and brick chases were to be built.

Although the specifications called for the steam main to enter the basement level blower room of the Rotunda, it may have actually entered the south side of the Rotunda via the East Lawn buildings and the Southeast Wing. Historic plans for an updated steam heat supply implemented in 1921 show supply lines and possibly the earlier conduit built by the University, entering the Rotunda in this location.

The timing and implementation of the Rotunda's proposed ventilation system is less clear. According to the McKim, Mead and White's specifications, the blower room was to contain a steel-plated ventilation fan, or blower, powered by a 10-horse-power electric motor. The motor was to be placed within a brick foundation, most likely a brick- and cement-lined pit. Cold-air ducts were also to be constructed linking the blower room with the outdoors. The fan would have forced the air through conduits to fresh-air registers placed in various locations in rooms. Evidence suggests that the Board of Visitors had purchased a 10-horse-power motor by October 1898 but also that a fan had not yet been purchased or had not yet been received from the manufacturer. Because it was not yet installed, Thornton, a professor of engineering, managed to convince the Board of Visitors to move the 10-horse-power motor "purchased to drive the fan for ventilating the Rotunda" to the Mechanical Laboratory [current Cocke Hall] "until it shall be needed for running the Rotunda fan."[510] Given this information, the fan and blower may have been installed in the Rotunda in 1899 or possibly later.

Photographs of the central hall of the ground floor of the Rotunda taken during the 1970s Ballou and Justice renovation document the presence of a large north-south oriented sub-floor utility corridor. This utility corridor was a two-tiered, four-compartmented duct composed of mortared brick and Guastavino tile, measuring approximately 4 feet deep and 4 feet wide. The presence of four compartments separated by mortared brick implies that the centrally oriented duct may have served both heating and ventilation purposes.

Construction of the Terraces

Even before construction contracts were awarded for the Rotunda itself, work on the terraces at the Rotunda was underway. McDonald Brothers had begun construction in late 1895, and specifications for the repair of the terrace roofs, probably drawn up by McKim, Mead and White, were dated February 1, 1896:

> *Iron.*
>
> Present 15" beam girders to be tapped for the connections of strengthening framing. Framing shown in black on drawing to be steel I beams of size marked on drawing, framed, and with connections as shown. If wall ends of beams come into arches of openings they are to be hung from the wall above the arch in wrought iron stirrups.
>
> *Plastering.*
>
> Cut out plaster at each point where strengthening beams and present four inch beams cross to permit of blocking up of the 4" beams, and repair all plaster after iron is erected.
>
> *Damp-proofing.*
>
> Flash all side walls with 16 oz. copper. On top of present mastic coat lay a damp-proofing course composed of four layers of heavy asphaltic roofing felt laid in and well cemented together with hot asphaltic cement, and coated with same on top surface. Before concrete for pavement is laid, put on a one-half inch thick coat cement mortar composed of parts of Dyckerhoff Portland Cement to three parts of clean sharp sand.
>
> Post & McCord's estimate for ironwork erected is . . . $750.00
>
> T. New's estimate for flashing and damp-proofing is 725.00[511]

On February 3, after having reviewed the specifications with Echols, Thornton informed White that the tight schedule would not allow for plastering and that it "should be deferred until the total dead load has been placed on the roof." Thornton also reported that the roof of the eastern terrace was leaking, in spite of patching.[512] By February 8 Thornton and White were in agreement that it was "best to postpone the completion of the terrace rooms and let the contracts for that work along with those for the Rotunda." Though the building committee wanted to have some of the rooms ready for use that spring, Thornton conceded that it was "hardly possible" for them to "finish the rooms in time to make them of any real use this session."[513]

At the March 13, 1896, meeting of the Board of Visitors, the building committee reported that $3,465.93 had been spent, to date, on the terraces and wings, including $1,000 paid to the Cranford Paving Company; $551.83 to Nettycomb and Kell for "cement, etc."; and $281.80 to Wenger and Brand for "plastering & material."[514]

Selecting the Contractor

Soon after learning that his firm had been selected for work at the University, Stanford White began to investigate prospective contractors. He consulted, for example, Thomas Hastings, John Carrère's partner. Hastings replied on February 6, 1896, that he could only give White "facts concerning our Richmond work, without any advice as to your work—because it is differently located." Hastings supplied the names of contractors in Richmond whom his firm had used for "masonry, carpentry, plumbing, roofing, painting, millwork, and ironwork."[515]

White was concerned about who would be invited to bid on construction work. He had checked on three companies that William Thornton had proposed earlier in March, and White was "not at all satisfied with the reports" he had received. It appeared that these companies had built only "buildings of a very cheap and unimportant character," rather than any that were intended "to last for generations." White suggested that William H. Echols confer with W. C. N. Randolph and Thornton to determine how to proceed with selecting the contractor.[516]

Randolph told White, in confidence, that for political reasons he would oppose awarding the work of reconstructing the Rotunda and erecting the three new classroom buildings to just one contractor. "We are a State institution, dependent for our success upon the backing that the State gives us," he wrote, "and while I am not for one minute going to yield to any demagogical ideas about it, I am not going to be foolish enough not to throw the rotten tub to the whale" (he warned White not to "ever let this sentence come back to me"). Randolph proposed instead giving the Rotunda contract to a Northern firm, since no Southern firm could "do it and make it fireproof." He proposed awarding the contracts for the construction of the new buildings to three separate Virginia firms. Still, Randolph wrote, if White felt that this approach would jeopardize the character of the work or involve unqualified contractors, he would agree to hire a single firm. It might "give you and I less trouble to let the whole thing to one man," Randolph wrote, but "it would not be good for the University."[517]

White replied that he would send the specifications to a list of contractors that had been submitted to Randolph. "On the whole," White added, "I think it would be best to obtain bids from the various firms recommended, reserving to yourselves and ourselves the right of rejecting any and all bids."[518]

While the questions of the contractors and bidding rules were being discussed in early April 1896, McKim, Mead and White had selected Theodore Skinner to be the firm's on-site representative at the University. Skinner, a member of the staff at the firm's New York City office, had written to White to apply for the post in late February and visited Charlottesville in anticipation of his role as supervisor of the work. Skinner, who was described as a "pleasant gentleman to do business with," was a graduate of Massachusetts Institute of Technology and already had "practical experience" as a construction superintendent. He sought the position in Charlottesville in the hope that the work there might "lead to a position as instructor in architecture at the University."[519]

Skinner found the work at the University difficult, describing his assignment as "work, hard work, from 8:30 a.m. until 6 p.m. and sometimes later—Saturdays as well as other days." His tasks included inspecting materials and workmanship, making drawings, correcting mistakes, and being "ready to talk shop to any of a hundred and one interested parties here, etc. etc."[520] Skinner held this post from April 27, 1896, through December 18, 1897.[521]

Skinner was also involved in the dialogue about the selection of the contractor for the restoration work on the Rotunda and the new construction. He reported to White on a conversation he had with Randolph about the selection process, after which White told Randolph that he agreed that "if possible all work should be given to Virginia Contractors." White further proposed that the terms of the contract be "very severe," with 10 percent of the contract held for three months after acceptance of the work and a 10 percent bond required. Randolph agreed, saying that he favored making the conditions "very stringent."[522]

Still, there was confusion over who was to be invited to submit bids. Randolph wired McKim, Mead and White on May 4, 1896, that he was disturbed that he had not yet received from the architects the list of contractors who would be invited to bid on the construction of the buildings; moreover, Skinner maintained that he had not received from Echols the University's list of contractors. On May 5 Thornton sent to White a list of candidates, with a note that the architects were to add to it "such other firms as you approve."[523] Randolph wired White on that same day that he hoped White would "Submit Specifications at once." The University's list included the Charles E. Langley Company of Richmond, who had contacted McKim, Mead and White about bidding on the work in early February.[524] A surviving list of proposed bidders for the work includes in addition to Langley three companies from Richmond; one from Lynchburg; one from Charlottesville; one from Charleston, West Virginia; and one from Louisville, Kentucky. Also on the list, and designated as having been suggested by McKim, Mead, and White, were H. L. Cranford, of Washington, D.C.; Norcross Brothers, of Worcester, Massachusetts; and Probst Construction Co. and George A. Fuller and Co., both of New York City."[525]

The bids were opened with White, Thornton, and Echols in attendance, on May 22, 1896, and the building committee planned to meet the next day.[526] A single construction contract for the restoration work and the new construction was awarded to the lowest bidder, the Charles E. Langley Company, and the documents were signed on May 26. The Board of Visitors, at its meeting on June 17, ratified the building committee's decision to award the construction contract to Langley for $269,440. This amount exceeded the sum that had been authorized by the Visitors in March but was approved by the Board of Visitors on June 17, 1896.[527]

The Charles E. Langley Company had been highly recommended to Stanford White by architect Thomas Hastings, who told White that Langley was a "very intelligent mechanic," with "unusual judgment in matters of building." Carrère and Hastings had worked with Langley on the Richmond Hotel. Hastings strongly recommended using Langley as the general contractor for the University of Virginia work, believing him to be "perfectly responsible" and "very conscientious."[528]

In the spring and summer of 1896 the University entered into contracts with several companies for subcontracting work: C. C. Cocke of Charlottesville was engaged to supply 1 million common bricks at a cost of $6.50 per thousand bricks; Adams Bros. and Payne of Lynchburg was engaged to supply 1.5 million good quality, hard brick at a price of $5.50 per thousand; Edgar N. Cox of Charlottesville was contracted to provide all of the sand that would be required "in and about the construction and repairs of any and all buildings and improvements constructed or repaired" at the University for the price of $.55 per ton; and E. Dillon and Co. was contracted to provide the lime required in the construction and repairs at a price of $.33¼ per 200-pound barrel.[529]

The Reconstruction of the Rotunda Begins

Once the contracts were signed at the end of May 1896, work began at once, around the first of June. The work at the Rotunda took precedence over the construction of the new buildings, though all work was to proceed simultaneously: the basement lecture rooms in the Rotunda and the four terrace rooms were to be finished as soon as possible and be ready for use by the beginning of the next session, in the fall. It was hoped that all of the work would be completed "by, or very near, the close of the year 1896."[530] The contract specifically called for the lecture rooms and terraces to be completed by September 15, 1896, and the entire construction project—both the Rotunda and the new buildings—was to be completed on December 15 of that same year.[531]

At first, work on the Rotunda progressed vigorously. By June 24, 1896, work on reconstructing the dome had begun and was reportedly "going on rapidly."[532] On July 7 Skinner reported to White that work was "progressing well," but questions had arisen about the Rotunda's original foundation and the foundation to be constructed for the new north portico. Skinner wrote to White:

> Today we have found that the old foundations of the "Rotunda" building had no spreading foot or concrete foot: that the new piers and walls of the North Portico foundation sit below the bottom of the old brick work and that although the earth is very compact clay, to prevent a settlement all along the walls, some form of underpinning and bracing must be devised and put in place at once.[533]

Skinner observed that "considering the depth and width of the piers under the columns," it seemed to him that it was "really necessary to prevent the earth under the old walls from moving to make any settlement impossible." Skinner sought White's advice on the matter, but in the meantime, "in absence of better authority," Skinner suggested that the "inner piers" be "doubly shored" and the "middle piers" have "one shore each." He continued:

> Then, if the piers were drifted under about a foot and walls carried up under old work and wedged up, that with proper bonding of pins no settlement would be possible between pins. A wall, one foot thick

> and backed up with the concrete floor filling should I think hold the earth in place there. I will have the walls shored up while waiting for your instructions.[534]

On July 8 Skinner sent to White a sketch "showing the arrangement of the Guastavino dome ceiling lights and ceiling of the fourth gallery Restoration of the Rotunda," which had been approved by the building committee and the contractors "without 'extras.'" Skinner explained that the omission of the lower skylight ring previously shown on their drawings permitted a promenade around the base of the dome "as there was previous."[535]

As work progressed in July, Skinner discovered that the design for the main staircase in the Rotunda needed to be adjusted. "I have made a sketch of the new arrangement of the stairs for the Rotunda," he wrote to White on July 29, "which I think will be necessary owing to Guastavino's ribs (not his own) but the floor ribs coming deeper than you know in making your details of stairs and landing."[536] The following week Skinner appealed to White again on the matter of the stairs, writing that the stairs "do not work out well in connection with the stair well as drawn. Of course the stairs can be built as they are shown, but there is not good head room. I am having a model or rather a platform and some steps built to show how bad it is, and shall expect you to change something." Other than this problem, Skinner reported that the work was "going along fairly."[537]

The August 7, 1896, issue of the *Charlottesville Chronicle* reported on the progress of the construction in detail, noting that work was "progressing rapidly": the new floor in the Rotunda was almost complete and the outer shell of the dome was three-quarters done. The terraces and the connecting colonnades were also "well under way" and would "soon be ready for the fire-proof roofs and the modeling of the balustrade around the terraces." To support the planned fourth gallery, which ultimately was not built, the lower portion of the dome was strengthened by twenty piers, each five feet wide. The lower part of the dome was stepped following the arrangement used by Jefferson, now modified to contain windows and a promenade at the base of the dome.[538]

By mid-August Skinner was ready to address the question of the lighting and the tile for the Rotunda's dome. He wrote to White on August 11, requesting that White send to him a "set of plans of Rotunda showing Lighting outlets for gas and electric fixtures." Skinner also asked that White "consider design of copper tile" for the dome and that he "consider regrading and arranging garden and old retaining wall of terraces, Rotunda."[539] The following week Skinner sent White a telegram, urging him to send the lighting information immediately.[540]

Photographs dated August 27, 1896, show the Rotunda covered with scaffolding, with part of the dome reconstructed. Another photograph of the same date shows the condition of the north facade with the ghost marks of the Annex's connecting roof still visible. Work on the Rotunda reconstruction progressed slowly in the late summer and early fall of 1896. Guastavino worked on the outer dome that summer, but on September 28 Skinner reported that work on the Rotunda was "delayed for lack of iron for galleries." As a result the inner dome could not be started, although the outer dome was reportedly "all completed" at this time.[541] The plan for the fourth gallery was eventually abandoned but was still included as of early autumn 1896. In 1973, when the Rotunda was being reconstructed, stairs that had been erected to reach the annular room on the fourth gallery above the main floor were discovered. The unfinished stairs had evidently been walled up after the plan for the fourth-floor gallery was eliminated.[542]

Another Tragedy

On the morning of October 19, 1896, part of the concrete roof of the one-story terrace wing projecting from the Rotunda's northeast edge collapsed, killing two workmen and seriously injuring three others. The two men who were killed were George Tucker, a carpenter foreman, and Eugene Bunch, a carpenter. The other workers sustained head injuries, as well as cuts and broken bones; two were in the building when the roof came down and were buried in the debris, while the third man was on the roof at the time of the collapse and rode it down.[543] Tucker, a native of Greensboro, North Carolina, had moved to Charlottesville with his wife and four children specifically for the work at the University. Bunch, age 24, was unmarried and reportedly lived near the pharmaceutical laboratory on the University grounds at the time of the accident.[544]

The cause of the collapse was attributed to the premature removal of the interior scaffolding, before the concrete had hardened sufficiently. The *Richmond Times-Dispatch* explained that the roof "was constructed with steel girders, strengthened by steel cables passing through them. The span of the roof was about thirty feet, and was supported by brick walls." Though the cables did not break after the supports were removed, "the top of the walls was dragged down by the great weight of the cement, girders, and roof." Shortly before the collapse, Skinner had given an order to the foreman not to remove the scaffolding, "as he did not consider the walls dry enough," but the supports were, nonetheless, taken down.[545]

A coroner's jury assembled on the day of the accident to determine responsibility for the accident.[546] The investigation, which included extensive interviews of the injured men, continued over the following five days. It was determined that the supports were removed under the direction of one of the supervisors from the Manhattan Concrete Company, and, therefore, the company was responsible for the accident.[547]

On October 29 Skinner and Robert Robertson, who had replaced William H. Echols as the University's head of buildings and grounds, inspected the condition of the walls of the two new lecture rooms and reported their findings to White. They checked "all of the pins of the north walls, and would have done so upon the South walls," but the gangway and scaffolds prevented accurate measurement there. They presented the results of their findings to White:

> First: There are no signs of any settlements in any of the walls either in those parts when the roof fell in or at any other part of the same wing or in the other wing.
>
> Second: From observations made by transit upon all piers in the north walls, at these points in the height of each pier, one at 1st offset, 2nd at impost [?] of arch, 3rd just below frieze, it appears that the three piers from which the girders fell <u>lean</u> <u>out</u> one 0.065' and two 0.045'. The remaining piers in this wing (the East one) are as nearly vertical as we could measure. The piers in the West wing (now shored up), including even the one carrying the cracked girder, all lean out from 0.03' to 0.06' between the points measured, the pier carrying the cracked girder leaning 0.035. The extreme N.W. corner pier, i.e., the corner of the arcade having 0.04' and having no heavy load makes me think that all the other irregularities may be due original lack of plumbing of the walls by the masons.
>
> Third: The cracked girder in the West room shows a measured deflection of 0.07' at the center but as all the girders in this room have heavy coat of plaster upon them, in some cases covering ⅞" iron electric pipes and gas pipes, it is hard to determine to what extent they have deflected.[548]

In spite of all this, Skinner and Robertson concluded that there were no "sways or swags in any of the rest of the roof and no cracks in the walls."[549]

On October 31 W. C. N. Randolph wrote to building-committee member Armistead C. Gordon, indicating that he expected both White and McKim to be in Charlottesville on the following Thursday to present in person White's "report upon the accident to the roof of the Jefferson Building and their proposition for the rebuilding of the new roof."[550]

Part of White's response to the accident was to send his brother, Richard Mansfield White, who was apparently in need of a job, to Charlottesville to serve as an assistant to Skinner. White told his brother that Charlottesville was a pleasant city, that "there are pleasant people there," and that the experience would be "good training" for him. He advised his brother to be "as useful as [Skinner] would like you to be, but no more so." "In other words," he said, "you are to consider yourself not our representative, or the University's, but simply Mr. Skinner's aid[e]." White further warned his brother that he was "not to talk about things to the Contractors, the University authorities, or, in fact anybody. If there is any talking to do, leave that for Mr. Skinner. This is very important."[551]

Making Changes to the Plans and Fitting Up the Interior of the Rotunda

On October 24, 1896, while the investigation of the failed terrace roof continued, Theodore Skinner wrote to Stanford White inquiring whether the "concrete columns for the porticos of the Rotunda" could be made hollow, and, if so, "how large a core could be left out." Regarding the interior of the building, Skinner wondered what type of book stacks would be used and from whom should such estimates be obtained. Skinner mentioned the "Library Bureau" as one possibility and asked White if there were others from whom he should seek estimates.[552]

Meanwhile, concern developed about the structural integrity of the Rotunda itself. On October 28 a representative from the Charles E. Langley Company informed Skinner that because of "irregularity of the Rotunda walls which gives the deck beams unequal, and in some cases too small bearing," they suggested building an 8-inch-thick wall from the first floor to the third gallery. The estimate for this work was $498.[553] Skinner wrote to White the following day suggesting that they follow Langley's recommendations. "Langley's suggestion," Skinner wrote, "seems to me the best solution of many difficulties and the cheapest way to give beams their proper bearing, prevent staining of plastering, and make the Rotunda cylindrical." The walls of the Rotunda were found to be "*very* irregular" and varied "about 4" in and out from the true circle." Skinner requested that the change order for the new work be made immediately, as the gallery beams of the first and second stories were in place and Guastavino was "getting ready for the 3rd gallery."[554] Ultimately, "two new courses of brick were needed on the inner surface of the walls to make them circular and to reduce the diameter enough to support the galleries."[555]

As November opened, University officials worried about the pace of construction. According to the contract, the Rotunda was to be completed by December 15, but the collapse of the terrace roof, the resulting investigation, and the construction of the new brick interior wall had slowed work so that construction was behind schedule. At its November 9, 1896, meeting the building committee resolved that it was necessary for McKim, Mead and White to "press" Langley toward the completion of all the work called for in their contract "without additional cost to the University."[556] Skinner informed White the following day that the committee was increasingly anxious for work to move ahead rapidly. In the same letter Skinner wrote that he was "awaiting instructions and orders" from White "for the treatment of the north portico steps into the garden" and "for the covering of the dome," since White had "omitted tile and changed to copper ribs." Skinner reported that he was delaying Guastavino's work on the inner dome until White decided whether he wanted to "change the designs or not." Skinner requested that White send along "drawings of the steps and outer dome casing" to Charlottesville soon.[557]

On November 12 White sent Skinner a telegram promising a new plan for the dome. Skinner responded that he was "greatly interested to see the new scheme" and wondered whether White could arrange to "have the twenty skylights in the dome steps let light into the dome thro [*sic*] the panels." Skinner also told White that Langley and Co. demanded more money for the "inner skylight of the dome for the Rotunda." "Will your new scheme alter this?" he queried White. If so, Skinner argued, the "work on present lines" would have to be stopped. Skinner questioned whether Langley would need to submit an estimate for this new work before making the skylights, or could this be adjusted later.[558]

Work proceeded slowly through the end of November and progress often hinged on White's readiness or ability to make decisions about both small and large questions from afar. On November 28 Skinner sent White the following update, pressing White to send his new plans for the dome and to make the decisions that would allow the project to move forward:

> Before the work of the wing rooms and basement rooms of the Rotunda can be finished, Langley & Co. desire that the gas and electric fixtures should be set, as otherwise the dirty work of making connections will spoil the finish.
>
> The building committee wish you to make a selection of fixtures for these rooms and also for the Rotunda proper, and procure estimates for the same in place, keeping in mind the limited means of the fund in hand. They want good fixtures in keeping with the building, but as simple and low priced as you consider fit. It is necessary that this matter be taken up immediately in order to forward the work.

> The building committee meets here on Friday next the 4th of December so if you are going to submit drawings for the new scheme of the Dome, they should be here by noon of that date or wait one month for the next meeting for approval.
>
> Will you kindly let me know when to expect drawings for this proposed change, or how soon I can start work on the old lines if you have not decided to make the change in design.[559]

White promptly responded to Skinner's request, promising him new drawings for the garden and for the dome. "I am going to have another inner core built, with an air space between," White informed Skinner, "but I do not wish to order the work ahead until the Building Committee approve, and am, therefore, making a careful drawing." His revised plan called for the inner dome to spring from the main shell of the building, enlarging the interior and decreasing the curvature, thus eliminating the "silo-like" effect that would have been created by the earlier plan. Tension bands were installed at the inner dome's base to assure that no spreading load was added to the outer walls.[560] White elaborated on the finish of the inner dome: "My intention is to have a plain white plaster dome, but at the top I would like, if there is no objection, to use the eagle and stars in the hall ceiling at Monticello as a band or ornament around the skylight."[561] The coffering and rosettes that White had earlier designed for the inner surface of the dome were done away with in favor of a smooth plaster surface. White's new treatment for the dome, "with a slight change in the porticos," was approved by the building committee at its December 4 meeting.[562] White's design has survived only in sketch form, with details of the decorations but almost no detail of the structure.[563] Work on the new inner dome was carried out during the winter of 1896–1897.

By the end of November 1896, Skinner was evidently frustrated by his lack of contact with White, having himself been so long in Virginia and so far from New York. On November 29 Skinner implored William Haase in the New York office to "call Mr. White's attention to the necessity of deciding about the gas and electric fixtures for the Rotunda immediately and get him to make selections and estimates." Skinner asked Haase to also get White "to locate the four fine light fixtures specified to be on each side" of the entrances to the Rotunda. Skinner thought that the fixtures should be hung "quite high above the portico floors, and possibly they would make the best effect if suspended near the ceilings." Still, he needed White's approval and pressed Haase to "please find out about these locations *at once* and let me know locations *exactly*, as the rising is being done rapidly now and delay will make it extra expensive to locate them.[564]

In relaying news to White that the building committee had accepted White's changes, Skinner queried him on the treatment of the dome. "Will you not," he wrote, "consider penetrating the new dome for the twenty skylights already in place in the outer dome? If not I shall have them removed and covered over flat with copper." Skinner promised that he would send White what plans he had of the Rotunda lighting outlets, noting that these plans had "changed somewhat by the changes in rooms" and adding that "the committee again recommended simplicity and cheapness to my attention." Skinner reported on December 5 that work was "going on well."[565] A fire-insurance map dated December 1896 indicates that the structure was then "being finished" and that the terrace wings, connecting arcades, and south portico and steps were in place at that time.[566]

On the following day, December 6, Skinner wrote Haase that he was returning by mail to the New York office the "drawings for the new dome of the Rotunda, approved by the committee" in Charlottesville. However, the building committee also insisted that further alterations be made: they requested that the "ceiling of the south porch be lowered from the position shown" on the "original drawings and as in Jefferson's time to a point at least as low as the top of the architrave shown and that a door be cut through from the 3rd gallery into the room thus formed." "You are to light same through flat lights in roof," Skinner instructed Haase, and the same was to be done in the north portico. Skinner continued:

> My idea would be to drop the ceiling as low as possible, even to top of columns, by making a beam ceiling of it—quite deeply coffered. You see we will lose the copper cornice any way [*sic*], why not use some in ornamenting coffers with rosettes . . . Please ask Mr. White about this at once, and have it decided as

> it will modify Guastavino's iron work somewhat, and let me have also prints of the new drawings, and any new details for balustrade, cornices, and [paneling?] work around gallery just as soon as you can.[567]

Langley and Co. signed a contract with the National Mosaic Company on December 8, 1896, to lay the mosaic floors in the Rotunda. Antonio Patrizios, president of National Mosaic, met with White two days later, at which time White "verbally approved the sketch designs" and recommended that "square White Carrara Stones" be used "in the body of the floor, but that some changes would be made in the borders." By January 12, 1897, Patrizios was awaiting from White the drawings indicating the changes.[568] By now, the December 15 deadline for completion of all projects was missed by nearly a month.

On January 15, 1897, Langley and Co. submitted a change-order proposal to McKim, Mead and White for $676.35 for the Rotunda's new windows and doors:

5 extra inside doors 3'2 x 7'6 x 1¾, jambs trim hardware and painting complete	114.25
8 extra inside doors 3'2 x 7'6 x 1¾, jambs trim transoms hardware complete	25.60
6 prs. Sash 3'5½ x 6'10⅝ cir. 3 sections with frames trim, shutters, aprons, stools weights, etc. complete	215.70
26 sq. yards extra 6" part. Wire lath plaster 2 sides	72.80
1 Fire proof door	22.00
	$676.35[569]

On January 19 Langley submitted another proposal to McKim, Mead and White for the installation of "granolithic steps" at the south portico based on an estimate made by the Manhattan Concrete Company for a sum of $5,500.[570]

By mid-January 1897 construction had advanced to the point where a question about the lighting had to be settled immediately. Skinner wrote to White indicating that the specifications called for "165 decorative lamps in the dome." "I have always understood you to want," Skinner wrote, "in one group or circle, a crown of lights in fact. Am I right?" He pressed White to decide on the location of the lamps "whether on the bottom of decorated member, or on the facia, or both" or to determine "some other place for those lights." "The wiring must be done now, at once," Skinner informed White, "since the two domes are too close together to admit of working between them." Skinner asked White to specify whether he wanted to use gas fixtures in addition to electric.[571]

At the end of January Skinner was eager to address the design of the entrance to the Rotunda, as well as other design features. He informed Haase that the "entrance vestibule" needed to be "considered at once" and requested that drawings be sent to him. The matter of "how it shall be *cut off*—and what shall be done to the *floor, walls,* and *ceiling*" had to be decided immediately. "There are several chases which must be *get at able*—and are specified covered with paneled boards—they will look queer unless the whole wall space is paneled too—please send me drawing of this treatment as specification as to what wood to use."[572] Skinner also instructed Haase to call to White's attention several "important matters" regarding the Rotunda and asked Haase to do the following:

> Make drawing for wood panel to go between the jambs, head, and floor of 1st gallery—This panel will only show from below and outside, the book cases will run all around wall on this gallery
> Make drawings for grilles, for all alcoves on ground floor
> Make F.S.D. [full size details] of names for frieze in main cornice, list of which I enclose
> Select hardware for front and rear doors, and for 3rd gallery cases.
> Select designs for electric fixtures, and gas fixtures, and get estimates, which then send to me to submit to the committee.[573]

On February 15, 1897, Skinner asked Haase to finalize "the 3rd gallery details in short order." With his letter he enclosed a "sketch plan and section of the third gallery floor and of inside the dome, showing the radius, height of [center], and position and size of doorway into stairs and stacks."[574]

Work on the interior progressed, and by the second week of March 1897 the plasterers were awaiting details from New York on how to finish the interior of the dome. "Please send me full sized details of the stars, clouds and rays of light around the Eagles," Skinner wrote White. Skinner also requested details of the "new treatment of the pedestals and balustrade around the top gallery" and of the "capital letters for the names" that were to encircle the entablature.[575]

An exterior photograph of the south portico shows the Rotunda very much a construction site in late March 1897. Some of the column capitals on the south portico columns are in place, though uncarved, and the balusters lay in the foreground awaiting installation on the terraces. An undated photograph shows a similar scene on the north side of the Rotunda, where the capitals are in place uncarved and the foreground is piled with construction debris.

Charles E. Langley and Co. Declares Bankruptcy

During the winter of 1897 it was becoming clear that Langley and Company was struggling to carry out its work under the bid of $269,440 that the University had accepted.[576] Theodore Skinner had approved Langley's application for payment of its eighth installment on the Rotunda contract, but Skinner was concerned about Langley's financial position and thought that Langley's request for funds was high and "simply an attempt to get a hold of as much money as possible as soon as they can." "The building will be completed in about two or three months except some carving which will take longer, so that the next monthly payments will have to be very small," he wrote. The contractors evidently needed cash, Skinner continued, "as they have limited capital." However, with the funds set aside in the reserve, Skinner still thought the "University is safe."[577]

At the end of March 1897 Skinner told White that he had "finally obtained from Langley & Co. the data" that White had wanted about credits and estimated costs of change orders. The difficulty in obtaining information may have been a harbinger of the construction company's financial difficulties.[578] Rector W. C. N. Randolph called a special meeting of the Board of Visitors' executive committee in early April to discuss the problem.[579] A few days later Skinner told White that no action had been taken by the committee "with reference to the possible stopping or omitting of any of the work." However, the executive committee had passed a resolution requesting that Skinner present to them "as soon as possible, a complete report, stating the condition of the contract, with the amounts necessary to complete each building to date."[580] Randolph had hoped that it would still be possible to complete the "whole work as designed" but feared that switching contractors at this late date would make the project prohibitively expensive.[581]

Amid the discord of trying to solve problems with Langley and Co., *Corks and Curls*, the student yearbook, printed an account of the status of construction as of early April 1897, praising the Rotunda's completed dome as "more graceful to our eyes in recent years" and noting that the columns of the two porticos were then "crowned with capitals of Italian marble, ready for the hand of the carver." The oval lecture rooms in the basement and the "old terrace rooms" were already being used for classes at that time, but the library itself was incomplete, still wanting decorative finishes and furniture. The new terrace rooms were "already under roof," and the connecting colonnades were "practically finished."[582]

The *Corks and Curls* report also described the "several important modifications" that had been introduced into the Rotunda's reconstructed interior: "The inner shell of the dome . . . has been thrown back to abut against the building wall, restoring to the domed interior its full amplitude. The light iron rail of the gallery has been replaced by an artificial stone parapet, and the piers of this will serve as pedestals for a circle of life-size statues (casts from the antique) overlooking the space below." The inner surface of the dome was not yet plastered or painted the planned sky blue with the "twelve soaring eagles, their beaks and talons picked out in gold." "The space between the circle of eagles and the central light will be frescoed to represent floating clouds," the yearbook reported, "fading into the clear vision of the sky."[583]

Reports furnished by McKim, Mead and White for the April 23, 1897, meeting of the Board of Visitors indicate that there was "some nine thousand dollars in dispute" over extras for all projects between Langley and Company and the architects. In a letter written a week before this meeting, White told Randolph that he felt that the contractors were being dealt with too leniently, but, he noted, "they unquestionably took the work at very low figures, and if it had not been for them the University would not have been able to have built its buildings under the appropriation." White believed that it was in the best interests of the building project and the University as a whole to help Langley and Co. "along as far as possible" but without allowing "them too much latitude."[584]

White had also pointed out to Randolph the "very difficult position" that Skinner had been in. He still enjoyed the firm's full confidence, but in executing the firm's orders, Skinner had "often incurred the disfavor of the Contractors." White asked Randolph to help Skinner "by impressing upon Langley & Co. that they must carry out his orders, and do no work without his assent as our representative." In spite of the tension, a few days before the April 23 meeting of the Visitors, Skinner reported that work was "now progressing favorably."[585]

White traveled to Charlottesville to meet with Randolph before the Board meeting. At the meeting the Board of Visitors noted that Langley claimed that the amount needed to complete the Rotunda and the new buildings was $92,518.55 but that the amount included "certain items of Extra work" which were "in dispute and not conceded" and that the "amount actually necessary to complete the work" would not exceed $89,438.59. The Board of Visitors resolved that until the buildings were completed and accepted by the University, "warrants shall be made only for current pay rolls and to other parties doing work and furnishing materials for work hereafter done and materials hereafter furnished."[586] The discussions leading up to these decisions were not recorded in the minutes, but it seems evident that the Board was losing confidence in the general contractor.

Before long the situation had deteriorated further. Randolph wrote White a strongly worded letter on May 3, notifying him that Langley's subcontractors had served the University with notices to stop making payments to Langley and Company and stating that the University was unable to pay Langley and Company "any more money and this will stop their work." The next step, Randolph wrote, was for the Board of Visitors to act through McKim, Mead and White, as was stipulated in the contract, "in taking possession of the work and material and completing the buildings." He told White it was "absolutely necessary" for White to attend the meeting of the Board the next week and also to "consider further the question of reducing the cost and leaving out part of the work provided for in the contract."[587]

Meanwhile, Charles Langley told White on May 4 that he would be meeting with representatives of the University to "go over the whole ground" and would be "willing to consent to anything in reason."[588] Piccirilli Brothers submitted a bill to the University on May 3, indicating that Langley and Company had paid them $4,000 to date. Piccirilli had delivered to the University twenty curved sills at $15 each and ten straight sills at $10 each, as well as ten Corinthian bases and twenty Corinthian capitals (sixteen for columns and four for pilasters, with the abacus and necking complete) at a cost of $400 for each capital. The capitals, however, were not yet carved, and the total price for the completed capitals would be $840 each.[589]

On May 12 Piccirilli Brothers submitted a second bill for the following:

30 sills on the Rotunda	$400
10 Bases on North Portico of Rotunda	
$150 each	$1500
20 Caps on Portico of Rotunda	
Material & Labor $400 each	$8000
To finishing same caps $440 each	$8800[590]

On May 20, 1897, Piccirilli wrote to McKim, Mead and White that estimated cost for "finishing all work contracted" was $8,800; the capitals were left uncarved for the time being.[591]

The Board of Visitors' executive committee met on May 14, 1897, to review the situation, and the subcontractors continued the work until May 15. However, the subcontractors and vendors had served notices to the University against Langley and Company for $43,000, and state law forbade any further payments to them. Langley and Company was unable to meet its payroll on May 15, leaving 150 laborers, who had not been paid since April 1, "upon the grounds without means of subsistence or of getting away." Langley and Company offered "to surrender their contract and tools and materials" if the University would advance $4,500 for the overdue payrolls. The committee accepted this offer, believing that in consideration of the "hopeless insolvency" of the contractors, the agreement was in the "best interests of the University." In accordance with the contract, the committee then executed agreements with two of the subcontractors, including the Guastavino firm for the "completion of certain tile roofing and flooring which will amount to probably $1,100." It is unclear from the records whether this work was on the Rotunda or on a portion of the new buildings at the foot of the Lawn.[592]

The executive committee recommended that because the Rotunda was the "most nearly finished of any of the buildings," it should be "pressed to completion first." With the old crew of roughly 150 workers cut by half, work continued.[593] As of May 15, 1897, a total of $85,576.98 had been spent on the restoration of the Rotunda.[594]

A New Contractor Is Chosen

At the end of May 1897, as the University's relationship with Langley and Company deteriorated, Ross F. Tucker of the Manhattan Concrete Company wrote to McKim, Mead and White, addressing his firm's role in the University's construction project. "Our one object in this matter is to proceed and execute our work with all speed and to deliver the same in a completed and satisfactory condition as soon as possible," Tucker explained. "We hope to meet you and the University on fair and liberal grounds," he continued, "in order that they may be put into the possession and enjoyment of their new buildings as soon as circumstances permit."[595]

With the wish that his firm be able to continue the work, Tucker highlighted some problems that he and his workers encountered in the reconstruction of the Rotunda. "You will understand that with the assignment of the principal contractors went all responsibility in the condition of the lecture room roofs of the Rotunda," he pointed out; the "water proofing of the old roofs was so poorly done that the rooms are useless."[596] Tucker maintained that the leaking terrace roofs were not the fault of the Manhattan Concrete Company:

> Everything has been done in order to discover the cause for these leaks without success. At my own expense in addition to all the damp-proofing and other work specified by the architect, I covered all of the vestibule roofs with tin and flashed the balustrade to the same so that there is no possibility for any leak to occur through the terrace roof. The only way in which water can possibly get in is from the outside of the balustrade. The balustrade is placed directly over the wall and it is possible that water is forced in during storms from the outside, under the base of the balustrade. This has been frequently caulked and will probably be stopped altogether when the cement work is painted. This portion of the work was not done under my contract and I am sure that no part of the work done by me.[597]

Tucker also reported leaks in the ceiling of the faculty room, chairman's office, proctor's office, and the Board of Visitors' room, as well as a leak in the steam pipe in the chairman's office. The pipe had been installed by Langley and Company.

The variation in the color of the brick used in the facades was also unacceptable Tucker indicated that all of the brickwork had been "gone over with acid and made as uniform as possible" but thought the bricks would still need to be painted to create a uniform appearance. Furthermore, there were problems with the columns. Tucker reported that Theodore Skinner, along with Tucker's own superintendents and the subcontractors who did the work, all "emphatically state that no lime mortar was used in this work." Tucker continued:

> I have already explained that I did all of this work as did the subcontractor, under protest. The University peremptorily ordered the columns to be completed before they had an opportunity to dry. The resolutions of the Committee are on record, as are my protests. Mr. Skinner notified the architects of the circumstances at the time. Under the circumstances it seems impossible for me to hold the

> subcontractors for pushing the work to completion and putting steam into the building before the work had an opportunity to dry. The fault would have been the same even though any other material had been used, which I am assured is not the case.[598]

Even considering all of these problems, Ross Tucker aimed to have at least the exterior of the Rotunda finished by June 15. He indicated that the "new west roof" would be "reinforced by additional iron work of an expensive kind" and that all work would be done in the "best manner and as speedily as possible."[599]

Tucker, a college friend of Skinner, was also known to White, since he had worked at Box Hill, White's Long Island estate.[600] On June 4, 1897, Tucker wrote to William Rutherford Mead, White's partner, expressing interest in taking over the work at the Rotunda. He planned to "leave for Virginia early next week to take up the matter of the proposition embodying the settlement of the claims of the sub-contractors and the completion of the work on the buildings." He hoped "to be able to make a proposition" to McKim, Mead and White and to the University, which would "do away with litigation and its endless delays and enable" the University to "complete the buildings in the shortest time possible."[601]

Meanwhile, W. H. Hoffman, an employee from McKim, Mead and White's New York office, had arrived in Charlottesville and on June 6 filed a report with Mead. Hoffman had already toured the buildings with Skinner and decided that in order to re-bid the remaining work, new specifications would be needed; they would be referenced to the original specifications and would identify the "various materials on the site that could be used." Not being able to find a suitable typist in Charlottesville, Hoffman requested that a typist from the firm's New York office be sent down, along with "his typewriter, plenty of specification paper, transfer paper, binding sheets & tape to bind work," along with his shorthand book. Hoffman understood that there would be four bidders in addition to Tucker, and he told Mead that he was "becoming acquainted with the work and specifying its completion at the same time which is difficult and keeps me over anxious."[602] Mead apparently went to Charlottesville for the meeting of the Board of Visitors held on June 15; White was spending at least part of the summer in the West.[603]

At that meeting the Board of Visitors authorized the executive committee to proceed with the construction and restoration work by entering into "all such arrangements and contracts as they may deem proper for the completion of the work and may make such modifications in the plans and specifications of the architects as they may deem judicious." The committee was authorized to award new contracts for all of the uncompleted work or to contract for part of it and hire day laborers to finish the rest of it.[604]

The stress of the situation was affecting Skinner's health. He wrote Mead two days after the June meeting of the Board of Visitors that when he had accepted the post in Charlottesville "for the sake of getting away from the office, more or less on account of my health," he had expected to stay only a year. The work proved "much more complicated" and caused him "much more worry" than he had had in his former job in New York, and he had "not gotten neither the rest nor the change" that he had expected. Nevertheless, he was determined to "weather the storm" and did not want to be replaced. Mead replied with a statement of confidence in Skinner's work.[605]

Meanwhile, Hoffman remained in Charlottesville to help with the situation. On June 19 he met with a committee of the Board. Hoffman filed a report about the meeting with Mead, noting that Randolph had been "very pleasant" to him and seemed to accept Hoffman's position that the "work was of excellent character and of ample quantity for the small amount of money they had expended on it." Hoffman had told Armistead Gordon, another committee member, that there was "no doubt" that all of the buildings would be ready for the students when they returned on September 15, although "there might be some work still to do, but it could be arranged that it need not interfere with the use of the buildings by the University." Ross Tucker had also been at the meeting, and the committee had questioned him about subcontractors.[606]

Shortly after the June 15 Board of Visitors' meeting, Skinner had been told by a member of the executive committee that if the architects could have their materials ready by June 28, the University would move ahead quickly to issue new contracts.[607] On June 22 Hoffman reported to William Mead in New York that he had completed the new specifications for the Rotunda that afternoon.[608]

By the summer of 1897 the stress of managing the work at the University was affecting Skinner's health. He wrote Mead two days after the June 15 meeting of the Board of Visitors that he had accepted the post in Charlottesville "for the sake of getting away from the office, more or less on account of my health," and had expected to stay only a year. The work proved "much more complicated" and caused him "much more worry" than he had had in his former job in New York, and he had "not gotten either the rest nor the change" that he had expected. Nevertheless, he was determined to "weather the storm" and did not want to be replaced. Mead replied with a statement of confidence in Skinner's work.[609]

On July 20, 1897, Ross F. Tucker signed a contract with the University of Virginia to serve as the general contractor for the completion of the work, stipulating that he would carry out all "Carpenter, Mason, Plastering, Painting, Plumbing, Heating & Ventilating, Gas fitting, Cement, Electrical, Hardwood, Iron and other work necessary to the completion of the Rotunda" and the new buildings. Under the new contract all work on the Rotunda and its terraces was to be completed by November 15, 1897, while all work on the new buildings was to be finished by January 1, 1898. Tucker's price, accepted by the University, for completing all of the work, was $99,956.[610]

A few days before signing the contract with Tucker, the University had contracted with W. J. Whitehurst for "certain sash, doors, frames, mouldings, glazing, wood work and other like materials"; he would be paid directly for these elements.[611] Some other contractors also submitted proposals to McKim, Mead and White in mid-July, but it is not clear whether they were accepted or combined with the Tucker contract. Nevertheless, their proposals may have indicated work that still needed to be done. For instance, the Southern Electric Company, of Baltimore, proposed to run "tubing to 5 outlets for back porch lights, to 1 outlet for front porch light; to 4 ceiling outlets in basement for First Floor; to 8 floor boxes on First Floor; to 20 outlets for desks on Third Gallery; to 2 outlets for clock face rooms" in the Rotunda. Southern further proposed to place receptacles for 170 lights around the dome.[612] W. H. Spelman and Co., of New York City, submitted a price of $1,315 for the completion of plumbing and gas fittings in the Rotunda.[613] Sculptors J. Franklin Whitman and Company of Philadelphia submitted a price of $3,900 on July 15 for carving the Rotunda's Corinthian capitals but then realized that they had made an error in measuring the capitals on a trip to Charlottesville and revised the price on July 22 to $6,500.[614] Ultimately, the work for carving the Rotunda's capitals went to the firm of Pempeo Coppini and John Grignola, of New York City, after an alumnus, John Skelton Williams of Richmond, offered to have the carving undertaken in honor of his father. Grignola completed the work in situ in 1902.[615]

Ross Tucker submitted bills for work completed on the first day of each month from August through November of 1897. The bills show that "granolithic moulds, models, and column work" were completed for $5,100 in July. Excavation, installation of heating, carpentry, plastering, and marble, iron, and electrical work were done in August for a total of $20,100.08. Similar work plus the installation of the elevator was carried out in September for $18,422.64. More of the same type of work was done in October for $21,447. It is not clear, however, what of this work was done at the Rotunda and what was done at the three new buildings at the south end of the Lawn.[616]

On September 30, 1897, Skinner reported to the office in New York that the contractors were "about to finish the shafts of the columns inside the Rotunda." He suggested that they finish the columns with a "light grey rough cast cement," rather than what had been specified, because, he argued, the columns would be "less easily soiled and would be equally durable." Moreover, Skinner offered the argument that the "contrast in color between the white bases, caps and cornices and the gray shafts would be very pleasing." "The rough surfaces," he added "would not tempt the students to write all over them as do the smooth white finishes."[617]

On December 10, 1897, Stanford White wrote to Randolph, impressing upon him that among the "most important matters to be carried out as soon as possible" were "the painting white the outside of the roof of the Rotunda, the painting of the interior of the dome and ceilings of the porches of the Rotunda," and "equalizing the color of the brickwork of the Rotunda," as well as "cutting of the caps and placing of the statues in the Rotunda."[618] On that same day the Board of

Visitors authorized painting the outside of the Rotunda dome white and having the inside of the dome "painted or colored and the Library galleries painted white."[619] Also at this meeting the Visitors paid tribute to Randolph, who was resigning as Rector of the University and as chairman of the building committee, for reasons of poor health. Armistead Gordon was elected Rector in his place.[620]

Correspondence dating to the end of December 1897 indicates that the work at the University was winding down.[621] Skinner left Charlottesville in the beginning of December on account of his stress-induced health problems. On December 29 Richard White, still on location and now overseeing the last of the work for McKim, Mead and White, wrote to his brother that people were approaching him about certain small matters that needed correction both at the new buildings and at the Rotunda and about the final acceptance of the work. He asked whether Stanford wanted him "to attend and to decide as to the lesser matters."[622] Tucker wrote to Richard White on the same day, asking him to sign a requisition for the balance due on his contract, less the 15 percent reserve. He hoped that "ere the week is over you can certify that the several buildings are complete and broom clean." Tucker complained that "University people and others over whom I have no control are tracking dirt into the buildings after I have cleaned them up, and are taking possession of rooms."[623]

Richard White communicated regularly with the New York Office. On January 5, 1898, he notified his brother that the executive committee of the Board of Visitors was planning to inspect the buildings prior to their formal acceptance. The contractors had "turned over the keys" to Richard White, and he, in turn, had turned them over to the Proctor.[624] The next day Tucker wrote McKim, Mead and White that the work was "ready for inspection and delivery to the owners."[625] Stanford White apparently decided to tour the buildings himself and not rely on his brother's offer to show the Visitors through the final inspection.[626]

On February 26 Richard White reported to his brother that scaffolding was up in the Rotunda, evidently for the painting of the dome, and the workmen were awaiting the "barrel of color which you were to have sent here from New York."[627]

Finishing the Work

On February 28, 1898, new members were elected to the Board of Visitors, and at their March 17 and 18 meeting the Visitors spent time closing out the accounts for the work on the Rotunda and the new buildings. The Board extended its gratitude to McKim, Mead and White, thanking the firm for its "personal interest and zeal in carrying out the work" and the "masterly way" in which it "offered a striking solution of practical difficulties in a manner at once harmonious with but expansive of the original design and preserved the distinctly classic features of the University buildings." To Stanford White the Board specifically extended its gratitude for his "unceasing labors and the unreserved devotion of his single abilities to the accomplishment of the best and noblest results." The Board boasted that, as completed, the new construction "greatly increased the efficiency and attractions of the University" and "made it a more splendid monument to its great founder, Thomas Jefferson."[628]

Theodore Skinner was back in Charlottesville for the meeting of the Board of Visitors on March 17 and 18, 1898. He had gone to Paris after leaving Charlottesville, but when he found himself "unable to work" there, physicians told him to return home and rest for six months. Rather than resting, though, he again traveled to Charlottesville at Stanford White's direction to represent McKim, Mead and White in settling the final arrangements for the University buildings. Richard White was still there, too, but was suffering from a sprained ankle.[629]

On March 21, 1898, Thomas H. Carter, now Proctor and Superintendent of Buildings and Grounds, submitted a report to McKim, Mead and White, outlining the various minor problems with the new buildings that needed to be rectified before the University would accept them. Regarding the Rotunda, Carter noted that there were "cracks and defects in the granolithic cement of the balustrade and steps of terraces," as well as leaks in the "large cellar under the platform connecting the north steps of the Rotunda" and in the "pump room under the north front of the Rotunda."[630] Carter also inquired about the installation of a pipe under the urinals in the Rotunda lavatories.[631]

While in Charlottesville Skinner reviewed Carter's observations and wrote to White on March 25 that the University was arranging for the work to be repaired and a "settlement of the Tucker contracts" was then "in sight." Skinner, however, did not elaborate on these matters, as he was bound for New York and told White that they could discuss it in detail in person.[632]

The Dedicatory Celebrations

The new buildings and the Rotunda were dedicated at the commencement ceremonies held in the new auditorium of Cabell Hall on June 14, 1898. The ceremony was attended by several hundred people, including Virginia Governor James Hodge Tyler. The following account of the event was published in the August 1898 issue of the *Alumni Bulletin*:

> Pit, dress circle, balcony and gallery were filled, probably four-fifths of the seats being occupied by ladies, whose pretty costumes gave a color to the scene and whose lively chatter swelled into a steady buzz before the Rev. Dr. Randolph McKim invoked divine blessing and thus began the transactions of the day. On the rostrum sat some two hundred men, a distinguished gathering, with Governor Tyler and his staff at the centre or grouped about it. Here were a bishop, a Senator of the United States and many distinguished alumni and guests. When Mr. Wu, the Chinese minister, and Mr. Chow-Iss-Chi, the second secretary of the Chinese legation, and Mr. M. Y. Chung came in and took their seats a Chinese flag (black dragon on a yellow field) faced them, draped on the wall behind those on the rostrum.
>
> Dr. McKim's prayer was followed by the hymn "Rise, Crowned with Light," sung finely by the students.
>
> The Hon. Armistead C. Gordon, of Staunton, read the dedication poem. The audience during the reading was very responsive, and at its close some one on the dress circle proposed "three cheers for our poet," which were given enthusiastically.
>
> Rev. Dr. T. M. Carson, rector of St. Paul's Episcopal Church, Lynchburg, then delivered an address, presenting the physical laboratory building, the gift of Mr. Charles B. Rouss, of New York.
>
> Then came the rollicking college song, "Orange and Blue," which set everybody to applauding, which was kept up until other songs were given.
>
> This was followed by an address by Hon. James C. Carter, of New York.[633]

That evening a large reception was held in the Rotunda.[634] The northwest terrace of the Rotunda, the YMCA hall, had been dedicated separately, two days earlier, on June 12, 1898.[635]

Though the buildings had been handed over to the University, some problems with the construction lingered after the dedication. In late July Thomas Carter wrote to McKim, Mead and White, requesting that the firm take the "necessary action in regard to the Rotunda columns." "I wish very much that Mr. Stanford White could see them in person," Carter wrote. "The upper part of the columns for six or eight feet are more solid than the lower, and might possibly be retained, but," he wrote, "I am unable to see that a complete and uniform job could be made of the columns without taking off the cement from the cores and putting it in anew."[636]

White evidently passed this information along to Theodore Skinner, who was, at the time, convalescing in Liberty, Maine, "lying off," as he himself put it on July 31, 1898, and "trying to get on my feet again" after his stressful year-and-a-half-long stint in Charlottesville. Though he had not yet fully regained his health, Skinner offered his services to White once more, writing that he was ready to help White in any way that he could in order to get the situation at the University settled once and for all.[637]

Regarding the Rotunda's columns, Skinner wrote that they "were finished in a hurry and at the urgent order of Mr. Robertson," superintendent of buildings and grounds, but that as far as he knew, the columns were done "exactly in accordance with the revised specifications written by Mr. Hoffman," of McKim, Mead and White. Skinner told White that

Gilman Brothers, a subcontractor for Ross F. Tucker, "prophesied that these columns would do just as they have done, i.e., crack and stain if the specifications were followed." Skinner said that he made a special trip to New York to consult with Charles McKim on the matter, as White was away in Europe when the question of the columns came up, but that McKim would not "take the responsibility of changing" White's specifications and instructed Skinner to see that they were carried out as written.[638]

The following description appeared in the August 1898 issue of the *Alumni Bulletin*: "At the northern end [of the Lawn] is the rotunda, a building in the Corinthian style, modeled from the Pantheon in Rome. Its base consists of four terraced wings united at the eastern and western ends by colonnades, and covered by a flat roof, forming, with the north and south porticos, a continuous promenade around the building. This promenade, guarded by its handsome parapet, is a beautiful feature of the remodeled structure."[639] The anonymous author of the article then turned to the interior of the restored building:

> From the centre of the base rises the rotunda itself, circular in plan with its shapely spherical dome and its superb Corinthian porticos. The interior is a single room from the portico level up, devoted entirely to the uses of the library. In addition to the space on the main floor, there are three galleries, the topmost at the springing of the dome being carried by a peristyle of twenty Corinthian columns.
>
> The room is finished in white, except the ceiling, which is sky blue, picked out with stars. The decoration about the central light is a circle of eagles seeming to soar downward through the blue ether. The base of the building contains in convenient proximity the offices of administration, the law lecture rooms, the law library and the assembly hall of the Young Men's Christian Association.[640]

In the 1898 edition of *Corks and Curls*, Stanford White wrote that "If the new buildings are successful, it is mainly due to the fact that the architects have rigidly endeavored to carry out and complete the original scheme as laid down by Jefferson, and that in doing so, the work has been to them a work of love." White concluded: "The State of Virginia may well feel that in the graceful proportions of the Rotunda and of the old buildings, in the gleaming white colonnades with their classic temples embowered in the avenues of trees, and in its beautiful College lawn under its soft skies, that it possesses, if not the finest, or richest, or most imposing, at least the most exquisite and perfect group of collegiate buildings in the world."[641]

An 1899 description of the Rotunda states that the interior of the restored building "is of nobler proportions than before, as there are but two stories, the second occupying more than two-thirds of the entire height, rising from the level of the floor of the portico to the dome, making it the most notable and imposing university library hall in the world." The author of this account, University librarian John S. Patton, went on to describe the new north facade of the building and portico, comparing it to the Annex:

> The illustration of the north front of the rotunda shows that a handsome esplanade has taken the place of the much criticized annex of former days, a modern architectural excrescence impossible of classification here, which those who care to see the orders of architecture unmixed will be glad has not been restored, especially as its absence gives room for a portico after the model of that which looks upon the lawn, though subordinate to it. It cannot be denied that the rotunda appears of less majestic height because of the flanking arcades, corridors, and wings which make it the centre of a quadrangle, but it is equally undeniable that this loss is in the interest of a happy effect, due to a closer correspondence with its surroundings. Everybody who is at all familiar with the arcades remembers how perfectly they accord with the general architectural plan outlined and in part inaugurated by Mr. Jefferson. These arcades have been extended by covered colonnades to the northern line of the rotunda, and united with it by two low wings on each side. In these wings are the office of administration, the law lecture rooms, and the hall of the Young Men's Christian Association. As the roofs of these colonnades and wings are covered

with cement pavements, they, together with the floors of the porticos, form a quadrangular promenade around the entire building.[642]

A final calculation revealed that the restoration of the Rotunda ultimately cost $109,058.[643]

A New Century

A September 1902 Sanborn fire-insurance map depicts the reconstructed Rotunda with its north and south porticos and four single-story terrace wings projecting from each side of the porticos. The wings are connected by single-story colonnades. The map indicates that the north wings were then used as classrooms, and the south wings were used as offices. A similar map made five years later, in October 1907, shows that the north wings continued to be used as classrooms but that the southeast wing had been converted from office space to classrooms. The southwest terrace wing continued to be used for office space. The skylight in the Rotunda roof is indicated on the map. Written over the dome is the word "Library," and "Fire Proof Construction" is inscribed over the entire structure. A Sanborn map made in November 1913 shows no changes since 1907.[644]

The first few decades of the twentieth century were quiet ones for the Rotunda. What work was done pertained to the landscaping, and there is no record of any major changes or repairs made to the building's interior. A 1920 Sanborn map indicates that all four of the terraces were by this time being used as classrooms, and this map also indicates that there is a basement level beneath the north terraces. Written next to the Rotunda on the map is the following descriptive note: "(Built 1895) Brick Walls, Floors & Roof. Tile on Reinforced Concrete Covered with Copper. Fireproof Construction." In November 1921 the University planned to "complete heating equipment" in the Rotunda, as well as in the East Range and the East Lawn. The contract was awarded to Almirall and Company of New York, without competitive bids, for $60,000. The work was set to begin at the end of November 1921 and was expected to be completed, weather permitting, by the first of January 1922.[645]

A Sanborn map made in 1929 shows that classes were no longer being held in the Rotunda's wings at that time; all of the rooms in the wings were now given over to offices and conference rooms.[646]

Restoration of the Exterior, 1938 and 1939

The Rotunda served as the University library until 1938, when the entire collection was moved to the new Alderman Library, located across McCormick Road to the west of the Rotunda, leaving the Rotunda without any real function.[647] In June 1938 the Board of Visitors authorized University President John Lloyd Newcomb to apply for a federal Public Works Administration grant for improvements to the Rotunda.[648] In July 1938 the University's Department of Buildings and Grounds made drawings of the Rotunda in preparation for repairs. A special meeting was called at which Rector Frederic W. Scott and the Board of Visitors gathered to accept the PWA grant on August 12, 1938. A $75,000 appropriation from the General Assembly of Virginia supplemented the grant.[649]

On August 12, 1938, the same day that it accepted the PWA grant, the University entered into contracts with architect Stanislaw Makielski, of Charlottesville, for the "restoration of the Rotunda" and with J. S. Miller Jr. for the "electrical engineering services in connection with the restoration of the Rotunda." Fiske Kimball, an authority on Thomas Jefferson's architectural work and the neo-classical revival in America, served as consultant on the project. Kimball had been a professor of art and architecture at the University from 1919 to 1923. The minutes of the meeting of the Board of Visitors from August 12, 1938, do not provide any further details.[650] At the time, Makielski was associate professor of architecture in the University's McIntire School of Fine Arts. Instead of awarding a contract to an outside construction firm, the University decided that the work should be carried out under the direction of the superintendent of buildings and grounds, Frank Hartman.[651] The $136,373 project would include new marble steps for both the north and south porticos and new marble balustrades to replace the crumbling concrete ones installed as part of the 1896 restoration. The brickwork of the building would also be "treated" and water drains replaced, in addition to "other minor improvements." The cryptoporticus may have been added at this time.[652]

On January 21 the building committee assembled to receive the bids for other components of the work—marble work, terrace paving, roofing, and sheet-metal work. Building-committee members Hollis Rinehart, Lewis C. Williams, and C. O'Conor Goolrick, as well as University president John Lloyd Newcomb, Stanislaw Makielski, and resident engineer G. B. Hazelgrove, were present for the opening of the bids. Contracts were awarded to the lowest bidders: the Georgia Marble Company of Nelson, Georgia, would furnish and set all marble for $65,200; N. W. Martin and Brothers of Charlottesville would furnish and set all stone flagging for $4,550 and provide the roofing, waterproofing, and sheet-metal work for $4,340, for a total of $74,090.[653] Work was underway by the early fall of 1938. On October 6 it was reported that workmen were tearing down the balustrade and steps of the Rotunda in preparation for the new marble replacements.[654]

The minutes from the April 7, 1939, meeting of the Board of Visitors provide details of the nature of the work to be done on the exterior. The Board of Visitors approved the following contracts, all from Southern firms, involving amounts under $1,000 for the work at the Rotunda:

To	*Amount*	*Description*
Hull Coal Company, Charlottesville, Va.	$767.50	Est. Cement Requirements
Barnes Lumber Corp., " "	133.60	Est. Masonry Cement
Charlottesville Stone Corp., " "	630.00	Est. Crushed Rock Requirements
E. T. Mankin, Inc., Richmond, Va	189.60	Est. Washed Sand Requirements
Barnes Lumber Corp., Charlottesville, Va.	210.00	Est. Common Brick Requirements
Noland Company, Inc., Richmond Va.	151.90	Est. Galv. Wrought Iron Pipe for Water Line
C. B. Anderson, Profitt, Va.	325.00	Est. Concrete and Mortar Sand Requirements
Virginia Steel Co., Richmond, Va.	105.00	Reinforcing Steel for North Steps
Charlottesville Hdwe. Co., Charlottesville, Va.	254.00	Reinforcing Mesh
Dietrich Brothers, Baltimore, Md.	216.00	Reinforcing Steel for Slabs
Hajoca Corporation, Staunton, Va.	575.00	Pipe and Fittings for Heating
Massey Bldr's Supply Co., Staunton, Va.	185.47	Sewer Pipe
General Elec. Supply Co. Richmond, Va.	865.25	Electric Conduit and Fittings
Richmond Struc. Steel Co., Richmond, Va.	290.00	Built-up Steel Beams for Colonnades
Charlottesville Lbr. Co., Charlottesville, Va.	620.00	Est. Plaster and Lime Requirements
Cinder Block Company, Richmond, Va.	353.40	Cinder block for Partitions and back up
Bowker & Roden, Richmond, Va.	182.50	Cork Expansion Joint
Charlottesville Lumber Co., Charlottesville, Va.	655.42	Est. Lath and Furring Channel Requirements
Tomlinson Co., Inc., Richmond, Va.	842.80	Galv. Wrought Iron & C. I. Pipe for Drainage
Richmond Struc. Steel Co., Richmond, Va.	285.00	3" Channels for Supporting Furring Channels in 4 basement wings
Dyke Dean, Elkton, Va.	216.53	Scaffolding Lumber
Harris Hdwe., Co., Charlottesville, Va.	104.57	Plaster Bond & Waterproofing[655]

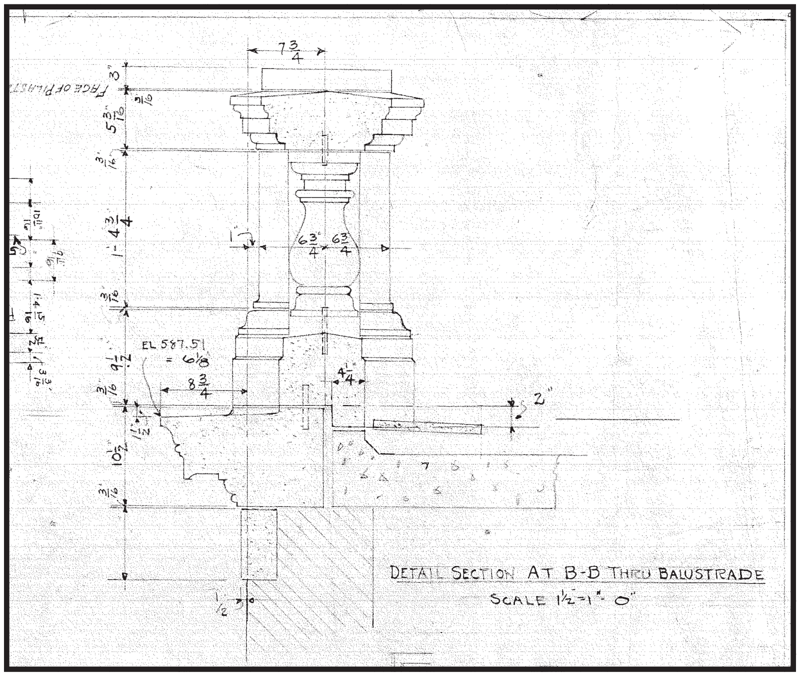


FIGURE 87. *Stanislaw J. Makielski, detail from drawings for the reconstruction of the terrace balustrade, 1939.*

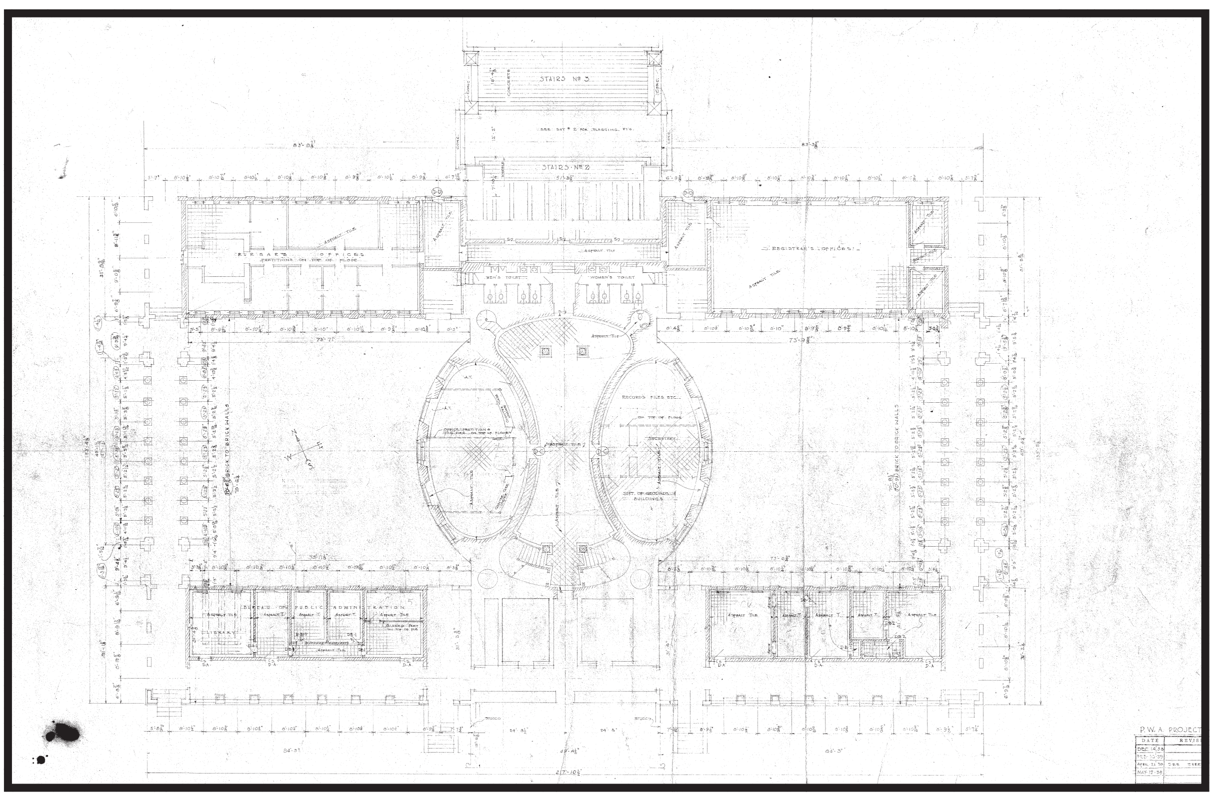


FIGURE 88. *Stanislaw J. Makielski, ground-floor plan of the Rotunda, 1938-1939, showing the wings.*

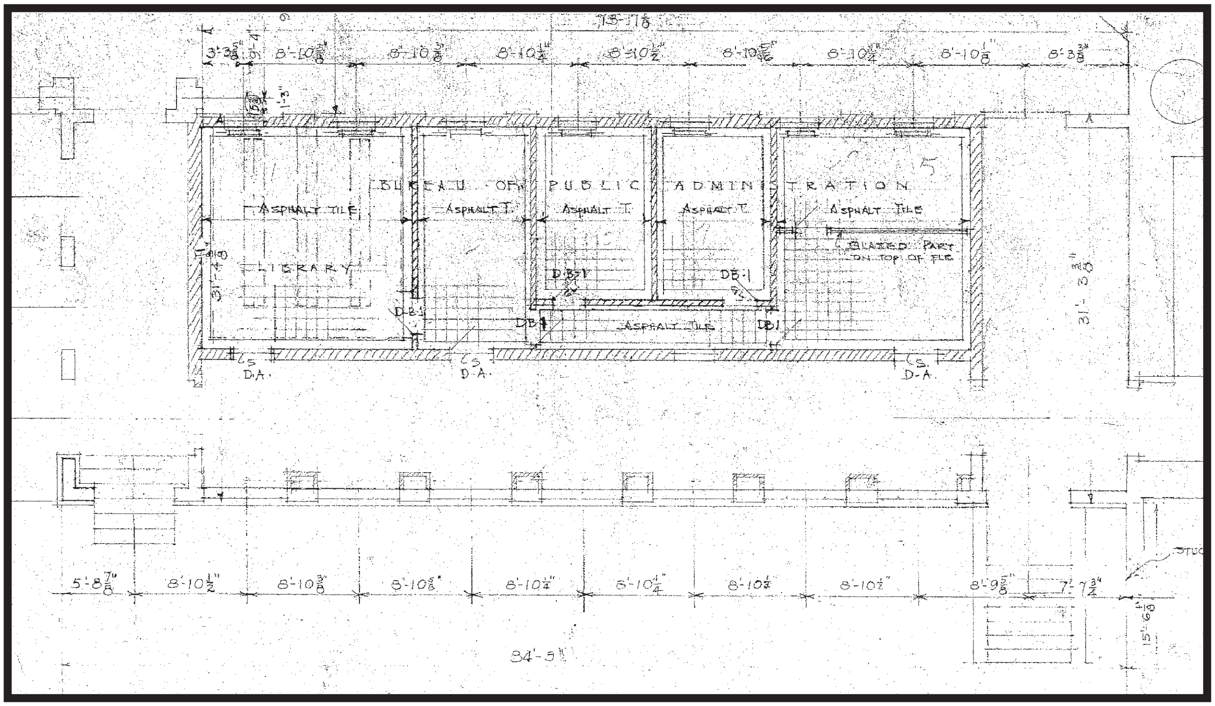


FIGURE 89. *Stanislaw J. Makielski, detail of ground-floor plan showing the southwest wing.*

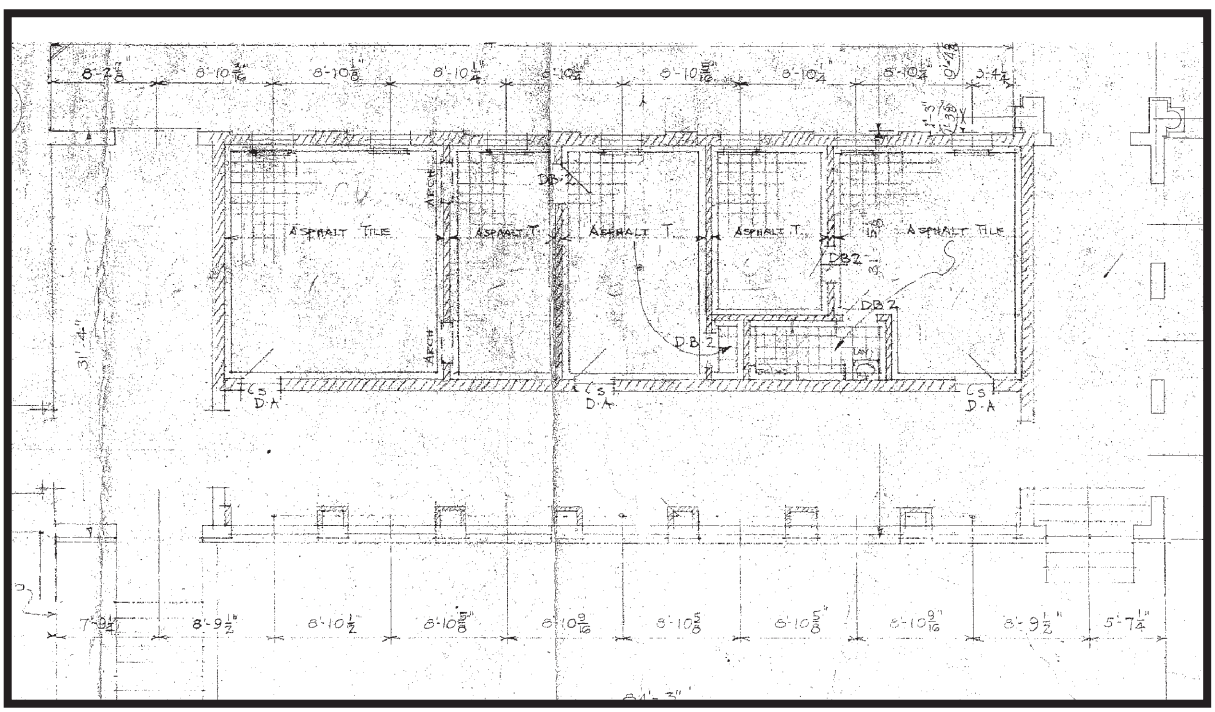


FIGURE 90. *Stanislaw J. Makielski, detail of ground-floor plan showing the southeast wing.*

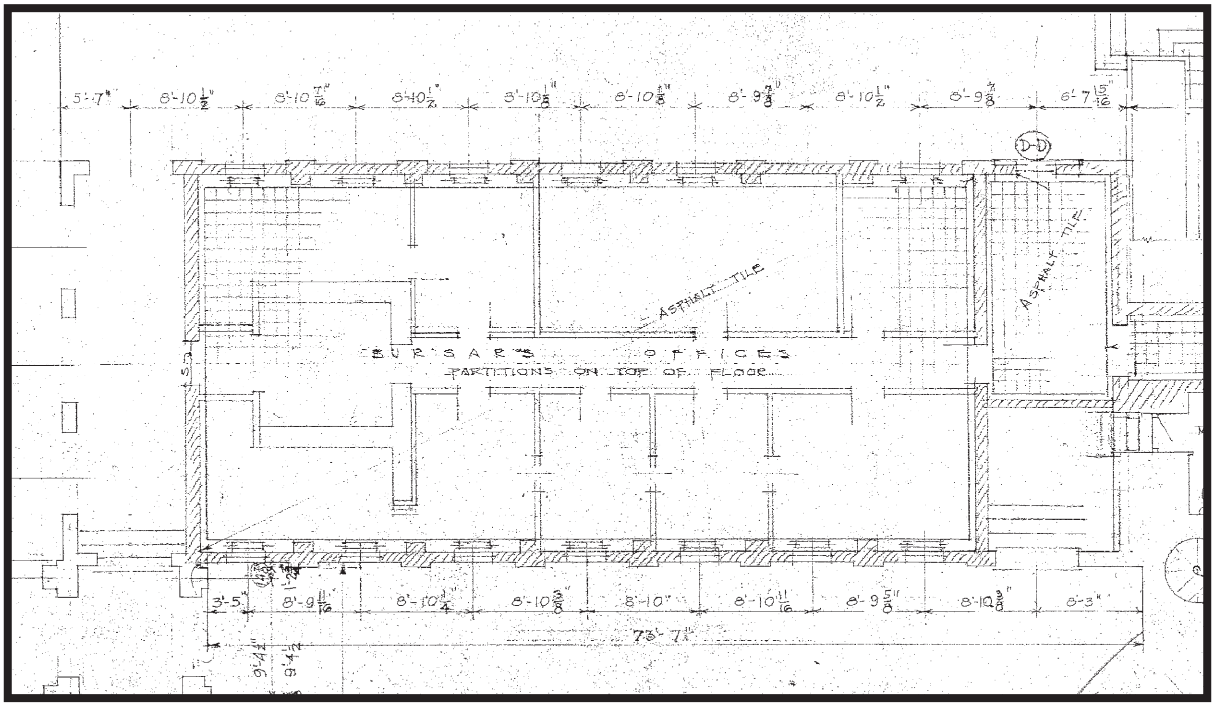


FIGURE 91. *Stanislaw J. Makielski, detail of ground-floor plan showing the northwest wing.*

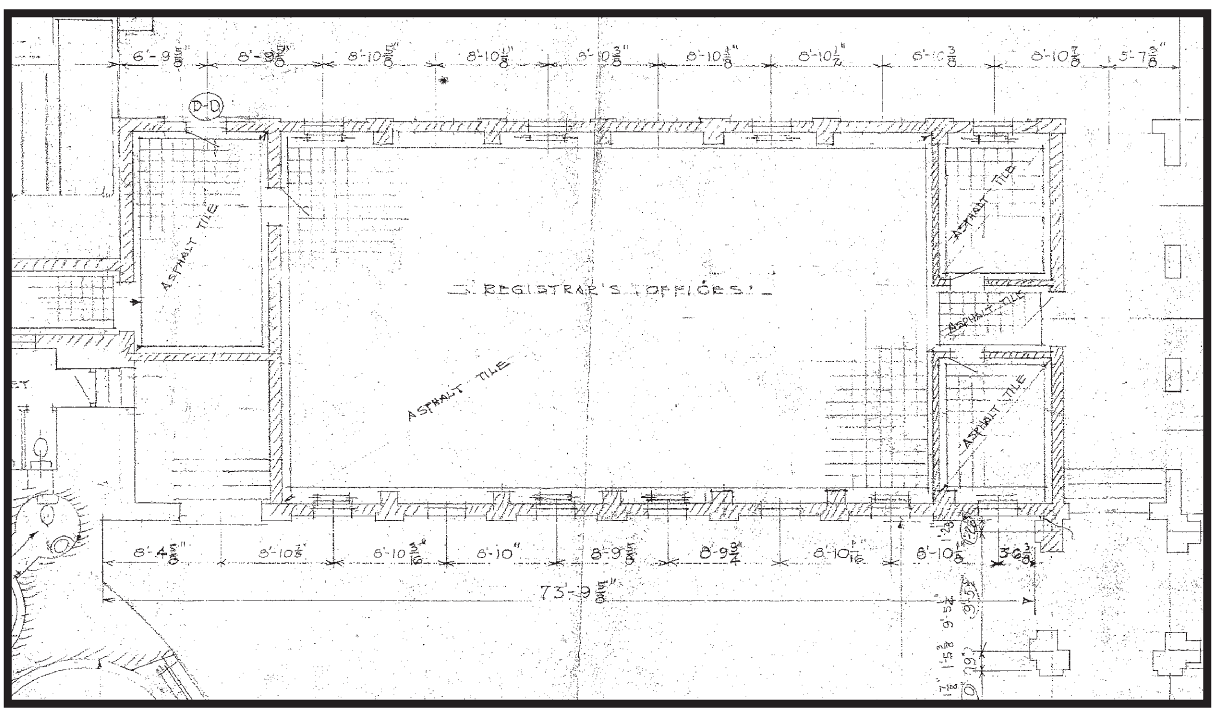


FIGURE 92. *Stanislaw J. Makielski, detail of ground-floor plan showing the northeast wing.*

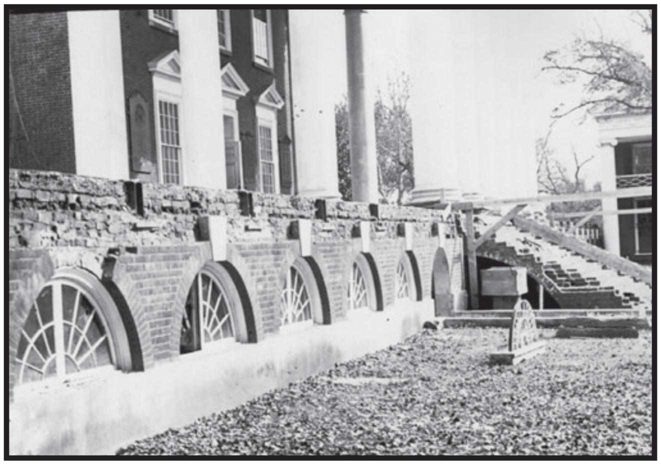


FIGURE 93. *Southwest wing and south stairs during the reconstruction of the portico steps.*

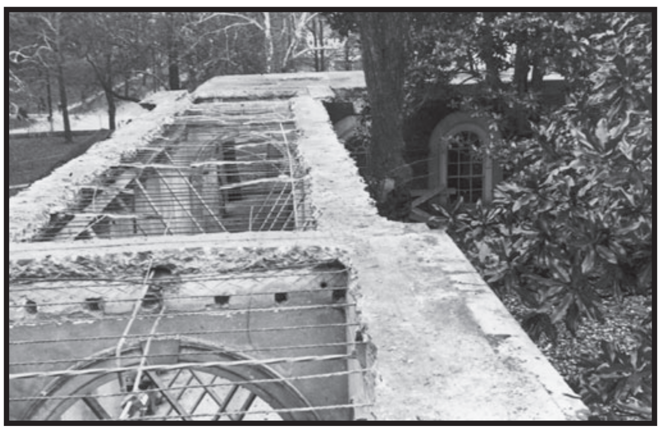


FIGURE 94. *Northwest and southwest wings and west colonnade looking north during the reconstruction of the terraces, 1939.*

FIGURE 95. *The south portico floor during construction, 1939.*

FIGURE 96. *Dome Room, ca. 1940.*

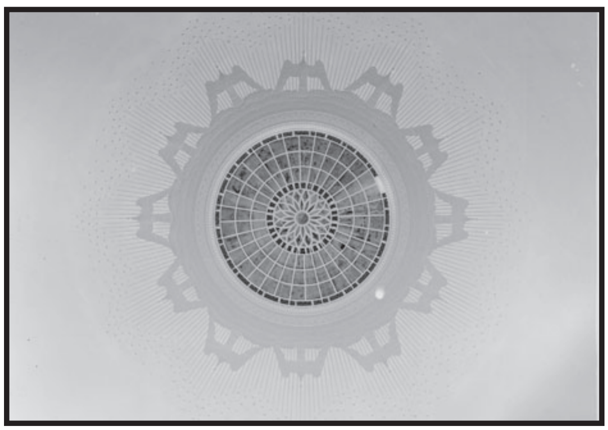


FIGURE 97. *Oculus laylight, ca. 1940.*

FIGURE 98. *Dome Room, middle gallery, ca. 1940.*

Additional contracts awarded on June 7, 1939, indicate that doors and frames were being replaced and that parts of the exterior were being repainted:

To	*Amount*	*Description*
Barnes Lumber Corp., Charlottesville, Va.	$174.00	Paving Brick
Westinghouse Elec. Sup. Co., Richmond, Va.	188.02	3,000' galvanized conduit
R. E. Richardson & Son, Richmond, Va.	1,180.80	Millwork (wdw. frames, etc.)
General Elec. Sup. Corp., Richmond, Va.	325.00	Five Panel Boxes
John T. Lewis & Bros., Philadelphia, Pa.	275.78	White Lead
Harris Hardware Co., Charlottesville, Va.	276.36	Bay State White Paint
Barnes Lumber Corp., Charlottesville, Va.	676.00	Doors and Frames[656]

Drawings of the new doors by Stanislaw Makileski show that four different styles were needed for four different locations within the building. The exterior doors to the offices under the south terraces were replaced, as were the interior connecting doors between those offices, the doors to the oval rooms on the ground level, and the exterior doors in the north terraces.

A drawing made by Makileski in December 1938 and corrected in May 1939 shows the uses of three of the terrace rooms at that time: the northwest terrace served as the bursar's office; the northeast terrace served as the registrar's office; and the southwest terrace served as the Bureau of Public Administration. Asphalt tile floors were indicated in the south terrace rooms.

Due to difficulties encountered in the detailing, fabrication, setting, and fitting of the marble, as well as a shortage of skilled marble cutters, setters, and pointers, the work was delayed, and the deadline for completion was extended from August 20 to September 28, 1939. The marble work was described as being "very complicated" and had to be "carefully cut and fitted to existing work, which was found to be out of square, not aligned and at varying levels," thus requiring an "unanticipated amount of detailing and checking." "Many pieces of marble," the Board of Visitors reported in the minutes of its July 19, 1939, meeting, "had to be cut and fitted on site," which contributed to the delay. The extension of the deadline also allowed more time for finishing the stone flagging and the roofing, waterproofing, and sheet-metal work.[657]

The contracts for the exterior work were closed out at the Board of Visitors' meeting on October 3, 1939. In January 1940 the *Baltimore Sun* reported that the exterior work had been completed for months, but interior painting was still in progress as workmen touched up the blue spangled ceiling of the dome. In addition to the exterior restoration, new office furniture, both metal and wood, was purchased to outfit the interior.[658] On January 26, 1940, the first in a new series of dances was held in the Rotunda, similar to the balls and receptions held there before the fire.[659] Further work on the interior was delayed because of World War II and would not be undertaken until the 1970s.[660]

In late 1941 Superintendent of Buildings and Grounds Frank Hartman sought to solve an "acoustical problem" in the Rotunda and contacted Dr. V. L. Chrisler of the National Bureau of Standards to consult. Though Hartman consulted with both Chrisler and Acoustics, Inc., of Washington, D.C., about the unnamed problem and the University had been "practically assured" of receiving funding for the work, the funding never came through and the project was "shelved" indefinitely.[661]

In 1944 the Board of Visitors elected to create a committee to investigate the best possible functions for the building.[662] A few years earlier, in 1939, the Board had begun considering appropriate uses of the dome room, when it appointed a committee of three men to investigate the possibilities. The results of the committees' findings are not known, but in 1944 Lewis C. Williams was appointed chair of the Committee on the Use of the Rotunda, and in March 1945 he reported to the Board that he needed architectural advice and "requested permission to employ the services of Eggers & Higgins to prepare plans."[663] The use of the Rotunda was discussed at the Board of Visitors' March 7, 1947, meeting, but no details of the discussion were included in the minutes.[664]

In February 1950 the Rotunda was the victim of an act of vandalism when a "carefully drawn Communist slogan" translated as "The Government of the Soviet Union—Glory to Stalin" and the hammer and sickle symbols of the U.S.S.R. were painted on the wall of the Rotunda near the Woodrow Wilson School of Foreign Affairs.[665]

Plans for Restoring the Rotunda's Interior, 1955–1973

After the removal of the library in 1938 the Rotunda received limited attention in University budgets, and it gradually deteriorated. By the mid-1950s Stanford White's changes to the Rotunda were viewed by some at the University as an abomination, in direct conflict with Jefferson's plans.[666]

On January 13, 1955, Professor Frederick D. Nichols of the University's School of Architecture met in the Rotunda with the Buildings and Grounds Committee of the Board of Visitors on how to "correct the alterations" made by Stanford White and restore the Rotunda interior to Jefferson's design. With Jefferson's original drawings and notes in hand, the committee discussed restoring the three oval rooms on the main floor to provide space for the University president's office and for a meeting room that could be used by the Board of Visitors. Following the alterations at the end of the nineteenth century the Board had ceased to hold its meetings in the Rotunda for want of an appropriate space therein, and the Buildings and Grounds Committee discussed the prospect of resuming Board meetings in the Rotunda. The use of the Dome Room was also discussed, and committee member Emily P. Smith, president of the Garden Club of Virginia, suggested that it be used as a museum of the University's history. The meeting concluded with the committee agreeing to consult with the Virginia Fine Arts Commission on Nichols's proposal to convert the Rotunda back to Jefferson's plan.[667]

The committee and Nichols met with the commission on February 11, 1955, and presented to the commission Nichols's plan for the restoration accompanied by copies of Jefferson's drawings for the Rotunda. The commission was reportedly "impressed" with the "unusual detail of the documentation" in the drawings and "approved heartily" of the proposal for the restoration of the Rotunda to its original plan and appearance.[668] Fiske Kimball, who had served as a consultant in the exterior restoration in the late 1930s, was called upon to comment on Nichols's proposal. Though Kimball had expressed some initial hesitation over tampering with any work done by an architect as important as Stanford White, Kimball reportedly expressed "great enthusiasm" for Nichols's ideas. Minutes of the Board of Visitors' meeting of February 12, 1955, report that Kimball remarked that "Jefferson was a greater architect than Stanford White" and that the Rotunda was Jefferson's last great architectural monument. Kimball supported Nichols's proposal for making the Rotunda the administrative center of the University, maintaining that this was "strictly in accord with Jefferson's conception of academic architecture."[669]

In anticipation of the interior restoration, University president Colgate Whitehead Darden Jr. requested that a model of Jefferson's Rotunda in its original form be constructed.[670] Further consideration of the Rotunda restoration was deferred until the model was completed and set up for viewing on the main floor of the Rotunda during the spring of 1957. The model was constructed by S. Rex Whitehurst, a student in the University's School of Architecture.[671] After viewing the model, the Board of Visitors quickly approved Nichols's plans to restore the interior of the Rotunda to its original design, as it stood from the time of its construction until the fire in 1895. However, construction was entirely contingent upon Nichols's ability to raise the funds for the work from private sources.[672]

Returning the interior of the Rotunda to Jefferson's plan would be a massive undertaking that would require gutting the entire McKim, Mead and White interior. Ultimately, it would take Frederick Nichols more than fifteen years to secure the necessary funds to commence work. At the same time the University had many other building projects that it perceived as being of higher priority, including continued work on the University hospital, an addition to the law school building, and renovations to Minor and Madison halls, among other projects.[673]

On September 25, 1965, President Edgar Finley Shannon Jr., who had succeeded Darden in 1959, appointed a Rotunda Restoration Committee to guide planning.[674] The restoration committee met for the first time on November 9, 1965, and agreed unanimously on the general plan for the restoration as outlined by Nichols, to make the dome room a visitor center for exhibits, receptions, and meetings and to replace the oval rooms on the main floor for use of the president and the Board.[675]

On December 20, 1965, the U.S. Secretary of the Interior designated the Rotunda as one of four National Historic Landmarks in Virginia, and President Shannon signed an agreement with the National Park Service for preservation of the Rotunda as a National Historic Landmark on January 7, 1966. A ceremony was held at the Rotunda on April 13, 1966, to recognize the Rotunda's status as a National Historic Landmark.[676]

On April 2, 1966, the Board of Visitors selected the architectural firm of Ballou and Justice of Richmond to prepare plans for the restoration of the Rotunda.[677] Werner K. Sensbach, director of the University's Planning Department, formally informed Ballou and Justice on April 29, 1966, that they had been selected to carry out the work.[678]

By September 1968 the firm had drawn up plans and sections of the Rotunda both of which were based on "probable actual construction as determined by analysis of pre-fire photos and original plates of Palladio and others referred to as sources." Existing critical dimensions were also noted on the drawings.[679] Another set of drawings prepared by Ballou and Justice in May 1969 indicates the tentative uses of the reconstructed oval rooms on the main floor: the president's office would be located in the west oval room, the Board of Visitors' meeting room would be in the east oval room, and secretaries would occupy the hourglass-shaped hallway between the two rooms.[680] A project report and project criteria were submitted by the architect on May 8, 1969. The criteria outlined the uses and the square footage of the planned reconstructed rooms, as well as what areas would be demolished, reconstructed, or restored.[681]

The University entered into contract with Ballou and Justice on December 29, 1970. The contract stated that the fee would be calculated on a cost-plus basis without an upset cost because the Rotunda was a "national historic monument."[682] By the end of March 1971 the project report, project criteria, cost estimate, and contracts between the University and Ballou and Justice had been approved by the governor's office. Though the planning work was "well underway" at that time, there was a prolonged delay in starting construction because the plans needed to be finalized and also because funding had not been secured.[683] In a composite wall section prepared in May 1971 the architects continued to work out details as they compared their plans to Jefferson's and the existing conditions.[684]

The engineering firm of Torrence, Dreelin, Farthing and Buford, of Richmond, conducted a preliminary engineering investigation of the Rotunda in June 1971 and found that the roof was sound and that the existing dome could be retained. The firm also concluded that Stanford White's "masonry liner wall" within the walls of the Rotunda should be preserved, as it was "necessary, both to support the dome and the dome-room floor and to buttress the original walls of the structure weakened in the fire." Francis L. Berkeley, assistant to President Shannon, reported on the University's preferences to architect Louis Ballou at the end of June 1971, based on the engineering firm's findings:

> The proposed sole alternative [to retaining the masonry liner wall and dome], demolition of the entire Rotunda structure, and reconstruction of it in a total restoration from the ground up, would serve only one purpose: it would make the dimensions of the interior rooms more faithful to the original dimensions by a few inches. Such an act would be self-defeating, however, because we would thus destroy all that remains (the major part of the exterior) of Jefferson's original structure in order to achieve a slightly more mathematical precision in restoring the lost portion thereof.
>
> In view of the fire of 1895 and recent legislation, the State Fire Marshal will not in any case permit reconstruction of Jefferson's wooden roof. The best fireproof roof that we could have is the present dome (built by one of the greatest of a half dozen architects who have shaped the Rotunda), which we judge to conform to the location of Jefferson's original as closely as possible for tile and masonry construction.
>
> The thrust of your recommendations appears to be to preserve the most that is possible of Jefferson's work while doing the least violence to the subsequent architectural history of the structure, but always

> deferring to Jefferson wherever there is a choice between his work and Stanford White's. This approach and the implementation you recommend are highly acceptable.[685]

By October 1971 Ballou and Justice prepared a full set of drawings, including sections, floor plans for each level, framing plans, details of the first-floor cornices and Dome-Room colonnade, and mechanical plans showing ductwork and piping below the basement floor, as well as preliminary electrical plans.[686] The preliminary specifications for the restoration of the Rotunda interior are dated October 1, 1971. The scope of work included the following:

> 1. Remove all present interior construction and finishes including plaster in the original portion of the Rotunda, retaining only the following:
>   a. Exterior walls, including masonry added to inner face in 1896.
>   b. Present Guastavino tile dome
>   c. Present Basement Oval Room masonry walls
>   d. Present window sash and exterior metal trim and cornices
>   e. North and South Porticos, including attics above and present spaces beneath and steps leading to Porticos.
>   f. All present facilities in wings beneath terraces adjacent to the Rotunda on east and west sides.
> 2. Provide proper shoring and bracing to all retained portions of the Rotunda during demolition and construction to prevent damage or collapse thereof.
> 3. Remove present copper roofing, skylight and plinths from the Dome.
> 4. Construct the following facilities within the shell of the Rotunda, as shown on drawings:
>   a. New duct and pipe space below Basement Hallway floor
>   b. New Basement floor slab and brick flooring
>   c. New Toilet and Service Facilities beneath the South Portico
>   d. New Mechanical Facilities beneath the North Steps, and beneath the South Portico
>   e. New Basement North Oval Room walls
>   f. New First Floor construction
>   g. New First Floor Oval Room walls
>   h. New Second Floor construction
>   i. New Dome Room (second floor) Colonnade and Galleries
>   j. New fireplaces and chimneys at all floors east and west sides and in North Oval Room (First Floor) and at stair landing
>   k. New Structural Floor in Attic over South Portico
>   l. New Main stairway from Basement to First Floor and From First Floor to Second Floor
>   m. New steel spiral staircases in NW and NE stairwells, extending from Basement to Dome Room Upper Gallery, with new exits to exterior at Basement level
>   n. New Elevator in SE stairwell at First Floor and Second Floor (Dome Room)
>   o. New Toilets in SW stairwell at First Floor and Second Floor (Dome Room)
>   p. New interior finishes, trim, doors, ceilings, wood flooring, etc.
>   q. New air-conditioning systems to all spaces in Basement, First Floor and Dome Room (Second Floor)
>   r. New sprinkler system above ceilings in Basement and First Floor, in spaces beneath North and South Porticos, at ceilings under Dome Room Galleries and in Attics over North and South Porticos
>   s. New electrical system and lighting throughout building.[687]

The Board of Visitors approved the architects' plans on April 7, 1972. The Buildings and Grounds Committee had met on the previous day with Louis Ballou and John Allen of Ballou and Justice to review the preliminary drawings. Ballou and Allen described the drawings for the restored Rotunda as "almost exactly as built by Thomas Jefferson" but explained that certain deviations were necessary to preserve the structural integrity of the Rotunda and to provide such modern conveniences as an elevator and air-conditioning. They reported that the Rotunda's dome was sound and that the reconstruction work would not in any way alter the outside appearance of the Rotunda.[688]

At its April 7, 1972, meeting the Board of Visitors authorized University president Edgar Finley Shannon Jr. to apply for a grant from the Department of Housing and Urban Development for one half of the total construction estimate of $2,176,500. The University's goal was to match the HUD funds with non-Federal sources and to have the building restored to its original design by the nation's Bicentennial in 1976. The U.S. Bicentennial Committee recommended that the Rotunda restoration be the nation's number one priority, in terms of preservation projects, for the Bicentennial celebration.[689] Between 1963 and 1972 several hundred contributions were received by the University for the restoration, including gifts from alumni and an appropriation of $55,000 from the General Assembly of Virginia.[690]

On April 28, 1972, in the presence of state, local, and national officials, the Department of Housing and Urban Development awarded the University of Virginia a grant in the amount of $1,088,250.[691] The Cary D. Langhorne Trust made a gift of $460,000, with additional income earmarked for the restoration over the next seven years for a total of $1,017,903. With this gift from the foundation, the University received the matching funds that it needed to begin the restoration work.[692]

Though the HUD grant was indeed a coup, it was subsequently discovered that the grant was actually made without the necessary approvals. The University was not aware of Section 106 regulations of the National Historic Preservation Act of 1966 requiring the state historic preservation office to review and approve of the project. Calder Loth, of the Virginia Historic Landmarks Commission, was assigned to act as a liaison between the state commission and Ballou and Justice. A special committee was set up by the commission to review the preliminary plans.[693]

In a report dated June 9, 1972, the Virginia Historic Landmarks Commission outlined several aspects of the planned work and the commission's suggestions, indicating that more elements of the McKim, Mead and White restoration would need to be retained beyond those outlined in the October 1971 specifications. The report supported the engineers' assessment that it was too risky to remove the reinforcing of the exterior wall installed after the fire, since demolishing it would compromise the structural stability of the original walls. Retention of the reinforcing, however, would make it impossible to recreate Jefferson's exact dimensions for either a new dome or the new oval rooms and would cause the window reveals to be overly thick. Consequently the Virginia Historic Landmarks Commission agreed with Francis Berkeley's 1971 assessment that Stanford White's dome should be retained. The exterior height and curvature of White's dome was found to conform closely enough to Jefferson's dome, and its retention, "with necessary adjustments to the design," was not considered a significant compromise in recreating Jefferson's plan. Furthermore, contrary to earlier reports and some leaking in the dome, it was, in fact, structurally sound.[694] The Virginia Historic Landmarks Commission formally approved the preliminary plans on June 20, 1972.[695] In its written approval of the plan, the commission included the following remarks on its decision to approve the restoration:

> Although the Commission endorses the philosophy that historic buildings should reflect their full history and thus should retain major architectural additions and alterations acquired throughout the building's existence, the Rotunda meets the principal qualification for an exception to this policy: it is a completely documented architectural monument and thus can be returned to its original appearance without compromise occasioned by lack of knowledge.
>
> The present interior developed by Stanford White, following the fire of 1895, now creates the requirement to choose between the retention of the work of one noted American architect and the

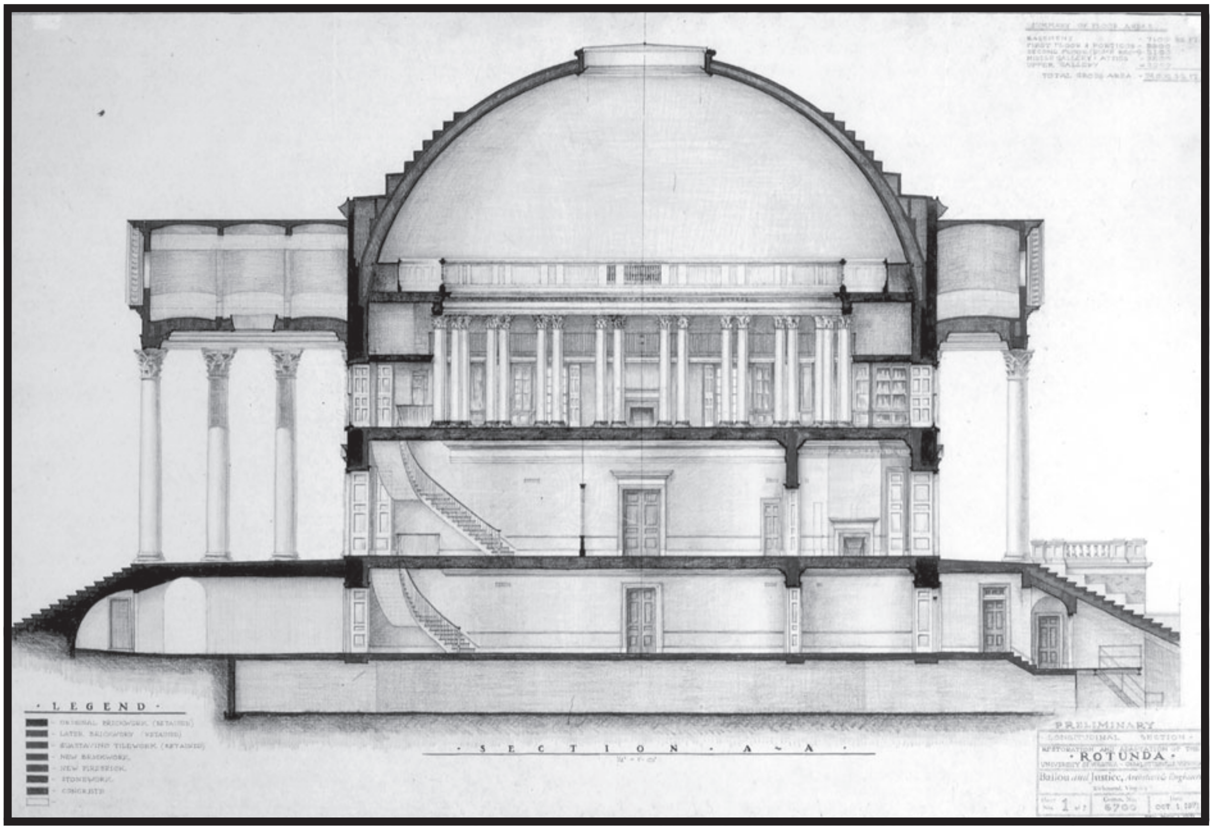
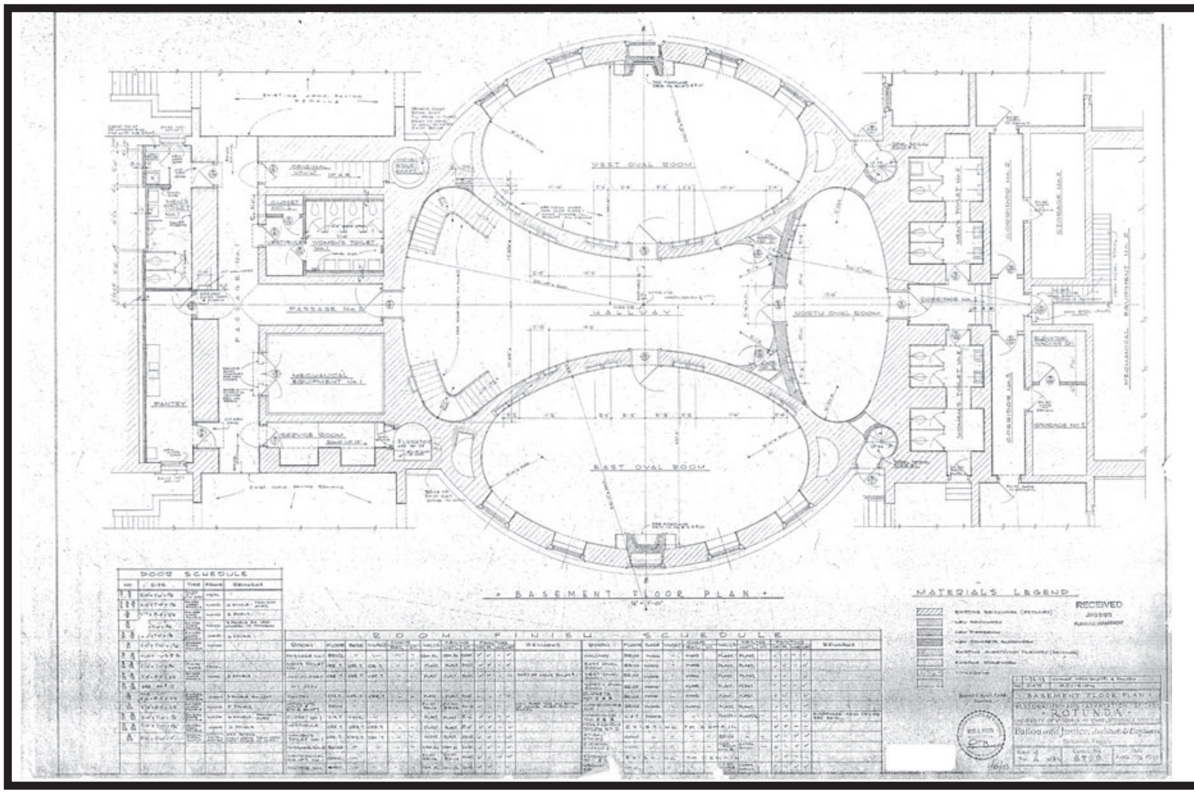
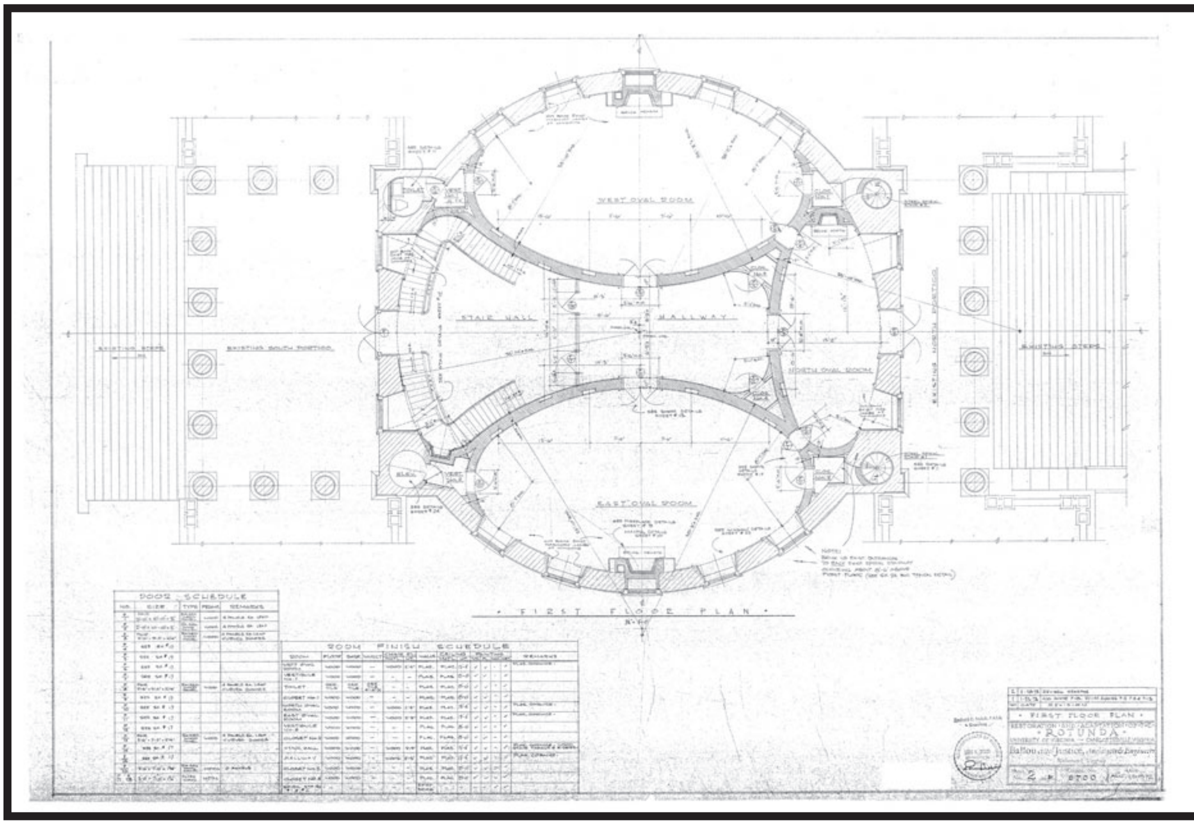


FIGURE 99. *Ballou and Justice, Architects, rendering of building section, prepared for the reconstruction of the Rotunda, mid-1970s.*

FIGURE 100. *Ballou and Justice, Architects, basement (ground-floor) plan, August 25, 1972.*

FIGURE 101. *Ballou and Justice, Architects, first-floor (main-floor) plan, August 25, 1972.*


WEST OVAL ROOM
HALLWAY
NORTH OVAL ROOM
EAST OVAL ROOM
PASSAGE No. 1
MECHANICAL EQUIPMENT No. 1
PANTRY
BASEMENT FLOOR PLAN
DOOR SCHEDULE
ROOM FINISH SCHEDULE
MATERIALS LEGEND
RECEIVED
ROTUNDA


WEST OVAL ROOM
STAIR HALL
HALLWAY
NORTH OVAL ROOM
EAST OVAL ROOM
EXISTING SOUTH PORTICO
EXISTING STEPS
FIRST FLOOR PLAN
DOOR SCHEDULE
ROOM FINISH SCHEDULE
ROTUNDA

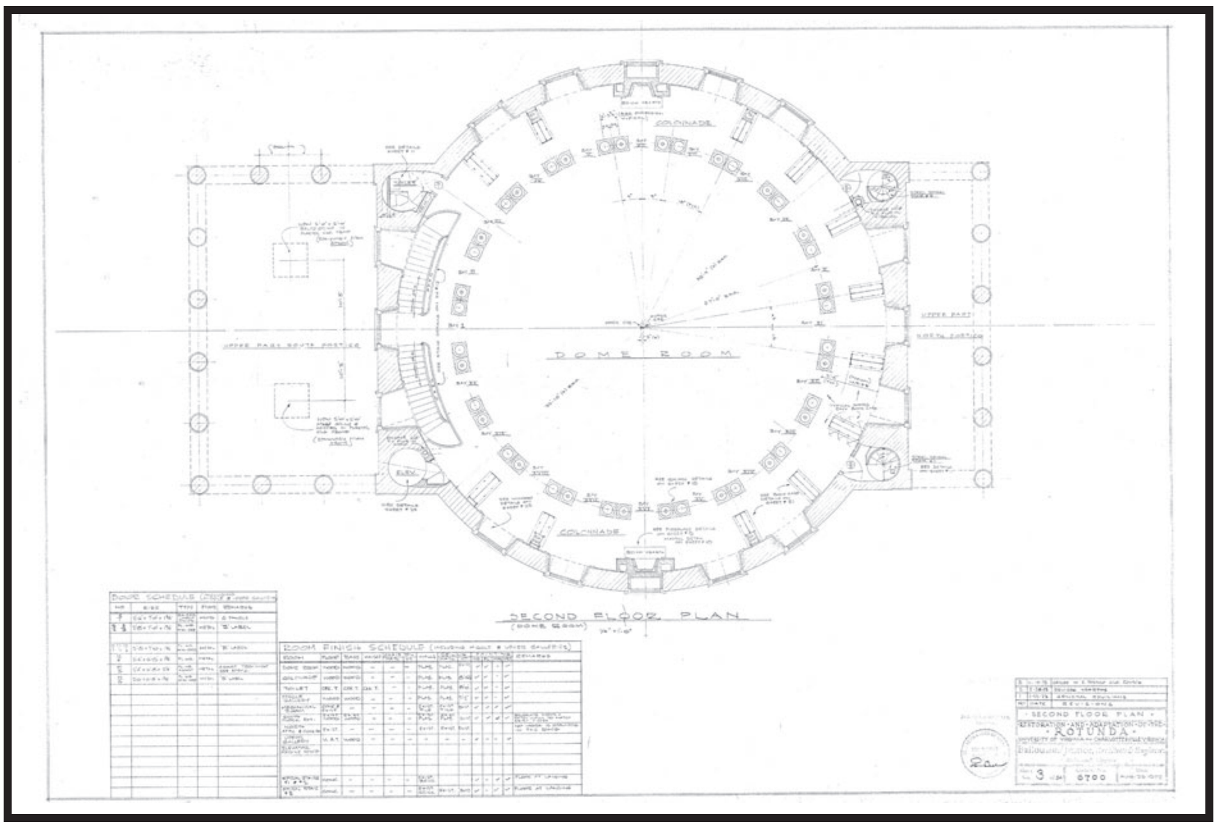
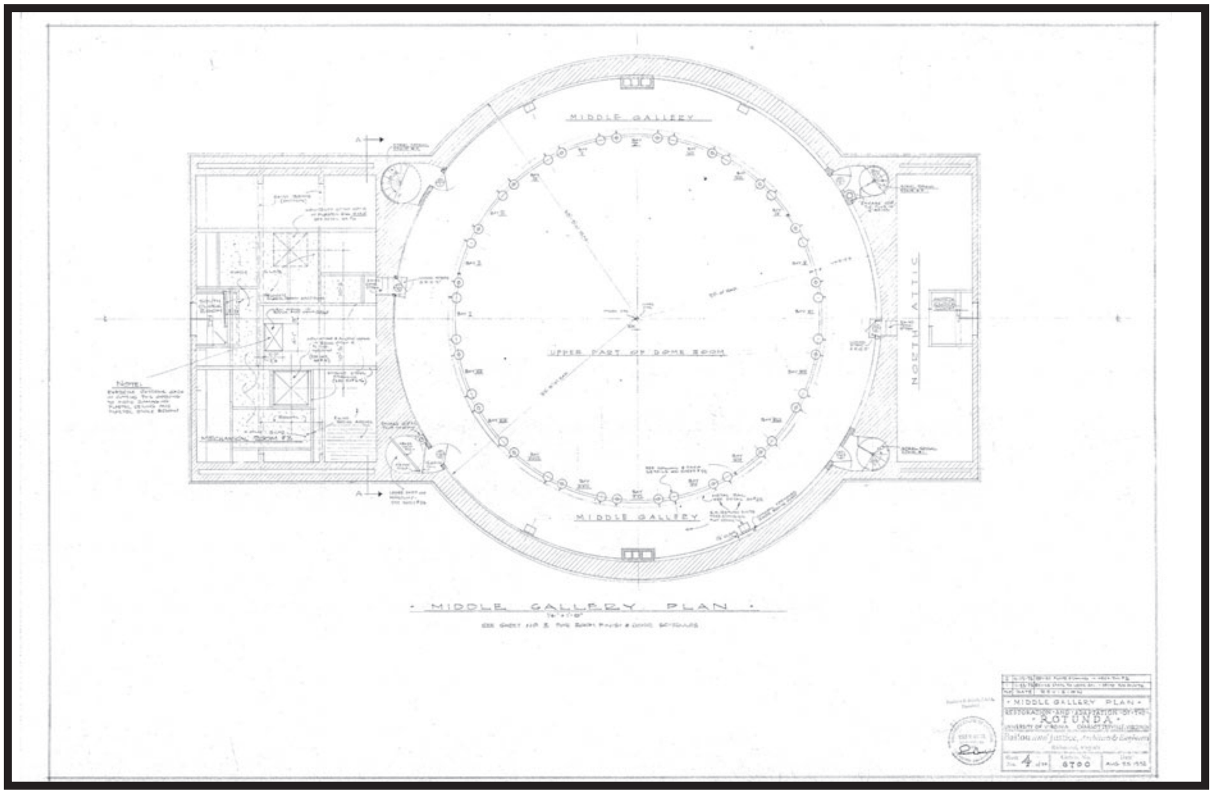
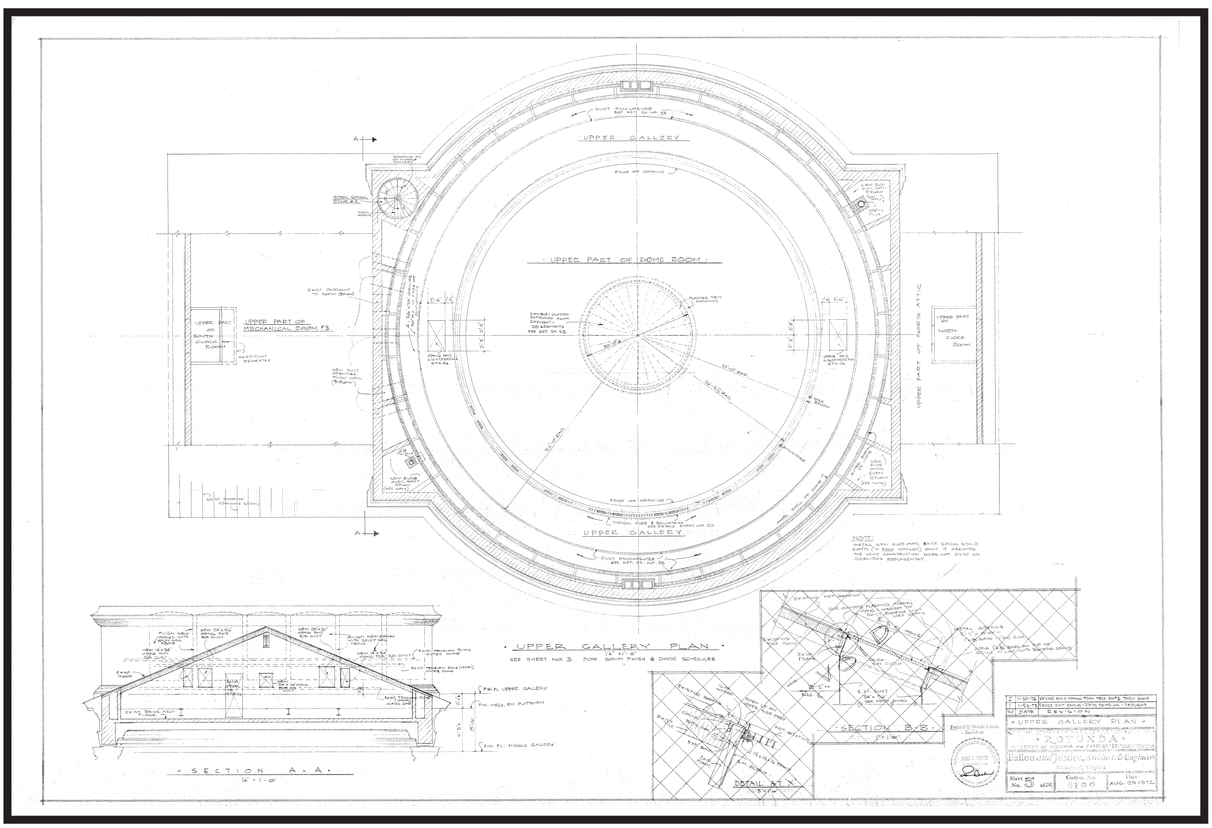


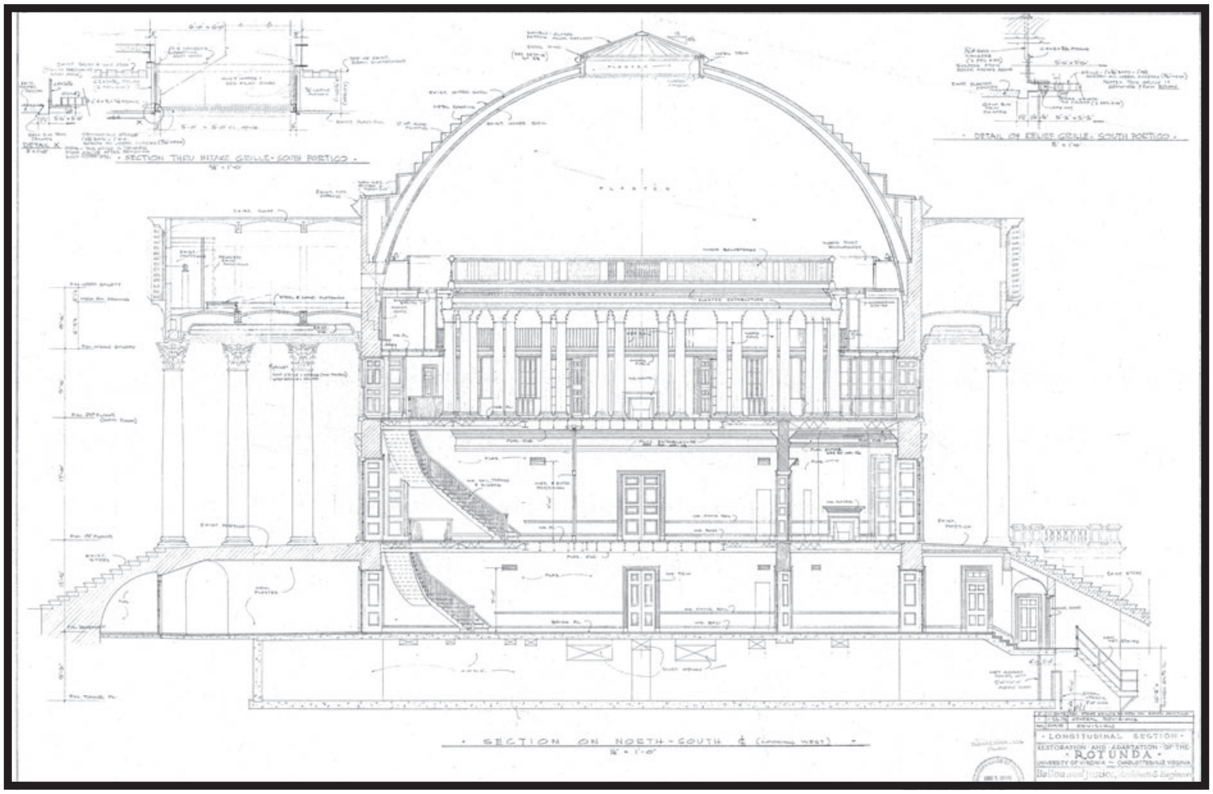
FIGURE 102. *Ballou and Justice, second-floor (Dome Room) plan, August 25, 1972.*

FIGURE 103. *Ballou and Justice, Architects, middle-gallery plan, August 25, 1972.*

FIGURE 104. *Ballou and Justice, Architects, upper-gallery plan, August 25, 1972.*


MIDDLE GALLERY
UPPER PART OF DOME ROOM
NORTH ATTIC
MIDDLE GALLERY
· MIDDLE GALLERY PLAN ·
ROTUNDA


UPPER GALLERY
· UPPER PART OF DOME ROOM ·
UPPER PART OF MECHANICAL ROOM #3
UPPER GALLERY
· UPPER GALLERY PLAN ·
· SECTION A-A ·
SECTION B-B
DETAIL AT X
· UPPER GALLERY PLAN ·
ROTUNDA


SECTION ON NORTH-SOUTH ℄ (LOOKING WEST)
LONGITUDINAL SECTION
RESTORATION AND ADAPTATION OF THE ROTUNDA
UNIVERSITY OF VIRGINIA — CHARLOTTESVILLE, VIRGINIA
PLASTER

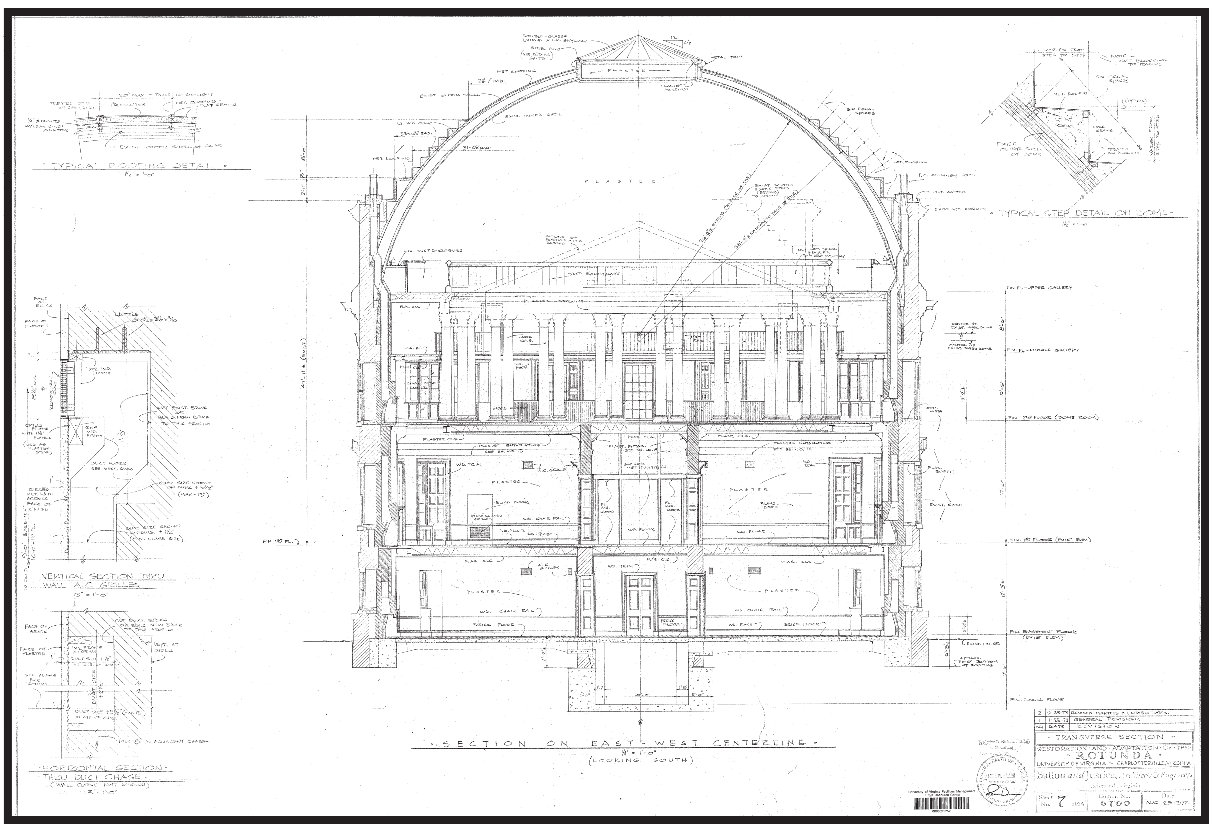

SECTION ON EAST-WEST CENTERLINE
(LOOKING SOUTH)
TYPICAL ROOFING DETAIL
TYPICAL STEP DETAIL ON DOME
VERTICAL SECTION THRU WALL A.C. GRILLES
HORIZONTAL SECTION THRU DUCT CHASE
TRANSVERSE SECTION
RESTORATION AND ADAPTATION OF THE ROTUNDA
UNIVERSITY OF VIRGINIA — CHARLOTTESVILLE, VIRGINIA
PLASTER

FIGURE 105. *Ballou and Justice, Architects, building section looking west, August 25, 1972.*

FIGURE 106. *Ballou and Justice, Architects, building section looking south, August 25, 1972.*

FIGURE 107. *The interior of the Rotunda during demolition, 1974. The brick that was laid up against the original outer wall in 1898 to support the Guastavino tile dome conceals any pre-fire evidence that might remain on the walls.*

FIGURE 108. *The interior during demolition, 1974.*

FIGURE 109. *Demolition of the floor on the main level, January 14, 1974.*

FIGURE 110. *The interior during demolition, January 30, 1974.*

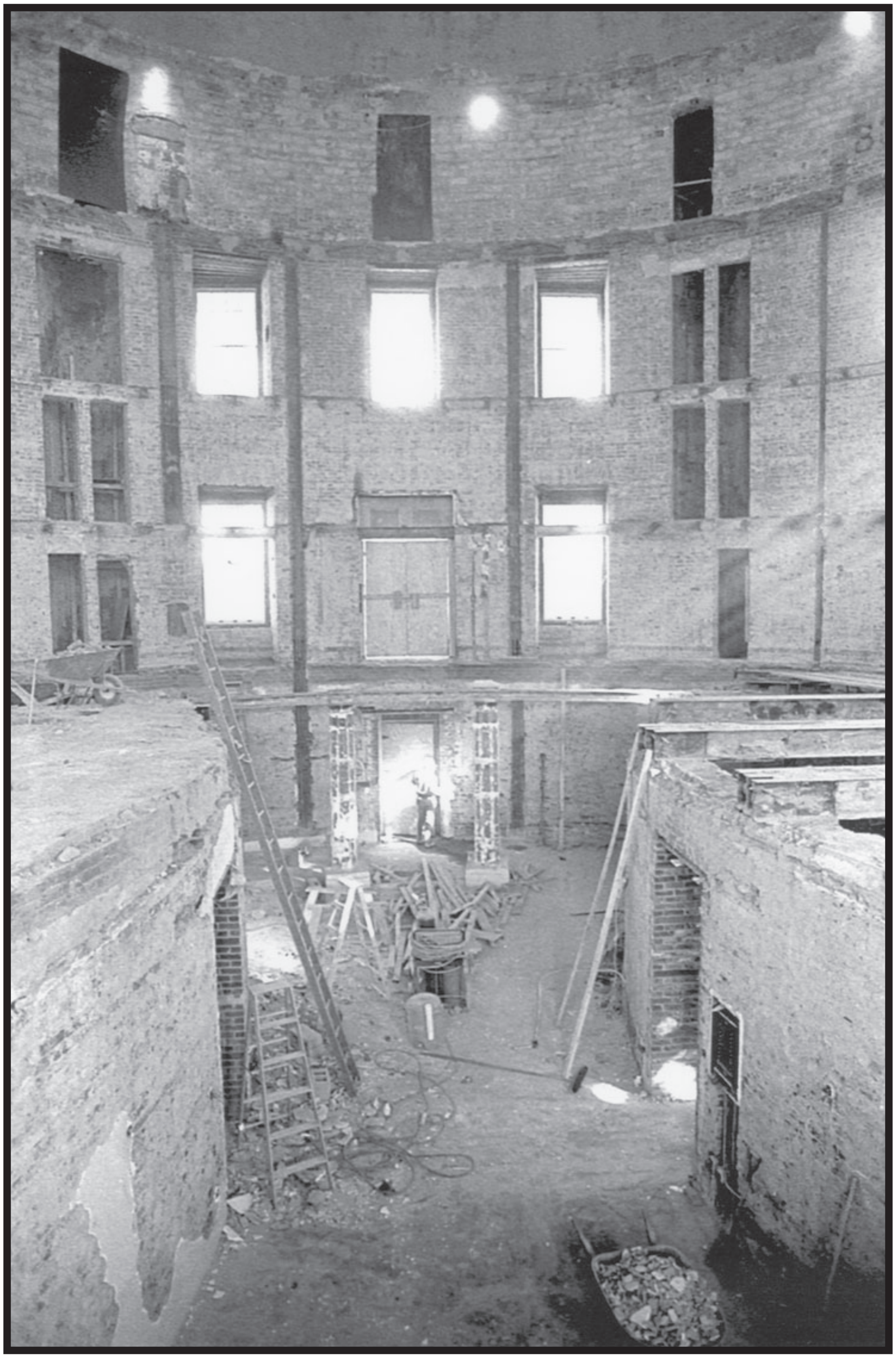


FIGURE 111. *The interior during demolition, January 30, 1974. The ground-floor walls to the right and left survive from the original construction.*

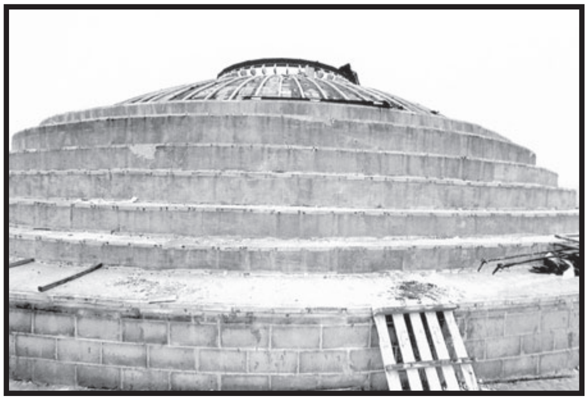


FIGURE 112. *The dome during the reconstruction of the skylight, November 18, 1974.*

FIGURE 113. *The new extruded-aluminum skylight frame during the reconstruction, November 18, 1974.*

FIGURE 114. *Construction of the ground floor looking south, May 8, 1975. The steel for the new stairs is in place.*

FIGURE 115. *Framework for the acoustical ceiling in the Dome Room, October 10, 1975.*

FIGURE 116. *A photograph of the reconstructed Dome Room (left) juxtaposed with a pre-fire image (right).*

> re-creation of that of the original designer. The quandary of making this selection is modified by the virtual loss of function of the structure since the removal of the Library in 1938 and the unadaptability to effective use of the present cavernous space.
>
> The Commission recognizes that preservation of the White interior as an example of the work of this architect would, under normal circumstances, be most urgently defended. The judgment to remove it must be based on more substantial grounds than the rationale of better adaptive use of convenience to the institution. The factors contribute but the choice must be one of the greater aesthetic and architectural value of the re-created Jefferson design as against the de facto White adaptation.[696]

The commission endorsed the retention of both the 1896 dome and 8-inch-thick McKim, Mead and White reinforcement of the exterior walls. The commission also commented on the proposed function of the restored Rotunda:

> By good fortune the restoration of the original interior will result in making the Rotunda a more functional building, in contrast to its present, somewhat abandoned state. The Dome Room is intended to be used as a much needed museum and visitor center as well as meeting place and reception hall. The East Oval Room appropriately is assigned to the use of the Board of Visitors. The West Oval Room, North Oval Room, and approximately one-half of the central hourglass-shaped hall is to be given over to the use of the President's Office.
>
> While ideally the Commission would prefer to see the completed interior restoration made fully available and open to visitors for their inspection and appreciation, it recognizes that adaptive reuse will limit its accessibility. This condition is offset, however, by its increased use as the administrative focus of the University and the consequent increased use by faculty, students, and officials.[697]

Louis Ballou proceeded with preparing the working drawings that summer.[698] The Virginia Fine Arts Commission reviewed and gave approval of the working drawings and specifications after meeting with President Edgar Finley Shannon and the architects on August 4, 1972.[699] The architects continued to work out details and prepared another set of drawings dated August 25, 1972. These drawings included sections; elevations; floor plans; schedules for doors and room finishes; foundation, fireplace, chimney, mantel, toilet, staircase, bookcase, entablature, and column details; and elevator plans and details.[700] The drawings were approved on September 15, 1972, though revised drawings and specifications were made in late January 1973 to resolve lighting, mantle designs, design of the glass partition in the main-level corridor, location of a proposed serving pantry, detailing of the bookcases, and handicapped facilities.[701]

The cover article of the July-August issue of the *Alumni News* was dedicated to the restoration. The University issued 7,500 reprints of the article, which was widely distributed among faculty, students, alumni, and others.[702] In commemoration of the 77th anniversary of the 1895 fire on October 26, 1972, a brandy-soaked cake shaped like the Rotunda was flambéd.[703]

Demolition of the McKim, Mead and White Interior, 1973

The University advertised in the *Richmond Times-Dispatch* in March 1973 for bids for a general contractor to undertake the demolition and restoration work. On July 10, 1973, Virginia governor A. Linwood Holton Jr. authorized the award of the construction contract for the Rotunda restoration work to the lowest bidder, R. E. Lee and Son of Charlottesville for \$1,995.824; the Department of Housing and Urban Development subsequently authorized the award of the contract on July 16, and the University gave its authorization on July 18.[704] R. E. Lee and Son's original bid had been for \$2,130,824, but the firm indicated that the construction cost could be reduced by \$135,000 if the column capitals could be "furnished of cast plaster rather than carved wood as specified," thereby lowering the construction cost to \$1,995,824.[705] R. E. Lee and Son had undertaken extensive restoration and repair work at Mount Vernon and Monticello, as well as renovations and additions to several buildings on the University of Virginia grounds, including Thornton, Newcomb, and Madison halls and the Alderman Library.[706]

On July 18, 1973, Louis Ballou met with R. E. Lee and Son's president and project manager J. A. Kessler Jr. and with Waller Hunt of the University's Planning Department in the Rotunda.[707] On September 20, 1973, the University gave R. E. Lee and Son notice to proceed with the work, which was to be completed on December 31, 1975.[708] Most of the work was done under the supervision of foreman Fred Warner after the first foreman died suddenly, early in the project.[709]

In demolishing the interior of the Rotunda, the University requested that the following items be removed intact: plaster column capitals (if these could be saved), the main floor skylight, the mosaic flooring of the first floor, the cast-iron balcony railings and wood handrail, the metal balcony floor plates, the stair rails and newel posts, and all finish hardware.[710]

During the demolition in July and August 1973 "all plaster, mortar, bricks, and steel from the Stanford White interior," plus the tile floor of the dome room, "were removed piece by piece, and the rubble was collected for removal through windows and doors, usually in wheelbarrows." The skylight and the copper roofing were also removed, revealing the Guastavino dome, as were the plaster eagles and stars decorating the ceiling. The west colonnade, linking the north and south terrace wings, was temporarily dismantled for more convenient removal of debris.[711] The copper from the roof was sold for $4,717 to Coiners Scrap Iron and Metal, in Charlottesville, and the amount was credited to the work at the Rotunda.[712] David Morris, associate professor of civil engineering at the University, acted as consultant to Ballou and Justice on "construction techniques and procedures to be used during demolition and underpinning operations."[713]

Within just a few weeks of starting demolition workmen found three circular staircases walled up in the hollow spaces in the corners between the Rotunda's inner and outer walls. The staircases were similar to the one in the southeast corner, which had been built by workmen during the 1896–1898 reconstruction and had been in use since that time. The uncovered staircases were not functional, however, in that they led to brick walls. Unfinished, the staircases had no longer been needed when plans for the fourth-floor gallery were abandoned in 1897. During the 1970s restoration the staircases were dismantled and the remnants discarded.[714]

In addition to the staircases, a pair of small fireplaces, recessed in the north wall of the east oval room in the basement, was also uncovered; these fireplaces were part of John Emmet's 1825 chemical hearth. When they were uncovered, the fireplaces, each about 15 inches wide and 2 feet high, still contained "shards of melted glass and bits of burned wood and charcoal from the 1895 fire." Gas and electric lines, presumably installed in 1896–1898 to carry lighting and utilities to the upper levels of the Rotunda, were also uncovered at this time.[715]

In July 1973 Lynchburg Steel and Specialty Company of Madison Heights, Virginia, prepared a set of drawings detailing framing plans and beams. The plans were approved, with corrections, by Ballou and Justice on February 1, 1974. Guille Steel Products Co., Inc., of Virginia Beach, Virginia, prepared framing plans for Lynchburg Steel in September 1973, and Ballou and Justice approved them, with corrections, on December 6, 1973.[716]

As demolition of the interior continued, the architects worked out various design details, addressing the Rotunda's stairways in December 1973 and the chimneys and fireplaces in March, August, and November 1974.[717] On January 26, 1974, the Otis Elevator Company prepared drawings for the elevator that was to be installed in the southeast circular stairwell. Ballou and Justice approved these plans on March 15, 1974. The architects approved corrected plans prepared by Greendale Ornamental Iron Company of Richmond for the railing around the middle gallery of the dome room on March 20, 1974.[718]

Photographs of the original interior of the Rotunda brought to light in the spring of 1974 led to alterations in the plans for the middle gallery and the bookcases in the dome room. In a letter dated April 12, 1974, Louis Ballou described the information provided by the photographs and the resulting changes:

> First, it appears quite conclusively to us that the ceiling under the Middle Gallery is at the same elevation as the paneled soffits of the window reveals. Second, the greater clarity of the photo allows a more

> precise evaluation of the proportions of the height of the Middle Gallery relative to the height of the columns. Also, the proportion of the height of the Gallery facia to the height of the columns can also be determined. The result of these studies has resulted in raising the level of the Middle Gallery to a height of 9'-10" above the Dome Room Floor instead of the originally indicated 9'-6", and increasing the facia depth from 11½" to 12¾". These dimensions as applied to the existing window opening vary only in fractions of inches from the apparent proportions of the photo.[719]

The photographs also showed that there had been no railing at the edge of the middle gallery, nor had there been a spiral staircase in the northwest "corner" of the room; the staircase had been part of Stanford White's design only. Though these features were not original to Jefferson's design, they were retained in the restoration to meet with modern safety codes.[720]

The photographs also shed light on the design of the original bookcases, which proved to be one foot longer than Louis Ballou had originally thought. Ballou explained the details of the bookcases seen in the photographs:

> The clearer photograph definitely shows a vertical muntin on each glazed door in addition to the horizontal muntins as we had indicated, and these muntins appear to be painted a dark color. We had indicated that the ledge of the lower portions of the bookcases had an overhang of about ¾", whereas the photo indicates almost no overhang. Finally, the photo indicated that the crown molding was actually more subtle that we had originally shown.[721]

By July 1974 the Rotunda had been stripped of the McKim, Mead and White interior, leaving a "cavernous, dark, coliseum-like" structure.[722] After what was described as a "brief lull in activity," construction work began on the interior. Reports distributed at the meetings of the Board of Visitors during 1974 and 1975 indicate that work proceeded on schedule throughout the entire restoration project and that the Rotunda would be ready for occupancy in January 1976.[723]

Debate over the Use of the Rotunda, 1974–1976

As the Rotunda's interior was being demolished, concern over the future use of the restored space grew among the student body. Plans for the Rotunda as the administrative center for the University were discussed on campus and in local newspapers and were strongly discouraged by segments of the student body that felt that converting the Rotunda to an administrative center would limit students' rightful access to the building. In March 1974 a twelve-member Student Council Rotunda Committee was formed; it included six student representatives and six faculty members, including Frederick Nichols and Joseph Bosserman, the dean of the School of Architecture. University president Frank Loucks Hereford Jr., who succeeded Edgar Finley Shannon Jr. in 1974, took an active part in the dialogue with students. The committee wanted the Rotunda to be used as a "focal point," where students, faculty, and administration could come together, and they encouraged "maximum openness and flexibility" in the usage of the building. The committee met frequently during an eighteen-month period in 1974 and 1975 to discuss the "hotly contested question" of Rotunda usage.[724] In April 1974 the committee reported that "it must be remembered that this building belongs to no specific person, group, or institution, but rather is a national landmark entrusted to the stewardship of the University." "It should not be our intention simply to replicate the original uses of the Rotunda during its first fifty years," the report stated; "rather, the restored Rotunda should again accommodate those availabilities which enrich the life of the students and faculty within the academical village."[725]

University officials wanted the new Dome Room to "work really well" for "committee meetings, dinners and banquets, lectures, musical performances and recitals, symposia, ceremonies and receptions;" improving the acoustics of the room would thus be very important.[726] Louis Ballou consulted with Robert B. Newman of Bolt Beranek and Newman, Inc., consultants in acoustics and vibration based in Waltham, Massachusetts, in October 1974 regarding what treatment of the dome would best improve the acoustics. In response Newman indicated that the "acoustics problems that have always been in evidence in the Dome Room will continue to plague the space unless we face squarely the problem of making the domed surface highly sound absorbing." "In other words," Newman wrote, "we get rid of it as a troublesome, focusing reflector. There is no hard sound-reflecting dome in the world that acts as a satisfactory ceiling for an 'auditorium.'"[727] Newman recommended installing "some type of perforated facing of metal or vinyl over a highly efficient sound-absorbing glass fiber blanket." He warned, however, that "such a treatment must be more or less a permanent installation" because the room was simply too large to add or remove components as needed. In conclusion, Newman made the following statement:

> I wish we had a magic answer that would give you high sound-absorbing efficiency with the appearance of smooth plaster. There simply isn't any such thing and to search for it is like looking for the fountain of youth or to hope that, when one jumps out of a window, he will go up, not down. The behavior of sound in rooms is governed by simple, physical laws. There is no way around it. If the Dome Room is going to work, we must make it work by application of known physical principles.[728]

Spitz Space Systems, Inc., of Chadds Ford, Pennsylvania, prepared a sample panel of the proposed acoustical treatment, and on December 6, 1974, representatives from the University, Ballou and Justice, and the Virginia Fine Arts Commission inspected the panel, which had been installed in the Rotunda for testing. The group unanimously agreed that though the treatment was "in no way a true or Jeffersonian restoration," it was the "best presently available solution to the problem of rendering the dome room useful for the activities set forth by the Rotunda Committee." The arts commission voted to recommend approval of the material by the governor.[729]

As the controversy over the ultimate use of the Rotunda swelled, the University frequently had to stave off trespassers and, in one case, attempted arson, when someone set fire to the dome in early November 1974. The fire resulted in minimal damage. R. E. Lee and Son held a contract with a private security firm, but it had expired on October 31, and the contract was not renewed, leaving security to the University police, who did not have the resources to patrol the Rotunda when the workmen were not on site.[730] At the end of the first week of November the firm hired a new night watchman to be stationed at the Rotunda for the duration of construction.[731]

The question of the use of the Rotunda continued after the construction work was completed in 1976. A nine-member Historic Central Grounds Committee was formed to supervise the general appearance and use of the Rotunda, the Lawn and its gardens, and the nearby McIntire Amphitheater, located to the west of Cocke Hall and completed in 1920. Guidelines for the Rotunda's usage were reworked periodically throughout the next few decades as questions about the building continued to be raised, and "conditions and fees for scheduled uses" became points of contention.[732]

Construction Continues, 1974–1976

Forms for the poured-concrete walls for the access tunnel beneath the basement were in place in May 1974, as local plasterers ran continuous curved cornices and prepared supports for the premolded decorations that would later be applied throughout the building.[733]

Architect Louis Ballou determined the design for the new skylight in the Rotunda by reviewing notes from the early proctors. "We had no information on the shape of the [original] skylight—how many divisions it had or anything about the slope," he wrote, but "we did know that its diameter was shown as sixteen feet on Mr. Jefferson's drawing of the Dome Room. We also knew that Mr. Jefferson had built a skylight that didn't last very long and leaked almost immediately." In reviewing the papers of Arthur S. Brockenbrough, who was proctor during the original construction, Ballou discovered that Brockenbrough "had ordered three trapezoidal shaped pieces of glass to replace three pieces broken in the skylight." "The largest dimension of these pieces was over two feet," Ballou wrote. This is the largest piece of glass that would have been available at that time. From that assumption they calculated the number of panels and the height of the skylight. By December 1974 the new skylight was in place, as were the furring strips on the Guastavino dome, which was ready to receive the new metal roof.[734]

The question of the color of the roof was discussed in late summer 1975. Several different color samples—white and varying shades of gray, green, and red—were painted on the dome for comparison. After much debate, the roof was painted white; the architects had determined that this was most likely the color of the original dome, as Jefferson had purchased only white paint for the University buildings while the Rotunda was under construction. It was also agreed that white was the most attractive color from a distance.[735]

During the demolition work Louis Ballou had discovered that leaks in the floor under the north portico had caused damage to the "structural system holding up the North Portico stairs, within the storage rooms along the cross corridor" and that the system was in a "bad state of deterioration." Ballou recommended that R. E. Lee and Son examine the area with the structural engineers and make necessary improvements and corrections.[736] The contractors replastered the corridors under the north portico sometime before May 1975 but did not identify the source of the leakage.[737] In August 1975 the contractors assessed the scope of the work needed to correct the problem:

> We have completed removal of marble on the upper landing including the upper step and installed the waterproofing membrane. We have flooded this area and found it to be tight without leaks. We have also flooded the step area and found that while we still have considerable leakage here, the leakage can be traced almost entirely, if not entirely to the joints.
>
> It appears to us that there is no leakage in the steps except through open joints and that if these joints are recaulked, we will have a waterproof area without the necessity of removing and replacing the marble steps. We point out that the cost of caulking the step joints is relatively minor compared to the large cost of removing the steps, waterproofing beneath them and replacing the steps. Since we believe our chances of success are very good, we recommend this approach and will proceed in this manner unless you advise us on the contrary . . .
>
> When the work is complete, the upper landing will have a complete new waterproofed membrane installed and the marble relaid with the joints pointed. The steps and adjacent buttresses and balustrade will be completely recaulked.[738]

In a July 17, 1975, letter to Raymond Bice, the chairman of the Restoration and Adaptation of the Rotunda Committee, Louis Ballou described the columns in the Dome Room and their placement, indicating changes that had been made to the architects' plans based on photographs of the columns in the original Dome Room and Jefferson's original specifications:

> The decision was made by the Committee to reduce the diameter of the columns to 17½ inches, simultaneously correcting the entasis and increasing the apparent space between the columns.
>
> It may interest you to know that according to Mr. Jefferson's original specifications, he called for columns 18 inches in diameter with a space of one foot between them and a space of 4 ½ feet between pairs of columns. This of course was in his first rough computations and would of necessity require adjustment because of the fractional dimension in circumference of a 54-foot circle.
>
> A study of photographs of the original Dome Room reveals that the spacing of the columns was actually determined by the spacing of the modillions in the entablature above. There is a modillion centered over each column. There are 220 modillions in a complete circle, and in each bay, which is 1/20th of the circle, there are 11 modillion spaces. Each pair of columns has three modillion spaces between column centers, and there are eight modillion spaces between pairs of columns. This slightly reduces the space between columns and increases the space between pair[s] of columns from Mr. Jefferson's original rough computations described above.
>
> The photographs also indicate that the height of the columns, including the base and the capital, is ten times the diameter, or 15 feet for an 18 inch column. A study of the relationship of the diameter

> of the columns to the spacing of the columns, which can be calculated, reveals that the columns were 18 inches in diameter.
>
> It appears that Mr. Jefferson may have varied the proportions of the composite order of Palladio, which he used as a guide, so that there would be more space between adjacent column bases and capitals with his closer column spacing, than could be obtained by exactly following the proportions of Palladio's original.[739]

With these revisions, Ballou indicated to Bice, the new columns and their spacing would be "as reasonably close to Mr. Jefferson's original as possible."[740]

Steel load-bearing posts were inserted in the center of one column in each pair, and the column capitals were cast from plaster to replicate the original wood capitals. Wood shafts and bases for the columns in the Dome Room were manufactured by Knipp and Company of Baltimore and shipped in sections to be assembled on site. The columns were installed in September 1975.[741] The plaster capitals, as well as the decorative moldings in the oval rooms, were made by Knipp's subcontractor, Decorator's Supply Corporation, of Chicago.[742]

Prefabricated balustrades had been delivered to the site in sections and assembled atop the entablature in the dome room in June 1975. Though a handrail was not part of Jefferson's design for the intermediate balcony, one was installed along the edge of the balcony in July to fulfill code requirements.[743]

By early March 1975 Spitz Space Systems's recommended acoustical panels for the interior of the dome had been accepted by all parties, as well as by the governor. The contract amount, $95,995, included fabrication and installation of the panels, as well as the installation of a fiberglass duct liner on the backside of the panels. Frames for the panels were installed in September 1975. The frames were attached to the Guastavino tile and supported "sound-absorbing panels of plastic-coated aluminum backed with fiberglass." The ceiling panels were installed in October 1975.[744]

The 140-year-old heart-pine flooring for the Dome Room was salvaged from other buildings and was laid in the direction from fireplace to fireplace, as indicated by a pre-fire photo of the dome room.[745] In 1981 Joseph Lee Vaughan and Omer Allan Gianniny Jr. described the method in which the floor was installed: "Two-by-four 'sleepers' were nailed to the poured concrete over steel joists. Voids were filled with sound-deadening insulation and a continuous plywood subfloor was nailed to the sleepers. The finished floor was then nailed to the sleepers. This effort helped deaden sound in the Dome Room." The floors were sanded, stained (with Min-wax stain no. 211), and coated with polyurethane. The floors were lightly buffed with steel wool and then waxed and buffed again. Installation of the Dome Room floor was completed in March 1976.[746]

The "free-form" stairs, Vaughan and Gianniny reported, "required close attention to detail." "Said to be the first double free-standing stairs in the United States," they wrote in 1981, "they are of special interest to architects and builders. Framed over steel, the wooden stairs follow smooth curves along the walls of the oval rooms until they intersect with the exterior walls. There they turn along another set of curves." A master craftsman from New York installed the railings, and the stairs were completed in November 1976. The fireplace located in the turn of the east stairway in the original design and covered up in the McKim, Mead and White construction was restored.[747]

A sophisticated new heating and cooling system, required to control the environmental conditions in the building to preserve it and the contents, was installed by the end of October 1975. The "labyrinth of valves, pipes, and tanks" used to maintain the climate-control system was contained in a "small room off the ground floor hall." Other utilities were "placed inconspicuously in the attic of the south portico, beneath the steps of the north portico, in the basement, and in a new access tunnel beneath the floor of the basement. The trench for the tunnel was dug twelve feet beneath the floor of the hitherto undisturbed red clay, along the north-south diameter of the building."[748] The Valley Steel Corporation of Salem, Virginia, which undertook this phase of the work, had prepared drawings of the "tunnel slab detail showing supporting accessories" in August 1973. Ballou and Justice approved the plans that same month.[749]

A New Rotunda

The Board of Visitors held its first meeting in the east oval room on the main floor of the Rotunda on January 23, 1976, though the restoration project was not entirely completed at that time. At the meeting a report on the status of the construction was distributed and discussed, and February 20, 1976, was set as the completion date.[750] On March 26, 1976, the restoration of the Rotunda was described as "essentially completed," and the dedication was held on April 13, 1976, Thomas Jefferson's 233rd birthday.[751] As part of the ceremony University president Frank L. Hereford Jr. received the key to the Rotunda's main entrance in the south portico from the Rector, William L. Zimmerman III. The newly revived Jefferson two-dollar bill was issued as part of the ceremony.[752]

For the nation's Bicentennial, the *AIA Journal* asked forty-six architects, critics, and historians to nominate what they considered to be the "proudest achievements" of American architecture. The results of the survey were published in the July 1972 issue of the *Journal*: with twenty-nine mentions, the University of Virginia's "Jeffersonian campus" received more recognition than any of the other thirty-seven nominees.[753]

One of the principal justifications for the entire restoration project—moving the president's office to the Rotunda—was never implemented. In December 1974, while the project was still underway, President Hereford determined that the spaces were too limited to adequately accommodate the Office of the President, and he felt that having the building serve simultaneously as a tourist attraction would be disruptive to office functions.[754] Although never used as the president's office, the design configuration of the first floor, with an interconnecting passage between the west oval room and the north oval room, and the toilet to the south of the west oval room, remained unchanged. In the first few years after its completion in 1976, the Rotunda was visited by between 800 and 1,000 visitors per day.[755]

In mid-April 1977 Louis Ballou submitted to the University an itemized statement for $251,920.85 for his firm's architectural services and engineering fees. Of this amount, $191,161.48 was for architectural services from January 1967 to July 1976. Electrical consultant Leo T. Griffin's bill amounted to $29,435.45; structural consultants Torrence, Dreelin, Farthing and Buford's bill totaled $10,763.19; $19,060.73 was due for "consultants, research, and expenses"; and $1,500 was billed by Ballou and Justice for "coordinating work with consultants."[756] R. E. Lee and Son's charges for the work carried out on the Rotunda totaled $2,375,758.77. An additional $27,556 was billed for supervision, $131,451.50 for equipment, and $26,055.11 for other expenses. The total cost amounted to $2,812,742.23.[757]

In May 1977 Werner Sensbach, director of the University's Planning Department, proposed to the Virginia Historic Landmarks Commission that glass doors be installed "on the south side of the Rotunda for both the main floor and the ground floor." The door on the ground floor would "provide a vestibule through which visitors enter the Rotunda." The glass doors on the main floor were meant to "open up the view of the Lawn for visitors inside the Rotunda."[758]

In the few years following the completion of work, the role that the Rotunda was to play at the University became more clearly defined, in many ways fulfilling the desires voiced by the Student Council Rotunda Committee in 1974 and 1975. The dome room was accessible to students as a place to study, and, as planned, receptions and special academic events were held there. On the main floor, the Board of Visitors met regularly in the east oval room, and doctoral examining committees and small groups used the north oval room. During the first year after construction was completed, the west oval room was used as the Bicentennial office for the University, but after 1976 it served as the president's ceremonial office. The basement oval rooms housed the University Guide Service and a University museum. The admissions office regularly used the west oval room in the basement to hold meetings with prospective students. Offices for the vice presidents of academic affairs, student affairs, finance, and development were located in the wings.[759]

A Program of Repair, 1982–1985

By the early 1980s the University's buildings—both the old structures and the newer construction—were in need of repairs and improvements. Over the years, when funds were short, the University had been required to return funds appropriated for maintenance, so such work, especially repairs slated for the older buildings, was often deferred. As maintenance was delayed, more expenditures were inevitably required.

In 1980 the University initiated a comprehensive program of continuous facilities inspection aimed at identifying in detail the nature and magnitude of the deferred-maintenance problem. By October 1982 it was estimated that more than $10 million would be needed to make up for the deferred-maintenance backlog throughout the entire University. Meanwhile, in June 1980 the Buildings and Grounds Committee had proposed to undertake the repair of some of the University's older buildings, which included "extensive work" to "correct leaking under the Rotunda deck." By the spring of 1982 nearly $4 million had been appropriated by the Virginia General Assembly for deferred maintenance, $250,000 of which was earmarked for replacing the Rotunda's decking. The need for "certain roofing and repair projects" was mentioned, though not elaborated on, in the minutes for the Board of Visitors' meeting on January 22, 1983. Overall the University's 1982–1984 budget gave first priority for an initial phase of corrective work on the older buildings. These buildings required continual maintenance, and an endowment for that purpose was needed.[760]

In May 1984 the esplanades on the roofs of the Rotunda's terrace buildings were in the process of being rebuilt "at a cost of some $200,000."[761] The January 24, 1985, minutes of the meeting of the Buildings and Grounds Committee indicate that at least some of the repair work, though unspecified in the report, done to the Rotunda was completed by that time and that the Rotunda's terraces had "required extensive work."[762]

In February 1985 the University's Department of Physical Plant prepared a drawing of the existing roof structure of the dome and porticos and annotated the drawing with notes about needed repairs. The notes included specifications for paint types, as well as recommended cleaning and application directions.

At the same time University officials were still attempting to define the best or most appropriate use of the Rotunda. An ad hoc Committee on the Use of the Rotunda presented a report on its findings to the Board of Visitors in October 1986. The report updated the guidelines for the use of the building that had been outlined in 1976, after the restoration was complete.[763]

The Committee on the Use of the Rotunda concluded that while it was very important to regard the Rotunda as an active, working building rather than a "sterile shrine," the building's special characteristics and historical significance dictated that its use be carefully considered. Especially since the Rotunda's restoration in the 1970s, there had been heavy demand by University groups—including the University Senate, Student Council, the Honor Committee and some fraternities—for use of the building's facilities, and the demand far outstripped the available space. In addition, several thousand people visited the Rotunda in a typical month. Because of the "irreplaceable and fragile nature" of the interior, it was important that the building be used in ways that would not shorten its life. The committee therefore recommended that the University establish a small standing committee to assist the Rotunda administrator in making decisions about requests for use. They recommended that the standing committee have both faculty and student representation.[764] The committee found that the use of the Dome Room to be of special concern because of the "fragile and irreplaceable" heart-pine flooring.[765] A policy on the use of the Rotunda was approved by the Board of Visitors on October 3, 1986.[766]

On January 29, 1987, the Buildings and Grounds Committee discussed "reworking the Rotunda front steps."[767]

In December 1987 the University of Virginia, along with Monticello, was added to the World Heritage List because it was considered a site of "outstanding universal value to mankind" and because its "deterioration or disappearance would be a harmful impoverishment of the heritage of all nations of the world."[768]

By the late summer of 1988 almost $5 million had been spent on the repair and restoration of the University's historic buildings since the inspection program began in 1980. Over the next two years another $700,000 was expended. Principal funding sources were the "operating budget, maintenance reserve appropriations, and private funding, with substantial support being developed by the Jeffersonian Restoration Advisory Board," which had been established in 1984.[769] The advisory board became the fundraising arm of the University for the Jeffersonian buildings and grounds, as well as the principal adviser to the Board of Visitors on policies related to the restoration and preservation of those properties.[770]

In its September 1988 report the Buildings and Grounds Committee of the Board of Visitors summarized the work that had been completed on the historic buildings during the previous eight years: the committee recounted that major exterior and interior repairs were made to many of the pavilions and to the Monroe Hill House, built in 1826. The Rotunda was not mentioned in this brief report, nor was it mentioned in a similar report released two years later.[771] Similarly, there was no specific mention of the Rotunda in the recommended program of repairs for 1990 to 1992.[772]

After 1985 the University had greatly increased its maintenance and restoration activities in the Jeffersonian Precinct, to a level of $1 million per year. These funds covered the cost of building materials, staff time, research, training of craftsmen, and materials analysis; additional funds were still needed to support capital outlays. The Jeffersonian Restoration Advisory Board began working toward creating the endowment that would be needed to maintain the historic buildings; the initial endowment target was $5 million.[773]

Considering the Rotunda's Role at the University

During the 1970s construction University officials began to seriously consider how the Jeffersonian buildings were being used, and these questions carried into the 1980s and 1990s. In 1990 the University began to develop policies that would guide treatment of the Jeffersonian buildings and grounds based on the principles of the Venice Charter of 1964. The University's new goal was to occupy and use the University's historic buildings rather than treat them as "museum pieces only to be toured and/or studied." "At the present time," the Buildings and Grounds Committee declared in 1990, "research, maintenance, and restoration must be conducted simultaneously, owing to the constant use of the buildings and the inability to isolate the site from both users and events."[774]

At the same time the University needed to consider the capital requirements for the upgrade and modernization of the historic buildings to bring them into conformance with modern fire-protection and safety standards, to provide satisfactory utility systems, and to adapt them to contemporary functions. This goal proved to be a significant problem for the University due to the magnitude of its inventory of older buildings. In 1990 nearly a third of the University's academic buildings had been built before World War II, and six percent of the buildings had been built in the nineteenth century.[775]

In order to assess the magnitude of the capital renewal requirements, the University initiated a facilities audit program. Based on the audits completed by early 1990, which included the inspection of 24 buildings, the total capital renewal cost for the University's pre–World War II buildings was estimated to be approximately $76 million.[776]

Beginning in the early 1990s the University had formulated its primary goal, which was to restore Thomas Jefferson's "vision of the reciprocity between the academic and the physical plan of the University." A large part of achieving and maintaining this goal was "to reverse the dispersion of the University across a larger countryside and restore its concentration around the central grounds," reestablishing academic programs and student residences in that area. With no building more central to the University than the Rotunda, these new goals would surely affect its usage.[777]

Early in 1992 the Office of Architect of the University was officially established, and architect Harry Porter, dean of the University's School of Architecture, was hired to fill the position. The Architect of the University and his staff were to establish their office in the Rotunda. In his new role, Porter was chair of the Master Planning Council and played an active role in the presentations of the Buildings and Grounds Committee.[778]

A report published in December 1992 illustrated expenditures on restoration projects in the Academical Village from 1983 to 1992. The spreadsheet shows that the only funds expended for work on the Rotunda during that time, the sum of $60,000, was in 1985.[779] After construction was complete in 1976 the Rotunda was used as the University's visitors' center, but by the early 1990s studies by the Buildings and Grounds Committee showed, surprisingly, that visitors to the University, especially prospective students and their families, "probably don't want or need to go there."[780]

In 1993 the University began investigating ways of making the Academical Village accessible to all students and visitors. Mesick, Cohen, Waite Architects, now John G. Waite Associates, Architects, along with EDAW landscape architects and Barrier Free Environments, Inc., an accessibility consultant, called for the installation of a mechanical lift near the Rotunda steps to the Upper Lawn Terrace and the modification of four toilets (two in the cryptoporticus and two near the lower north oval room), as well as improvements to the serviceability of the Rotunda's elevator. The consultants also recommended regrading the walkway and raising the level of the paving in the arcade adjacent to the principal office entries at the northwest corner of the Rotunda office wings and installing a lift device to ground-floor toilet rooms inside the Rotunda.[781]

Repairs and Improvements at the End of the Twentieth Century

Harry Porter resigned as Architect of the University in 1994 and was replaced by University alumnus Samuel A. "Pete" Anderson III in May 1995.[782] In May 1995 the American Institute of Architects awarded the University the Institute Honor Award for the University's decade-long curatorial program to preserve and restore the buildings in Thomas Jefferson's Academical Village, including the Rotunda.

During the late 1990s University officials, including curator and architect for the Academical Village James Murray Howard, realized that the Rotunda continued to be in need of repair and improvements, especially as use of the building was considered. In June 1997 Howard compiled a report on the Rotunda, discussing, largely, the dome and roof:

> You may have noticed that the dome turned black briefly, from December [1996] until March [1997]. What you were seeing was a chemical primer applied to the metal surface to neutralize rust that blossomed there in late fall. The action was consistent with the University's posture during the last decade—sustain the present steel outer skin of the dome for as long as may be practical. Thus our immediate aim this year was first to neutralize the rust, then repaint in the white color that has, for the last twenty years, been seen by the public. That repainting has now been accomplished. The four-month project, which had to lie dormant during the coldest months, yielded unexpected insights into the nature of the dome, past and present. Research into historic documents and photographs showed that the dome has undergone many episodes of change. While it is still difficult to prove how the dome was first skinned, we can demonstrate that its shape and color were altered at least five times over 150 years. It is doubtful that the curved surface was white even in the earliest years, when it was more likely a medium gray color; and photographs prove that it was very dark in color throughout much of the 19th and 20th centuries. But we do know that the present brilliantly white dome is a product only of the 1970s. Should we therefore change the dome's appearance now? No. This year's physical investigations have allayed the recent belief that we would have to replace the metal skin in a very few years. We now think that this chapter in the life of the building could endure for perhaps another ten years, with adequate maintenance. We also know that the masonry inner structure of the dome is sound, yet it dates only from the era of rebuilding just after the 1895 fire; prior to that the structure was of wood. So whenever we do confront the unavoidable need to replace the metal skin, we face dilemma—what is the appropriate covering for a non-original but perfectly sound masonry structure? Would Jefferson's earliest skin be correct if the structure below does not correspond historically, or would Stanford White's copper skin be "truer"? But that question is for the distant future. Be assured that, for now, the dome can and should remain as we see it, until the next chapter is ready to be written.[783]

Early in 1997, as part of a survey of the existing conditions, the University Facilities Planning and Construction Department mapped out the scope of water damage and likely sources of water penetration into the spaces below the terrace esplanades.

Based on the results of the survey, the department recommended concentrated testing of the northeast terrace wing as well as removing a section of the marble base from the south portico for laboratory testing.[784]

James Murray Howard provided the following report on the Rotunda's exterior in June 1997:

> Outside, the Rotunda suffers from increasing water problems on the decks that surround the original circular building. Expanded by Stanford White in 1896, reworked in 1938 and 1983, the decks are now subject to chronic leakage that makes some of the office spaces below unsightly and unpleasant. We are presently engaged in studies with architectural consultants to better understand the failure mechanisms and to find ways to resolve them. Phase I of the work, completed in the winter of 1997, surveyed and documented the problem areas. Phase II, now underway, will include testing of the affected areas, necessitating the removal of some marble and bluestone components to determine subsurface conditions and enable us to better predict trustworthy responses. Resolution of the problems at all four decks will probably require several years, which would constitute Phase III of the work. We want to be sure that any new work will stop the habitual destruction that has plagued these decks for many years.[785]

Also in June 1997 the guidelines on the use of the Rotunda, which had been approved in October 1986, were revised and updated. An access ramp to the Rotunda was being considered in the spring of 1998.[786] Three access ramps were ultimately installed: one at the southwest corner, one on the south side between Pavilion I and the south steps of the Rotunda, and one at the southeast corner.

In the summer of 1997 the Design Committee of the Jeffersonian Restoration Advisory Board initiated improvements in the lower east oval room, which then served, and still does, as a visitors' reception and information area. Since the 1970s restoration the room had been arranged as a museum-like space for visitors. Until 1991 the office of the Rotunda administrator was also located in the east oval room, when it was moved to the lower north oval room. By the late 1990s, however, the University's goal was to alter the museum-like atmosphere of the east oval room and make it more useful as an impressive but informal meeting space that would include displays about the history of the Jeffersonian precinct.[787]

By the spring of 1998 the marble bases of the columns on the south side of the Rotunda were showing wear and were in need of repair. The plinths were "cracked and the caulked/mortared joints between the pieces opened"; one plinth had completely broken loose, and the plinth beneath the southwest pilaster was "severely damaged." When that damaged plinth was removed in summer 2000, Stephen P. Ratliff, senior construction manager of the University's Facilities Planning and Construction Department, found two coins that had been deliberately placed underneath the plinth block. One coin, an 1865 two-cent piece, had the initials "JMB" scratched onto the surface, and the other, an 1879 one-cent piece, bore the initials "CWH." The number "97" was scratched into the reverse of both coins, suggesting that they had been placed there during the rebuilding of the Rotunda after the fire and that the pilaster plinth had been replaced at that time.[788]

In spring 1998 workers replaced the stone paving on top of the southwest terrace offices, and steel-and-brass guardrails were installed at each side of the main stair leading from the Rotunda deck to the Lawn level following the designs of James Murray Howard. The rails were fabricated and installed by Iron Crafters, Inc., of Gordonsville, Virginia, at a cost of $17,180 and were completed in time for graduation exercises in mid-May.[789]

The survey that had been carried out in 1997 was the first phase of a four-phase construction project for the improvement of the Rotunda decking, the final three stages of which were to take place during the summers of 2000 through 2003. The design work was carried out by Stoneking von Storch Architects, of Charlottesville, and Whitlock Dalrymple Poston and Associates, consulting engineers of Manassas, Virginia.[790]

With the 2003 arrival of Architect for the University David Neuman, a reassessment was made of the University's historic-preservation goals. Neuman had formerly held a similar position at Stanford University. At the University of Virginia a new effort would be made to supplement the ongoing commitment to the preservation of the Jeffersonian buildings and landscape with an increased recognition of the roles of the post-Jeffersonian buildings and landscapes at the

University. Neuman established a skilled team to implement newly identified preservation priorities and objectives at the University.

In 2003, the University began the process of developing a Historic Preservation Framework Plan that would outline the chronology of development on the Grounds and formulate criteria for determining preservation priorities. Central to this plan is the tenet that the University's historic buildings and grounds are fully functioning parts of the University's operations; they are not intended to be museum artifacts.

Historic Structure Report

John G. Waite Associates, Architects was commissioned in 2006 to research and write a historic structure report that would serve as the basis for a comprehensive restoration and rehabilitation of Thomas Jefferson's Rotunda. The historic structure report was the culmination of extensive physical investigations and archival research, with architects and building conservators working to identify evidence from the various periods of the building's complex history.

The report team developed a complete set of measured drawings to record existing conditions, to serve as foundation contract documents for the subsequent restoration, and to benchmark a moment in time following changes brought about by the devastation of fire and physical interventions. The drawings were augmented by a construction history of the building, as well as a document of changes over time, including a history and chronology of the landscape in the immediate vicinity of the Rotunda. Primary research was carried out to better understand the building and to be better able to explain why remaining building fabric was important. The success of the report was largely dependent on the contrast and comparison of archival research and physical evidence.

Following a complete interior and exterior visual survey of the building, the team prepared architectural descriptions of existing conditions and problems of repair, as well as an assessment of structural, mechanical, electrical, plumbing, and fire-protection systems. The subsequent recommendations for repair and rehabilitation addressed options for the approach to preservation and restoration and included proposals for programming and maintenance.

An unabridged copy of the Rotunda Historic Structure Report was completed in 2007 with appendices including measured drawings; the 1851 Robert Mills's construction specifications for the Rotunda Annex; the 1896 McKim, Mead and White construction specifications for the restoration and rebuilding of the Rotunda; the 2006-2007 mechanical; electrical, plumbing, and fire-protection findings and recommendations; and a 2007 structural assessment. An abridged, printed version of the historic structure report was released in 2008.

As the project advanced from research to restoration, the first step was to make repairs addressing the integrity of the building envelope. The direction provided by the University generally followed the option outlined in the historic structure report for revising and upgrading the 1970s rebuilding, so that it would more accurately represent Thomas Jefferson's original interior, and restoring the surviving McKim, Mead and White exterior. The building in 2008 was generally a composite of Stanford White's exterior restoration and Ballou and Justice's interior renovation.

Roof

In 2010 the University retained John G. Waite Associates, Architects to provide the design and construction documents for the first phase of the Rotunda restoration and rehabilitation—the replacement of the dome roof. The 1970s terne-coated steel roofing was perforated by corrosion, which had been promoted by condensation beneath the roofing. The failure of built-in gutters compounded problems with water infiltration at the dome. A substantial amount of moisture had permeated the masonry construction of the tile dome and the upper reaches of the brick drum walls. The University decided to replace the failed sheet-steel roofing with copper roofing, painted white to replicate the patinated appearance of the original tinplate shingle roofing and the intended design of the 1896-1898 McKim, Mead and White restoration . The 1970s oculus of the dome was to be replaced with a new vented skylight replicating the interior appearance of Jefferson's ca. 1826 oculus and the exterior appearance of Stanford White's ca. 1897 oculus.

It was already known that the dome of the Rotunda consisted of an inner and outer shell of terra-cotta units fabricated by Rafael Guastavino as part of Stanford White's work, replacing the wood-framed Delorme dome destroyed by the fire of 1895; however, the details of the terra-cotta construction were unknown. A series of roof probes during the summer of 2010 exposed typical construction details and conditions of the sheet-metal roofing and underlying masonry.

The deck of the drum roofing surrounding the dome was found to be constructed of terra-cotta tile spanning inaccessible chambers, which were separated by brick walls radiating from the base of the dome. The decking consisted of a thick, open-cell yellow tile over a bed of mortar and a thin layer of flat red terra-cotta tile. The open-cell porous tile was a nailing tile to which the sheet-metal roofing was attached.

The bottom step of the deck surrounding the dome was constructed of concrete block with a cast-concrete tread; the succeeding six dome steps (dating to the 1970s renovation) were constructed of cast-in-place concrete. Brick and tile rubble from the demolition of the McKim, Mead and White dome steps was found within the cavity of the bottom step, saturated with water. Inside the cavity, a relieving arch was discovered in the outer Guastavino tile dome. The arched opening, filled with tile, appears to have been one of the eighteen evenly spaced skylights of Stanford White's initial dome design. These skylights were eliminated in November 1896, when White altered the design of the interior dome. He enlarged the diameter of the inner dome at its base and decreased its curvature, so that the inner dome would spring from the drum, rather than from the inner circumference of the gallery of the Dome Room.

With the removal of a section of the 1970s terne-coated steel sheet-metal roofing from the dome, the underlying contemporary construction was found to consist of wood battens attached to the dome with anchors set in the tile. Fiberglass insulation with an asphalt-paper backing was laid between the battens. Beneath the insulation, ca. 1897 fasteners secured roofing felt to the tile dome. The upper extent of the dome was found to be dry and generally in good condition. Any water entering the roofing was naturally shed by the curvature of the dome to its base, where a high concentration of moisture was observed.

A series of probes within the duct enclosure at the upper gallery of the Dome Room and in the north wall of the southwest stairwell to the roof revealed a total of six ferrous tension rings at the base of the inner and outer tile domes. Five of these rings are believed to be steel, dating to the McKim, Mead and White restoration and rebuilding. These bands are vertically oriented and encircle the bases of the tile domes; two on the outer dome and three on the inner dome. A sixth, horizontally oriented ring appears to be of wrought-iron construction and is believed to date to the original construction of the Rotunda. This ring has offset, lapped joints that are joined with a twelve-inch tapered iron pin with hand-cut threads and a square nut. It is thought that the iron ring may have been attached to a wood sill to form a composite iron-and-wood tension ring at the top of the brick drum wall. A seventh steel tension ring, also dating to 1896-1898, was discovered during subsequent roof investigations.

In April 2011, the University hosted a historic preservation colloquium to review the historical research and physical investigation and to deliberate the implications of multiple periods of significance, the ongoing use of the building, and the priorities for work. Following the colloquium, the University decided to expand the scope of roof probes to insure that as much information as possible was known about the configuration and condition of the construction of the dome roof, in order to assist in developing the restoration approach. The new probes examined the roof construction and underlying conditions at the north and southeast points of the compass, augmenting the 2010 findings at the southwest quadrant of the roof.

During the summer of 2011 destructive and nondestructive probes were utilized to examine the construction of the dome roof. Limited demolition of the 1970s concrete dome steps yielded new information about the McKim, Mead and White dome and about the 1970s roofing modifications. Radial probes, removing a two-foot to three-foot width of sheet-metal roofing and concrete step construction, were cut out to expose the upper surface of the terra-cotta dome. These probes revealed an additional ferrous tension ring (the seventh known tension ring) immediately above the tile and brick-arch construction of the abandoned perimeter skylights; this construction was encapsulated within the cavity of the

1970s bottom step. The exposed cross-section of the cast-in-place concrete steps revealed that the concrete had been poured twice. Both concrete pours had wood nailing grounds embedded at the inside corners and leading edges of the steps. The secondary concrete pours appear to have been needed to modify the proportions of the steps.

The concrete steps were constructed as an expedient solution for replicating the appearance of Jefferson's steps, believed to have been of wood frame construction similar to the parapets used on Pavilions IX and X. The limited detailing and specifications provided for the dome roof in the architectural construction documents completed by Ballou and Justice is indicative of the tentative nature of the 1970s re-roofing effort. The additive nature of the concrete pours and the way in which they were formed suggest an inexact, field response to the needs of the project.

The upper two 1970s concrete steps were cast in place on top of the soft, open cell "nailing tile" of the ca. 1897 dome. These steps were placed above the uppermost location of the McKim, Mead and White steps. The ca. 1897 construction consisted of four steps with brick risers and tile treads. These steps had progressively shorter risers from bottom to top.

In August 2011, nondestructive evaluation (NDE) techniques were introduced as a means of identifying embedded steel reinforcement in the tile dome construction. Ground-penetrating radar and metal detection were used in an attempt to verify the existence of reinforcement as shown on the 1910 Guastavino patent drawings for tile dome structures. While the NDE results were not conclusive, they did suggest that steel reinforcement may exist between the outer two layers of hard tile in the outer dome.

In July 2011, before the Rotunda roof-replacement construction documents had been completed, the University solicited letters of interest and statements of qualifications from construction-management firms. Four firms were invited to submit construction-management proposals with design phase services for the Rotunda roof replacement project. The University selected the joint-venture proposal of the Christman Company and the Gilbane Building Company, and a contract was finalized in October 2011.

The initial construction documents for the dome roof replacement were completed in the spring of 2012. In addition to the new skylight, the University's Board of Visitors had made the decision to repair and replace the 1970s dome roof steps. New copper sheet-metal roofing was installed at the dome and over the reconstructed dome steps, with detailing that provides for ventilation of the roofing and for drip edges on the steps to shed water.

Exterior Masonry and Sheet-Metal Restoration

Additional document packages were released in October 2012 and January 2013 for exterior masonry and sheet-metal restoration. This work included the cleaning and pointing of the brick drum walls and restoration of the window sash in the drum.

Between July and August 2012, a series of ten probes were made into the ca. 1897 copper sheet-metal construction of the upper cornice, intermediate entablature, first-floor window friezes and pediments, and ground-floor window architraves. Stanford White introduced these materials as fire-resistant construction replicating the appearance of the original wood.

The upper sheet-metal cornice was found to be supported on bent iron or steel brackets that were embedded in the brick masonry wall construction. The upper edge of the cornice was anchored to the sheet-metal gutter lining at the perimeter of the drum with a cleated horizontal seam. A wood nailing strip was used to attach the lower horizontal edge of the cornice to the brick wall construction.

The probes revealed that the copper sheet-metal cornice and gutter construction of the intermediate entablature were carried on cast-iron brackets attached to the drum wall with lag bolts screwed into wood expansion plugs. The architrave and frieze below the cornice, as well as the sheet-metal base above the cornice, were face-nailed to wood furring strips and blocking that were nailed into the masonry. The built-in gutter was carried on wood joists spanning between the cast-iron brackets of the cornice. The empty outrigger framing pockets of Jefferson's intermediate entablature, which burned in the fire of 1895, were filled with brick soldiers. Many of the wood expansion plugs embedded in the brick masonry to carry the cast-iron brackets had rotted and pulled loose from the wall, and much of the wood framing was rotted and attacked by vermin.

With the removal of the sheet metal surrounding a first-floor window, it became apparent that the window pediments were carried on wood frames nailed into wood grounds embedded in the brick wall construction of the drum. The sheet-metal frieze beneath the pediment was face-nailed to wood furring strips that were nailed to the brick masonry. The sheet metal had been deformed by falling debris and by over a century of construction and maintenance operations. Significant paint buildup, uneven layers of paint, and repeated applications of caulk obscured the molding details. With the paint stripped from a pediment, it became apparent that the moldings were initially fabricated with soldered joints.

The copper sheet-metal architraves surrounding the ground-floor windows were face-nailed to the wood construction of the window frames. Old railroad rails supported the masonry wall construction above these window openings. The outer wythes of brick above the window openings are carried on supplemental steel angles or on the wood construction of the window frame. These lintels are aided to a large degree by the corbeled arching of the brick wall construction above the window openings.

Following a series of in-situ mock-ups assessing the viability of paint-removal techniques, including chemical stripping, dry-ice blasting, and soda blasting, the decision was made to remove the sheet metal from the building for off-site chemical submersion stripping. This work was completed under the next phase of construction. The stripped metal was then worked by hand to restore the molding profiles without stretching the metal. Solder repairs were undertaken as needed to secure molding connections and ornamental details, and holes were filled. The ferrous cornice brackets were cleaned and painted. The intermediate cast-iron brackets were re-secured to the building.

Phase II

In August 2012 the University solicited proposals for the design work for the next phase of construction, which would complete the renovation of the Rotunda. John G. Waite Associates, Architects competed against several other architectural firms for this work. Following an October 2012 interview, a contract was awarded in January 2013.

The scope of work included exterior restoration of the terrace wings and colonnades, replacement of terrace-wing roofing, replacement of marble column capitals, complete interior renovation, replacement of the building systems, installation of a new elevator and elevator lobbies, the construction of a new service elevator and underground vault beneath the east courtyard, and landscape design for the east and west courtyards, as well as the north terrace. Substantial sub-grade utility work was also included.

The John G. Waite Associates, Architects design team included the following consultants:

Lincoln Surveying	Land survey
Dewberry	Civil engineering
OLIN	Landscape architecture
Robert Silman Associates with 1200 Architectural Engineers	Structural engineering
Hughes Associates Architects & Engineers	Fire safety
Kohler Ronan Consulting Engineers	Mechanical, electrical, plumbing, and fire protection engineering
Cerami & Associates	Audiovisual, data, security, and acoustics
VDA	Elevators
Irrigation Research and Development	Landscape irrigation
Fountaincraft	Courtyard fountain
Nasco Construction Services	Cost estimating

The University directly hired several additional consultants:

Glave & Holmes Architecture	Furniture
Froehling & Robertson	Geotechnical engineering
Conservation Solutions	Materials conservation
John Canning & Co.	Materials conservation
Rivanna Archaeological Services	Archaeology

In February 2013, John G. Waite Associates, Architects served in an advisory capacity on the selection committee for the construction manager for the second phase of the construction. The Christman Company of Sterling, Virginia; Whiting-Turner of Richmond, Virginia; and R. E. Lee & Son, Inc., of Charlottesville were invited to participate in interviews for the work. The University selected Whiting-Turner.

The initial project kick-off meeting was held in January 2013. The project was developed through the normal phases of design: schematic-design documents were issued in March 2013; design development (preliminary design) documents were issued in October 2013; and the final construction documents were issued in August 2014. Landscape and expanded civil construction documents were issued in July 2015.

Pre-construction

Pre-construction work included various probes into the building fabric, including opening up ceilings in multiple locations to view hidden construction, removal of plaster to inspect masonry construction, investigations into the terrace roofing system, and excavations to examine existing building footings.

Marble Capitals

A 2010 study by Milner & Carr Conservation, commissioned by the University to assess the existing portico column capitals, noted that the Vermont marble capitals installed following the 1895 fire were in poor condition. Full replacement was recommended over repair. Identified as a critical long-lead item, the procurement of replacement capitals began prior to the start of major construction. The project team worked collaboratively to establish the preferred method of replacement. The replacement capitals would be made of Carrara marble as the 1823 capitals had been, and the design would match the surviving 1823 fragments.

The surviving Jeffersonian marble fragments were recorded with a laser-scanning device, and converted into a digital three-dimensional model. The stone carvers then used this model to guide automated computer numerical control (CNC) carving machines to rough-cut marble blocks. The final surface of the capitals was hand-carved using pneumatic chisels. Historic photographs of the capitals were studied to inform the design of missing elements. These elements were then modeled in clay. Several rounds of clay and marble mock-ups were created to further refine the design. The selection of marble blocks and the detailed design of the capitals was developed over the course of several trips by the project team to Carrara, Italy, between March 2014 and April 2015, to work with the stone contractor, Rugo Stone of Lorton, Virginia, and the stone sculptor, Pedrini Mario and Company, of Carrera.[791] The first group of finished capitals was delivered to Charlottesville in March 2015 for installation at the building. Temporary shoring was developed to support the vaulted tile roof construction of the north and south porticos, so that the failing capitals could be removed, and the new capitals installed. Installation of all sixteen capitals, ten at the south portico and six at the north portico, was complete by July 2015.

Construction Begins

Construction work began shortly after the University's final exercises in May 2014.

After the discovery of the chemical hearth, probes were undertaken in the two remaining niches at the north and south ends of the lower west oval room. The niche at the south end of the lower east oval room had been altered during the

FIGURE 117. *The Rotunda during the restoration and rehabilitation, looking east, 2015.*

1970s renovation work. The probe into the north niche of the west oval room revealed that the cavity had been filled with debris, mostly brick masonry. The layering of the debris suggested that a portion of the niche was filled during the 1895 fire, with subsequent construction debris filling the remainder. The cavity was capped with a Guastavino tile laid directly over the debris without formwork. Several artifacts were found in the debris, including a large cross-shaped iron wall anchor, which likely connected a beam or floor joist to the outer brick walls of the drum.

Dome Rome Column Capitals

The renovation of the Dome Room in the 1970s included wood columns topped with cast-plaster capitals. The execution of the plaster capitals proved to be less than satisfactory and was partially a result of the inadequate funding available at the time. Careful study of the surviving photographs of the space prior to 1895 revealed several differences between the ca. 1825 capitals and the 1970s replacements. Archival research indicated that the 1825 capitals were carved from wood blocks by Philip Sturtevant, who also carved the wood capitals at the entry niche of Pavilion IX. Although of a different order, the capitals at Pavilion IX have a similar character to the original capitals of the Dome Room. The egg-and-dart moldings especially have an obvious similarity, which is significant as they are somewhat stylized compared to many common examples.

FIGURE 118. *Excavation of the east courtyard for the new underground vault, 2015.*

John G. Waite Associates, Architects produced dimensioned scale drawings as a starting point for developing the new capital design. Similar to the marble capital fabrication, clay-and-wood mock-ups were produced and refined, then laser-scanned to create a digital three-dimensional model. This model was then used to program CNC machines to rough carve all the component pieces from mahogany. The 40 wood capitals were then hand finished. Final assembly of the capital component pieces was done on site, as the shaft of every other wood column surrounds a structural-steel column, preventing installation as a completed piece.

South Wings Remodeling

University officials held a meeting with the design team in September 2014 to introduce a change in programming for the south terrace wings. Rather than a light remodeling of existing office spaces, the wings were to be redesigned to serve as two classrooms in the southeast wing, and one large multipurpose meeting room in the southwest wing. One notable exterior design change included creating three new door openings from the new multipurpose room onto the west courtyard. During the course of this work, physical evidence of the arched openings of Jefferson's gymnasium was uncovered.

FIGURE 119. *Installation of one of the new marble capitals, 2016.*

FIGURE 120. *Construction of the vault below the ground-floor east oval room, 2015.*

Earlier probes into the roof structure of the terrace wings revealed significant deterioration of the structural concrete roof deck. Corrugated-metal decking was installed beneath the concrete deck to support the deteriorated areas without requiring the complete removal of the affected decking.

Water Table

The sandstone belt course resting on the brick water table of the Rotunda drum showed signs of distress, and the brickwork was leaning outward. A small probe, undertaken to determine its construction, found that the two-wythe brick stem wall supporting the stone belt course was not tied into the main wall of the building. It appeared to have been added at a later point in the initial construction of the building. As the sandstone was also not tied into the brick drum, water could easily infiltrate the masonry construction, allowing freeze-thaw cycles to push the stone-and-brick water table construction away from the main drum. The stem wall was completely removed and reconstructed, adding ties to secure the wall to the main drum.

This work revealed inverted brick masonry arches below each of the windows of the drum. The inverted arches served to spread the concentrated load of the brick masonry piers between the windows more evenly along the length of the brick foundation, similar to a modern grade beam. Concealed copper sheet-metal flashing was added beneath the stone belt course to direct water away from the wall construction. Stone dutchman repairs were also carried out on the sandstone. On the east elevation, a well-carved notch on the bottom of the stone below the center window was opened up. This notch had been infilled with brick and covered with mortar. This opening may have been related to a chemical hearth associated with the central east fireplace in the lower east oval room. A similar but rough-hewn notch was also found in the sandstone belt course adjacent to the surviving chemical hearth at the north end of the lower east oval room. This notch was inadvertently removed with the installation of a stone dutchman repair.

North Stair

Probes into the south walls of the north restrooms on the ground floor were intended to locate openings in the masonry for windows that would have originally lit the lower north oval room. The probes confirmed that no windows ever existed here; however, they revealed paint ghosting of a double staircase located against the wall. The ghosting was preserved, and small glass panels were created that allow the evidence to be viewed from the remodeled restrooms.

The building was complete enough to allow graduating students to process across the terrace wings in May 2016. Work continued through the summer of 2016, with outstanding items completed by the end of the year. The final cost of the project, including all phases, was approximately $50 million.

Post Construction Issues

Fountain

The fountain in the east courtyard developed leaks and was repaired by University crews. Leaks recurred in 2018, and more comprehensive repairs were undertaken in the summer of 2020. The fountain was returned to operation by August 2020.

Dome Room Damage

Moisture damage to plaster and wood trim in the Dome Room began to appear in 2019. Problems with the mechanical system were suspected to be the cause. The University commissioned Affiliated Engineers Incorporated (AEI) to inspect the systems. AEI issued a report in July 2019. The University; John G. Waite Associates, Architects; Whiting-Turner; and AEI worked together to develop a series of probes to further investigate the issues. A combination of flaws in the ductwork and insulation installation, as well as problems with mechanical-system control sequences, combined to cause the formation of condensation on the ductwork and other building surfaces. Physical repairs were made to the ductwork, and revisions were made to the digital-control sequences. Plaster and wood surfaces were then repaired.

Dome Room Columns and Capitals

The wood columns and capitals supporting the galleries in the Dome Room have exhibited open joints and cracks. Investigation and remediation of these issues are ongoing.

Notes

Abbreviations used in notes.

AAL	Avery Architectural and Fine Arts Library
AG	Alexander Garrett
ASB	Arthur Spicer Brockenbrough
B and J	Ballou and Justice
BGC	Building and Grounds Committee
BHL	Benjamin Henry Latrobe
BV	Board of Visitors, University of Virginia
Coolidge Coll.	Coolidge Collection of Thomas Jefferson manuscripts, Massachusetts Historical Society
JCC	Joseph Carrington Cabell
JD	James Dinsmore
JHC	John Hartwell Cocke
JPE	John Patten Emmet
JM	James Madison
JN	John Neilson
JGWA	John G. Waite Associates, Architects
JRAB	Jeffersonian Restoration Advisory Board
LC	Thomas Jefferson Papers, Library of Congress, American Memory Database
MMW	McKim, Mead and White
MMW, N-YHS	McKim, Mead and White Collection, New-York Historical Society
NYT	*New York Times*
PL	Ledgers maintained by the Proctor of the University of Virginia, UVSC, Record Group 5/3 12.961
PP	Papers of the Proctors of the University of Virginia, UVSC, Record Group 513
SW	Stanford White
TA	Thomas Appleton
TJ	Thomas Jefferson
TJP	Jefferson Papers of the University of Virginia, UVSC
UV, FMPF	University of Virginia, Facilities Management Project Files
UVSC	University of Virginia Library Special Collections
WJC	William J. Coffee
WRM	William Rutherford Mead

Unless otherwise referenced, the Jefferson correspondence cited below is from the Jefferson Papers of the University of Virginia, University of Virginia Library, Special Collections. The texts of many documents relating to the University that date from 1817 to 1828 have been transcribed and are available in the Thomas Jefferson Digital Archive at the University of Virginia, Electronic Text Center (http://etext.lib.virginia.edu/jefferson/). In those instances where only a portion of the text appears in the transcript, the microfilm version or on-line scan of the original document was consulted. The original spellings have been maintained.

The *Documentary History of the Construction of the Buildings at the University of Virginia, 1817-1828*, by Frank E. Grizzard Jr., also available at the Thomas Jefferson Digital Archive, was an invaluable guide to documents relating to the construction of the Rotunda, as was William B. O'Neal, *Jefferson's Buildings at the University of Virginia, The Rotunda* (Charlottesville: University of Virginia Press, 1960).

The published annual reports of the Rector and Board of Visitors include financial information on payments made for construction of the Rotunda. These amounts are often at variance with the sums shown in the manuscript versions of the proctor's ledgers for the same time periods. In this report the published financial records were used unless otherwise noted.

1. TJ to L. W. Tazewell, 5 Jan. 1805, transcript in Mary N. Woods, "Thomas Jefferson and the University of Virginia: Planning the Academic Village," *Journal of the Society of Architectural Historians* 44 (Oct. 1985), 282-283. See this article also for a discussion of architectural precedents for colleges and other institutional structures in the U. S. and Europe that were known to Jefferson.
2. TJ to [trustees for the lottery of East Tennessee College], 6 May 1810, LC.
3. BV, Central College, Minutes, 5 May 1817.
4. TJ to L. W. Tazewell, 5 Jan. 1805, in Woods.
5. TJ to William Thornton, 9 May 1817.
6. Thornton to TJ, 27 May 1817.
7. TJ to BHL, 12 June 1817.
8. BHL to TJ, 17 June 1817, in John C. Van Horne, ed., *The Correspondence and Miscellaneous Papers of Benjamin Henry Latrobe*, Vol. 3 (New Haven and London: Yale Univ. Press for Maryland Historical Society, 1988), 903-4. The editors of the BHL papers commented that "While certain aspects of Jefferson's design may well have impressed BHL, this statement probably also reveals both BHL's flattery of Jefferson and his owan false modesty." The editors cite (p. 904) a plan by BHL for a national university in Washington, D.C., that resembled many aspects of Jefferson's scheme.
9. BHL to TJ, 28 June 1817, LC.
10. TJ to BHL,16 July 1817, in Van Horne, 907-8.
11. Ibid.
12. BHL to TJ, 24 July 1817, in Van Horne, 914-916.
13. TJ to BHL, 3 Aug. 1817, LC.
14. BHL to TH, 12 Aug. 1817, LC. TJ to BHL, 24 Aug. 1817.
15. BHL to TJ, 6 Oct. 1817.
16. TJ to BHL, 12 Oct. 1817.
17. TJ to BHL, 19 May 1818, LC.
18. *Report of the Commissioners Appointed to Fix the Scite of the University of Virginia* (Richmond: John Warrock, 1818), 3-4.
19. Ibid., 4.
20. TJ to JCC, 28 Jan. 1819.
21. *Report and Documents Respecting the University of Virginia* (Richmond: Thomas Ritchie, 1820), 6-7; this is the report filed in 1819. *Report and Documents Respecting the University of Virginia* (Richmond: Thomas Ritchie, 1820), 7; this is the report filed in 1820. BV, Minutes, 29 March 1819, 4 Oct. 1819.

22. TJ to John Wayles Eppes, 30 June 1820. TJ, Statement of Probable Costs for the Buildings, 28 Nov. 1820.
23. These drawings are illustrated in William B. O'Neal, *Jefferson's Buildings at the University of Virginia, The Rotunda* (Charlottesville: Univ. of Virginia Press, 1960), plates VI-IX, XI, XII.
24. O'Neal, 3.
25. Ibid., 50-52.
26. TJ, Operations at and for the College, [1817-1826], last page. This book contains Jefferson's specifications for the pavilions, dormitories, and hotels; similar information for the Rotunda appears on the back of his drawings for the Rotunda.
27. ASB to TJ, 29 March 1821, cited in O'Neal, 19-20.
28. BV, Minutes, 2 April 1821.
29. Chapman Johnson and James Breckenridge to JHC, 5 April 1821.
30. Ibid.
31. TJ to Francis Wayles Eppes, 8 April 1821.
32. TJ to JHC, 9 April 1821.
33. Ibid.
34. TJ to Thomas Appleton, 16 April 1821. TJ to John Patterson, 15 May 1821.
35. TJ to BV, 30 Sept. 1821. TJ, A View of the Expenses & Funds, 30 Sept. 1821.
36. TJ to JM, 30 Oct. 1821.
37. JCC to JHC, 21 Nov. 1821.
38. TJ to William Short, 24 Nov. 1821.
39. ASB to the Rector and BV, 26 Nov. 1821.
40. BV, Minutes, 29-30 Nov. 1821.
41. *Report and Documents Respecting the University of Virginia* (Richmond: Thomas Ritchie, 1821), 3-4.
42. JHC to JCC, 8 Dec. 1821.
43. TJ to Thomas Cooper, 9 March 1822.
44. TJ to JM, 7 April 1822.
45. TJ to William Short, 19 Oct. 1822, LC.
46. BV, Minutes, 7 Oct. 1822.
47. Ibid. *Report and Documents Respecting the University of Virginia* (Richmond: Thomas Ritchie, 1823), 3; this is the report for 1822.
48. TJ to ASB, 11 Oct. 1822.
49. TJ to Thomas Mann Randolph Jr., 23 December 1822.
50. TJ to Robert Walsh Jr., 21 Dec. 1822. JCC to TJ, 23 Dec. 1822.
51. William Cabell Rives to TJ, 19 Dec. 1822.
52. TJ to Thomas Mann Randolph Jr., 23 Dec. 1822.
53. TJ to JCC, 28 Dec. 1822.
54. Ibid.
55. JCC to TJ, 30 Dec. 1822.
56. *Report and Documents Respecting the University of Virginia* (Richmond: Thomas Ritchie, Printer, 1823), 4.
57. TJ to Maria Hadfield Cosway, 24 Oct. 1822.
58. TJ to JCC, 13 Jan. 1823.
59. AG to JHC, 18 Feb. 1823.
60. JN to JHC, 22 Feb. 1823.
61. Ibid. Neilson claimed that Thorn had not in fact made those bricks but that he had made the ones for Pavilion VIII, Hotel C, and the proctor's house.
62. JN to JHC, 22 Feb. 1823.
63. TJ to JM, 6 Jan. 1823. TJ to JCC, 28 Jan. 1823.
64. TJ to JM, 24 Feb. 1823.
65. Abiah B. Thorn and Nathanial Chamberlain, contract with University of Virginia, 8 March 1823. Notes on the quality and details of the work had been drafted by Jefferson; see TJ, Instructions for Bricklaying and Carpentry, ca. 1823, and Brockenbrough appears to have drawn on some of Jefferson's text when writing the contracts.
66. ASB, Contract with JD and JN, 11 March 1823.
67. Abiah B. Thorn and Nathanial Chamberlain, contract with University of Virginia, 8 March 1823. JD and JN, contract with University of Virginia, 11 March 1823.
68. JD and JN, contract with University of Virginia, 11 March 1823.
69. ASB to TJ, 11 March 1823.
70. TJ to ASB, 12 March 1823. TJ to JHC, 13 March 1823.
71. TJ to JM et al, 12 March 1823.
72. Ibid.
73. JM to TJ, 21 March 1823.
74. JCC to TJ, 24 March 1823.
75. BV, Minutes, 7 April 1823.
76. TJ, Memorandum on Finances, 6 April 1823.
77. JCC to Louisa Maxwell Holmes Cocke, 8 April 1823.
78. TJ to JHC, 22 April 1823.
79. ASB to JHC, 13 March 1823.
80. ASB to JHC, 7 April 1823; 13 April 1823.
81. JHC to ASB, 14 April 1823, PP.
82. ASB to TJ, 28 Nov. 1823.
83. ASB to JHC, 7 April 1823.
84. JHC to ASB, 14 April 1823.
85. JM to JCC, 16 April 1823.
86. TJ to JM, 30 April 1823.
87. Ibid.
88. JM to JCC, 16 April 1823. TJ to JM, 30 April 1823; fuller text in JM Papers.
89. TJ to JM, 30 April 1823; JM to JCC, May 10, 1823. See the "Chemical Hearth" section of this report.
90. TJ to ASB, 22 April 1823.
91. JN to TJ, 5 May 1823.
92. TJ to ASB, 16 June 1823.
93. TJ to ASB, 10 Aug. 1823.
94. ASB to TJ, 11 Aug. 1823. TJ to ASB, 11 Aug. 1823.
95. Martha Jefferson Randolph to Nicholas P. W. Trist, 4 April 1824.
96. O'Neal, plate XIII.
97. TJ to JCC, July 4, 1823.
98. ASB to JCC, 27 July 1823.
99. JN to JHC, 23 Aug. 1823.
100. TJ to E. S. Davis, 27 Aug. 1823. TJ to William Short, 8 Sept. 1823, LC.
101. TJ to John Trumbull, 15 July 1823, quoted in Grizzard, Appendix K, 24-25.
102. *Report and Documents Respecting the University of Virginia* (Richmond: Thomas Ritchie, Printer, 1823), 30-42; LD 5662, UVSC.
103. *Report and Documents Respecting the University of Virginia* (Richmond: Thomas Ritchie, Printer, 1823), 30-42.
104. *Report of the Rector and Visitors of the University of Virginia to the President and Directors of the Literary Fund* (Richmond: Thomas Ritchie, Printer, 1824), 20, 22.
105. ASB to TJ, 28 Nov. 1823.
106. TJ to ASB, 28 Dec. 1823.

107. *Report of the Rector and Visitors of the University of Virginia to the President and Directors of the Literary Fund* (Richmond: Thomas Ritchie, Printer, 1824), 24, 26.
108. TJ to ASB, 2 Sept. 1823. Giacomo Raggi and ASB, contract, 8 Sept. 1823, PP.
109. BV, Minutes, 6 Oct. 1823.
110. TJ to TA, 8 Oct. 1823.
111. TH to ASB, 22 Nov. 1823. *Report of the Rector and Visitors of the University of Virginia to the President and Directors of the Literary Fund* (1824), 22.
112. TA to TJ, 8 Feb. 1824.
113. Ibid.
114. ASB to TJ, 3 May 1824.
115. TJ to TA, 17 May 1824.
116. TJ to ASB, 29 March 1824.
117. ASB to TJ, 28 March 1824.
118. TJ to ASB, 29 March 1824.
119. TJ to Joseph G. Swift, 22 May 1824. William Bainter O'Neal, *Jefferson's Fine Arts Library, His Selections for the University of Virginia Together with His Own Architectural Books* (Charlottesville: University Press of Virginia, 1976), 83-87; plate 24 is a reproduction of a DeLorme drawing of the laminated ribs.
120. Notes on the quality and details of the work had been drafted by Jefferson; see TJ, Instructions for Bricklaying and Carpentry, ca. 1823.
121. TJ to Joseph G. Swift, 21 June 1825.
122. TJ to WJC, 31 May 1824, Coolidge Coll.
123. D.W. and C. Warwick to ASB, 6 April 1824.
124. John Brockenbrough to ASB, 3 May 1824, PP. ASB to TJ, 3 May 1824.
125. D.W. and C. Warwick to ASB, 7 June 1824.
126. D.W. and C. Warwick to ASB, invoice, 14 June 1824. John Brockenbrough to ASB, 3 May 1824, PP.
127. Anthony Bergamin to ASB, 21 June 1824, PP.
128. D.W. and C. Warwick to ASB, invoice, 14 June 1824; D. W. and C. Warwick to ASB, 14 June 1824; PP.
129. D.W. and C. Warwick to ASB, invoice, 6 July 1824, PP.
130. D.W. and C. Warwick, invoice, 13 July 1824, PP.
131. *Report of the Rector and Visitors of the University of Virginia to the President and Directors of the Literary Fund* (Richmond: Thomas Ritchie, Printer, 1824), 32. These published figures differ from the handwritten proctor's ledgers, which show that Bergamin was paid $626.82 on September 13, 1824. The description of the work is quoted in O'Neal, 14.
132. Brockenbrough and Harvie to ASB, 4 Oct. 1824, PP. Andrew Smith to ASB, invoice and letter, 10 Nov. 1824. *Report of the Rector and Visitors of the University of Virginia to the President and Directors of the Literary Fund* (1824), 24.
133. BV, Minutes, 5 April 1824.
134. TJ to WJC, 10 April 1824, Coolidge Coll.
135. John M. Perry and ASB, agreement for brickwork, 25 May 1824, PP.
136. ASB to TJ, 4 June 1824.
137. ASB, Estimate of the Cost of the Rotunda, 5 April 1824.
138. *Report of the Rector and Visitors of the University of Virginia to the President and Directors of the Literary Fund* (1824), 28, 30, 32.
139. Ibid, 34.
140. Proctor's Ledger, Rotunda Account, May 10, 1824, p. 318, PL. ASB to TJ, 14 July 1824.
141. TJ to WJC, 4 Sept. 1824, Coolidge Coll.
142. Ibid.
143. WJC to TJ, 11 Sept. 1824.
144. TJ to WJC, 19 Sept. 1824, Coolidge Coll.
145. *Report of the Rector and Visitors of the University of Virginia to the President and Directors of the Literary Fund* (1824), 3.
146. BV, Minutes, 4 Oct. 1824.
147. ASB to TJ, 21 Dec. 1824, quoted in O'Neal, 33.
148. Henry Marshall, "Charlottesville and the University: An 1824 View," *Magazine of Albemarle County History* 29 (1971), 29-30.
149. Lafayette to TJ, 29 Aug. 1824, in Marie Joseph Paul Yves Roch Gilbert du Motier, Marquis de Lafayette, *Letters of Lafayette and Jefferson* (Baltimore: The Johns Hopkins Press, 1929), 420.
150. TJ to TA, 8 Oct. 1824.
151. TJ to Joseph Coolidge, 12 Oct. 1824, microfilm edition, Thomas Jefferson Papers, University of Virginia. *Report of the Rector and Visitors of the University of Virginia to the President and Directors of the Literary Fund* (Richmond: Thomas Ritchie, Printer, 1824), 3. In a letter of 4 Feb. 1825, Bergamin to ASB, Bergamin states that his work had been finished but he had not been paid. TJ to ASB, 21 April 1825.
152. TJ to Lafayette, 9 Oct. 1824.
153. *Richmond Inquirer*, 16 Nov. 1824; a partial transcription of this account, which was originally published in Charlottesville's *Central Gazette*, appears as "Reception of General Lafayette in Albemarle," *The Magazine of Albemarle County History* 24 (1965-66), 53-66.
154. *Richmond Inquirer*, 16 Nov. 1824.
155. *Richmond Inquirer*, 16 Nov. 1824.
156. Mémoires, Correspondance et Manuscrits du Général Lafayette, publiés par sa famille, Vol. 16 (Paris: H. Fournier Ainé, 1838), 183-184.
157. TJ to Coffee, 9 Dec. 1824.
158. WJC to TJ, 20 Dec. 1824.
159. WJC to TJ, 1 Jan. 1825; 16 Jan. 1825; 31 Jan. 1825. *Report of the Rector and Visitors of the University of Virginia, to the President and Directors of the Literary Fund* (Richmond: Thomas Ritchie, Printer, 1825), 26.
160. Ibid., 30.
161. John Brockenbrough to ASB, 11 March 1825, PP.
162. TJ to JCC, 11 Jan. 1825.
163. TJ to Joseph Coolidge, Jr., 12 April 1825.
164. TJ to ASB, 21 April 1825.
165. Thomas May to ASB, 8 Jan. 1825, 11 Jan. 1825, 14 Feb. 1825, 10 March 1825, 4 April 1825, 14 May 1825. More glass was ordered in 1825, but it is not clear whether it was intended for the Rotunda; Thomas May to ASB, 9 July 1825, 20 July 1825, PP.
166. Thomas May to ASB, 27 July 1825, 4 Aug. 1825, 24 Aug. 1825, PP.
167. Invoice, Benjamin Blackford to ASB, 15 Aug. 1825, PP.
168. BV, Minutes, 5 March 1825.
169. TJ to ASB, 9 March 1825.
170. JD and JN to ASB, 5 March 1825, PP.
171. TJ to JCC, 11 Jan. 1825.
172. TJ to ASB, 11 March 1825.
173. TJ, Statement of University Funds, 15 March 1825.
174. TJ to TA, 17 May 1824.

175. TA to TJ, 10 and 25 June 1824, 28 July 1824.
176. TJ to TA, 8 Oct. 1824.
177. TA to TJ, 8 Oct. 1824, LC.
178. TA to TJ, 4 May 1825. TA, Account for Marble Columns, 4 May 1825. TA to TJ, 22 June 1825. Jefferson wrote Appleton on 10 Aug. 1825 stating that he had not heard from him since 8 Oct. 1824 and setting forth the accounts for the marble.
179. TA to TJ, 22 June 1825. Appleton sent his final accounting for the project in July; TA to TJ, 12 July 1825.
180. TJ to ASB, 23 July 1825.
181. TJ to ASB, 30 Aug. 1825. Jonathan Thompson to TJ, 9 Sept. 1825. The tax collector at the custom house in New York, Jonathan Thompson, told Jefferson that he had shipped the marble to Richmond on board the sloop *Eliza Allen*; Jonathan Thompson to TJ, 9 Sept. 1825.
182. Henry A. S. Dearborn to TJ, 6 Sept. 1825. TJ to ASB, 13 Sept. 1825.
183. Henry A. S. Dearborn to TJ, 20 Sept. 1825.
184. Henry A. S. Dearborn to TJ, 22 Sept. 1825.
185. *Report of the Rector and Visitors of the University of Virginia, to the President and Directors of the Literary Fund* (Richmond: Thomas Ritchie, 1826), 12.
186. BV, Minutes, 5 Oct. 1825.
187. TJ to Ellen W. R. Coolidge, 14 Nov. 1825. Jonathan Thompson to TJ, 17 Nov. 1825.William Cabell Rives to TJ, 13 March 1826, 30 Nov. 1826. TJ to ASB, 2 May 1826. John Brockenbrough to ASB, 9 May 1826. *Report of the Rector and Visitors of the University of Virginia* (1826), 20. William Cabell Rives to TJ, 13 May 1826.
188. BV, Minutes, 7 April 1826.
189. TJ to Coolidge, 12 April 1825.
190. TJ, Specifications for the Rotunda's Clock & Bell, ca. 11 April 1825.
191. Joseph Coolidge Jr. to TJ, 5 Aug. 1825.
192. TJ to Coolidge, 13 Oct. 1825.
193. TJ to ASB, 3 Jan. 1826.
194. TJ to Ellen W. R. Coolidge, 14 Nov. 1825.
195. TJ to JHC, 20 May 1826.
196. TJ to ASB, [c. May 1826].
197. TJ to Coolidge, 4 June 1826.
198. TJ to ASB, 22 June 1826.
199. ASB to TJ, 6 June 1825.
200. TJ to ASB, 7 June 1825. The drawing has been lost.
201. ASB to TJ, 9 June 1825.
202. *Report of the Rector and Visitors of the University of Virginia* (1825), 34.
203. John Patton Emmet to TJ, 12 May 1825. ASB to TJ, 6 June 1825.
204. TJ to ASB, 7 June 1825.
205. Emmet to ASB, 5 January 1826, quoted in Grizzard, chapter 10, p. 7.
206. Charles Bonnycastle to ASB, 10 April 1826, PP.
207. TJ to TA, 8 Oct. 1823.
208. TA to TJ, 8 Feb. 1824.
209. Philip Sturtevant to ASB, 17 June 1824, PP.
210. Philip Sturtevant to ASB, 18 June 1825, PP.
211. *Report of the Rector and Visitors of the University of Virginia, to the President and Directors of the Literary Fund* (Richmond: Thomas Ritchie, 1826), 16, 22. Philip Sturtevant to ASB, 13 July 1826. Sturtevant wrote Brockenbrough in the fall wanting an advance of $300; Sturtevant to ASB, 5 Nov. 1826, PP.
212. Sturtevant to ASB, 5 Nov. 1826, PP.
213. WJC to ASB, 12 July 1825, PP.
214. ASB to TJ, 23 July 1825.
215. TJ to ASB, 24 July 1825.
216. WJC to ASB, 26 July 1825, PP. WJC to TJ, 19 Aug. 1825.
217. WJC to ASB, 4 Sept. 1825.
218. WJC to ASB, 25 Sept. 1825. ASB to TJ, 1 Oct. 1825.
219. ASB to TJ, 1 Oct. 1825. It is not clear from the Proctor's Ledgers or Jefferson's papers that Coffee ever did this work; there is no listing in the ledgers under his name in the Rotunda accounts between 1825-1830 (although payment might have been made to someone else on his behalf); similarly no payments to him are included in the accounts published in the annual reports between Sept. 1825 and July 1828.
220. TJ to ASB, 12 Oct. 1825.
221. TJ to ASB, 19 Sept. 1825.
222. TJ to ASB, 15 Nov. 1825.
223. *Richmond Enquirer*, Sept. 6, 1825.
224. *Report of the Rector and Visitors of the University of Virginia* (1825), 24-38. *Report of the Rector and Visitors of the University of Virginia* (Richmond: Thomas Ritchie, 1826), 12-14.
225. *Report of the Rector and Visitors of the University of Virginia, to the President and Directors of the Literary Fund* (1825), 4.
226. TJ to ASB, 21 April 1825.
227. TJ to ASB, 3 Jan. 1826.
228. TJ to JCC, 4 Feb. 1826.
229. *Report of the Rector and Visitors of the University of Virginia* (1826), 22.
230. TJ to ASB, [7] April [1826].
231. TJ to JHC, 20 May 1826.
232. TJ to ASB, 5 May 1826. *Report of the Rector and Visitors of the University of Virginia* (1826), 12-14.
233. TJ to ASB, 5 May 1826. TJ to JHC, 20 May 1826. TJ to ASB, [c. May 1826].
234. TJ to ASB, [c. May 1826].
235. A. H. Brooks to ASB, 13 June 1826. *Report of the Rector and Visitors of the University of Virginia* (1826), 22.
236. Invoice, Daniel Warwick to ASB, 12 June 1826, PP.
237. TJ to ASB, [c. May 1826].
238. TJ to ASB, 5 May 1826. TJ to JHC, 20 May 1826.
239. TJ to ASB [c. May 1826].
240. TJ, Operations at and for the College, pages 3, 4, 39, quoted in O'Neal, 52-54.
241. JHC and Alexander Garrett, 31 May 1826.
242. *Report of the Rector and Visitors of the University of Virginia* (1826), 22.
243. *Report of the Rector and Visitors of the University of Virginia* (1826), 18, 22.
244. Ibid.
245. TJ to T. Smith, 22 Oct. 1825.
246. TJ to Robert Mills, March 3, 1826, TJ Papers, LC.
247. *Report of the Rector and Visitors of the University of Virginia* (1826), 3.
248. *Report of the Rector and Visitors of the University of Virginia, Exhibiting the Results of an Examination into the Progress of the Students, &c., &c.* (Richmond: Thomas Ritchie, 1827), 3, 7.

249. Ibid, 3.
250. Joseph Antrim to ASB, 7 Aug. 1826, PP.
251. JHC to ASB, 27 Sept. 1826, PP.
252. ASB to JHC, 20 Aug. 1826.
253. *Report of the Rector and Visitors of the University of Virginia* (1826), 3.
254. *Report of the Rector and Visitors of the University of Virginia, to the President and Directors of the Literary Fund* (Richmond: Thomas Ritchie, Printer, 1829), 20. ASB to JHC, 8 Aug. 1827.
255. *Report of the Rector and Visitors of the University of Virginia* (1826), 4.
256. BV, Minutes, 3-7 Oct. 1826.
257. BV, Minutes, 1 Oct. 1828.
258. *Report of the Rector and Visitors of the University of Virginia* (1827), 18, 20, 22, 24.
259. *Report of the Rector and Visitors of the University of Virginia* (1829), 20.
260. Ibid., 20, 22, 28.
261. *Report of the Rector and Visitors of the University of Virginia* (1826), 22.
262. Joseph Coolidge to ASB, 31 March 1827, PP. The University paid for Willard's expenses in Charlottesville; *Report of the Rector and Visitors of the University of Virginia* (1827), 28. *Report of the Rector and Visitors of the University of Virginia* (1829), 20.
263. *Report of the Rector and Visitors of the University of Virginia* (1829), 20, 24, 32.
264. BV, Minutes, 18 July 1827.
265. Nicholas P. W. Trist to ASB, 11 Sept. 1827, PP.
266. ASB to JHC, 7 Oct. 1827.
267. JHC to ASB, 10 Nov. 1827. Grizzard, Chap. 11, p. 9.
268. ASB to JHC, 8 Aug. 1827.
269. ASB to JHC, 8 Aug. 1827, 7 Oct. 1827.
270. ASB to JCH, 4 March 1828, quoted in Grizzard, Chap. 11, note 802.
271. JHC to ASB, 10 Nov. 1827. ASB, Memorandum, 9 Nov. 1827, quoted in Grizzard, Appendix K, 38. Trouble with the chimneys continued in the fall of 1828; BV, Minutes, 3 Oct. 1828. Grizzard, Chap. 11, p. 13.
272. Charles Bonnycastle, Plan for Curing Smoking Chimneys [c. 5 Oct. 1828], transcribed in Grizzard, Appendix S.
273. Coleman Sellers to JHC, 19 Jan. 1828.
274. Grizzard, Chap. 11, p. 8.
275. William Wertenbaker to ASB, 15 Jan. 1828, quoted in Grizzard, Chap. 11, p. 7. Benjamin Blackford of the Isabella Furnace sent an invoice on Nov. 30, 1827, for "2 Largest Oval Stoves" and one large Philadelphia stove; since this invoice predates the faculty resolution, these stoves may have been intended for another location.
276. BV, Minutes, 20 July 1829.
277. Margaret Bayard Smith to Anna Bayard Boyd and Jane Bayard Kirkpatrick, 2 Aug. 1828, 12 Aug. 1828, quoted in Grizzard, Epilogue, notes 2, 6.
278. William Leitch to the University of Virginia, 4 Jan. 1833, Proctors' Papers, RG 5/3, Box 9, Bills and Accounts, Univ. of Virginia. Philip Alexander Bruce, *History of the University of Virginia 1819-1919*, vol. 1 (New York: MacMillan Co., 1920-22), 269.
279. Contract, William Leitch and University of Virginia, 1833, PP.
280. *Report of the Rector and Visitors of the University of Virginia* (n.p., n. pub., 1835), 6. John Smith, invoice, 29 April 1833, PP. William Leitch, invoice, May 1833, PP.
281. BV, Minutes, 17 July 1833, p. 307. There is no indication in the annual reports of 1833 or 1834 that repairs to the skylight were made during those years.
282. *Report of the Rector and Visitors of the University of Virginia* (n.p., n. pub., 1836), 9.
283. BV, Minutes, 17 Aug. 1837, p. 394. *Report of the Rector and Visitors of the University of Virginia* (1838), 17.
284. *Report of the Rector and Visitors of the University of Virginia,* (n.p., n. pub., 1840) 22.
285. *Report of the Rector and Visitors of the University of Virginia* (n.p., n. pub., 1837), 6–7. *Report of the Rector and Visitors of the University of Virginia* (1840), 22, University of Virginia health System Web site, http://www.healthsystem.virginia.edu/internet/library/historical/uva_hospital/centennial/beginnings.cfm (accessed 6 Dec. 2006). The Anatomical Hall was designed by Jefferson and built in 1826. It was razed in 1938.
286. BV, Minutes, 4 July 1840, p. 427. William B. O'Neal, ed., *The American Association of Architectural Bibliographers, Papers,* vol. 6 (Charlottesville: Univ. of Virginia Press, 1969), 102–122. Though the Rotunda's weathervane is usually depicted as having been in the shape of an arrow, O'Neal writes that its form is not certain. In 1933 University alumnus John M. Payne, who attended the University from 1858 to 1860, distinctly recalled that the weathervane was indeed in the form of a quill during his tenure at the University, and it was the quill-shaped weathervane that was removed in 1860: "The Vane was in the form of a Qwill [*sic*] Pen some 8 or 10 feet long—gilded. The point of the pen would point to the letter N. E. S. W. as the wind blew."
287. *Report of the Rector and Visitors of the University of Virginia* (1840), 12–13.
288. Ibid., 3.
289. Bruce, vol. 4, 16. Francis Fry Wayland, *Andrew Stevenson, Democrat and Diplomat* (Philadelphia: Univ. of Pennsylvania Press, 1949), 212. In the spring of 1845 student enrollment at the University was 194. Ten years later, in the 1855–1856 academic year, it was 558, and then next year it grew to 645, the largest for any year prior to the Civil War. By comparison, in 1855–1856 enrollment at Yale was 619, at Harvard 669. When Virginia had 645 students in 1857, Harvard had 697. Supplement to the Annual Report of the Rector and Visitors of the University of Virginia, 1849, UVSC. City of Charlottesville, Virginia, Web site, "History of Charlottesville Transit Service," http://www.charlottesville.org/Index.aspx?page=672 (accessed 4 Dec. 2006). *Report of the Rector and Visitors of the University of Virginia* (n.p., n. pub., 1850), 9. George Humphrey Yetter, "Stanford White at the University of Virginia: The New Buildings on the South Lawn and the Reconstruction of the Rotunda in 1896" (master's thesis, Univ. of Virginia, May 1980), 10.
290. BV, Minutes, 9 Oct. 1849. Bruce, 22. "University of Virginia's Loss," *NYT*, 28 Oct. 1895.
291. BV, Minutes, 4 July 1840.
292. BV, Minutes, 1 July 1841.
293. George W. Spooner, Proposal for Gymnasia, 20 July 1833, University of Virginia Web site, 22 Documents Concerning the Founding of the University of Virginia, 1829–1860, http://etext.

virginia.edu/toc/modeng/public/Jef14Gr.html (accessed Dec. 6, 2006). *Report of the Rector and Visitors of the University of Virginia* (n.p., n. pub., 1842), 9.

294. George Spooner to the University of Virginia, invoice for converting the two gymnasia on each side of the Rotunda into a Lecture room and Chapel furnishing all materials for same, July 1842, PP.
295. BV, Minutes, 1 July 1841.
296. BV, Minutes, 4 July 1840.
297. Day and Welsh, invoice, 29 Aug. 1842, PP. John Day to the University of Virginia, invoice, 9 March 1842, PP.
298. *Report of the Rector and Visitors of the University of Virginia, to the President and Directors of the Literary Fund* (n.p., n. pub., 1845), 12.
299. BV, Minutes, 3 July 1845.
300. BV, Minutes, 9 Oct. 1849.
301. BV, Minutes, 29 June 1850.
302. Andrew Stevenson and Thomas J. Randolph to Joseph C. Cabell, 14 Aug. 1851, Report E, in *Report of the Rector and Visitors of the University of Virginia* (n.p., n. pub., 1851), 21.
303. *Report of the Rector and Visitors of the University of Virginia* (1850), 9.
304. BV, Minutes, 25 Sept. 1850. Bruce, vol. 4, 22. Andrew Stevenson to Joseph C. Cabell, 28 Dec. 1850, Cabell Family Papers, 38-111, Box 38, UVSC.
305. Andrew Stevenson to John Hartwell Cocke, 15 Oct. 1850, Cocke Papers, 640, Box 134, UVSC.
306. Andrew Stevenson to Joseph C. Cabell, 28 Dec. 1850, Cabell Family Papers, 38-111, Box 38, UVSC. Rhodri Windsor Liscombe, *Altogether American: Robert Mills, Architect and Engineer* (New York: Oxford Univ. Press, 1994), 282. Bruce, vol. 4, 22.
307. Bruce, vol. 3, 23.
308. National Archives Web site, National Historical Publications and Records Commission (NHPRC), "Documenting the Career of Architect Robert Mills," *Annotation* (Newsletter of the NHPRC) 26:3 (1998): http://www.archives.gov/nhprc/annotation/september-98/robert-mills.html (accessed 1 Dec.2006). Great Buildings Web site, "Robert Mills," http://www.greatbuildings.com/architects/Robert_Mills.html (accessed Dec. 1, 2006). U.S. Treasury Web site, "Robert Mills, 1781-1855," http://www.ustreas.gov/offices/management/curator/exhibitions/2002exhibit/print_robertmills.html.
309. Liscombe, 282-283.
310. Andrew Stevenson to Joseph C. Cabell, 24 Jan. 1851, Cabell Family Papers, 38-111, Box 38, UVSC.
311. Robert Mills, Specifications of the manner of executing a certain Building proposed to be added to the Rotunda on the north side of the University buildings, 3 Jan. 1851, RG 31/1/2:6.771, Folder 1851 Jan. 3, pamphlet and spec., UVSC.
312. Bruce, vol. 4, 22-24.
313. Robert Mills, Specifications of the manner of executing a certain Building proposed to be added to the Rotunda on the north side of the University buildings, 3 Jan. 1851, RG 31/1/2:6.771, Folder 1851 Jan. 3, pamphlet and spec., UVSC.
314. Andrew Stevenson to Joseph C. Cabell, 24 Jan. 1851, Cabell Family Papers, 38-111, Box 38, UVSC. After consulting with foundries in the North, Stevenson reported to Cabell that the University could save upwards of $13,000 on the column capitals and bases.
315. *Report of the Rector and Visitors of the University of Virginia, 1851*, p. 11.
316. Andrew Stevenson to Joseph C. Cabell, 8 April 1851, Cabell Family Papers, 38-111, Box 38, UVSC. Liscombe, 283. George Spooner is listed in the 1837, 1838, 1839-40, 1842, 1845, 1846, 1847, 1848, 1849 annual reports of the Rectors and Visitors of the University of Virginia as having done repair work on various buildings during those years.
317. Univ. of Virginia Bursar's Account Book, 8437 (1851–1854), 59–64, cited in Liscombe, 283.
318. *Report of the Rector and Visitors of the University of Virginia* (1851), 16. Bursar's Records, 1851, Addition to the Rotunda, 59, UVSC.
319. Bursar's Records, 1851, Addition to the Rotunda, 59, UVSC.
320. Andrew Stevenson and Thomas J. Randolph to Joseph C. Cabell, 14 Aug. 1851, Report E. in *Report of the Rector and Visitors of the University of Virginia* (1851), 21, UVSC.
321. Gessner Harrison to Joseph C. Cabell, 20 Sept. 1851, Cabell Family Papers, 38-111, Box 39, UVSC.
322. Bursar's Records, 1851, Addition to the Rotunda, 59–60, UVSC.
323. Bruce, vol. 4, 24.
324. Andrew Stevenson to Joseph C. Cabell, 8 May 1852, Cabell Family Papers, 38-111, Box 38, UVSC.
325. *Report of the Rector and Visitors of the University of Virginia* (n.p., n. pub., 1853), 9.
326. *Report of the Rector and Visitors of the University of Virginia* (1853), 28–29.
327. *Report of the Rector and Visitors of the University of Virginia* (n.p., n. pub., 1854), 16.
328. Bursar's Records, 1852, Addition to the Rotunda, 64, UVSC.
329. *Report of the Rector and Visitors of the University of Virginia* (1853), 10.
330. BV, Minutes, 29 June 1853.
331. *Report of the Rector and Visitors of the University of Virginia* (1853), 10.
332. Ibid., 9.
333. Ibid.
334. Bruce, vol. 4, 23-24.
335. Rivanna Archaeological Consulting, "Archaeological Mitigation Adjacent to the Cryptoporticus, University of Virginia Rotunda Access Project," 2001, p. 8. BV, Minutes, 28 June 1852. Bruce, vol. 4, 18–19.
336. BV, Minutes, 26 June 1856. Between 1853 and 1854, Ellet completed construction of the temporary tracks of the Virginia Central Railroad over the Blue Ridge Mountains through Rockfish Gap and would have been a known entity to the Board of Visitors.
337. BV, Minutes, 1 Sept. 1858.
338. Socrates Maupin, Report of the Faculty, 11. In *Report of the Rector and Board of Visitors of the University of Virginia to the Governor,* 1866; Green Peyton, "Report of the Proctor and Superintendent, June 1, 1882," 6. In *Annual Report of the Board of Visitors of the University of Virginia for the Fiscal Year 1881-1882* (Richmond: R. F. Walker, 1882); "University of Virginia," 24. *Engineering News*, January 21, 1882; Philip A. Bruce, *History of the University of Virginia 1819 – 1919*, Vol. 3, 20. (New York: MacMillan Co., 1921); BV, Minutes, 25 June 1873.
339. Socrates Maupin, Report of the Faculty, 11. In *Report of the Rector and Board of Visitors of the University of Virginia to the*

Governor, 1866.

340. BV Minutes, 29 June 1868.
341. Green Peyton, "Report of the Proctor and Superintendent, June 1, 1882," 6. In *Annual Report of the Board of Visitors of the University of Virginia for the Fiscal Year 1881-1882* (Richmond: R. F. Walker, 1882); "University of Virginia," 24. *Engineering News*, January 21, 1882.
342. BV Minutes, 26 June 1888.
343. BV, Minutes, 29 June 1853.
344. Ibid. *Report of the Rector and Visitors of the University of Virginia* (n.p., n. pub., 1855), 53.
345. BV, Minutes, 27 June 1854; 29 June 1854. *Report of the Rector and Visitors of the University of Virginia* (1854), 9. Sometime during 1853 or early 1854 the University appealed to distinguished New York architect Alexander Jackson Davis for "the most advisable mode and the probable cost of permanently repairing the terraces" at the University. The Report of the Rector and Visitors from July 1, 1854, does not specify which terraces were in need of repair, but they may have included the two south terraces of the Rotunda. Though Davis did not come to the University himself, he sent builder George Nichols, who made a "detailed estimate and a report on the subject of the terraces," which was presented before the Board of Visitors in June 1854. Nichols's estimate and report were approved, and Davis was appointed as architect of the project at the June meeting. Between June and the end of July, Davis "furnished a working plan and estimate to be used in letting work to the contractors."
346. *Report of the Rector and Visitors of the University of Virginia,* (n.p., n. pub., 1857), 55–56.
347. Ibid.
348. BV, Minutes, 30 June 1859.
349. *Report of the Rector and Visitors of the University of Virginia* (1857), 47–48.
350. Bruce, vol. 4, 25.
351. *Report of the Rector and Visitors of the University of Virginia* (n.p., n. pub., 1859), 36–37.
352. *Minutes of the Faculty of the University of Virginia* [Faculty Minutes], Vol. 2: Dec. 1826 – July 1830, Sept. 20, 1827, p. 68; Jan. 14, 1828, p97. RG 19/1/1.461. Special Collections Department, University of Virginia Library, Charlottesville, Virginia. This section on the Meigs heating system was prepared by Rivanna Archaeological Services.
353. *Minutes of the Rector and Board of Visitors* [BV, Minutes], 10 July 1833. Jordon L. Mott patented the Pyramid Stove in 1833. It was the first anthracite coal-burning stove having a fire box at its base and fuel was inserted through the tapered shaft top.
354. William A. Pratt to William J. Robertson, University of Virginia Board of Visitors, 23 Dec. 1857. *Papers of the Office of the Proctor, 1811 – 1905*, Folder 4, Reports to the Executive Committee. Accession #38-174. Special Collections Department, University of Virginia Library, Charlottesville, Virginia.
355. William A. Pratt to William J. Robertson, 23 Dec. 1857. In 1857 William A. Pratt was acting as an independent architect and engineer consulting to the University of Virginia. He would not be hired as the first Superintendent of Buildings and Grounds until September of 1858.
356. William A. Pratt to William J. Robertson, 10 March [1858]. *Papers of the Office of the Proctor, 1811 – 1905*, Folder 4, Reports to the Executive Committee. Accession #38-174. Special Collections Department, University of Virginia Library, Charlottesville, Virginia. John G. Waite Associates, Architects, *Varsity Hall, University of Virginia: Historic Structure Report* (2003).
357. BV, Minutes, 1 Sept. 1858.
358. BV, Minutes, 3 Sept. 1858.
359. Eurling B. Roberts, *Joseph Nason*, n.p. CIBSE Heritage Group. Electronic resource: http://www.hevac-heritage.org/built_environment/biographies/surnames_M-R/nason/N1-NASON.pdf; Eurling B. Roberts, Montgomery C. Meigs, Part 1 and Part 2, np. CIBSE Heritage Group. Electronic resource: http://www.hevac-heritage.org/built_environment/biographies/surnames_M-R/meigs/M1-MEIGS.pdf.; William C. Dickenson, Dean A. Herrin and Donald R. Kennon, eds. *Montgomery C. Meigs and the Building of the Nation's Capital*, (Athens: Ohio University Press, 2002), 14-15; Robert Briggs, C. E., *Report on the Ventilation of the Hall of Representatives, and of the South Wing of the Capitol of the United States*, (Philadelphia: Press of Henry B. Ashmead, 1876) 8-11.
360. Meigs was paid $115.55 for 'contingent expenses' associated with his preparation of a report and plans. See Bursar's Accounts 1851-1860, February 23, 1859, 117. *University of Virginia Bursar's Records, 1851-1912*. RG-5/2/1.121. Special Collections Department, University of Virginia Library, Charlottesville, Virginia; Montgomery C. Meigs, University of Virginia, Plans of Public Rooms with Proposed Arrangements for Heating Them, February 16, 1859. *Papers and Plans, 1856-1892, 1856 – 1860*. Manuscript Collection, Folio 61, Barcode 000028827. Winterthur Library, Winterthur, Delaware.
361. BV, Minutes, 25 June 1859.
362. Report of the Rector and Visitors of the University of Virginia, June 30, 1859. Document No. XII, 40. In *Governor's Message and Reports of the Public Officers of the State of the Board of Directors, and of the Visitors, Superintendents and other Agents of Public Institutions or Interests of Virginia*. (Richmond: William F. Ritchie, 1859).
363. University of Virginia Board of Visitors. *Executive Committee Minute Books, Vol. 1: 1859-1866*, 34-35. RG-1/1/3.461. Special Collection Department, University of Virginia Library, Charlottesville, Virginia.
364. University of Virginia Board of Visitors. *Executive Committee Minute Books, Vol. 1: 1859-1866*, 47, 54, 58. RG-1/1/3.461. Special Collection Department, University of Virginia Library, Charlottesville, Virginia; Bursar's Accounts 1851-1860, February 11, 1860; March 6, 1860; June 11, 1860, 84. *University of Virginia Bursar's Records, 1851-1912*. RG-5/2/1.121. Special Collections Department, University of Virginia Library, Charlottesville, Virginia.
365. BV, Minutes, 30 June 1860.
366. Editor's Table, 108. *Virginia University Magazine* 4, no. 1 (Nov. 1859): 57-112.
367. Report of the Rector and Visitors of the University of Virginia, June 30, 1861. Document No. 12, 6-7. In *Message of the Governor of Virginia and Accompanying Documents*. (Richmond: William F. Ritchie, 1861).
368. H. E. Howard, *Charlottesville and the University of Virginia in the Civil War* (Lynchburg, Va.: H. E. Howard, Inc., 1988), 17, 50.

369. CWSAC Battle Summaries, http://www.cr.nps.gov/hps/ABPP/BATTLES/bystate.htm (accessed 7 Dec. 2006).
370. Howard, 50. Howard reports that the Board of Visitors complained that the University's use as military hospital had been ordered without proper authorization and that its continued presence would be a detriment to the University's educational mission. The Board demanded removal of the patients and stated that it would not give consent for such usage of the University grounds. The University also sought compensation for damages and called upon Confederate authorities to pay "a proper rent for the use of the buildings." Though the University supported the Confederacy, it is clear that its top priority remained the education of its students.
371. *Report of the Rector and Visitors of the University of Virginia* (n.p., n. pub., 1866), 3.
372. BV, Minutes, 4 July 1863; 6 July 1865.
373. BV, Minutes, 27 June 1867; 29 June 1868.
374. *Report of the Rector and Visitors of the University of Virginia* (1866), 3, 4, 8. BV, Minutes, 29 June 1868. In 1866 there were 258 students enrolled at the University, "of whom 167 are from Virginia, 18 from Maryland, 17 from Alabama, 10 from North Carolina, and the rest distributed amongst eighteen other states."
375. BV, Minutes, 30 June 1869.
376. BV, Minutes, 29 June 1870.
377. BV, Minutes, 25 June 1872.
378. BV, Minutes, 28 June 1873; 30 June 1873.
379. BV, Minutes, 1 July 1874.
380. Ibid.
381. BV, Minutes, 28 June 1874.
382. BV, Minutes, 30 July 1880.
383. *Annual Report of the Rector and Visitors of the University of Virginia* (Richmond: R.F. Walker, 1882), 6.
384. *Annual Report of the Rector and Visitors of the University of Virginia* (Richmond: R.F. Walker, 1883), 8.
385. Ibid.
386. BV, Minutes, 26 June 1883.
387. *Annual Report of the Rector and Visitors of the University of Virginia* (Richmond: Rush U. Derr, 1884), 3.
388. *Annual Report of the Rector and Visitors of the University of Virginia* (Richmond: Rush U. Derr, 1885), 4.
389. Unsigned letter to Col. C. S. Venable, 31 May 1886, PP.
390. "Missing Rotunda Bell Found," *Daily Progress*, 25 Nov. 1964. "Ding Dong," *CD*, 9 Dec. 1964. "For 'Hoos the Bells Toll," *Inside UVA*, 15 Feb. 1990.
391. *Annual Report of the Rector and Visitors of the University of Virginia* (Richmond: E.T. Walthall, 1888), 12.
392. *Annual Report of the Rector and Visitors of the University of Virginia* (Richmond: E.T. Walthall, 18891), 3–4.
393. "A Sketch of the University Architecture," *Corks and Curls* (1891): 14–15.
394. BV, Minutes, 8 Dec. 1892.
395. BV, Minutes, June 1894, cited in Yetter, 14.
396. *Richmond Dispatch*, 28 Oct. 1895; [Richmond] *Times*, 28 Oct. 1895; *Norfolk Virginian*, 29 Oct. 1895; *Washington Post*, 29 Oct. 1895; *NYT*, 28 Oct. 1895. All sources cited in note 3 in Richard Guy Wilson, *"Arise and Build!" A Centennial Commemoration of the 1895 Rotunda Fire* (Charlottesville: University of Virginia, 1995), 3. *College Topics*, 4 Nov. 1895. From University of Virginia, *Manual of Information* (Roanoke: 1899), quoted in Paul B. Barringer, *University of Virginia: Its History, Influence, Equipment and Characteristics* (New York: Lewis Publishing Co., 1904), 112. In volume 42 of *Corks and Curls* (1956-57), the cause for the fire was attributed to "faulty insulation" resulting in "a short circuit in the wiring of the roof of the auditorium [Annex]."
397. Report of the Faculty, 31 Oct. 1895. *College Topics*, 4 Nov. 1895. *College Topics*, 9 Nov. 1895. "University of Virginia's Loss," *NYT*, 28 Oct. 1895.
398. "University of Virginia's Loss," *NYT*, 28 Oct. 1895. Morgan Poitiaux Robinson, *The Burning of the Rotunda* (Richmond: F. J. Mitchell Printing Co., 1908), 20. University of Virginia, *Manual of Information* (Roanoke: 1899), quoted in Barringer, 112.
399. *College Topics*, 4 Nov. 1895.
400. Ibid. Robinson, 16.
401. *College Topics*, 4 Nov. 1895.
402. Robinson, 14, 17.
403. Robinson, 17–18.
404. Report of the Faculty, 31 Oct. 1895. *College Topics*, 4 Nov. 1895. Bell Dunnington to Sadie Dunnington, 28 Oct. 1895, in *Arise and Build!: The Great Fire, Firsthand Accounts*, www.lib.virginia.edu/small/exhibits/rotunda/fire/dunnington.html (accessed 24 Aug. 2006)
405. Robinson, 23.
406. "University of Virginia's Loss," *NYT*, 28 Oct. 1895. "Rotunda Walls All Right," *Charlottesville Daily Progress*, 31 Oct. 1895. University of Virginia, *Manual of Information* (Roanoke: 1899), quoted in Barringer, 112. Robinson, 21, 23.
407. "University of Virginia's Loss," *NYT*, 28 Oct. 1895.
408. *College Topics*, 11 Jan. 1896, from University of Virginia, *Manual of Information* (Roanoke: 1899), quoted in Barringer, 112. The University of Virginia Annual Report from 1895–96 indicated that out of the 62,000 volumes in the library only 15,000 were saved. *University of Virginia Annual Report, 1895–96*, p. 3.
409. *College Topics*, 16 May 1896.
410. John T. Thornton to Rosalie Thornton, 27 Oct. 1895, in *Arise and Build!: The Great Fire, Firsthand Accounts*. Barringer, 24.
411. "University of Virginia's Loss," *NYT*, 28 Oct. 1895. Report of the Faculty, 31 Oct. 1895. While it was used as a temporary storage space for the displaced library and Annex collections, the Natural History Museum was entirely closed to visitors. *University of Virginia Report for the Session, 1895–96* (Charlottesville: Charlottesville Printing Co. and Old Dominion Press, n.d.), 3.
412. Report of the Faculty, 31 Oct. 1895.
413. "Rotunda Walls All Right," *Charlottesville Daily Progress*, 31 Oct. 1895. Thomas J. Randolph was Rector of the University of Virginia from 1857–1864. He was the son of Martha "Patsy" Jefferson Randolph—her second child of 12. Rector W. C. N. Randolph was, therefore, Thomas Jefferson's great-grandson.
414. "The Library," *The Alumni Bulletin* (Feb. 1895): 110. This report also states that the Rotunda, during the "severe winter" of 1895–96, suffered from water damage, "on account of the melting of the heavy snow-fall."
415. Report of the Faculty, 31 Oct. 1895. "The University of Virginia Appeals," *NYT*, 10 Nov. 1895.
416. "Rotunda Walls All Right," *Charlottesville Daily Progress*, 31 Oct. 1895. Report of the Faculty, 31 Oct. 1895. Society of Architectural

Historians Web site, http://www.sah.org/oldsite06012004/aame/biom.html (accessed on 17 Aug. 2006). Harry P. McDonald, FAIA, was born at Romney, Virginia, in 1847 and graduated from Washington and Lee University in 1870. In 1880 he settled in Louisville, Kentucky, and, with his brothers, practiced architecture under the firm name of McDonald Brothers. Among the works he executed are the Kansas State House and St. Paul's Episcopal Church in New Orleans. He was elected a member of the Western Association of Architects in 1885 and became a Fellow of the AIA in 1889. He died on February 18, 1904.

417. Margaret Lewis Randolph to Patsy Jefferson Taylor, 30 Oct. 1895, cited in Frederick Doveton Nichols and Omer Allan Gianniny Jr., "Thomas Jefferson, Stanford White and the University of Virginia Rotunda: A Controversy of Styles," unpublished manuscript, 1984, 3-5, UVSC.
418. Report of the Faculty, 31 Oct. 1895.
419. Ibid. There was some dissent over the recommendation that the interior of the Rotunda be reconstructed differently that the original building. While some members of the faculty and the Board of Visitors supported the idea of the single, open space beneath the dome, there was enough opposition to the idea that a statement was published in the 7 Dec. 1895, issue of *College Topics* that the "internal arrangement" of the Rotunda would be "exactly as it was before." Ultimately, however, the space beneath the dome was not divided by floors, as it had been in the original construction.
420. *College Topics*, 7 Dec. 1895.
421. Report of the Faculty, 31 Oct. 1895.
422. Report of the Faculty, 31 Oct. 1895. *College Topics*, 7 Dec. 1895. Stanford White, "The Buildings of the University of Virginia," *Corks and Curls* 11 (1898): 127. "It was evidently Jefferson's intention to build a portico at the north end of the Rotunda," White wrote in *Corks and Curls* in 1898, after the restoration was completed. "In the restoration this new portico was added, and a great flight of steps carried down to the terrace and then to the road, with a happy and dignified result."
423. "University of Virginia's Loss," *NYT*, 28 Oct. 1895. "University Relief Fund," *Charlottesville Daily Progress*, 31 Oct. 1895. "The New Buildings," *The Alumni Bulletin* (Aug. 1898): 47.
424. Report of the Faculty, 31 Oct. 1895. The report states that the money "already in hand" was the "Fayerweather money."
425. "University Relief Fund," *Charlottesville Daily Progress*, 31 Oct. 1895.
426. Report of the Faculty, 31 Oct. 1895. In order to make the most of the next building season in the coming spring and to move the work along quickly, the faculty proposed that new bricks matching those used to construct the Rotunda be manufactured immediately in preparation for the imminent construction.
427. Report of the Faculty, 31 Oct. 1895.
428. "The Work of Restoration," *Alumni Bulletin* (Feb. 1896): 133.
429. BV, Minutes, 4 Nov. 1895. *College Topics*, 9 Nov. 1895.
430. "University Building Fund," *Richmond Dispatch*, 8 Nov. 1895.
431. "It Must Be Rebuilt," *Richmond Dispatch*, 30 Oct. 1895. Bruce, vol. 4, 273. Acts and Joint Resolutions of the General Assembly of the State of Virginia, 1895-96 (Richmond: J. H. O'Bannon, 1896), 159. These sources were cited in "The Conflagration and the Making of the 'New' University," *Arise and Build!*
432. *College Topics*, 6 Jan. 1896. "W. M. Thornton Dies; Virginia Educator," *NYT,* 12 Sept. 1935.
433. "The Work of the Restoration," *Alumni Bulletin* (Feb. 1896): 137.
434. Ibid. Richmond contributed $14,125; Norfolk, $2,967; Lynchburg, $573; Staunton, $319; Lexington, $260; Winchester, $175; and Roanoke, $156. It is not clear how the sum of $2,930 from the University reported in the *Alumni Bulletin* figures into the other funds raised by the University.
435. *College Topics*, 6 Jan. 1896.
436. Ibid.
437. *Univ. of Virginia Report for the Session 1896–97* (Charlottesville Printing Company and Old Dominion Press, n.d.), 14.
438. *Univ. of Virginia Report for the Session 1895–96*, 3.
439. "The University Bill," *Charlottesville Chronicle*, 24 Jan. 1896, cited in *College Topics*, 25 Jan. 1896.
440. "The New Buildings," *Alumni Bulletin* (Aug. 1898): 47.
441. McDonald Bros. Architects, Design for Restoration of Rotunda, University of Virginia, Section A-B, n.d., UVSC.
442. McDonald Bros. Architects, Design for Restoration of Rotunda, University of Virginia, Ground-floor Plan, n.d., UVSC.
443. Ibid.
444. Report of the Faculty, 31 Oct. 1895. Wilson, "The Conflagration and the Making of the 'New' University," *Arise and Build!* W.M. Thornton to SW, 24 Jan. 1896, Box 172, File 1, MMW, N-YHS.
445. BV, Minutes, 4 Nov. 1895.
446. BV, Minutes, 13 March 1896. The record shows that inadequately engineered work on the Rotunda and its wings in the winter of 1896 resulted in the building committee asking for the McDonald Brothers' resignation. This must have occurred before January 18, 1896, when Thornton wrote to White that the "McDonald Brothers had retired from work which they had undertaken."
447. Report of the Faculty, 31 Oct. 1895.
448. Report of the Faculty, 31 Oct. 1895.
449. William R. Mead to Doctor [Thornton?], 5 Nov. 1895, PP.
450. SW to J. A. Chanler, 2 Nov. 1895, SW, Press Book 14, p. 233; SW to Mr. Coleman, 8 Nov. 1895, SW, Press Book 14, p. 255, SW Collection, AAL.
451. John Carrère to Charles A. Coolidge, 14 Jan. 1896, Box M-15, UVSC. Carrère reveals in this letter that he had spoken with Mead about the prospect of an architectural competition for the work at the University and that the firm of McKim, Mead and White did "not want to compete at all," that from a "business standpoint" they could not be "justified in competing," but because of the "interesting" connection with the University of Virginia they were willing to make "a very marked exception."
452. W. Gordon McCabe to Carrère, 20 Jan. 1896, Box 171, File 1, MMW, N-YHS.
453. Randolph to Carrère, 18 Jan. 1896, Box 172, File 3, MMW, N-YHS.
454. Richard Guy Wilson, "The Conflagration and the Making of the 'New' University," *Arise and Build!* Charles C. Baldwin, *Stanford White*, (New York: Da Capo Press, 1931) 113, cited in Yetter, 34.
455. Randolph to SW, 18 Jan. 1896, Box 173, File 3, MMW, N-YHS. Thornton to White, 18 Jan. 1896, Box 172, File 1, MMW, N-YHS. Richard Guy Wilson, "The Conflagration and the Making of the 'New' University," *Arise and Build!* The construction of a separate law school building was also part of the original plan, but this plan was scrapped because of expense.

456. BV, Minutes, 13 March 1896.
457. Randolph to SW, 18 Jan. 1896, Box 173, File 3, MMW, N-YHS.
458. Ibid.
459. BV, Minutes, 13 March 1896.
460. Bruce, vol. 4, 274. Nichols and Gianniny, i-14.
461. Rivanna Archaeological Consulting, 8.
462. Two documents, Harry McDonald's account of the Jan. 18 meeting of the building committee and W. C. N. Randolph's letter to McDonald Brothers, were cited in Nichols and Gianniny's manuscript, n-2–3, but only as the University of Virginia, correspondence, Dir. of Grounds and Buildings, W. H. Echols, 1895–1896.
463. Nichols and Gianniny, n-7.
464. Thornton to SW, 8 Feb. 1896, Box 172, File 3, MMW, N-YHS.
465. Nichols and Gianniny, 1-8.
466. Thornton to SW, 8 Feb. 1896, Box 172, File 3, MMW, N-YHS.
467. McDonald Brothers to the Univ. of Virginia Building Committee, 2 Feb. 1896, RG-1/1/3.682, UVSC.
468. Randolph to Carrère, 18 Jan. 1896, Box 172, File 3, MMW, N-YHS.
469. Thornton to SW, 24 Jan. 1896, Box 172, File 1, MMW, N-YHS.
470. Randolph to SW, 24 Jan. 1896, Box 172, File 3, MMW, N-YHS.
471. SW to Thornton, 27 Jan. 1896, Box M-4, File 1, MMW, N-YHS.
472. Thornton to SW, 1 Feb. 1896, Box 172, File 1, MMW, N-YHS. Thornton to White, 29 Jan. 1896, Box 172, File 3, MMW, N-YHS.
473. Randolph to SW, 24 Jan. 1896, Box 172, File 3, MMW, N-YHS. Thornton to White, 1 Feb. 1896, Box 172, File 1, MMW, N-YHS. BV, Minutes, 13 March 1896, p. 20.
474. Edward Simmons, *From Seven to Seventy: Memories of a Painter and a Yankee* (New York and London: Harper and Brothers, 1922), 241.
475. MMW, receipt of drawings delivered to Thomas H. Carter, June 1898, MMW, N-YHS, Box 171, Folder I. Thomas H. Carter, list of Thomas Jefferson drawings received from MMW, June 1898, Box 171, File 1, MMW, N-YHS. This list is an inventory of Thomas Jefferson drawings that were used by MMW and returned to the University by them. The list includes the "bird's-eye view of the University grounds and buildings, and drawings of the Rotunda south front; interior library; ground plan; interior view; and a sketch with notes, specifications, estimates, etc., on the reverse side."
476. SW to Thornton, 21 Feb. 1896, RG-5/5, Mss. 8437, Univ. of Virginia, Correspondence of Buildings and Grounds, Box 1, UVSC.
477. SW to Thornton, 21 Feb. 1896, RG-5/5, Mss. 8437, Correspondence of Buildings and Grounds, Box 1, UVSC.
478. SW to Thornton, 26 Feb. 1896, RG-5/5, Mss. 8437, Correspondence of Buildings and Grounds, Box 1, UVSC.
479. SW to Thornton, 26 Feb. 1896, RG-5/5, Mss. 8437, Correspondence of Buildings and Grounds, Box 1, UVSC.
480. Richard Guy Wilson, "The Conflagration and the Making of the 'New' University," *Arise and Build!*
481. BV, Minutes, 13 March 1896. William M. Thornton, "Engineering Instruction at the University of Virginia," 1924, Mss. 2612, p. 6, UVSC.
482. BV, Minutes, 13 March 1896, p. 21. The report of the building committee provided these numbers but made an error in its calculation: the report states that a total of $9,050.43 was spent as of March 13, 1896. For more information on the breakdown of expenses, including the incidentals, see the March 13 report of the Board of Visitors.
483. BV, Minutes, 13 March 1896.
484. Ibid. SW to Ethel[red?], 19 March 1896, Press Book 15, 334, SW Collection, AAL.
485. "Report of the Architects to the Building Committee," *Alumni Bulletin* (Feb. 1896): 139. Barringer suggests that Jefferson split the area within the Rotunda into two floors "by the imperative need of obtaining space for laboratories and lecture-halls" (p. 276).
486. Ibid. "The Work of the Restoration," *Alumni Bulletin* (Feb. 1896): 135–36. *College Topics*, 14 March 1896. Memorandum on Letterhead of Chairman's Office, University of Virginia, ca. 29 Jan. 1896, Box 171, File 2, MMW, N-YHS. This document, in Thornton's hand and probably dating to around January 29, 1896, indicates how the new rooms associated with the Rotunda would be used. The "East Basement Room" would "be assigned to Greek"; the "West Basement Room" would be used for Latin instruction; the "East Terrace Room" would be used for English Literature; the "West Terrace Room" would be used for French and German instruction; and the "Room under the North Portico" would be used for History and Political Economy. Nichols and Gianniny, d-7.
487. Randolph to SW, 27 March 1896, Box 172, File 3, MMW, N-YHS. SW to Echols, 25 April 1896, RG-5/5, Box 1, MMW Correspondence, UVSC.
488. MMW, untitled ground-floor plan, 7 April 1896; First Gallery Plan (Second Gallery Plan Similar) for Restoration of Rotunda, University of Virginia, 7 April 1897, UVSC.
489. MMW, Basement Plan for Restoration of Rotunda, University of Virginia, 7 April 1897; Plan of Rotunda & Garden, University of Virginia, 7 April 1896, UVSC.
490. MMW, Basement Plan for Restoration of Rotunda, University of Virginia, 7 April 1897; Longitudinal Section, Restoration of Rotunda, University of Virginia, 7 April 1896, UVSC.
491. MMW, untitled ground-floor plan, 7 April 1896; First Gallery Plan (Second Gallery Plan Similar) for Restoration of Rotunda, University of Virginia, 7 April 1897, UVSC. R. Guastavino made annotations to MMW's 7 April 1896 plans sometime during 1897. On the plans Guastavino indicates that the fourth floor was omitted in the final design.
492. MMW, Side Elevation, Restoration of Rotunda, University of Virginia, 7 April 1897, UVSC. MMW, "Carpentry, Roofing, and Glazing, Restoration of the Rotunda, University of Virginia, Charlottesville, Va." 22 April 1896, Box 2485, Acc. 3263, UVSC.
493. Guastavino to MMW, 18 Feb. 1896, Box 171, File, 1, MMW, N-YHS.
494. Peter Austin, "Rafael Guastavino's Construction Business in the United States: Beginnings and Development," *APT Bulletin* 30:4 (1999): 15. Nichols and Gianniny, q-1.
495. Guastavino to MMW, 11 March 1896, Box 171, File 1, MMW, N-YHS.
496. J. T. Wagner, W. H. Mullins Architectural Sheet Metal to MMW, 11 March 1896, Box 171, File 2, MMW, N-YHS.
497. Piccirilli Brothers to SW, 15 April 1896, Box 172, File 1, MMW, N-YHS.
498. Thornton to SW, 1 Feb. 1896, Box 172, File 1, MMW, N-YHS. Thornton to SW, 8 Feb. 1896, Box 172, File 3, MMW, N-YHS.
499. BV, Minutes, 13 March 1896.

500. Skinner to Echols, 27 April 1896, RG-5/5, Box 1, MMW Correspondence, UVSC.
501. Echols to Skinner, 29 April 1896, Box 171, File 1, MMW, N-YHS.
502. Echols to SW, 4 May 1896, MMW, N-YHS.
503. Thornton to SW, 20 March 1896, Box 172, File 3, MMW, N-YHS.
504. "The Work of the Restoration," *Alumni Bulletin* (Feb. 1896): 135–36.
505. Ibid.
506. Information for this section was taken primarily from McKim, Mead and White's April 1896 specifications for contractors, [full citation to be added]. This section on the heating and ventilation system was prepared by Rivanna Archaeological Services.
507. BV, Minutes, 4 Nov. 1895.
508. It is believed that the 'basement level blower room' was likely the current North Mechanical Room underlying the north stairs to the Rotunda.
509. The sectional cored cast-iron radiator had been developed by the 1880s from earlier hot water and steam fed versions. The sectional radiator, common in late nineteenth-century homes, possessed legs and was often highly ornamented.
510. BV, Minutes, 13 Oct. 1898.
511. Specification for the Repair of the Terrace Roofs at the University of Virginia, Charlottesville, Virginia, 1 Feb. 1896, Box 172, File 3, MMW, N-YHS.
512. Thornton to SW, 3 Feb. 1896, Box 172, File 3, MMW, N-YHS.
513. Ibid.
514. BV, Minutes, 13 March 1896.
515. Thomas Hastings to SW, 6 Feb. 1896, Box 172, File 4, MMW, N-YHS.
516. SW to Echols, 27 March 1896, RG-5/5, Mss. 8437, Correspondence of Buildings and Grounds, Box 1, UVSC.
517. Randolph to SW, 28 March 1896, Box 172, File 2, MMW, N-YHS.
518. SW to Randolph, 6 April 1896, RG-5/5, Mss. 8437, Correspondence of Buildings and Grounds, Box 1, UVSC.
519. "The University Buildings," *Alumni Bulletin* (May 1896): 13. Skinner to SW, 28 Feb. 1896, Box 172, File 2, MMW, N-YHS.
520. Skinner to Mead, 26 July 1896, Box 172, File 3, MMW, N-YHS.
521. MMW, Bill Books, Vol. 6, p. 298, MMW, N-YHS.
522. SW to Randolph, 18 April 1896, RG-5/5, Mss. 8437, Correspondence of Buildings and Grounds, Box 1, UVSC. Randolph to White, 22 April 1896, Box 172, File 2, MMW, N-YHS.
523. Randolph to MMW, telegram, 4 May 1896, Box 172, File 2, MMW, N-YHS.
524. Skinner to Echols, 2 May 1896, RG-5/5, Mss. 8437, Correspondence of Buildings and Grounds, Box 1, UVSC. Thornton to SW, 5 May 1896, Box 172, File 1, MMW, N-YHS. Charles E. Langley Co. to MMW, 6 May 1896, Box 171, File 2, MMW, N-YHS. Randolph to SW, 5 May 1896, Box 172, File 2, MMW, N-YHS. Charles E. Langley to MMW, 3 Feb 1896, Box 171, File 2, MMW, N-YHS.
525. Proposed list of Bidders on University of Virginia, [1896], Box 172, File 3, MMW, N-YHS. The three Richmond firms in addition to Langley were W. A. Chesterman and Co., G. J. Hunt, and Menton E. Ancarrow. John P. Pettijohn and Co. were from Lynchburgh, Va; A. F. Withrow Lumber Co. was from Charleston, W. Va.; M. T. Lewman and Co. were from Louisville, Ky.; and Walton and Vandergrift haled from Charlottesville. Thornton to White, 18 March 1896, Box 171, File 1, MMW, N-YHS. Regarding Pettijohn, Chesterman, and Withrow, Thornton wrote to White on March 18, 1896, that there were "reasons both of fact and of policy why these should be invited to make a tender on the work."
526. Skinner to SW, telegram, 20 May 1896, Box 172, File 2, MMW, N-YHS.
527. C. P. Benson, copy of resolutions adopted at meeting of building committee on 9 Nov. 1896, Box 172, File 1, MMW, N-YHS. BV, Minutes, 17 June 1896.
528. Thomas Hastings to SW, 6 Feb. 1896, Box 172, File 4, MMW, N-YHS. William M. Thornton, "Engineering Instruction at the University of Virginia," 1924, Mss. 2612, p. 6, UVSC. In this 1924 report Thornton made the following observation about the acceptance of Langley: "The Norcross Brothers, a firm of first-class repute, bid $450,000. Langley after several months of active work, went bankrupt. The University took over the job, completed it, and as shown by the Proctor's final report, spent in all $450,000. The Norcross bid was doubtless fair and reasonable and ought to have been accepted."
529. Contract, University of Virginia and C. C. Cocke, 12 Aug. 1896, RG 5/3, Box 22, Folder 1895–96/Robertson; Contract, University of Virginia and Adams Bros. and Payne, 4 May 1896, RG 5/3, Box 22, Folder 1895–96/Robertson; Contract, University of Virginia and Edgar N. Cox, 5 June 1896, RG 5/3, Box 22, Folder 1895–96/Robertson; Contract, University of Virginia and E. Dillon and Co., 5 June 1896, RG 5/3, Box 22, Folder 1895–96/Robertson. All files in UVSC.
530. "The University Buildings," *Alumni Bulletin* (May 1896): 13. SW to [?], 25 May 1896, MMW, SW, Press Book 16, p. 138, AAL. Shortly after the contracts were signed, Stanford White left for a six-week trip to Canada and returned to New York in mid-July 1896.
531. Thornton to the Friends and Alumni of the University of Virginia, 7 July 1896, RG 19/1/2.991, Box RG +8/1/1.281, Folder 1896, July 7, UVSC.
532. Skinner to Haase, 24 June 1896, Box 172, File 3, MMW, N-YHS.
533. Skinner to SW, 7 July 1896, Box 172, File 3, MMW, N-YHS.
534. Skinner to SW, 7 July 1896, Box 172, File 3, MMW, N-YHS.
535. Skinner to SW, 8 July 1896, Box 172, File 3, MMW, N-YHS.
536. Skinner to SW, 29 July 1896, Box 172, File 3, MMW, N-YHS.
537. Skinner to SW, 6 Aug. 1896, Box 172, File 3, MMW, N-YHS.
538. Nichols and Gianniny, s-6. "University Buildings," *Charlottesville Chronicle*, 7 Aug. 1896.
539. Skinner to SW, 11 Aug. 1896, Box 172, File 3, MMW, N-YHS.
540. Skinner to MMW, 17 Aug. 1896, Box 172, File 3, MMW, N-YHS.
541. Skinner to SW, 28 Sept. 1896, Box 172, File 3, MMW, N-YHS.
542. Nichols and Gianniny, q-7.
543. "The Roof Fell In," *Richmond Dispatch*, 20 Oct. 1896. "Disaster at the University," *Charlottesville Daily Progress*, 19 Oct. 1896.
544. "Disaster at the University," *Charlottesville Daily Progress*, 19 Oct. 1896.
545. "The Roof Fell In," *Richmond Times-Dispatch*, 20 Oct. 1896.
546. "The University Accident," *Charlottesville Daily Progress*, 20 Oct. 1896.
547. "The Verdict," *Charlottesville Daily Progress*, 23 Oct. 1896.
548. Skinner to SW, 29 Oct. 1896, Box 172, File 2, MMW, N-YHS.
549. Ibid.

550. Randolph to A. C. Gordon, 31 Oct. 1896, Gordon Papers, File 1896, UVSC.
551. SW to Richard Grant White, 29 Oct. 1896, SW, Press Book 17, p. 44, AAL.
552. Skinner to SW, 24 Oct. 1896, Box 172, File 3, MMW, N-YHS.
553. Charles E. Langley and Co. to Skinner, 28 Oct. 1896, Box 172, File 2, MMW, N-YHS.
554. Skinner to SW, 29 Oct. 1896, Box 172, File 2, MMW, N-YHS. It is not known if White authorized this change.
555. Nichols and Gianniny, s-7–8.
556. C. P. Benson, Secretary, Superintendent of Grounds and Buildings of the University of Virginia, 9 Nov. 1896, Box 172, File 1, MMW, N-YHS.
557. Skinner to SW, 10 Nov. 1896, Box 172, File 2, MMW, N-YHS.
558. Skinner to SW, 12 Nov. 1896, Box 172, File 2, MMW, N-YHS.
559. Skinner to SW, 28 Nov. 1896, Box 172, File 2, MMW, N-YHS.
560. Nichols and Gianniny, q-7–8.
561. SW to Skinner, 12 Nov. 1896, PR 42, Box 501 M/3, Folder Univ. of Virginia, MMW, N-YHS.
562. Skinner to SW, 5 Dec. 1896, Box 172, File 2, MMW, N-YHS.
563. Nichols and Gianniny, q-7–8.
564. Skinner to Haase, 29 Nov. 1896, Box 172, File 2, MMW, N-YHS.
565. Skinner to SW, 5 Dec. 1896, Box 172, File 2, MMW, N-YHS.
566. Sanborn Map Co., *Insurance Maps of Charlottesville, Va.*, Dec. 1896.
567. Skinner to Haase, 6 Dec. 1896, Box 172, File 2, MMW, N-YHS.
568. Antonio Patrizios, Pres., National Mosaic Co. to SW, 12 Jan. 1897, Box 171, File 2, MMW, N-YHS.
569. Charles E. Langley and Co. to MMW, 15 Jan. 1897, Box 171, File ?, MMW, N-YHS.
570. Charles E. Langley and Co. to MMW, 19 Jan. 1897, Box 171, File ?, MMW, N-YHS.
571. Skinner to SW, 17 Jan. 1897, Box 172, File 2, MMW, N-YHS.
572. Skinner to Haase, 28 Jan. 1897, Box 172, File 2, MMW, N-YHS.
573. Skinner to Haase, 8 Feb. 1897, Box 172, File 2, MMW, N-YHS.
574. Skinner to Haase, 15 Feb. 1897, Box 172, File 2, MMW, N-YHS. The sketch plan and section of the third-floor gallery that Skinner enclosed with his letter to Haase have not been located.
575. Skinner to SW, 10 March 1896, Box 172, File 2, MMW, N-YHS.
576. Skinner to Robert Robertson, 12 Jan. 1897, RG 515, Box 1, File MMW Correspondence, UVSC.
577. Skinner to Mr. Martin, 10 March 1897, Box 172, File 2, MMW, N-YHS.
578. Langley and Co. to SW, telegram, 13 March 1897; telegram [17?] March 1897, Box 171, File 2, MMW, N-YHS.
579. Skinner to SW, 29 March 1897, Box 172, File 2, MMW, N-YHS.
580. Skinner to SW, 6 April 1897, Box 172, File 2, MMW, N-YHS.
581. Randolph to SW, 8 April 1897, Box 172, File 2, MMW, N-YHS.
582. "The New University—Her Buildings and Equipment," *Corks and Curls* 10 (1897), 119-120.
583. Ibid.
584. SW to Randolph, 16 April 1897, Box 172, File 3, MMW, N-YHS.
585. SW to Randolph, 16 April 1897, Box 172, File 3, MMW, N-YHS. Randolph to SW, telegram, 22 April 1897, Box 172, File 2, MMW, N-YHS. White had planned to attend that meeting, but it is not clear whether that happened; MMW to Randolph, 16 April, Box 172, File 3, MMW, N-YHS. Skinner to MMW, 19 April 1897, Box 172, File 2, MMW, N-YHS.
586. BV, Minutes, 23 April 1897.
587. Randolph to SW, 3 May 1897, Box 172, File 2, MMW, N-YHS.
588. Charles E. Langley to SW, 4 May 1897, Box 171, File 2, MMW, N-YHS.
589. Piccirilli Brothers to MMW, 3 May 1897, Box 172, File 3, MMW, N-YHS.
590. Piccirilli Brothers to MMW, 12 May 1897, Box 172, File 1, MMW, N-YHS.
591. Piccirilli Brothers to MMW, 20 May 1897, Box 172, File 1, MMW, N-YHS.
592. BV, Minutes, 15 June 1897.
593. Ibid.
594. Ibid. These minutes include a summary of expenditures of the building committee from 15 Nov. 1895 to 15 June 1897. Overall $264,991.60 was spent on the building projects. Relevant to the Rotunda on the itemized list are references to the cost of tearing down the remains of the Annex ($617.34) and the heating of the Rotunda in the winter of 1897 ($244.56).
595. Ross F. Tucker of the Manhattan Concrete Company to MMW, 21 May 1897, Box 171, File 2, MMW, N-YHS. Manhattan Concrete Co. to Judge Moon, 4 June 1897, Box 171, File 2, MMW, N-YHS.
596. Ross F. Tucker of the Manhattan Concrete Company to MMW, 21 May 1897, Box 171, File 2, MMW, N-YHS. Manhattan Concrete Co. to Judge Moon, 4 June 1897, Box 171, File 2, MMW, N-YHS.
597. [Ross F. Tucker?], Schedule of Defects, University of Virginia, ca. 1897, Box 172, File 3, MMW, N-YHS.
598. Ibid.
599. Tucker to MMW, 21 May 1897, Box 171, File 2, MMW, N-YHS. Manhattan Concrete Co. to Judge Moon, 4 June 1897, Box 171, File 2, MMW, N-YHS.
600. Skinner to Mead, 17 June 1897, Box 172, File 17, MMW, N-YHS.
601. Tucker to Mead, 4 June 1897, Box 171, File 2, MMW, N-YHS.
602. W. H. Hoffman to Mead, 6 June 1897, Box 171, File 2, MMW, N-YHS.
603. Moon to Mead, 14 June 1897, Box 171, File 2, MMW, N-YHS. White to Randolph, 28 July 1897, RG-5/5, Mss. 8437, Correspondence of Buildings and Grounds, Box 1, UVSC.
604. BV, Minutes, 15 June 1897.
605. Skinner to Mead, 17 June 1897; 19 June 1897; Box 172, File 2, MMW, N-YHS.
606. Hoffman to Mead, 19 June 1897, Box 171, File 2, MMW, N-YHS. It is not clear from the letter whether this was a meeting of the executive or the building committee.
607. Skinner to Mead, 19 June 1897, Box 172, File 2, MMW, N-YHS.
608. Hoffman to Mead, 22 June 1897, Box 171, File 2, MMW, N-YHS.
609. Agreement for General Work and Materials for Rotunda, Physical, Academical, Mechanical and Boiler House Buildings at Charlottesville, Virginia, The Rector and Visitors of the University of Virginia with Ross F. Tucker, July 15, 1897, MMW, N-YHS.
610. Skinner to Mead, 17 June 1897; 19 June 1897; Box 172, File 2, MMW, N-YHS.
611. Agreement for General Work and Materials, Rector and Visitors of the Univ. of Va. with Ross F. Tucker, 20 July 1897, Box 172, File 4, MMW, N-YHS.
612. Southern Electric Co. to Skinner, 8 July 1897, Box 172, File 2, MMW, N-YHS.
613. W. H. Spelman and Co. to MMW, 10 July 1897, Box 172, File 1,

MMW, N-YHS.

614. J. Franklin Whitman and Co. to MMW, 22 July 1897, Box 172, File 4, MMW, N-YHS.
615. Yetter, 77. "The Rotunda Capitals," *Alumni Bulletin* (July 1902), 35. Pompeo Coppini, *From Dawn to Sunset* (San Antonio: Press of the Naylor Co., 1949), 54.
616. Tucker to MMW, 1 Aug. and 1 Sept. 1897, Box 172, File 1, MMW, N-YHS. Tucker, orders for extra work, 1 Sept. 1897– 3 Dec. 1897, Box 172, File 1, MMW, N-YHS. Tucker submitted to the University several orders for extra work from Sept. to Dec., none of which clearly relate to the Rotunda.
617. Skinner to MMW, 30 Sept. 1897, Box 172, File 2, MMW, N-YHS.
618. SW to Randolph, 10 Dec. 1897, Box 172, File 4, MMW, N-YHS.
619. BV, Minutes, 10 Dec. 1897.
620. BV, Minutes, 10 Dec. 1897.
621. Tucker to Richard M. White, 28 Dec. 1897, Box 171, File 2, MMW, N-YHS.
622. R. White to SW, 29 Dec. 1897, Box 172, File 4, MMW, N-YHS.
623. Tucker to R. White, 29 Dec. 1897, Box 172, File 4, MMW, N-YHS.
624. R. White to SW, 5 Jan. 1898, Box 172, File 4, MMW, N-YHS.
625. Tucker to MMW, 6 Jan. 1898, Box 171, File 2, MMW, N-YHS.
626. R. White to SW, 7 Jan. 1898, Box 172, File 4, MMW, N-YHS. D. Harmon to SW, 11 Jan. 1898, Box 171, File 2, MMW, N-YHS.
627. R. White to SW, 26 Feb. 1898, Box 172, File 4, MMW, N-YHS.
628. BV, Minutes, 18 March 1898.
629. Skinner to SW, 15 Feb. 1898; 20 March 1898, Box 172, File 15, MMW, N-YHS.
630. Thomas H. Carter to MMW, 21 March 1898, Box 171, File 1, MMW, N-YHS.
631. J. E. Phillips to SW, 6 Oct. 1898, Box 171, File 1, MMW, N-YHS. The original inquiry for the pipe under the urinals was made in March, and it is evident from this letter written seven months later that the work was still not done. Phillips estimated that the work would cost at least $90.
632. Skinner to SW, 25 March 1898, Box 172, File 2, MMW, N-YHS.
633. "Commencement, June 1898," *Alumni Bulletin* (Aug. 1898): 52. James C. Carter was a New York City lawyer who had ties to Virginia. According to his obituary in the *Virginia Law Register*, 11 (May 1905), Carter was "remembered by Virginia lawyers as having several times attended the annual meeting of our State Bar Association, and for a splendid lecture in opposition to certain legal reforms in pleading. After that address but little was ever heard of these reforms in Virginia . . . all his life he had a high admiration for Virginia and Virginians." Upon his death in 1905, Carter bequeathed $10,000 to the University of Virginia.
634. "Commencement, June 1898," *Alumni Bulletin* (Aug. 1898): 52.
635. "Dedication of the YMCA Building," *Alumni Bulletin* (Aug. 1898): 49.
636. Thomas H. Carter to MMW, 28 July 1898, Box 171, File 1, MMW, N-YHS.
637. Skinner to SW, 31 July 1898, Box 172, File 2, MMW, N-YHS.
638. Ibid.
639. "The New Buildings," *Alumni Bulletin* (Aug. 1898): 47.
640. Ibid.
641. SW, "The Buildings of the University of Virginia," *Corks and Curls* 11 (1898): 130.
642. John S. Patton, "University of Virginia," *Annual Reports of Officers, Boards, and Institutions of the Commonwealth of Virginia for the Year Ending September 30, 1899* (Richmond: J. H. O'Hannon, 1899), xcvi.
643. Leland M. Roth, *The Architecture of McKim, Mead and White, 1870–1920, A Building List* (New York and London: Garland publishing Co., 1978), 160.
644. Sanborn Map Co., *Insurance Maps of Charlottesville, Va.*, Sept. 1902, Oct. 1907, Nov. 1913.
645. Charles Hancock to E. A. Alderman, 28 Nov. 1921, RG 1/1/2, Box 9, Folder Board of Visitor Minutes, UVSC.
646. Sanborn Map Co., *Insurance Maps of Charlottesville, Va.*, 1929.
647. University of Virginia website, Maps of the University of Virginia, http://www.virginia.edu/imap, (accessed Oct. 23, 2006). Alderman Library was designed by University alumnus Robert E. Lee Taylor of Baltimore and built between 1936 and 1938. It was named in honor of Edwin Anderson Alderman, the University's first president.
648. BV, Minutes, 11 June 1938.
649. Ibid. The PWA grant was made in a letter to the University by H. T. Cole, Regional Director under the date of 2 Aug.1938, Docket No. Va. 1312-F, Federal Emergency Administration of Public Works.
650. BV, Minutes, 12 Aug. 1938, vol. 10, p. 303. "Fiske Kimball," FactMonster, http://www.factmonster.com/ce6/people/A0827648.html (accessed 21 Nov. 2006).
651. Francis L. Berkeley Jr., "Mr. Jefferson's Rotunda: Myths and Realities," *UVa Alumni News* (July–Aug. 1972): 7. William H. Wraneck, "Jefferson Rotunda at University of Virginia Reopening after Second Restoration," *Baltimore Sun*, 14 Jan. 1940. Univ. of Virginia, Office of the Landscape Architect, Binder 3, Rotunda and Lawn.
652. "Restoration Work on Rotunda Opens," *Charlottesville Daily Progress*, 6 Oct. 1938, Univ. of Virginia, Office of the Landscape Architect, Binder 3, Rotunda and Lawn.
653. BV, Minutes, 21 Jan. 1939. The Vermont Marble Company, the Georgia Marble Company, the Marsteller Corporation, the Vickery Stone Company of Indiana, Bailey Plumbing and Heating Company, Brown and Taylor, and N. W. Martin and Brothers each submitted bids.
654. "Restoration Work on Rotunda Opens," *Charlottesville Daily Progress*, 6 Oct. 1938, Office of the Landscape Architect, Univ. of Virginia, Binder 3, Rotunda and Lawn.
655. BV, Minutes, 7 April 1939.
656. BV, Minutes, 7 June 1939.
657. BV, Minutes, 19 July 1939.
658. William H. Wraneck, "Jefferson Rotunda at University of Virginia Reopening after Second Restoration," *Baltimore Sun*, 14 Jan. 1940. Univ. of Virginia, Office of the Landscape Architect, Binder 3, Rotunda and Lawn. BV, Minutes, 3 Oct. 1939. Security Steel Company of Avenel, N.J., supplied the metal office furniture and Anderson Bros., Inc., of Charlottesville supplied the wood office furniture.
659. "The Rotunda Dances," Office of the Landscape Architect, Univ. of Virginia, Binder 3, Rotunda and Lawn.
660. Francis L. Berkeley Jr., "Mr. Jefferson's Rotunda: Myths and Realities," *UVa Alumni News* (July–Aug. 1972): 7.
661. Frank E. Hartman to V. L. Chrisler, 2 Dec. 1941; Chrisler to Hartman, 5 Dec. 1941; Roy G. Pratt to Hartman, telegram, 28 Dec.

1941; Hartman to Pratt, 21 February 1942, UV, FMPF.
662. BV, Minutes, 14 Oct. 1944.
663. BV, Minutes, 8 March 1939; 15 March 1945. The committee appointed in 1939 to investigate the use of the dome room was made up of University president John Lloyd Newcomb, R. Gray Williams, and C. O'Conor Goolrick.
664. BV, Minutes, 7 March 1947.
665. "Communist Paints Sign on Rotunda," *The Cavalier*, 16 Feb. 1950.
666. BV, Minutes, 4 Nov. 1895, as cited in Francis L. Berkeley Jr., "Mr. Jefferson's Rotunda: Myths & Realities," University of Virginia Alumni News (July-Aug. 1972): 7. Nichols and Gianniny, w-4.
667. BV, Minutes, 14 Jan. 1955.
668. BV, Minutes, 12 Feb. 1955.
669. Ibid.
670. BV, Minutes, 17 Dec. 1955. The model has been preserved and is kept in a university storage facility.
671. BV, Minutes, 15 Sept. 1956; 7 June 1957.
672. BV, Minutes, 7 June 1957.
673. BV, Minutes, 8 Oct. 1960. At the 8 Oct.1960, meeting of the Board of Visitors the Rotunda project was deferred while it waited for funding. Plans for the northwest wing of the Rotunda were evidently discussed at the meeting but were not approved by the BGC at this time. According to the minutes, no details about the plans were given at the meeting.
674. Rotunda Chronology, attachment in BV, Minutes, 17 May 1974.
675. Ibid.
676. Ibid.
677. BV, Minutes, 2 April 1966.
678. Werner K. Sensbach to Ballou and Justice, 29 April 1966, UV, FMPF.
679. B and J, Composite Typical Section, The Rotunda: Dome Room Half Plan, Composite Plan, The Rotunda; 10 Sept. 1968, no. 21930, UV, FMPF. Ballou and Justice, "Dome Room Half Plan, Composite Plan, The Rotunda, University of Virginia," 10 Sept. 1968, no. 21930, UV, FMPF.
680. B and J, First Floor Plan, Alterations and Restoration of the Rotunda, University of Virginia, 8 May 1969, no. 21924. UV, FMPF.
681. Alteration and Restoration of the Rotunda, Project Criteria, 8 May 1969. UV, FMPF.
682. Contract between the Rector and Visitors of the University of Virginia and B and J, 29 Dec. 1970. UV, FMPF.
683. Restoration and Renovation of the Rotunda: A Progress Report and an Outline of Procedures, 30 March 1971. UV, FMPF. Francis L. Berkeley Jr. to Louis W. Ballou, 30 June 1971, UV, FMPF. The cost estimate could not be determined.
684. B and J, "Rotunda, Composite Wall Section," 25 May 1971.
685. Francis L. Berkeley Jr. to Louis W. Ballou, 30 June 1971, UV, FMPF.
686. B and J, "Restoration and Adaptation of the Rotunda, University of Virginia," preliminary plans, 1 Oct. 1971, no. 21805, UV, FMPF.
687. B and J, Architects and Engineers, Preliminary Specifications, Restoration and Adaptation of the Rotunda, University of Virginia, Charlottesville, Commission, No. 6700, 1 Oct. 1971.
688. BGC, Minutes, 6 April 1972, in BV, Minutes, 7 April 1972.
689. BV, Minutes, 7 April 1972. Rotunda Chronology, attachment in BV, Minutes, 17 May 1974.
690. Rotunda Chronology, attachment in BV, Minutes, 17 May 1974.
691. BV, Minutes, 2 June 1972. Rotunda Chronology, attachment in BV, Minutes, 17 May 1974.
692. BV, Minutes, 2 June 1972. Application for Approval of Award of Contracts, Restoration and Adaptation of the Rotunda, 22 June 1973, UV, FMPF.
693. Calder Loth to Brian Hogg, Univ. of Virginia Office of the University Architect, 6 July 2006, UV, FMPF.
694. Virginia Historic Landmarks Commission to Univ. of Virginia Special Committee appointed to study the Rotunda Restoration, 9 June 1972. UV, FMPF.
695. Stanley W. Abbott, Virginia Historic Landmarks Commission to Edgar M. [*sic*] Shannon, 20, June 1972. Rotunda Chronology, attachment in BV, Minutes, 17 May 1974.
696. Abbott to Shannon, 20 June 1972.
697. Ibid.
698. Vincent Shea to Junius R. Fishburne, 27 July 1972.
699. Rotunda Chronology, attachment in BV, Minutes, 17 May 1974.
700. B and J, Restoration and Adaptation of the Rotunda, University of Virginia, set of 24 drawings, 25 Aug. 1972, no. 68375, UV, FMPF.
701. J. Norwood Bosserman to Werner K. Sensbach, 16 Oct. 1972; Frederick D. Nichols to Louis K. Ballou, 25 Oct. 1972; David W. Weiss to Francis L. Berkeley Jr., 16 Nov. 1972; Louis W. Ballou to Francis L. Berkeley Jr., 22 Nov. 1972, UV, FMPF. Application for Approval of Working Drawings and Specifications for the Restoration and Adaptation of the Rotunda, 15 Sept. 1972, UV, FMPF. J. Warren Burch and J. C. Jones to R. R. Morrissette, 26 and 31 Jan. 1973, UV, FMPF.
702. Rotunda Chronology, attachment in BV, Minutes.
703. "The 'Rotunda' Burns," *Charlottesville Daily Progress*, 28 Oct. 1972, *CD*, 30 Oct. 1972.
704. Werner K. Sansbach to Douglas Hamner Jr., 13 April 1973; Werner K. Sensbach to Frederick D. Nichols and Vincent Ragunas, 13 July 1973, UV, FMPF. Advertisement for Bids for the Restoration and Adaptation of the Rotunda, *Richmond Times-Dispatch*, 9 March 1973, UV, FMPF.
705. J. A. Kessler Jr. to B and J, 5 July 1973, UV, FMPF.
706. Overall Qualifications of R.E. Lee and Son, Inc., 12 April 1973, UV, FMPF.
707. Restoration and Adaptation of the Rotunda, Progress Meeting no. 1, 18 July 1973, UV, FMPF. Application for Approval of Award of Contracts, Restoration and Adaptation of the Rotunda, 22 June 1973, UV, FMPF.
708. Rotunda Chronology, attachment in BV, Minutes, 17 May 1974.
709. "Rotunda Supervisor Improves on Jefferson," *Charlottesville Daily Progress*, 25 May 1975.
710. Restoration and Adaptation of the Rotunda, Progress Meeting no. 1, 18 July 1973, UV, FMPF. R. E. Lee and Son, Demolition Procedure and Sequence, 4 Oct. 1973, UV, FMPF. The main-floor skylight, reportedly in "fair condition," was later put up for sale by the Virginia Department of Purchases and Supply.
711. Joseph Lee Vaughan and Omer Allan Gianniny Jr., *Thomas Jefferson's Rotunda Restored, 1973–1976* (Charlottesville: Univ. of Virginia Press, 1981), 85, 93, 100.
712. Kessler to B and J, 29 April 1974, UV, FMPF.
713. Restoration and Adaptation of the Rotunda, Progress Meeting no. 1, 18 July 1973, UV, FMPF. Kessler to B and J, 13 Aug. 1973, UV, FMPF.

714. Kessler to B and J, 18 Oct. 1973, UV, FMPF. "Rotunda Yields Mini Mystery," *Charlottesville Daily Progress*, 24 Oct. 1973. "Workmen Uncover Rotunda's Secret," *CD*, 22 Oct. 1973.
715. Vaughan and Gianniny, 85–86.
716. Lynchburg Steel and Specialty Company, drawings, July 1973, no. 39233, UV, FMPF. Guille Steel Products Co., Inc., "First Floor Framing Plan," "Upper gallery Framing Plan," "Dome Room Floor Framing Plan," 24 Sept. 1973, no. 21915, UV, FMPF.
717. B and J, "Half Plan of Main Stairs, First Floor to Second Floor," 7 Dec. 1973. B and J, "Oval Room Entablature," 7 Dec. 1973. B and J, "Chimney and Fireplace Details," 12 March 1974. B and J, "Revised North Oval Room Fireplace," 22 Aug. 1974.
718. Otis Elevator Company, "Half Floor and Ceiling Plan, Restoration and Adaptation of the Rotunda," 26 Jan. 1974, no. 21918, UV, FMPF. Greendale Ornamental Iron Company, "Plan of Railing at Middle Gallery, Rotunda, University of Virginia," n.d., approved 20 March 1974, no. 21914, UV, FMPF.
719. Ballou to Nichols, 12 April 1974, UV, FMPF.
720. Ibid.
721. Ibid.
722. Vaughan and Gianniny, 85–86.
723. BV, Minutes, 17 May 1974; 10 Jan. 1975; 14 March 1975; 30 May 1975, 3 Oct. 1975.
724. Robert Chambliss Light, Jr., Rotunda Renovated: Controversy Resolved, unpublished memoir. "Council Group Studies Utilization of Rotunda," *CD*, 14 March 1974. Additional faculty members of the committee were Architecture professor James A. Cox, Speech professor John Graham and Humanities professors John J. Longley and W. Bedford Moore III. Student members included third-year students Steve Semes, Gary Pavis, Tenny Wellford, and Cham Light; first-year student Kel-Ann Sheldon; and second-year law student Waite Rawls. "Rotunda Use Discussed," *CD*, 21 March 1974. "Use of Rotunda Remains Controversial Question," *CD*, 10 April 1974. "Rotunda Committee Urges 'Multiple Usage' in Report," *CD*, 25 April 1974.
725. "Rotunda Committee Urges 'Multiple Usage' in Report," *CD*, 25 April 1974.
726. Newman to Ballou, 22 Nov. 1974, UV, FMPF.
727. Newman to Ballou, 22 Nov. 1974, UV, FMPF.
728. Newman to Ballou, 22 Nov. 1974, UV, FMPF.
729. Excerpt from the minutes of the Art Commission meeting held in Charlottesville, December 6, 1974, 17 Dec. 1974, UV, FMPF.
730. "Trespassers Invade Rotunda Site," *CD*, 5 Nov. 1974. "Arson Reported in Rotunda Fire," *CD*, 13 Nov. 1974.
731. "R. E. Lee Uses Rotunda Guard to Discourage Night Trespassers," *CD*, 7 Nov. 1974.
732. Vaughan and Gianniny, 77. "Rotunda Use Revisions Draw Fire from Historic Committee," *CD*, 1 March 1976.
733. Vaughan and Gianniny, 109, 111.
734. Ibid., 106–107.
735. Ibid, 119, 123. Rotunda Improvements, 13 June 1997, BGC Notebooks, p. 17, RG-1/1/3, Box 16, Folder 1997–1998, BGC Correspondence, UVSC. Research undertaken in 1996 and 1997 concluded that it is "doubtful" that the dome was painted white in its early years; it was probably painted medium gray.
736. Waller S. Hunt Jr. to Vincent Shea, 31 May 1974, UV, FMPF.
737. Kessler to B and J, 9 May 1975; 12 June 1975, UV, FMPF.
738. Kessler to B and J, 15 Aug. 1975, UV, FMPF.
739. Ballou to Raymond Bice, 17 July 1975, UV, FMPF.
740. Ibid.
741. Vaughan and Gianniny, 112–115.
742. Kessler Jr. to B and J, 20 June 1974; Ballou to R. E. Lee and Son, 28, Jan. 1975, UV, FMPF.
743. Vaughan and Gianniny, 112–115.
744. Kessler Jr. to B and J, 3 March 1975, UV, FMPF. Vaughan and Gianniny, 115. "Tour Marks Near Completion of Rotunda Restoration," *CD*, 5 Dec. 1975.
745. Vaughan and Gianniny, 67–68. "Rotunda Supervisor Improves on Jefferson," *Charlottesville Daily Progress*, 25 May 1975.
746. Vaughan and Gianniny, 119, 125, 129. Kessler to B and J, 17 March 1976, UV, FMPF.
747. Vaughan and Gianniny, 125, 129. "Restored Rotunda Differs Drastically," *CD*, 27 Oct. 1975.
748. J Vaughan and Gianniny, 109.
749. Valley Steel Corporation, "Tunnel Slab Detail Showing Supporting Accessories," 9 Aug. 1973, no. 21920, UV, FMPF. Valley Steel Corporation, untitled drawing, 9 Aug. 1973, no. 21920, UV, FMPF.
750. BV, Minutes, 23 Jan. 1976.
751. BV, Minutes, 26 March 1976.
752. "Officials Open 'New' Rotunda," *CD*, 14 April 1976.
753. "Highlights of American Architecture," *AIA Journal* 65 (July 1976): 88–158.
754. Loth to Hogg, 6 July 2006. Frank L. Hereford Jr. to Junius R. Fishburne Jr., 4 Dec. 1974.
755. Vaughan and Gianniny, 137.
756. B and J Architects invoice for restoration and adaptation of the Rotunda, commission no. 6700, 13 April 1977; Ballou to Werner K. Sensbach, 31 March 1977, UV, FMPF.
757. Project Completion Report, 28 July 1977, UV, FMPF.
758. Sensbach to H. Bryan Mitchell, 10 May 1977, UV, FMPF.
759. Vaughan and Gianniny, 137. BV, Minutes, 22 Jan. 1976.
760. Report of the BGC, 6 June 1980, pp. 2–3, RG-1/1/3, Box 12, Folder Oct. 5, 1979–June 6, 1980, BGC Minutes, UVSC. Beginning in the early 1980s, new State regulations governed the selection of architects for university projects: architects selected to undertake projects valued at over $100,000 now had to be approved by the State Department of Engineering and Buildings. The University's Board of Visitors, however, could select architects for projects under $100,000 without the approval of the State. To be considered for work at the University, architects selected for these projects had to have prior experience with university projects and also had to be located within 100 miles of Charlottesville. Deferred Maintenance at the University of Virginia in the Report of the BGC, 12 Oct. 1982, pp. 1-2; BGC Minutes. Report of the BGC, 15 Oct. 1982, p. 2; Report of the BGC, 25 March 1982, pp. 2–3; RG-1/1/3, Box 12, UVSC. BV, Minutes, 22 Jan. 1983.
761. Status Report Maintenance Reserve Appropriations, 1982–1984 Maintenance Reserve Program, 1–3, RG-1/1/3, Box 12, Folder May 1983–Nov. 1984, BGC Minutes, UVSC.
762. Report of the BGC, 24 Jan. 1985, p. 4, RG-1/1/3, Box 12, Folder 1981–1985, BGC Minutes, UVSC.
763. Final Report of the President's Ad Hoc Committee on the Use of the Rotunda, 28, Aug. 1986, in BV, Minutes, 3 Oct. 1986.

764. BV, Minutes, 3 Oct. 1986.
765. BV, Minutes, 3 Oct. 1986.
766. BV, Minutes, 3 Oct. 1986; 13-14 June 1997.
767. Report of the BGC, 29 Jan. 1987, 2, RG-1/1/3, Box 13, Folder Oct. 1985–May 1987, BGC Minutes, UVSC.
768. James Murray Howard, "The Academical Village of Thomas Jefferson" in *ICOMOS Information* (Naples: Edizioni Scientifiche Italiane, 1989), 19.
769. University of Virginia, Condition of University Facilities, Report of the BGC, 19 Sept. 1988, pp. 3–4, RG-1/1/3, Box 13, Folder 1988–1989, BGC Correspondence, UVSC. University of Virginia, Condition of University Facilities, Report of the BGC, 27 Oct. 1990, p. 5, RG-1/1/3, Box 13, Folder 1990, BGC Correspondence, UVSC.
770. Raymond M. Haas to John Casteen III, 2 Nov. 1990, RG-1/1/3, Box 13, Folder 1990, BGC Correspondence, UVSC.
771. University of Virginia, Condition of University Facilities, Report of the BGC, 19 Sept. 1988, pp. 3–4, RG-1/1/3, Box 13, Folder 1988–1989, BGC Correspondence, UVSC. Information on Monroe Hill House from the University of Virginia Web site, http://fmweb.virginia.edu/facilities/facinfo.asp?bldg=2085 (accessed Oct. 12, 2006). University of Virginia, Condition of University Facilities, Report of the BGC, 27 Oct. 1990, p. 5, RG-1/1/3, Box 13, Folder 1990, BGC Correspondence, UVSC.
772. Recommended Program, 1990–1992 Capital Budget Program, 25 Jan. 1989, RG-1/1/3, Box 13, Folder 1988–1989, BGC Correspondence, UVSC. In 1989 the proposed budget for 1990–1992 included a $10,250,000 maintenance-reserve request for the University's buildings, an unspecified amount of which would be set aside for the University's historic buildings. Responsibilities and Procedures of the Architectural Advisory Committee, University of Virginia, Department of Physical Plant, 15, June 1989, p. 1. RG-1/1/3, Box 13, Folder 1991, BGC Correspondence, UVSC. An architectural advisory committee was established in 1989 to review and critique the design development of building projects at the University.
773. Report of the BGC, 25 Nov. 1986[?], RG-1/1/3, Box 13, Folder 1988–1989, BGC Correspondence, UVSC.
774. Raymond M. Haas to John Casteen III, 2 Nov. 1990, RG-1/1/3, Box 13, Folder 1990, BGC Correspondence, UVSC.
775. University of Virginia, Condition of University Facilities, Report of the BGC, 24 Jan. 1990, pp. 1–5, RG-1/1/3, Box 13, Folder 1990, BGC Correspondence, UVSC. The reports discussing the University's funding needs for maintenance and improvements to its older buildings spoke in general terms. Though the reports specifically mentioned some of the work completed or needed in the academic buildings and pavilions, there was no mention of the Rotunda.
776. University of Virginia, Condition of University Facilities, Report of the BGC, 24 Jan. 1990, pp. 1–5, RG-1/1/3, Box 13, Folder 1990, BGC Correspondence, UVSC.
777. A Vision Statement for the Planning and Design of the University of Virginia Buildings and Grounds, 2 April 1991, RG-1/1/3, Box 13, Folder 1990–1991, BGC Minutes, UVSC.
778. Leonard Sandridge to the BGC, 13 Jan. 1992, RG-1/1/3, Box 13, Folder 1992, BGC Minutes, UVSC.
779. University of Virginia Restoration of the Academical Village, Actual Expenditures (in thousands), December 1992, submitted as part of a report made by the University's Facilities Management, 20 Jan. 1993, RG-1/1/3, Box 14, Folder 1992–1993, BGC Correspondence, UVSC.
780. Report of the BGC, 3 Sept. Nov. 1992, RG-1/1/3, Box 14, Folder 1992–1993, BGC Correspondence, UVSC.
781. Accessibility Study for Jefferson's Academical Village, 7 Dec. 1993; Prioritized List of Accessibility Tasks, 5 May 1993, RG-1/1/3, Box 14, Folder 1993, BGC Correspondence, UVSC.
782. Colette Capone to the BGC, 12 May 1995, RG-1/1/3, Box 15, Folder 1995, BGC Correspondence, UVSC.
783. Rotunda Improvements, 13 June 1997, BGC Notebooks, p. 17, RG-1/1/3, Box 16, Folder 1997–1998, BGC Correspondence, UVSC.
784. Stephen R. Jacques, Rotunda Deck Improvements, 27 April 2000, UV, FMPF.
785. Rotunda Improvements, 13 June 1997, BGC Notebooks, p. 18.
786. Univ. of Virginia Board of Visitors Agenda item Summary, 29 May 1998, RG 1/1/3, Box 15, Folder 1997–1998, BGC Correspondence, UVSC.
787. Rotunda Improvements, 13 June 1997, BGC Notebooks, pp. 17–18, RG-1/1/3, Box 16, Folder 1997–1998, BGC Correspondence, UVSC.
788. Shashi Kavde to Pete Syme, memorandum on Rotunda column bases, 18 May 1998, UV, FMPF. E-mail, Joseph Dye Lahendro to Clay Palazzo, 20 Dec. 2006 and 24 Jan. 2007.
789. James Murray Howard to Leonard G. Hassel and Bill Martin, 20 March 1998, UV, FMPF.
790. Determinations and Findings, Rotunda Deck Improvements, 1 Nov. 2000; A. Rhett Whitlock to Michael D. Stoneking, 9 July 2002, UV, FMPF.
791. The team in Carrera, Italy included Roberto Pedrini (main sculptor and owner); Gianluca Pedrini (blocks selection manager and owner); Gianluca Ceccarelli (project manager); Sabrina Mariotti (CNC machine manager); Umberto Puccetti (lead sculptor); Marco Ravenna (sculptor); Joannes Bizas (sculptor); Michele Barattini (sculptor); Marco Pedrini (blocks handling); Daniele Gianfranchi (honed finishing); Giancarlo Buratti (clay modeller).

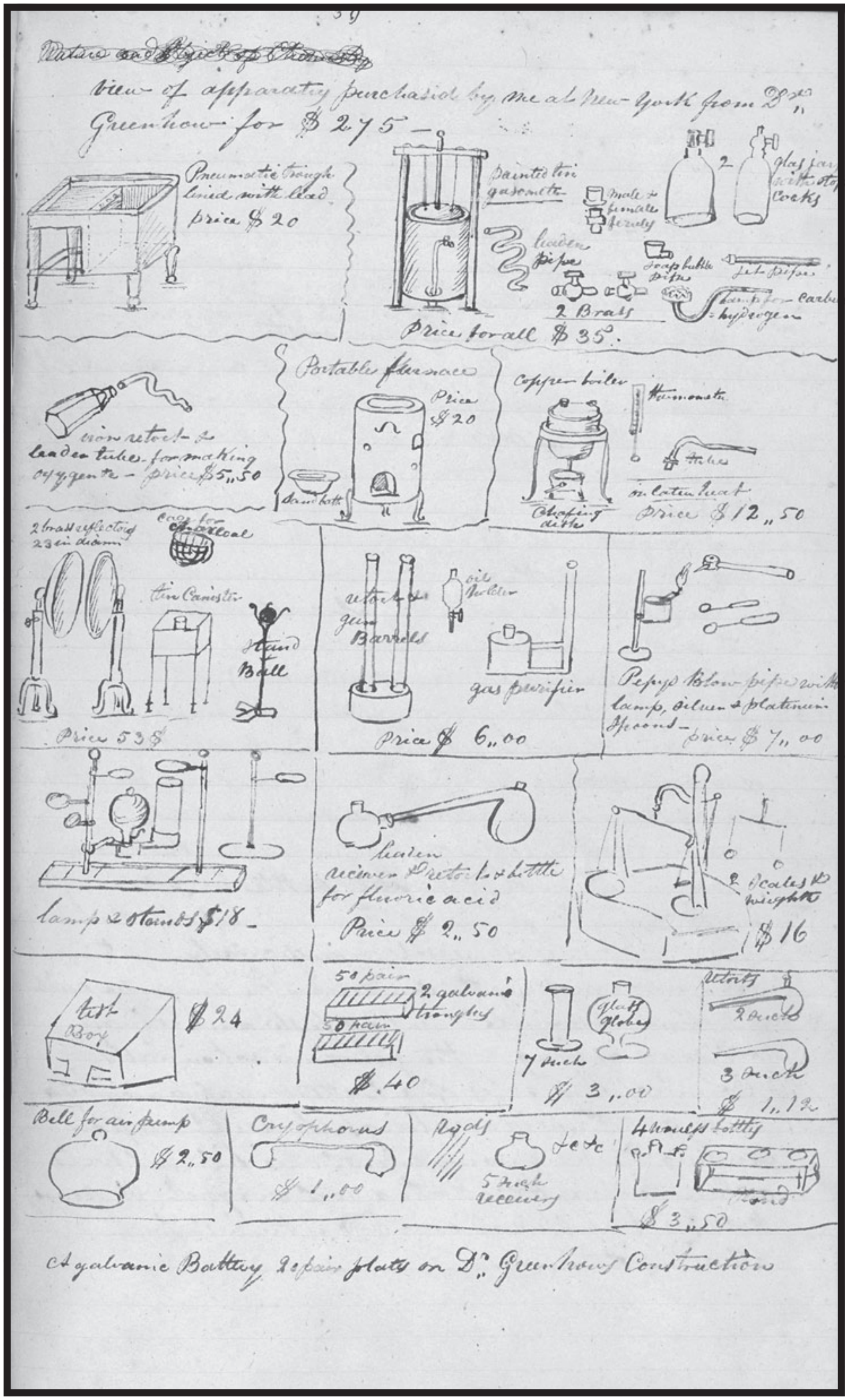


FIGURE 121. *John P. Emmet's sketches of the apparatus purchased from Dr. Greenhow in 1825.*

THE ROTUNDA
CHEMICAL HEARTH

CENTRAL TO THOMAS JEFFERSON'S comprehensive architectural design for the University of Virginia were the 10 pavilions that faced the Lawn: Each pavilion would be assigned to one professor, who would conduct classes in the building and live there with his family. This scheme worked relatively well for professors teaching languages, mathematics, or law but less well for those who needed space for scientific demonstrations and laboratories. Among those needing a larger facility was John P. Emmet, the first professor to teach chemistry at the University.[1]

Locating the School of Chemistry in the Rotunda

The Virginia General Assembly had approved a loan of $60,000 for the Rotunda early in February 1823. Jefferson was said to be in "high spirits," knowing that construction of the centerpiece of his design could at last get underway. The topmost level of the Rotunda would house the library, and the large oval rooms on the first floor would be used for lectures and examinations.[2] The facilities for teaching chemistry would be located in the basement. Jefferson realized, however, that this location for teaching chemistry would pose certain problems. "For the Professor of Chemistry," he wrote in April 1823, "such experiments as require the use of furnaces, cannot be exhibited in his ordinary lecturing room. We therefore prepare the rooms under the oval rooms of the ground floor of the Rotunda for furnaces, stoves &c."[3] However, in October 1824, when the Board of Visitors officially set forth the use of the spaces in the Rotunda, they assigned only one basement room for teaching chemistry; the other basement spaces, the Visitors wrote, could be used "for any necessary purpose to which they may be adapted."[4]

Professor Emmet would find this arrangement highly unsatisfactory because it conflicted with his up-to-date ideas about the teaching of chemistry.

Essential Features of Early Chemical Laboratories

Locating lecture rooms and chemical hearths for teaching purposes in the basement of a structure was a typical practice in the late eighteenth and early nineteenth centuries, in part because water for laboratory operations would not need to be pumped to an upper story. Providing satisfactory ventilation of fumes from a basement, however, could be difficult, and moisture could also be a problem.[5] Since fire was the chief method of effecting chemical change, the chemical hearth and its chimney were considered the "operational heart of the chemical laboratory." Individual furnaces, whether fixed or portable, were designed to produce the various temperatures and types of heat needed for successful experiments.[6] Flues and fresh-air intakes helped control temperatures, as did the type of fuel. The ability to control the heat for experiments was thus a critical skill for chemists.[7]

The other essential elements of a chemical laboratory were sufficiently large work surfaces and vessels that could "bear without breaking the sudden application of great heat and cold, be impenetrable to every substance and inalterable to any solvent, be unvitrifiable and capable of enduring the most violent fire without fusing." This apparatus was often stored on shelves across the front of the ventilation hood over the chemical hearth and around the walls of the laboratory.

The Appointment of Professor John P. Emmet

Born in Ireland in 1796, John Patten Emmet was eight years old when he arrived in New York, where his father, an outspoken Irish patriot, had sought political asylum. Despite debilitating childhood diseases, John Emmet was admitted to West Point, but poor health forced him to leave before completing his studies. In 1819 he enrolled at the College of Physicians and Surgeons in New York and became an assistant to William J. MacNeven, professor of chemistry. Emmet was awarded his medical degree in January 1822. In search of a warmer climate, he moved to Charleston, South Carolina, where he practiced medicine and "delivered a course of lectures" on chemistry.[8]

Jefferson wrote to Emmet on March 6, 1825, announcing his unanimous appointment by the Board of Visitors as "a professor for the school of Natural history." Jefferson explained that "under the generic term of Natural history," the board "comprehend Zoology, Botany, Mineralogy, Chemistry and Geology; that of Chemistry however being considered as the branch most eminently distinctive of the school." There was not much time for Emmet to consider the offer. "The Institution opens tomorrow," Jefferson continued, "so that in the hope that you will accede to our wishes, we shall request your attendance as early as possible, and in the meantime, ask an answer which may place us on a certainty."[9] Emmet, then in New York, replied a week later, accepting the appointment. He arrived at the University by April 12, 1825, and began lecturing soon thereafter.

Thomas Jefferson and the First Chemical Laboratory and Lecture Room

A chemical hearth of some type was in place in the basement of the Rotunda by the time John Emmet arrived at the university. Most likely, it had been built according to Jefferson's directives, perhaps with some input from a newly arrived professor, Robley Dunglison, who had studied medicine in Europe, or from fellow Visitor Joseph Cabell, who had observed such facilities in Europe.[10] Jefferson may have also relied on several other sources for constructing the University's first chemical hearth.

When he was representing the United States in Paris in 1784-1789, Jefferson may well have become aware of new developments in chemistry. He may have visited the large new medical facilities at the École de Chirurgie, which had a magnificent anatomical theater and a chemical laboratory on the floor below. More relevant to the available spaces in the basement of the Rotunda were the hundreds of small private laboratories then popular in Paris. Given Jefferson's own interest in science, it may well be that he knew of these small laboratories and attended chemical demonstrations there.[11]

Furthermore, Jefferson's personal library included many publications on pure and applied chemistry. At least two volumes contained illustrations of recently constructed chemical laboratories. One volume featured plates of the furnaces at the new combination chemical laboratory and lecture room at the College of Physicians and Surgeons in New York, which had been constructed for William MacNeven, John Emmet's mentor. The college had remodeled a three-story warehouse into classrooms. On the first floor was a new "combined lecture room-laboratory," which essentially followed the layout of the previous chemistry lecture room and laboratory. It was an oblong hall, where

> From one end of the hall to perhaps the middle were rows of backless benches on which students sat, facing the laboratory at the other end. Before the benches was a heavy mahogany table upon which MacNeven or his assistant performed lecture demonstrations. At the laboratory end was another heavy mahogany table upon which MacNeven and his students assembled apparatus for these analyses and experiments.[12]

While the seating area had undergone little change during the remodeling, MacNeven made an important change at the laboratory end of the space: Along two walls he added "a Range of Fixed Furnaces." He published two elevations and a description of these furnaces in *The American Medical and Philosophical Register* in 1814, and Jefferson owned a copy of this volume.[13] Among the components shown in the plates were a "flat sand-heat, to hold evaporating vessels"; a "furnace

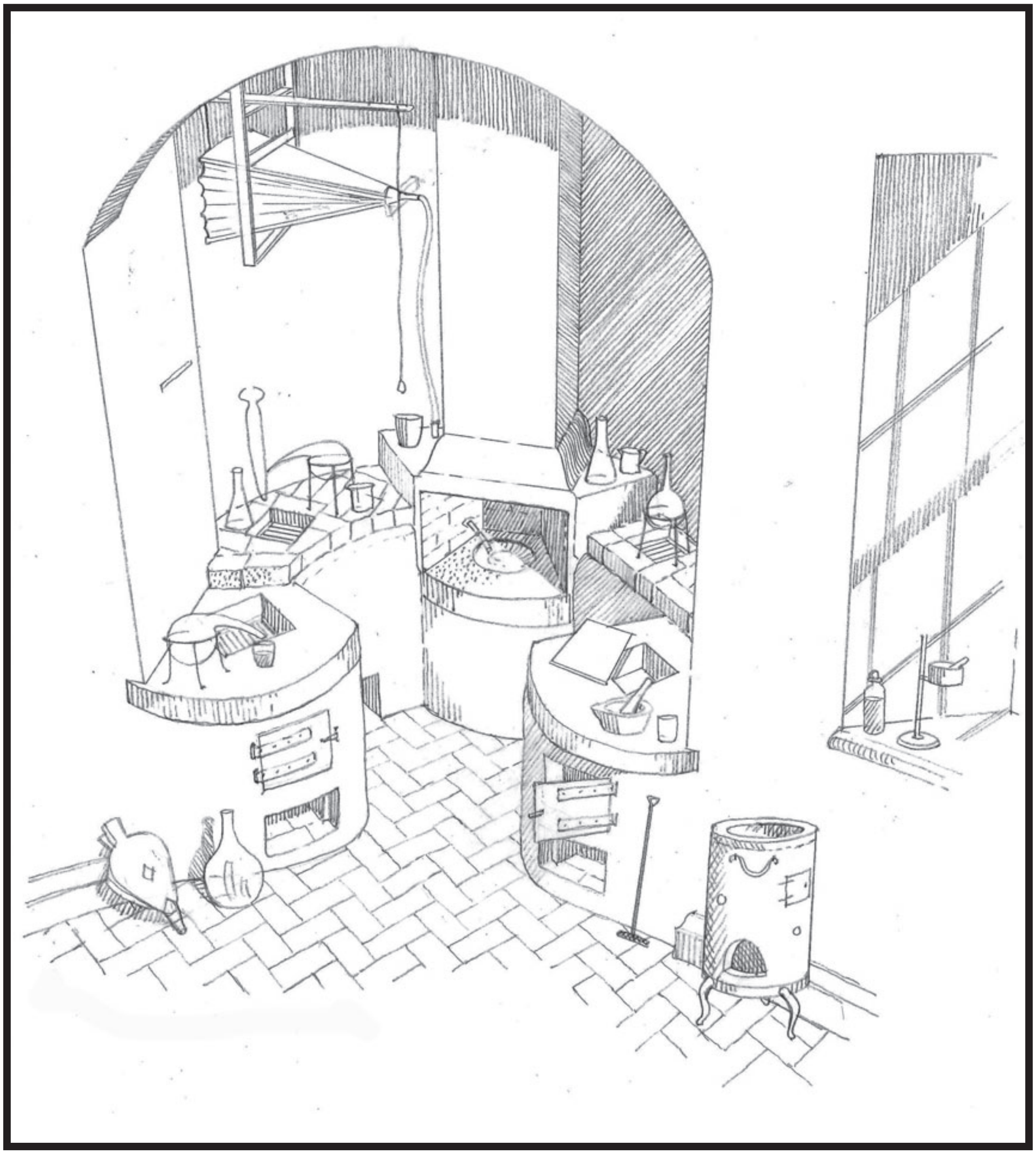


FIGURE 122. *Conjectural sketch of the chemical hearth with Emmet's apparatus.*

with a cast iron pot" intended to be "used as a sand bath, for distillation, or as a boiler"; a muffle furnace; a "very powerful draught-melting furnace"; a forge hearth with a "blast pipe and bellows"; an "eight gallon still and worm tub" with a water bath; and a reverberating furnace. The "furnaces were supplied with cold air from withoutside [*sic*] the building, by means of channels under the floor." There were also several recessed conduits for venting fumes through the chimney.[14]

Jefferson also owned the first American edition of *A Manual of Chemistry Containing the Principal Facts of the Science, Arranged in the Order in Which They Are Discussed and Illustrated in the Lectures at the Royal Institution of Great Britain* by William T. Brande. This volume included a foldout floor plan and a detailed explanation of the chemical laboratory and lecture room at the Royal Institution in London.

The first facilities for teaching chemistry in the basement of the Rotunda may have included at least a simple chemical hearth, possibly a stove-like brick structure at the center of the east wall of the lower east oval room, where the arc of the oval was the flattest; in an even more modest arrangement, there would have been one or more freestanding iron furnaces rather than a masonry hearth.[15] A hood above the hearth or furnaces would have had flues tied into a chimney to provide ventilation. In front of the hearth would have been a table, where the professor would conduct experiments. Rows of benches for the students would have faced the hearth.

Compared to the teaching facilities at his alma mater in New York, with its two 17-foot-long walls of fixed furnaces, the facilities at the Rotunda must have appeared rudimentary to John Emmet. In a letter to Emmet written soon after he had arrived at the University, Jefferson acknowledged that the facilities for chemistry were incomplete.

Professor Emmet's Proposal for a New Chemistry Building, 1825

John Emmet had had considerable firsthand experience studying and working in chemical laboratories and lecture rooms, and he had arrived at the University of Virginia with clear ideas on how chemistry should be taught. He had fitted up a chemical laboratory in his parents' residence in New York so that he could continue his classwork on cold days when his frail health prevented him from venturing outdoors. He had studied chemistry in William MacNeven's "materially improved" chemical laboratory.[16] He had access to a laboratory in Charleston, South Carolina, where he gave public lectures. These experiences undoubtedly influenced Emmet's entreaties to Jefferson for better facilities: the first, to build a new, separate chemistry teaching complex, and the second, at least to be allotted more space within the Rotunda.

In May 1825, just a month after taking up his post, Emmet wrote to Jefferson, frankly outlining problems with the arrangement of the oval lecture room:

> Having now entered upon experimental chemistry for the instruction of my class, I feel the strongest conviction that I may with propriety address you upon the necessity of making further provisions for me. I do not think for the present year but for the next; and am even desirous of devoting the best part of my House [Pavilion I] for class purposes. I speak feelingly when I say that even a Small furnace, when in operation, makes my room [in the Rotunda] oppressively hot & myself even more so, for, from its necessary position I am compelled, almost, to sit upon it.[17]

"These considerations," Emmet continued, "have induced me to beg that you would consider my department ere the season be too far gone; and lest I might seem to be over burthering your time, I have ventured to suggest a plan for your inspection," which he illustrated and described in his letter. "In the arrangement," he wrote, "I have had in view, what I consider of prime importance to the students of Chemistry, namely that they should operate for themselves."

Emmet enclosed an annotated plan and a perspective of his proposed scheme. Most importantly, the drawing represented features that Emmet felt were essential to teaching chemistry successfully—a lecture room and a separate teaching laboratory, where students could conduct their own experiments. Emmet felt strongly that there should be "two rooms." If he were "compelled to operate in one," he wrote, "I will suffocate my class and ruin the apparatus."[18]

Jefferson studied Emmet's proposal and quickly drafted a response. "This appears," he wrote, "to contain all the articles called for in such a building and arranged with great convenience." However, permission to construct such a facility, he explained, "is beyond the powers delegated to me, and there will be no meeting until Oct. of the Visitors who alone could give authority"; in any case, there was no funding available for construction "nor any prospect" for securing funding "within any definite time." All that could be done at the present time, Jefferson continued, was "to make the most of what has been provided." He explained to Emmet how he and others at the University had planned the spaces to be used for teaching chemistry: "uninformed of the conveniences requisite and of their arrangem[en]t, we could only prepare space in which they might be erected, and trusting that in whatever form this was provided, the Professor could accom[m]odate, to it the conveniences necessary to it's [*sic*] purposes." They had "reserved the means only for compleating [*sic*] our work in whatever way he should deem best."[19] "This," Jefferson told Emmet, "I am in hopes you will still accomplish."[20]

Nonetheless, Jefferson could not resist putting his own hand to a scheme incorporating the features that Emmet desired. He enclosed a drawing, telling Emmet that in it he had tried to see "how far it might be practible [*sic*] to bring what might be necessary within the compas[s] provided." He told Emmet that he had "taken the particulars specified in your plan, and have effected an arrangem[en]t now inclosed [*sic*] which seems to comprehend them all with some convenience." Jefferson, however, assured Emmet that he was not wedded to the scheme he had drawn: "I do not propose this for actual adoption because I am sure you will devise a much better plan; my only object was to try it's [*sic*] practicability. I must therefore request you to study out the best arrangement which the rooms provided will admit, and whatever constructions in them you shall think best of, shall be immediately executed." He hoped that "not being able to do what is absolutely best, you will concur in doing the best we can."[21] Jefferson's drawing of this scheme has not been located.

From his correspondence with Jefferson, it is clear that Emmet believed that students needed to conduct experiments themselves and not just observe an instructor's demonstrations. It was of "prime importance," Emmet told Jefferson, that the students "should operate for themselves"; it was Emmet's observation that students who had attended only lectures, though intelligent, nevertheless "were utterly ignorant of even the most trivial chem.l [*sic*] operations."[22]

Improved Facilities and a Supplemental Chemical Hearth

In addition to his appeals to Jefferson, Emmet pressed his case for better facilities with the proctor of the University, Arthur S. Brockenbrough, who, in turn, wrote to Jefferson in June 1825 explaining that Emmet was still "much dissatisfied with the proposed arrangement for his laboratory." In response to Emmet's entreaties, Jefferson had apparently proposed that the small oval room immediately north of the two large oval rooms could serve as the laboratory, but it was a small space and could not accommodate many students. Brockenbrough told Jefferson that Emmet thought that the small room in the basement of the Rotunda would "not answer the purpose for the want of room & light – he wishes to have the use of both of the large oval rooms in the basement[,] one for his lecture room the other for a laboratory." "If this be granted him," Brockenbrough asked Jefferson, "where then shall the room for a Museum be fit[t]ed up?"[23] In his reply to Brockenbrough, Jefferson at last granted Emmet's wish for more space. "Dr. Emmet can have both the large basement rooms & to be arranged as he pleases for his chemical purposes," Jefferson wrote. "In that case," he continued, "we will use one of the upper oval rooms for a Museum."[24]

Emmet evidently set to work immediately to reconfigure the chemistry facilities. He moved the lecture room from the east oval room to the west oval room and set up a laboratory for students in the east oval room. The primary chemical hearth would be located at the center of the east wall of the students' laboratory. In addition, perhaps to accommodate the many types of heat needed in the laboratory or to have more space for his own experiments, Emmet apparently decided to construct a small supplemental chemical hearth at the north end of the student laboratory.

The contractors building the Rotunda had left a half-moon-shaped void behind the curved wall at the north end of the east oval room in the basement, and it was in this space where the supplemental chemical hearth was constructed. Once the wall in front of that void was removed, the space behind became a small alcove, just large enough to accommodate a compact chemical hearth. Flues were extended up to the roof through the same void; at ground level, fresh-air intakes were also created. While the alcove proved to be a very cramped space, Emmet may have relied on this supplemental hearth to conduct his own experiments while also being available to supervise students during their laboratory work at the main hearth.[25]

Drawings in a notebook that Emmet kept during the mid-1820s suggest that he had been developing his ideas for such a chemical hearth; there are pencil studies for a hearth-like arrangement in an apsidal-shaped void like the one at the north end of the east oval room. Another sketch appears to relate to a firebox and vent that would be part of the hearth.[26]

Furthermore, among the surviving financial records of the University is an August 1825 invoice from Benjamin Blackford of Isabella Furnace in Virginia that included charges for "5. plates different sizes," "6. Boxes with grates," and "18 Bars."[27] This invoice was dated just two months after Jefferson had given Emmet permission to arrange the basement rooms as he saw fit and had assured him that "whatever constructions in them you shall think best of, shall be immediately executed." The boxes with the grates and the bars may well have been part of the equipment needed for the supplemental chemical hearth: five cast-iron bars and a single cast-iron grate remained within the chemical hearth in 2013, and a drawing in Emmet's hand of one of the cast-iron bars was found among the Proctor's Papers. In November 1825, Blackford was paid $128.29 "for castings for rotunda and laboratory," suggesting that iron components for the hearth were complete by that time.[28] Emmet may have also made changes to the primary chemical hearth on the east wall of the laboratory; this hearth would have been connected to the flues on the side of the room.

In constructing a new hearth and improving the existing one, Emmet certainly would have been influenced by his experiences at William MacNeven's lecture room and laboratory in New York and perhaps discussed with Jefferson the plates and written description of it in *The American Medical and Philosophical Register*. Emmet would, however, have had to take into account a major difference with the New York facility: MacNeven's furnaces extended for some distance along two sides of a rectilinear laboratory, whereas at the Rotunda, the chemical hearths had to be accommodated within the curved walls of the room.

Nevertheless, the surviving fabric of Emmet's supplemental hearth bears similarities to the range of furnaces in MacNeven's laboratory. The cold-air intakes that run through channels under the floor of the Rotunda, as well as the exhaust passages, are similar to those used in the New York laboratory, and a surviving tinplate pipe found in the alcove may have been part of a forced-air bellows system, similar to that used by MacNeven.[29] In addition, the stepped-arch masonry hood above Emmet's alcove hearth collected and carried away fumes much as the angled screen in the New York laboratory did.

The annual report that Jefferson submitted to the Virginia Literary Fund in October 1825 stated that the Rotunda was still not complete. However, he wrote, "indispensable" work was underway in the Dome Room, so that the library could be put into operation. The "other apartments of indispensable use" were listed as "two for a chemical Laboratory, one for a museum of Natural History, and one for examinations, for accessory schools and other associated purposes."[30]

Evidently still not satisfied with his spaces in the basement of the Rotunda, Emmet raised the matter of a new chemical laboratory in a letter to the Board of Visitors, which was read at their meeting in July 1827, a year after Jefferson's death.[31] In response, the Visitors asked Emmet "to prepare and to lay before the Visitors at their next meeting, the plan of a chemical laboratory and of a Lecture room connected therewith, large enough for the accommodation of a class of 200 Students." The Visitors also asked the proctor "to present an accompanying estimate of the expense of erecting the same, of durable materials, and in a plain & neat style of architecture."[32]

Another, possibly unfinished, drawing by Emmet may be the plan that the Visitors requested. Labeled "Ground Plan of a Chemical Lecture room & Laboratory," it was to be constructed west of the Rotunda, across the street from Hotel A and near the anatomical theater. Emmet's drawing shows a building rectangular in plan, measuring 40 feet wide and about 60 feet long. The lecture hall, 40 feet square, was designed to hold approximately 210 students. It had about a dozen rows of seats divided by two aisles that radiated from the lecturer's table. Presumably, the furnaces needed for demonstrations were to be placed directly behind the lecturer's table. The laboratory area, 20 by 40 feet in plan, took up a third of the building. The construction cost was estimated at $3,000.[33]

Despite Emmet's urging, the Visitors did not agree to erect a new building for the teaching of chemistry. However, beginning in 1829, they did agree to some improvements to the existing facilities.[34]

Early Alterations and Apparatus, 1829–1835

John Emmet had originally located the chemical laboratory in the east oval room of the basement of the Rotunda. Over the years, small alterations were made to the laboratory, as well as to the lecture room, located in the west oval room. In July 1829, for instance, the Board of Visitors passed a resolution directing that the "fire place in the Chemical Laboratory" was "to be altered, so as to improve the draught, in the mode thought most expedient by the Professor of Chemistry."[35] This "fire place" may have referred to the chimney mass of the hearth on the east side of the east oval room or to the chemical hearth in the alcove at the north end of the room.[36] In addition, the "wood cistern" in the laboratory was to be "replaced by ones of brick and water proof lime." The "requisite painting and white washing at the forge and fire place in the same Laboratory" was "to be done without delay."[37] In the lecture room across the hallway, the benches were "to be fixed to a rising platform." At this time, there were wood pillars in the lecture room.[38] In 1829 and 1830 the University purchased glass-fronted cabinets for storage of the chemical equipment.

By the fall of 1825 the University had paid $500 for "a chemical apparatus" and had received "some donations of mineral collections," which would be used in the chemistry classes.[39] In one of his notebooks, Emmet carefully drew sketches of that apparatus, entitling the drawing "View of apparatus purchased by me at New York from Dr. Greenhow for $275."[40] Robert Greenhow had been a classmate of Emmet's at medical school in New York in 1821, and his father was a friend of Jefferson's.[41] It seems likely that the items shown in the drawing were in use in Emmet's laboratory and lecture room.

Chemistry was considered an important part of the curriculum at the University, beginning with the Rockfish Gap report of 1818 on Central College.[42] The annual *Catalogue of Officers and Students of the University* for 1834-1835 included this outline of what Professor Emmet was teaching at that time:

> There are two classes in this school; one of Chemistry, to which there are lectures given twice a week; and the other of Materia Medica and Pharmacy, to which is given a lecture once a week throughout the session.
>
> In the Chemical lectures, all the important applications of the science to the mechanical arts, agriculture and domestic economy are noticed, and when practicable, illustrated by experiment. In the lectures on earths and metals, the appropriate minerals are exhibited and noticed with reference to the sciences of Mineralogy and Geology. At the close of the history of inorganic matter, the atomic theory and the laws of definite proportions are fully explained and exemplified. The latter part of the course is occupied with the chemistry of organic substances; to which are added general views of the connection between Chemistry and the physiology of animals and vegetables.[43]

The catalog also noted that "There is attached to this school, a very extensive apparatus and laboratory."

Reversing the Locations of the Lecture Room and the Laboratory, 1841

In 1841, as John Emmet's health deteriorated, changes were being made to the layout of the spaces occupied by the school of chemistry. The Visitors were told that the "lecture room of the professor of Chemistry in the basement story of the Rotunda is not as well adapted for the purposes of a lecture room as the opposite apartment in the same story, now used as a chemical laboratory." In response, the Visitors agreed that the proctor "under the directions of the professor of Chemistry be instructed to cause those apartments to be altered in their interior arrangements so that the Eastern apartment be used as a chemical lecture room & the western apartment as a chemical Laboratory."[44] Accounts from April 1842 document that

$300 was spent "on account of changing chemical lecture room."[45] This work may have included bricking up the chemical hearth in the north alcove of the east oval room.[46]

John Emmet's Later Years at the University

Over the years, Emmet published several scientific papers in the *American Journal of Science and the Arts* and in other journals.[47] The experiments on which these papers were based most likely were carried out at the chemical laboratory in the Rotunda.

Meanwhile, however, Emmet's health was failing. He and his wife left for Florida in January 1842. His condition improved as a result of the warmer climate, but the return trip to New York proved to be "a boisterous passage, in a small uncomfortable vessel," which drifted at sea for nearly a month. Emmet lost "more than he had gained in Florida" in terms of his health. He died on August 15, 1842, at age 47, not long after landing in New York.[48]

The Second Professor of Chemistry, Robert E. Rogers, 1842–1852

The Board of Visitors held a special meeting on September 19, 1842, in order to appoint Emmet's successor, Dr. Robert E. Rogers, for a term of one year.[49] Rogers was officially appointed professor of chemistry on July 4, 1843.[50] He had studied at the College of William and Mary, where his father taught natural history and chemistry. After a stint on railroad-surveying teams, he studied medicine at the University of Pennsylvania and then worked as a chemist on a geology survey of Pennsylvania. Robert's brother William B. Rogers taught natural philosophy at the University of Virginia beginning in 1836 and would later found the Massachusetts Institute of Technology.[51]

With the appointment of Professor Robert Rogers in 1842, some additional changes to the chemistry lecture room were proposed. At their July 1843 meeting, the Visitors passed a resolution stating that "with a view to enable the professor of Chemistry more effectually to enforce the regulations of the Lecture room, the Proctor be authorised [*sic*] and required to have removed the present releif [*sic*] boards in front of the Benches in the Lecture room so as to make them open & similar to those in the philosophical Lecture room."[52]

At the same 1843 meeting, the Visitors turned their attention to the pillars in the basement rooms, directing the proctor to provide "an estimate of the cost of substituting the wood pillars in the Chemical Lecture room and Laboratory by hollow pillars of cast iron of such dimensions as the professor of Chemistry may deem most advisable."[53] A payment of $71.15, made in February 1846 to Wortham and M'Gruder, "for cast iron columns" may have been for such replacements.[54]

A committee of inspection, charged with reviewing the facilities of the University, filed its report in June 1848. It indicated that chemistry was still being taught in the two large spaces in the Rotunda—the laboratory and the lecture room:

> Your Committee first proceeded in company with the professor of Chemistry and Materia Medica to examine the Chemical laboratory. They found the Chemical apparatus & agents in neat order, apparently well kept & methodically arranged. On examining the lecture room of the professor, your committee found the Benches & seats used by the Students much defaced, & injured, & not sufficiently ample to accommodate the Students. The professor suggested the necessity of furnishing the additional seats required and repairing the old ones; which suggestion your committee approve.[55]

Later in the same meeting, the Visitors directed the proctor to "cause the necessary new Benches to be furnished in the lecture room of the professor of Chemistry & to repair the old seats."[56] In a February 1851 report to the faculty, Rogers delineated the "extreme incompleteness of apparatus" for his school, especially what was needed "to illustrate the important subjects of Calorie, Electricity & Galvanism." "Almost the only materials with which the Laboratory is supplied," he continued, were "chemical re-agents and the consumable glass ware renewed from year to year."

When Rogers resigned in September 1852, the Visitors expressed "their high appreciation of his eminent services in the discharge of his duties as Professor, and their sincere wishes for his future success and happiness." He was succeeded by J. Lawrence Smith, of the University of Louisiana.[57]

Meanwhile, the Visitors anticipated that the Annex to the Rotunda would be completed before their next annual meeting, in 1853, and that it would thus be "desirable in finishing the rooms to adapt them in some particulars to the purposes in which they are to be applied." The Visitors agreed to assign the "sub basement rooms" in the Annex to the School of Chemistry and Materia Medica.[58]

Professor J. Lawrence Smith, 1852-1853

When J. Lawrence Smith took over as professor of chemistry for the 1852-1853 academic year, he inaugurated a "practical laboratory course" and announced that the "apparatus connected with this department is calculated for a full experimental demonstration of the different topics."[59] This academic year was probably the last time that chemistry lectures and demonstrations were held in the basement of the Rotunda.

Professor Smith brought a wealth of experience to his classroom. A native of Charleston, South Carolina, he had studied chemistry at the University of Virginia under John P. Emmet and Robert Rogers, worked as an assistant engineer on the Charleston and Cincinnati Railroad, and studied at the Medical College of South Carolina and in Europe.

New Facilities in the Rotunda Annex

While the creation of new lecture rooms in the south gymnasia wings in the early 1840s had relieved some pressure on the lecture rooms in the Rotunda, within a few years more lecture space was needed. There was also concern that large events held in the library atop the Rotunda were causing structural problems below. In 1850 the Visitors hired architect Robert Mills to design an Annex to the Rotunda.

The June 1854 graduation ceremonies were held in the "largest apartment" in the new Annex, even though other parts of the building were not yet complete. Downstairs, though, the "lecture rooms in the basement of the building had been previously prepared for use, and had been occupied by the professors of chemistry and natural philosophy" during the academic year. Thus it appears that the chemistry lecture room and the laboratory in the Rotunda were last used in the spring of 1853.[60]

The annual report of the Board of Visitors for 1853-1854 lauded the facilities for chemistry in the new Annex: "It has in the subbasement a chemical lecture room and laboratory, not surpassed, if equaled, in point of extent and convenience, at any other institution in our country." Furthermore, the Annex was "connected with the rotunda, so as to bring all the lecture rooms, scientific collections and apparatus in the academical department under a common roof, in graceful and commodious distribution."[61]

Robert Rogers had taught chemistry and materia medica through the 1851-1852 academic session. Smith, his successor, held the post for only one year, from 1852 through June 1853. It would thus seem likely that Rogers would have been involved in planning the new facilities in the Annex. Smith, however, was responsible for actually fitting up the new laboratory and lecture room.[62]

The old benches were renewed and reused in the new lecture room, rather than being replaced with more costly cast-iron benches as originally planned. The tables in the new laboratory were "constructed with reference to the future use of the Laboratory for practical instruction"; the tops, for instance, were "made of thick St. Domingo mahogany, the only kind of wood . . . fitted for tops of laboratory tables." Experiments could be conducted "with perfect ventilation" that allowed for the "escape of all vapors." Access to water was also touted: the "supply of the Laboratory with water (an important consideration in view of cleanliness, the first feature of a good laboratory) has been also well accomplished at less expense and with vastly more convenience than by the former plan of digging a well near the Laboratory"; the water now came from "a cistern back of the Chapel by a leaden pipe & distributed in a fitting manner over the Lecture room and

Laboratory."[63] The chemistry facilities were again the pride of the University, much as John Emmet had hoped to achieve a generation earlier.

Discovering the Chemical Hearth

The chemical hearth was constructed during the second half of 1825. It was likely used until 1841, when the niche wall opening was bricked up to return the east oval room to lecture use. At that time, the projecting outer ovens were partially cut off to establish a uniform curve in the wall at the north end of the room. The space lay undisturbed until the fire in 1895.

The bricked-in space was protected from the fire itself, but the renovations designed by McKim, Mead and White called for removing the walls of the oval room above the basement level. This work would have removed the exhaust flue, as well as the upper portions of the stepped-arch ceiling of the chemical hearth. A flat Guastavino tile ceiling was placed across the top of the niche. The space below was kept clear, and small wood boards were used as falsework to support construction of the tile ceiling. In contrast, the north niche of the west oval room was filled with masonry debris, and Guastavino tile was laid directly over the debris. Workers installing this tile would surely have seen the hearth, and it seems some care was used to preserve it, but no mention of it has been found from this period.

The two outer fireboxes of the hearth were rediscovered in September 1974 during the Ballou and Justice renovation. Small wood doors were incorporated into the wall to view these partially intact features, including several of the surviving iron grate bars. At the time, the connection to the use of the space for teaching chemistry was established, but the full extent of the surviving features seems not to have been fully understood.[64]

On February 27, 2013, architects Clay Palazzo and Matthew Scheidt of John G. Waite Associates, Architects were walking through the Rotunda during the course of their work to design the upcoming major renovation. They knew that brick wythes had been added to the interior face of the exterior walls at the Dome Room level during the McKim, Mead and White renovation, but they questioned whether brick had also been added to the walls of the lower levels. It occurred to them that there might be some visible brick that could help answer the question about the small chemical ovens in the lower east oval room. In an attempt to get a better view of the wall construction adjacent to the small oven space, Matthew Scheidt laid on his back with his head as far into the oven as possible. Looking up, he noticed a square opening cut into a piece of stone and a dark space above that. The painted plaster walls visible above made it clear that further investigations were necessary to understand this space.

Over the course of the next few weeks, a series of probes was undertaken by University masons to partially open up the niche for examination and documentation. A separate historic structure report for the chemical hearth was commissioned by the University and completed by John G. Waite Associates, Architects in January 2017.[65]

FIGURE 123. *Chemical hearth in the lower east oval room.*

Notes

Abbreviations used in notes are listed at the end of the "History" section.

1. As part of the research for this project, I [Diana S. Waite of Mount Ida Press] met with leading scholars in London, Oxford, and Cambridge, England, to discuss the chemical hearth at the Rotunda; I am very grateful to all of them for sharing their expertise on the history of chemical hearths and the teaching of chemistry—Frank James and Charlotte New at the Royal Institution; Peter J. T. Morris at the Science Museum in London; Robert G. W. Anderson, former head of the British Museum; and John Perkins, retired dean of arts and humanities at Oxford Brookes University. I am also very grateful to Mary Ellen Bowden, of the Chemical Heritage Foundation in Philadelphia, for providing introductions to these scholars and for making other research suggestions.
2. *Enactments of the University of Virginia, Constituting, Governing and Conducting That Institution* (Charlottesville: C. P. M'Kennie, 1825). John G. Waite Associates, Architects, *The Rotunda, University of Virginia: Historic Structure Report* (2008).
3. TJ to JM, 30 April 1823, James Madison Papers, LC.
4. BOV, Minutes, 4 Oct. 1824.
5. Jon Eklund, "The Incompleate Chymist, Being an Essay on the Eighteenth-Century Chemist in His Laboratory, with a Dictionary of Obsolete Chemical Terms of the Period," *Smithsonian Studies in History and Technology* 33 (1975): 4.
6. Eklund, 6-7, 17.
7. Ibid.
8. George Tucker, *Memoir of the Life and Character of John P. Emmet, M.D., Professor of Chemistry and Materia Medica in the University of Virginia* (Philadelphia: C. Sherman, Printer, 1845), 11-12. Emmet, 21. Spencer, 11.
9. TJ to JPE, 6 March 1825, electrostatic copy in TJP of original in Huntington Library, San Marino, Calif. BV, Minutes, 4 March 1825.
10. JPE to TJ, 12 May 1825. Jefferson had sought advice from two experts about identifying and procuring proper apparatus for outfitting the chemistry laboratory, but no correspondence with experts on the arrangement of a chemical laboratory or lecture room has been located, nor has any drawing of the first lecture room or laboratory in the Rotunda been found.
11. Email, John Perkins to Diana S. Waite, 15 July 2014. John Perkins, "Sites of Chemistry in the Eighteenth Century," *Ambix* 60 (May 2013): 95-98.
12. Wyndham D. Miles, "William James MacNeven and Early Laboratory Instruction in the United States," *Ambix*, 17, no. 3 (1970): 144.
13. "Front View of a range of Fixed Furnaces, set up by the Professor of Chemistry, Dr. Mac Neven, in the laboratory of the College of Physicians and Surgeons, N. York," *The American Medical and Philosophical Register* 4 (1814), 284-288. Miles, 145. Nathaniel P. Poor, *Retirement Library Catalogue*, 5, accessed on 14 Jan. 2014, www.librarything.com. Jefferson knew or at least knew of MacNeven even earlier, for MacNeven had sent him a book on Irish history in 1807; TJ to William J. MacNeven, 15 Aug. 1807, online transcript, Gilder Lehrman Institute, New-York Historical Society, accessed 15 Oct. 2014.
14. "Front View of a range of Fixed Furnaces," 284-288.
15. Unfortunately, archaeological evidence in the area under where such a hearth would have been located appears to have been destroyed when concrete was subsequently laid in that area; telephone conversation with Steve Thompson, Rivanna Archaeological Services, 10 March 2015.
16. John W. Francis, "Historical Sketch of the Origin, Progress, and Present State of the College of Physicians and Surgeons of the University," *American Medical and Philosophical Register* 4 (1813-1814): 119.
17. JPE to TJ, 12 May 1825.
18. JPE to TJ, 12 May 1825.
19. TJ to JPE, 16 May 1825, LC.
20. Ibid.
21. Ibid.
22. JPE to TJ, 12 May 1825.
23. ASB to TJ, 6 June 1825.
24. TJ to ASB, 7 June 1825.
25. Conversation with John Perkins, 5 March 2015. It is clear from the aforementioned sources on American laboratories and from conversations with Perkins and other scholars that the alcove hearth alone was not large enough for teaching.
26. JPE, Notebooks of John Patten Emmet, Ledger 3, Mss. 12713-a, UVSC.
27. Invoice, Benjamin Blackford to ASB, 15 Aug. 1825, PP, Box 5, Folder Aug. 15-25, 1825.
28. *Report of the Rector and Visitors of the University of Virginia* (1826), 14. It is possible that this charge is related to the 15 Aug. 1825 invoice, but that is difficult to determine since the invoice was drawn up in pounds and the annual report gave amounts in dollars. Blackford also received a second payment, for $62.52, but the nature of the work was not identified. TJ to JPE, 16 May 1825, LC.
29. Email, Clay Palazzo to Diana Waite, 11 Nov. 2013.
30. *Report of the Rector and Visitors of the University of Virginia* (1825), 4.
31. BV, Minutes, 10 July 1827.
32. Ibid.
33. JPE, "Ground Plan of a Chemical Lecture room & Laboratory," [1827?], Mss. 8553, UVSC. Joseph Michael Lasala, "Thomas Jefferson's Designs for the University of Virginia," master's thesis, Jan. 1992, School of Architecture, Univ. of Virginia, drawing 19-13.
34. Jefferson had donated his "collection of natural and artificial curiosities" to the University, and they were stored initially in the "small oval room on the first floor of the Rotunda"; in the fall of 1828 the Visitors directed that these materials be moved to the "small oval room in the basement story." The space on the second floor was then to be used for the "reception of the Philosophical apparatus, under the superintending care of the Professor of Natural Philosophy"; BV, Minutes, 3 Oct. 1826; 1 Oct. 1828.

35. BV, Minutes, 10 July 1829. Executive Committee, Minutes, undated resolution, PP, RG-5/3/1.111, Box 16, File Letters and receipts, N.D.
36. There was trouble with draught of other fireplaces; see *John G. Waite Associates, Architects, The Rotunda, University of Virginia: Historic Structure Report* (2008), 53, note 275. BV, Minutes, 10 July 1829.
37. BV, Minutes, 10 July 1830.
38. Ibid.
39. Proctor's Ledger, 1819-1825, p. 166, RG-5/3/2.961. AR, 1825, 4. TJ to ASB, 24 July 1825. Proctor's Ledger, 1819-1825, RG-5/3/2.961.
40. JPE, Notebooks of John Patten Emmet, Ledger 3, Mss. 12713-a, UVSC.
41. Ann Blackman, *Wild Rose: The True Story of a Civil War Spy* (New York: Random House, 2005), 97-98.
42. *Report of the Commissioners Appointed to Fix the Scite of the University of Virginia* (Richmond: John Warrack, Printer, 1818), 7.
43. *Catalogue*, 1834-1835, p. 15.
44. BV, Minutes, 1 July 1841.
45. *Report of the Rector and Visitors of the University of Virginia* (1842), 10.
46. Meanwhile, as other professors were filling in for the ailing Emmet, another chemistry lecture room was being constructed in the anatomical hall, a separate structure that had been designed by Jefferson and was located to the west of Hotel A. An invoice from contractor George W. Spooner, preserved in the Proctor's Papers, provides some details about how the new lecture room in the anatomical hall was constructed; some of its features may have been similar to those in the chemistry lecture room in the basement of the Rotunda.
47. John P. Emmet, "Experiments upon the Solidification of Raw Gypsum," *Journal of the Philadelphia College of Pharmacy* 5 (Jan. 1834): 48-52.
48. Tucker, 21. Miles and Gould, vol. 2, 85. Spencer, 19. William Barton Rogers, the professor of natural philosophy, and other professors had filled in for Emmet during his final illness.
49. BV, Minutes, 19 Sept. 1842.
50. BV, Minutes, 4 July 1843.
51. Browne, 710. For more on the Rogers family, see Edgar Fahs Smith, "James Blythe Rogers, Chemist, 1802-1852," *Journal of Chemical Education* 20 (June 1943): 287-291; Edgar F. Smith, *Chemistry in America, Chapters from the History of the Science of the United States* (New York and London: D. Appleton and Co., 1914), 235-241.
52. BV, Minutes, 4 July 1843.
53. Ibid.
54. *Report of the Rector and Visitors of the University of Virginia* (1846), 9.
55. BV, Minutes, 25 June 1848.
56. Ibid.
57. BV, Minutes, 1 Sept. 1852.
58. BV, Minutes, 25 June 1852.
59. John Staige Davis, "History of the Medical Department of the University of Virginia," *Alumni Bulletin of the University of Virginia*, Series 3, no. 7 (1914): 307. *Catalogue*, 1852-1853, p. 21.
60. *Report of the Rector and Visitors of the University of Virginia* (1854), 9.
61. *Report of the Rector and Visitors of the University of Virginia* (1854), 10.
62. Gemmell and Jones, 52.
63. BV, Minutes, 25 June 1853.
64. Vaughan and Gianniny, 85, 91.
65. John G. Waite Associates, Architects, *The Rotunda Chemical Hearth, University of Virginia: Historic Structure Report* (2017).

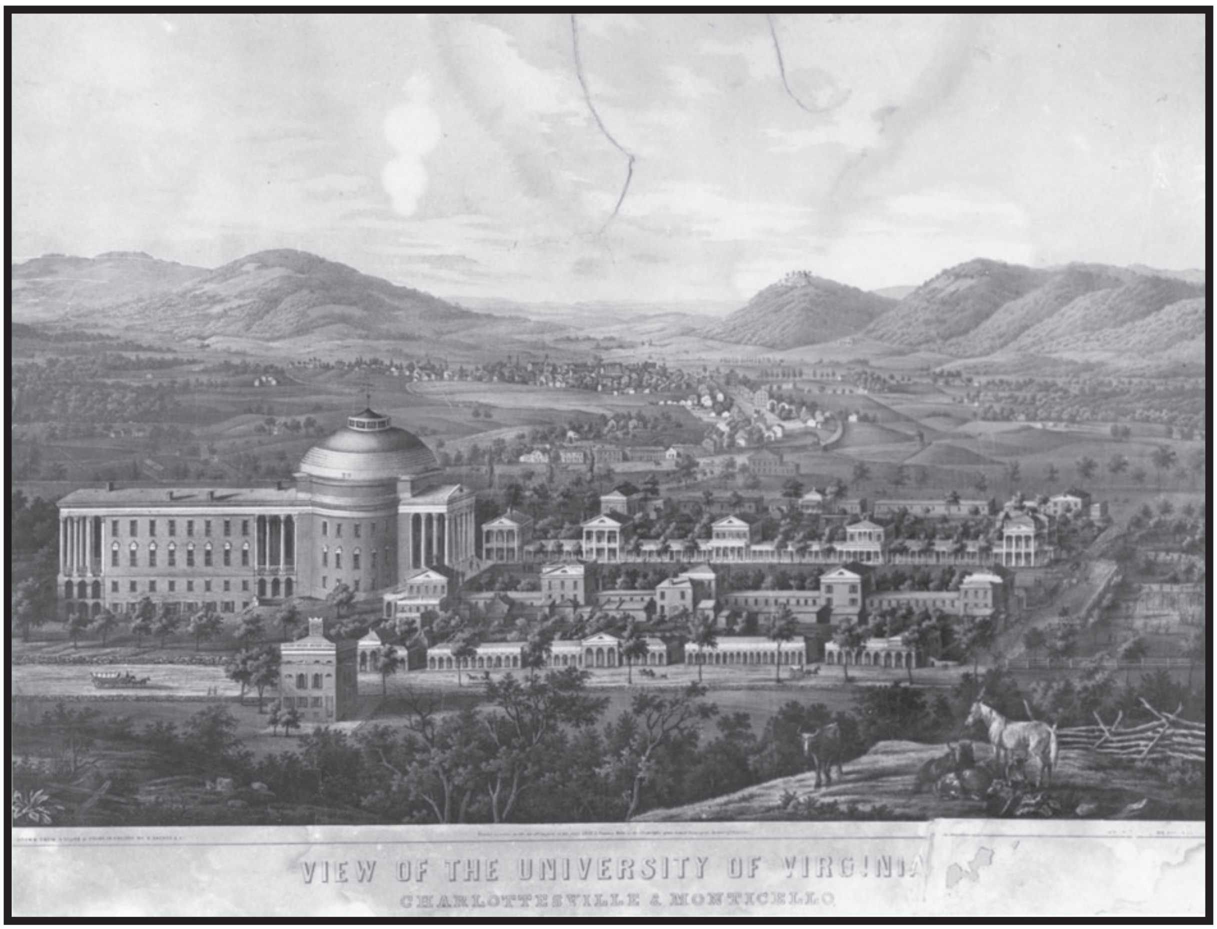


FIGURE 124. *University of Virginia from the west, 1856, printed by E. Sachse and Co. and published by C. Bohn.*

THE ROTUNDA
LANDSCAPE HISTORY

Landscape Features Around the Rotunda

THE DEVELOPMENT OF THE MAJOR LANDSCAPE FEATURES around and near the Rotunda occurred in three successive phases or periods. The first begins with the establishment of the University and continues until just before the construction of the Annex in 1851. The second period was prompted by the construction of the Annex and ends with the fire in 1895. The third phase of development begins with the renovation campaign that followed the fire and the treatment of the landscape during the twentieth century. While the renovation campaign carried out in the 1970s completely revamped the Rotunda's interior, little change was made to the landscape at that time.

Throughout the Rotunda's history, changes to its surrounding landscape were made largely to the areas to the east, west, and north of the building. Dozens of views of the central grounds from various periods, whether drawn or photographed, show that the features of the upper Lawn on the south side of the Rotunda changed very little. Views dating from the early and mid-nineteenth century and photographs taken from the 1860s through today all depict the Rotunda free of shrubbery, trees, or visual impediments. These images suggest that there were never plantings immediately in front of the Rotunda or its wings. A walkway ran across the front of the Rotunda at the bottom of the steps beginning in the building's early years, and at various times pairs of lamps were installed on posts on the Lawn, flanking the steps.

Until McKim, Mead and White's plans for the landscape were implemented in 1898, the grounds to the north of the Rotunda were essentially utilitarian and only lightly tended, if at all. In the earliest years, the areas north of the Rotunda were used for vegetable gardens or athletic fields by students. The areas just east and west of the Rotunda were covered with patchy grasses and shrubs and a few trees, some naturally occurring, some planted by the proctors or superintendents. The entire area was scarred with footpaths in changing patterns over the years, worn into the field by students forging shortcuts to other areas. Constructed from 1851 to 1854, the Annex covered more than 8,000 square feet of the land immediately north of the Rotunda, and massive, fortress-like battered stone walls were constructed around the east, west, and north sides of the Annex, considerably altering the landscape. After the Annex burned, Stanford White tamed the Rotunda's relatively wild backyard and softened the precipitous drop-off by imposing an orderly Beaux-Arts design. Since then many improvements and changes have been made, including the removal of the stone walls in the late 1950s, but much of the plan has remained the same since 1898.

Perhaps because the Lawn was the landscape focus for so much of the University's history or because the University often had other, more pressing priorities, there is a relative dearth of information on work carried out in the areas surrounding the Rotunda for some entire decades of the nineteenth century and during some years in the twentieth century as well.

The Lay of the Land, 1817–1851

As evidenced by his plans for the grounds at Monticello, Thomas Jefferson was as interested in landscape design as he was in architecture. Though no record of his plans for landscaping the University's grounds survive, it is clear from a June 12, 1817, letter to Benjamin Henry Latrobe that Jefferson did have definite preferences for the treatment of the Lawn and intended it to be covered with grass and planted with at least some trees. Beyond this, however, little is known about Jefferson's ideas for the central grounds, and even less is known about his intentions for the areas immediately surrounding and just north of the Rotunda.[1]

When Jefferson purchased the 43.75-acre plot of land for the new university in 1817, it was an "impoverished, disused cornfield, rising high and dry by itself and without obstructions in the way of trees and bushes."[2] In the early days of the University the central grounds consisted of the land lying between East and West Streets, defined at the north end by the Staunton Pike, now University Avenue, and at the south end by Fry's Spring Road, now Jefferson Park Avenue. East Street is now part of Hospital Drive, and West Street ran from the Staunton Pike along the West Range and connected with what is now part of Stadium Road, southwest of the central grounds.[3]

Views of the University grounds dating from 1826 to 1851 consistently depict the University from a southerly perspective, looking north up the Lawn and past the flanking pavilions, dormitories, and terraces toward the Rotunda and its wings, which enclose the north end of the Lawn. The publication of so many versions of this same view underscores the fact that the Lawn had become the central landscape feature of the University's grounds. No early views of the Rotunda's north facade or of the terrain north of the Rotunda have been located, perhaps because the area had not been developed; only a few scant contemporary descriptions provide clues to its appearance.

In a November 1, 1825, letter to proctor Arthur S. Brockenbrough, Jefferson indicated that he planned to erect a fence in the open field north of the Rotunda in order to "prevent people's passing through the grounds" from the north and to thereby direct all traffic approaching the University to the entrance at the south end of the grounds. Three-Notch'd Road, which became the Staunton Pike and is now University Avenue, cut through this field and was a busy thoroughfare even in 1825, when it was the main highway linking Richmond to the agricultural markets of the Shenandoah Valley. In this same letter Jefferson also indicated that he preferred seeding "grass in that North lot to planting trees because they would mask the building & prospect."[4] At this time the land north of the Rotunda was described as having been a "poor old turned out field" and an "old bald hill" covered with nut-bearing chinquapin bushes and a "jungle-like growth of small false oak." Open areas were used for students' athletic exercises.[5]

In October 1825, the Board of Visitors agreed that the faculty should have a vegetable garden and resolved that it be laid out in an area that extended from the north side of the Rotunda down to the Corner, the area along what is now University Avenue and which eventually developed into a bustling commercial district.[6] By the time construction of the Rotunda was completed in 1826, the area north of the Rotunda was probably a barren "morass of mud and construction debris" with only a few trees, the fence, and the vegetable garden.[7]

In the summer of 1827 the executive committee of the Board of Visitors directed the proctor to "plant appropriate ornamental trees to the north of the buildings and the public road."[8]

In June 1828 the proctor paid $6.00 to one W. Goodman for locust trees, which may have been planted in this area. The two large sycamores that reportedly still stood in this area in the 1960s may date from this era as well.[9] A section of the grounds just north of the Rotunda was enclosed by a "strong and neat post and rail fence" around this time, per Jefferson's wishes, voiced a few years earlier.[10] Expanded plans for improvement of the University grounds were made in July 1829, and as-yet-undeveloped land was to be planted with trees and shrubs.[11] In July 1831 the proctor delivered reports to the Board of Visitors on the proposed treatment of the "outer gardens," as well as the "steps of the Rotunda."[12] It is not clear whether he was referring to the steps on the south or north side of the Rotunda or to both, or what the treatment entailed.

The fence that Jefferson had mentioned to Brockenbrough in November 1825 created a lane that ran from what Jefferson referred to as "Dinsmore's corner" to the corner of Hotel B at the north end of the East Range.[13] Dinsmore's corner is likely a reference to part of the property owned by James Dinsmore, the principal master carpenter who worked on the Rotunda and other buildings at the University. Dinsmore owned land east of the University in the area of today's intersection of Jefferson Park Avenue and West Main Street.[14] Jefferson's reference to this lane in his letter to Brockenbrough is the first known mention of the Long Walk, the path that today runs east from the Rotunda to the Corner.[15] The first views of the University to depict the grounds from the east were not published until the 1850s; an 1851 view clearly shows a lane, defined by fences, extending eastward from the Rotunda.[16] A wood engraving dated 1853–1856 also shows this lane. A steel engraving from 1856 hints at the presence of the lane, while depicting a partially wooded area east of the Rotunda, enclosed by a fence.[17]

During the summer of 1844 improvements were made to the Rotunda's immediate environs. In July the University paid laborer David Byars $7.50 for "digging a ditch to drain rotunda lot." The following month Samuel Campbell built a "stone wall around the rotunda lot," for which the University paid him $50.[18] Additional improvements to the drainage system were made later, in August 1857, when the University paid J. O. Daniels $46.75 for "ditching and draining rotunda lot and turnpike road."[19]

Mature paulownia trees that stood "near the Rotunda" as late as the 1960s may date to the mid-1840s, when Maximillian Schele de Vere came to the University as a professor of modern languages and took up residence in Pavilion IV on the East Lawn, where he planted a flower garden interspersed with trees. Today one large paulownia tree still stands at the front of the Rotunda, to the east of the upper terrace. It is known that Schele de Vere planted paulownia trees in his garden, and it is possible that at that time he planted those near the Rotunda as well.[20]

Construction of the Annex and Modification of the Surrounding Landscape, 1851–1895

Before construction of the Annex began in July 1851, there was reportedly a porch on the north side of the Rotunda that was approached on either side by long flights of stone steps. The terrain on this side of the Rotunda then "fell away abruptly; and on the face of the bank thus created, grew a waving mass of Scotch broom," an invasive, densely growing plant.[21]

The Annex extended 155 feet north of the Rotunda and was surrounded on its east, west, and north sides by high stone walls, creating an enclosed forecourt; the north wall had two battered archways. In June 1854, as construction of the Annex was nearing completion, the Board of Visitors reported that "additional work on the embankment around the new building" was needed.[22] That October, when Robert R. Prentis made repairs to the Rotunda steps, he also carried out unspecified work on the embankment, for which he was paid $32.25.[23]

In their history of the University's grounds, Edwin M. Betts and Sylvester O'Grince noted that "from Jefferson's death until 1856 all of the landscape gardening, planting of trees, and the care of the grounds was under the supervision of the Proctor, who had no special training for the work. The landscaping was done haphazardly and the open spaces were crowded with trees and shrubs of all kinds without proper regard for the buildings."[24] For several years during this time no reports were made on landscape work carried out anywhere on the University grounds, nor were reports filed on the condition of the grounds. Though an early 1851 report had indicated that the grounds and buildings were in a "state of repair and preservation," by 1855 the grounds were in a state of neglect. This laxness may be attributed to the University having channeled its resources into completing the Annex.[25]

As the University expanded its facilities, its need for a larger and more reliable supply of water grew. In 1855 the University engaged civil engineer Charles Ellet, of Philadelphia, to devise a plan for piping water to the central grounds from a number of springs, located west of the University grounds and at higher elevations. Around this time the small artificial pond located roughly at what is now the intersection of McCormick Road and University Avenue just northwest of the Rotunda may have been created to act as a reservoir as part of Ellet's system, which included installing water tanks "on top of the Rotunda." Water would be piped from the springs to the pond and "then pumped by steam into the tanks."[26] This pond appears on a map created by Ellet in 1856, as well as in late-nineteenth-century photographs of the grounds. Ellet's

FIGURE 125. *Site plan, 1826. Sketch by Jennifer Steen, 1997; revised by John G. Waite Associates, Architects, 2007.*

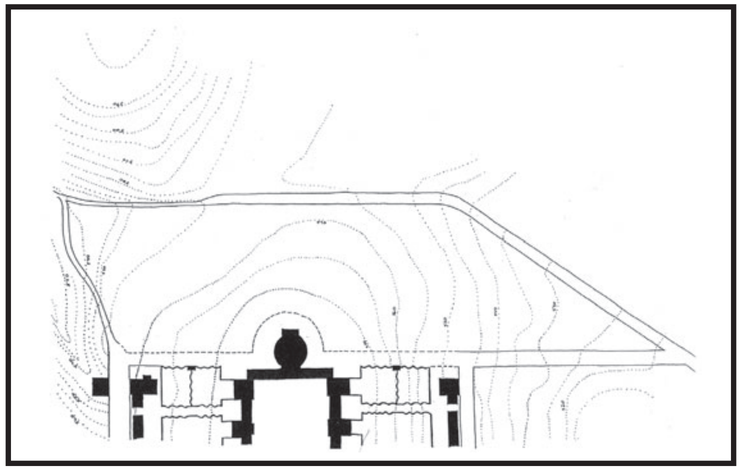


FIGURE 126. *Site plan, 1856. Sketch by Jennifer Steen, 1997; revised by John G. Waite Associates, Architects, 2007.*

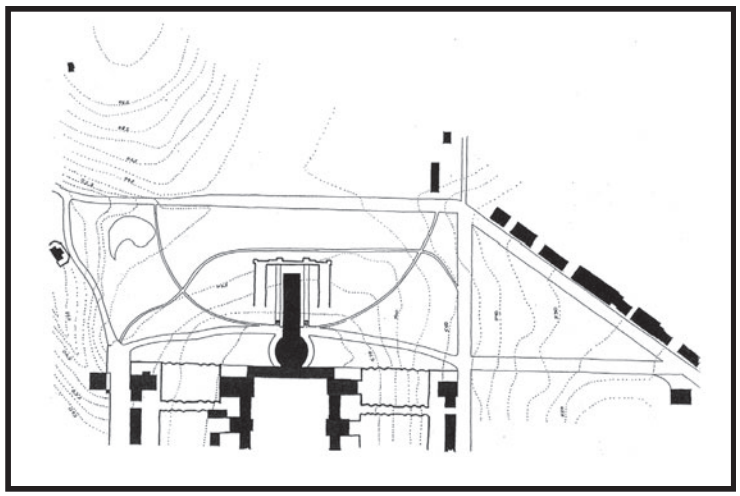
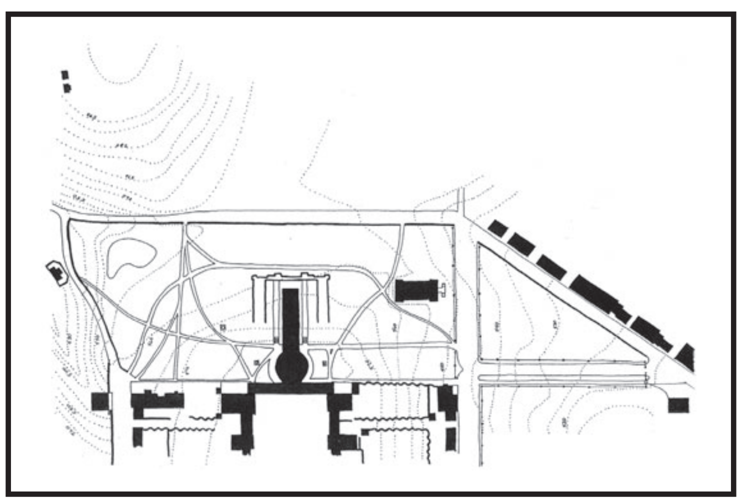


FIGURE 127. *Site plan, 1876. Sketch by Jennifer Steen, 1997; revised by John G. Waite Associates, Architects, 2007.*



1856 map also indicates the location of a cistern just west of the Rotunda.[27] The cistern may date to as early as 1827, when such a reservoir was constructed in that area to serve the chemical laboratory in the basement of the Rotunda.[28]

Beginning in the 1850s, there are many views of the grounds from the east and others from the west, presumably to showcase the new Annex. In these depictions, the scope of the view seldom extends beyond the north portico of the Annex, and only a very few of these views show any part of the landscape at the north end of the grounds. The pond created around this time is evident in one of these views, an 1856 steel engraving. In other views, the limited areas shown appear to be open and planted with a few trees, though these may be romanticized representations of the landscape.[29]

To relieve the overworked proctor and bring a semblance of order to the University's landscape, the office of proctor and groundskeeper was divided in 1858, and civil engineer William A. Pratt, an Englishman who had lived in Alexandria and Richmond before coming to Charlottesville, became the University's first superintendent of buildings and grounds.[30] At the meeting of the Board of Visitors at which he was appointed, Pratt presented an elaborate plan for improving the grounds. His plan included creating large parks on the east and west sides of the Rotunda and also to the north. "Stables and other unsightly buildings as well as the professors' gardens between the Rotunda and the Corner" were to be removed.[31] Evidently there was some controversy surrounding the vegetable gardens, but Pratt's plan prevailed, and the "gardens were removed to the area beyond Dawson's Row," at the south end of the grounds.[32]

In 1858 Pratt had trees felled in preparation for a road that was to pass through the ground-level arcade that connected the Rotunda and the Annex. The student body vociferously objected to the plan, and though it was never fully carried out, much of the surrounding "grove" was destroyed in the initial effort of laying out the road.[33] According to an 1858 map made by Pratt, a perimeter road or path encircled the entire central grounds but evidently never went through the connecting arcade. Pratt's map shows a semi-circular walkway extending from Staunton Pike (University Avenue) up to the arcade between the Rotunda and the Annex and then back down to the pike. A long, undulating path runs west to east across the grounds north of the Rotunda.[34]

Two cisterns, located behind the east and west terrace wings of the Rotunda in the areas that are now the courtyards, appear on Pratt's map, as well as on another map from ca. 1870. A third cistern is indicated in the field northwest of the Rotunda, in the area where the pond was located.[35]

From 1858 to 1860 Pratt oversaw the planting of many species of trees, including Norway spruce and European beech, to the north of the Rotunda, as well as in the east and southwest areas of the grounds. Many of the old trees that now shade the area north of the Rotunda are believed to have been planted during this campaign.[36] The surviving sycamores to the west and north of the Rotunda date from Pratt's time, and a large ginkgo tree to the west of the Rotunda is marked as a memorial to him.[37]

Throughout the 1840s, 1850s, and 1860s—except for the years when the grounds were managed by William Pratt—the Lawn was often reportedly in a neglected condition. Time and again, fences and gates were erected across the Lawn's south end to keep cattle from grazing on the grass and hogs from rooting around, but the fences were not properly maintained, and the animals frequently made their way in. Trees on the Lawn and the Ranges were sometimes vandalized and cut down by rambunctious students and not replaced, leaving unsightly stumps studding the landscape. With the Lawn itself often neglected or mistreated during these decades, even less attention may have been paid to the less visible areas north of the Rotunda.[38]

Throughout much of the Civil War, the University shut down the office of superintendent of buildings and grounds in order to cut costs. William Pratt carried out his duties sporadically, as the University could afford to pay him, until the summer of 1866, when the offices of proctor and superintendent were again united, and the University appointed Col. John E. Johnson to fill the position. Johnson was succeeded 16 months later by Maj. Green Peyton, an "accomplished engineer and skilled financier."[39] In early 1868 Peyton oversaw the planting of new trees throughout the University grounds as well as on the "upper Lawn," near the Rotunda.[40]

An 1870 map of the grounds shows the areas to the east, west, and north of the Rotunda planted with many trees and crisscrossed with walks.[41] A similar arrangement of walks appears on a map dating to 1890.[42]

Over the next few decades, the position of proctor and superintendent remained unified, until 1892, when it was again divided and filled by Peyton, as proctor, and adjunct professor William H. Echols, of the School of Applied Mathematics, as superintendent. The proctorship and superintendency were again united in 1897 under the sole responsibility of Col. Thomas Carter. During these decades, until the reconstruction following the fire in 1895, there is no record of any major work carried out on the landscape immediately surrounding the Rotunda.[43]

In 1879, however, the "sewer in the rear of the rotunda" was replaced with an "odorless apparatus" at a cost of $265.29.[44] A photograph dating to ca. 1880 shows that two gas lanterns on posts had been installed along the walkway at the foot of the steps on the south side of the Rotunda. A fire-insurance map dating to July 1891 indicates the presence of a well to the northwest of the Rotunda. The well is not depicted on a similar map published in December 1896.[45]

The 1895 Fire and the Resulting Modifications to the Landscape, 1896–1905

After fire destroyed the Annex in October 1895, its charred remains were quickly razed and carted away, and once again the area immediately north of the Rotunda was an open space. The landscape scheme presented by McKim, Mead and White included retaining the high stone walls that had surrounded the Annex, filling in the enclosed area, and turning it into a garden.[46] In October 1896 Theodore F. Skinner wrote to Stanford White from Charlottesville, urging that the "matter of the treatment of the sunken garden north of the Rotunda should be taken up and settled immediately"; the "bulk of the other grading" associated with the new construction had already been completed. Skinner reminded White that the building committee hoped to "get through with their earth contractors" that fall. Since the enclosed area within the walls was to be filled in and graded, material needed to be hauled to the site at once.[47]

McKim, Mead and White's original landscape plans for the north side of the Rotunda showed a wide flight of stairs leading from the Rotunda portico to an intermediate terrace. From there three separate, narrow flights of steps led down to an elaborate parterre with orthogonal paths laid out around a circular central area.[48]

A simplified design dating from 1898 did away with the elaborate parterre and walkways. The new design, which more closely reflects what was built, included a broad flight of stairs descending from the Rotunda's portico to a terrace from which a single broad flight of steps led down to a garden area. A simplified plan for the garden created a broad utilitarian space: a perimeter walkway defined two planes on either side of a paved central area with a rectangular space for statuary in the center.[49] The two archways in the north side of the rusticated stone wall were filled in, and a section of wall between the arches was removed to make way for a wide flight of stone steps leading down toward University Avenue.[50] According to an 1899 account, the landscape on the north side of the Rotunda was "laid out as a beautiful square, connected by a handsome flight of steps with the north front of the Rotunda, and by a like flight with the grounds on the north, presenting a most imposing view, with its picturesque terraces gradually descending."[51]

The construction of the new north terrace wings and the colonnades that connected them to the south terrace wings created garden courts on the east and west sides of the Rotunda. Stanford White designed these courts with "circular centers" and "axial walks separating four compartmented garden areas."[52]

These features were never completed as planned by White. Magnolia trees were planted sometime between 1901 and 1918.[53] A 1902 photograph of the west courtyard shows only a grassy area and no plantings. The 1918 photograph of the same courtyard shows that a gravel path had been laid around the perimeter, surrounding a privet hedge defining a grass center. Three southern magnolia trees are shown, as well as what appears to be a locust tree.[54]

In 1905 the office of proctor and superintendent of buildings and grounds was again split, and William A. Lambeth became superintendent of the University's buildings and grounds, while Thomas Carter remained proctor. In

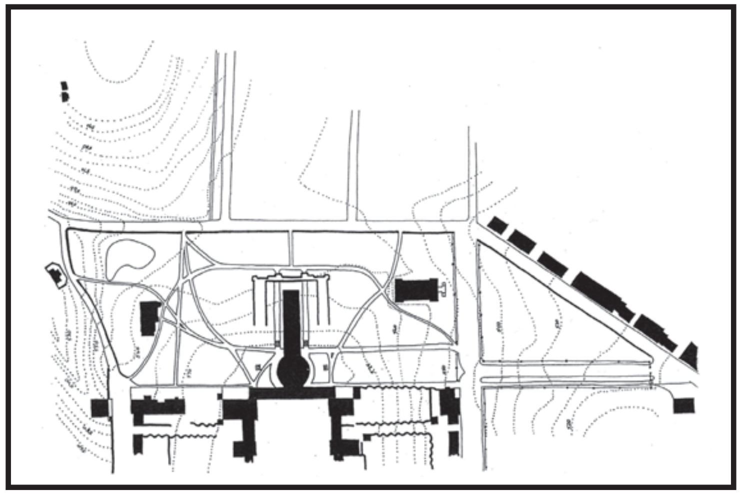


FIGURE 128. *Site plan, 1889. Sketch by Jennifer Steen, 1997; revised by John G. Waite Associates, Architects, 2007.*

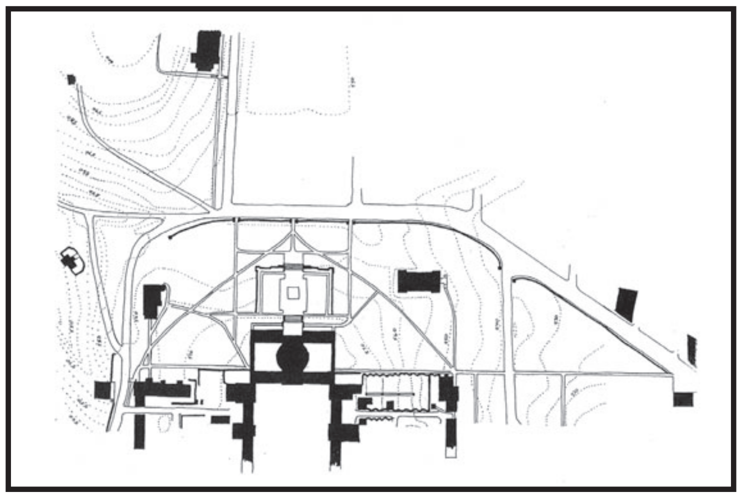


FIGURE 129. *Site plan, 1898. Sketch by Jennifer Steen, 1997; revised by John G. Waite Associates, Architects, 2007.*

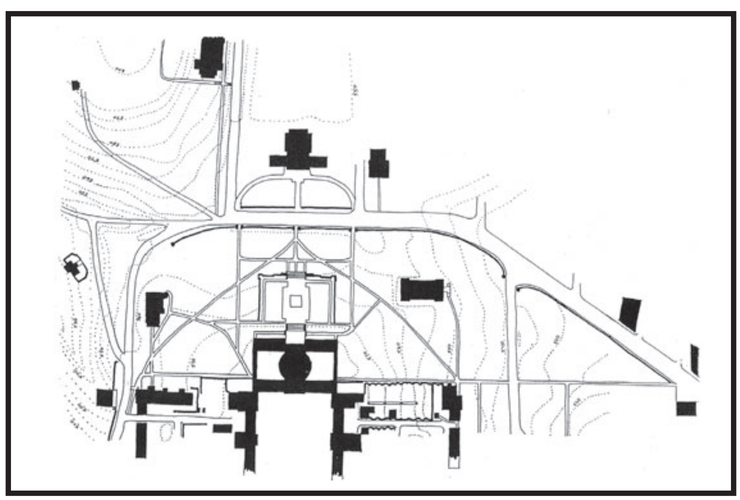


FIGURE 130. *Site plan, 1905. Sketch by Jennifer Steen, 1997; revised by John G. Waite Associates, Architects, 2007.*

FIGURE 131. *Site plan, 1910-1920. Sketch by Jennifer Steen, 1997; revised by John G. Waite Associates, Architects, 2007.*

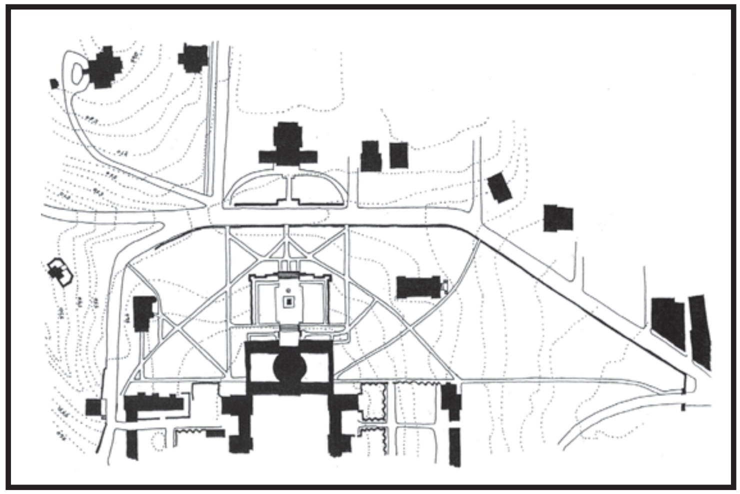


FIGURE 132. *Site plan, 1929-1930. Sketch by Jennifer Steen, 1997; revised by John G. Waite Associates, Architects, 2007.*

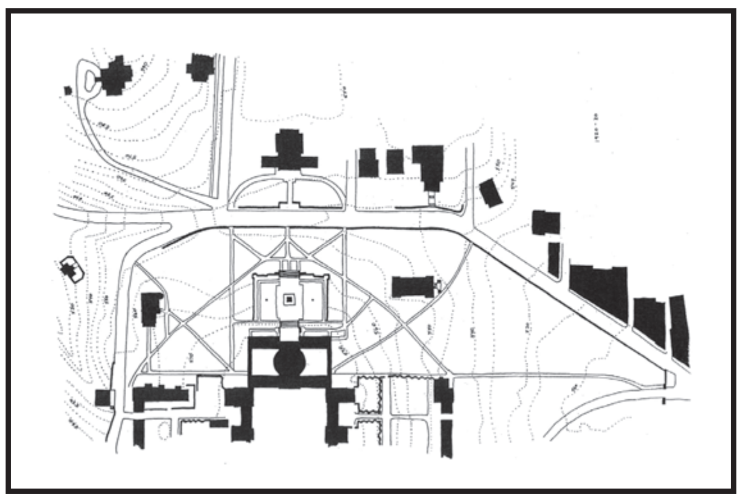
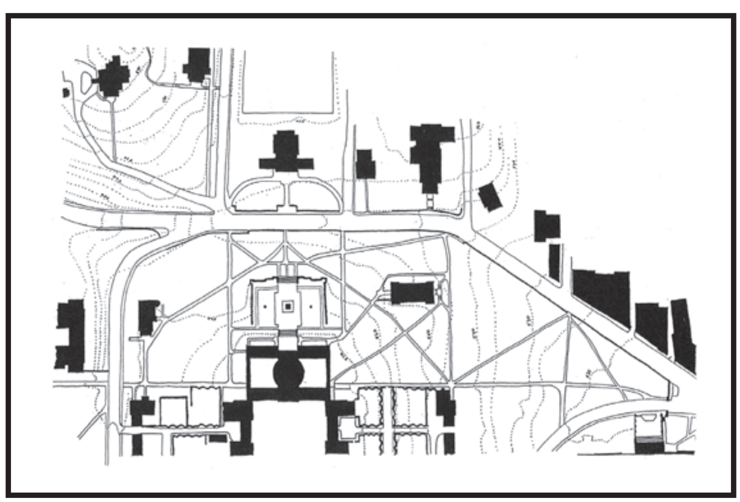


FIGURE 133. *Site plan, 1930-1940. Sketch by Jennifer Steen, 1997; revised by John G. Waite Associates, Architects, 2007.*



handing off responsibility to Lambeth, Carter submitted the following report regarding work on the walks that had been carried out around the Rotunda during his tenure and proposed work to finish what had been started:

> Granolithic walks north of the Rotunda; 1024 yards can be finished at $1.00 a yard. I recommend that it be done at once, both for economy and for appearance. Afterwards, the walks south of the Rotunda, extending from the residence of Professor Lile on the East Lawn around the Quadrangle to the residence of Professor Fitz-Hugh on the West Lawn, about 1320 yards should follow. The walks were begun in 1895, two years before I entered my duties here, and were laid around the Lawn, only to professor Lile's and to Professor Fitz-Hugh's and the Ranges, and from the Rotunda to the Post Office. They should be continued to Monroe Hill and Dawson's Row and to the Hospital and elsewhere regularly, until fully completed.[55]

An Evolving Landscape, 1905–1956

When William A. Lambeth assumed his new position in 1905, both the grounds and buildings were "in need of immediate attention."[56] Lambeth began to make improvements at once, and between 1905 and 1928, when he left the position, he planted 1,500 trees, many of which were transplanted from the surrounding woods or were gifts from individuals and private nurseries. Lambeth also thinned crowded copses of old trees, "which had been planted without proper regard to buildings," thus opening new vistas.[57]

Several important embellishments were made to the terraces on the north side of the Rotunda. Around 1906 two flagpoles, one for the U.S. flag and the other for the Virginia flag, were presented to the University by alumni Thomas F. Ryan and Paul Goodloe McIntire and erected in the "Northern plaza of the Rotunda."[58] The bronze statue of Jefferson, located at the foot of the stairway, was dedicated in 1910. It was the gift of Moses Ezekiel, a distinguished American-born sculptor who lived and worked in Rome; a decade earlier, Ezekiel had created a similar statue for the city of Louisville, Kentucky. At the University, the life-size, standing figure of Jefferson faces north, holding a scroll representing the Declaration of Independence and surmounting a replica of the Liberty Bell, which is embellished with four allegorical female figures—Liberty, Justice, Religious Freedom, and Human Freedom. The base of the statue is red marble.[59] In 1913 the class of 1910 gave the University a stone sundial and two stone benches to be placed "on the plaza before the north front of the Rotunda." The *Alumni Bulletin* described the arrangement as an "interesting group, with the quaintly carved and inscribed dial standing between the benches, form[ing] a break in the sunny space overlooked by the monument to Jefferson."[60]

Photographs dating to ca. 1914 show that two lamps with globe shades were installed on the south side of the Rotunda, in the place of the earlier lamps. The lamps with the globe shades appear in a 1921 photograph of the Rotunda's south side, but by 1930 they had been removed.

In 1915 William Lambeth proposed that a road be laid out between the pavilions and Ranges, cutting in between the foot of the stairs of the north portico and the north court. Lambeth consulted renowned Beaux-Arts architect Henry Bacon, who that year had designed the Senff Gate to the University at the north end of Hospital Drive. Bacon came to Charlottesville that April and inspected the site for the road with Lambeth. Bacon wrote to University president Edwin Anderson Alderman, offering his full support of the plan, and included a sketch of the proposal with his letter. "The proposed road," Bacon wrote, "will not detract from the old character of the buildings, and in these days of interesting sightseeing in automobiles it is most desirable. Many will see under the best conditions the old University group who might not see it if the road is not built."[61]

Lambeth and Bacon's proposed road bisecting the terrace on the north side of the Rotunda was never built. However, a large-scale paving project was undertaken at the University between 1916 and 1922, during which the "alleys and drives between the West Lawn and West Range" were paved with "concrete and brick." "Many new walks and drives" were "laid about the University grounds during the summer" of 1922. The first boxwoods were planted in the terrace to the north of the Rotunda during the 1930s.[62]

In a history of the landscape north of the Rotunda, Jennifer Steen made the following observations on the development of the area during the first three decades of the twentieth century and the lasting effect that those changes have had on the University:

> The monumental stairs and terraces became a Forecourt, a processional space, and a formal entry to the University. When Madison Hall was built in 1905, the axis begun by Stanford White's monumental terraces was completed and strengthened. Today it is so strong that it is difficult to imagine how recently it was created. The new axis effectively split the grove in two, although it took about twenty years for the result to become evident in the mindscape. While the west side remained much the same, the east began to become more open, incorporating more exotic trees and blending into the lawn to the east of Brooks Hall. The Beaux Arts design substantially altered the older patterns of circulation, so that while certain paths which retain their heavy traffic (the Long Walk and the Carr's Hill entrance) have been preserved, the patterns of the area as a whole bear little resemblance to those of the earlier University. In most cases, as paths have fallen out of use, the trees which lined them have been left standing, so that the apparently random plantings which characterize the area at present in fact reflect the traffic patterns of 150 years.[63]

Edwin Betts and Sylvester O'Grince's report on the history of the University's trees and grounds indicates that in the 1960s the only remaining indigenous trees in the area immediately surrounding the Rotunda that predated establishment of the University were "two white oaks, to the east and north front of the Rotunda, near the wall running parallel with University Avenue."[64] The one remaining large white oak was destroyed during a summer storm in 2005.[65]

Repair and Redesign, 1957–1974

In late November 1957, a section of the high, rusticated stone wall along the east edge of the terrace behind the Rotunda collapsed due to heavy rains. University president Colgate W. Darden Jr. discussed improvements to the area at a December 1957 meeting of the Board of Visitors and indicated that plans had been worked out by T. K. Fitz Patrick, dean of the University's School of Architecture and a member of the University's Architectural Advisory Committee. The plans had been approved by the Virginia Fine Arts Commission, and landscape architect Alden Hopkins, of the Williamsburg restoration, advised on the overgrown American boxwood and other shrubbery in the area.[66]

By December 5, 1957, workmen had already begun removing the east and west portions of the stone wall on the north side of the Rotunda. President Darden maintained that an earth terrace wall, rather than the stone wall, was "more in keeping with Jefferson's ideas of landscaping."[67] Elevations and plans dating from between December 1957 and September 1958 show proposed changes to the north approach to the Rotunda, as well the lines of the old stone wall and the proposed new terrace. Brick paving in alternating basket-weave and herringbone patterns was to be installed in the wide walkway connecting the Rotunda's north steps to a rebuilt stairway descending to the new brick terrace. The plans also included new plantings, including holly bushes.[68]

In April 1959, president Darden submitted to the Board of Visitors a proposal for making changes to the north approach to the Rotunda between University Avenue and the newly constructed terraces. The Buildings and Grounds Committee approved the proposed plans for the north approach, but the $9,700 estimate for the work was thought to be too high in light of other needs at the University. If the University were to make changes to the north entrance of the Rotunda, it would have to find a private source of funding.[69]

Funding was quickly secured, and construction of the extension of the brick terrace on the north side of the Rotunda began in mid-July 1959. The *Charlottesville Daily Progress* published the following report on the project:

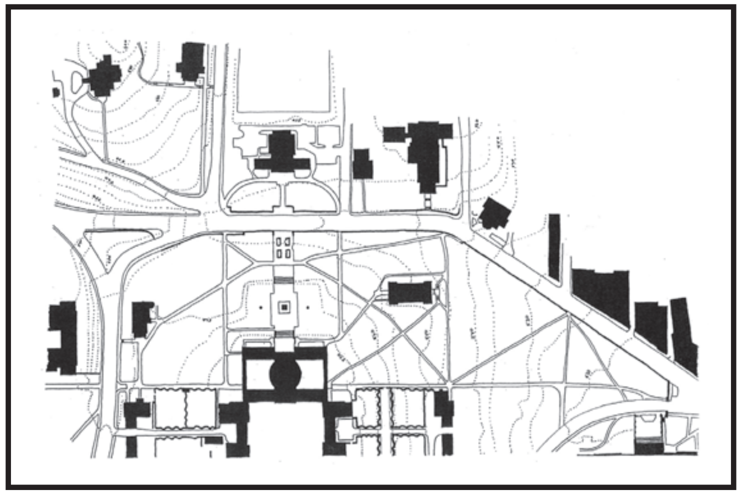


FIGURE 134. *Site plan, 1957-1960. Sketch by Jennifer Steen, 1997; revised by John G. Waite Associates, Architects, 2007.*

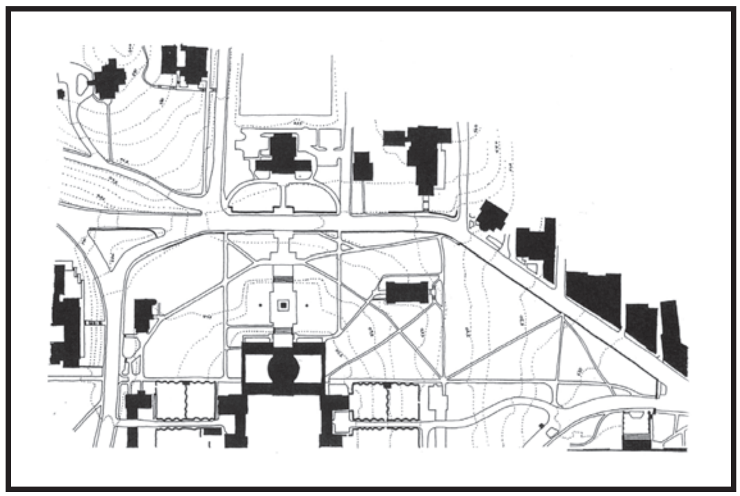


FIGURE 135. *Site plan, 1976-1996. Sketch by Jennifer Steen, 1997; revised by John G. Waite Associates, Architects, 2007.*

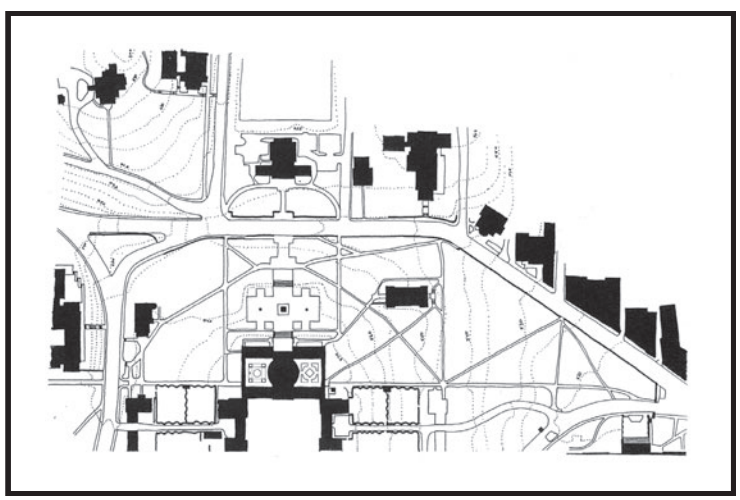


FIGURE 136. *Site plan, 2016. Sketch by Jennifer Steen, 1997; revised by John G. Waite Associates, Architects, 2022.*

> The new terrace will reach the low, gray stone wall which runs parallel to Main Street. It will be bisected by a walk, bordered by two large planter beds. Stone benches will be placed on the terrace.
>
> The street opening in the stone wall will be widened to more than 50 feet. Sections of the wall taken down to enlarge the opening will be placed along the edge of the new terrace.
>
> No provisions for parking have been made, but the sidewalk which parallels Main Street will be widened in front of the new terrace to serve as a loading platform.
>
> The terrace will be constructed so as not to injure the large sycamore trees standing between the older terrace and the street.[70]

Plans were made in early 1960 for the installation of a rectangular 15-by-9-foot fountain, which was designed by T. K. Fitz Patrick to honor former president Colgate W. Darden, to be placed in the courtyard east of the Rotunda. The plans called for the interior of the fountain's pool to be paved with mosaic tile and for the edges to be of marble, surrounding a small tazza-form-urn-shaped fountain. Construction of the fountain began in early October 1960. Marble was substituted for the mosaic work. The fountain was completed and dedicated within the year.[71]

1975 to 2000

On May 30, 1975, Rector Joseph H. McConnell appointed a special committee to study the feasibility and cost of placing a fountain in the Rotunda's west courtyard, similar to the fountain located in the east courtyard. A second fountain, however, was never installed; instead, in 1978 a brick-paved terrace was added to the courtyard, and magnolia trees were planted. The University faculty dedicated this garden to Edgar F. Shannon, president of the University from 1959 to 1974.[72]

As part of its bicentennial gift to the university, the Garden Club of Virginia created a new garden, called the Rotunda forecourt, to the north of the Rotunda in the low area near University Avenue. The design was generated by the Office of University Planning for the garden club. The work included demolishing four rectangular beds with hedges and groundcover, laying new brick paving, installing concrete benches, and planting Japanese holly, Delaware Valley white azaleas, and English ivy in curvilinear beds around the paving.[73] The care of this area is detailed in a memorandum understanding between the University and the Garden Club.[74] In 1981 a sidewalk on the east side of the Rotunda was widened in order to improve access for food-service trucks provisioning large events held in the Dome Room.[75]

In May 1985 the Buildings and Grounds Committee discussed the long-range plan for the central grounds and hired EDAW, Inc., landscape consultants, for the project.[76] About a year later EDAW prepared a historic central grounds landscape study, which stated that the landscape surrounding the Academical Village had not been administered using the same "thoughtful, comprehensive planning" that had been applied to conserving the University's architectural resources and that "sporadic, ad hoc decisions and the natural processes of growth and decline" had resulted in a gradually deteriorating landscape.[77]

The study recommended that the "overgrown, misshapen magnolias" in the Rotunda's courtyards be replaced with "small deciduous trees" and that the University consider redesigning the Darden memorial fountain "in a manner appropriate with the style and elegance of the Rotunda." Furthermore, the study recommended the removal of the "discordant understory shrubs" on the north side of the Rotunda, as well as the shrubs around the north terraces and the overgrown American boxwood on the "crest of the upper terrace to restore views of the Rotunda from University Avenue." The report noted that it was important to research the history of the north court "to ascertain the significance of the existing earth terrace and condition of the stone retaining walls covered in the 1950s."[78]

On December 9, 1986, the Jeffersonian Restoration Advisory Board wrote to the Board of Visitors, commenting on the landscape study. The advisory board supported the "idea of either removing or redesigning the Darden fountain" but recommended that more study was needed before removing or replacing the magnolia trees.[79] The advisory board felt "strongly that the entire area between the Rotunda and University Avenue" was "in serious need of redesign," arguing that the site offered "inestimable potential as a site of important archaeological evidence" and recommending that a consultant be hired at the earliest opportunity to study the area and make recommendations, addressing all these issues in detail."[80]

During the 1990s several changes were made to the area north of the Rotunda. Grass on the embankment was replaced with mondo-grass groundcover after a lawnmower overturned on the steep banks. Overgrown American boxwood was replaced with dwarf English box, and liriope was planted as groundcover in the courtyards. The Long Walk was widened once more to accommodate catering trucks. By 1999 the hillside northwest of the Rotunda was very worn from being used as a shortcut by pedestrians between the colonnade on the west side of the Rotunda and the brick walk leading to University Avenue. The Buildings and Grounds Committee therefore proposed that steps and a ramp be built in place of the worn earthen path. The Buildings and Grounds Committee approved this change on June 15, 1999.[81]

Cultural Landscape Report, 2012–2013

In 2012 the Office of the Architect for the University of Virginia commissioned a cultural landscape report (CLR) for the Academical Village from Heritage Landscapes LLC and Rivanna Archaeological Services, noting that "The desire for increased historical documentation for use in decision-making became evident as other projects in the Academical Village ensued. The major restoration of the Rotunda building also included a study of the landscape history to inform the project."[82]

The CLR, which was completed in December 2013, divided the Academical Village landscape "into spatial components based on patterns of organization, referred to as landscape character areas (LCAs)."[83] The report provided a detailed history and evolution of the Academical Village as a whole and of the north Rotunda Lawn (LCA 2) within which the landscape of the Rotunda falls.[84] The CLR also contains record plans of the paving of the Rotunda lower forecourt project from 1976 and its planting from 1977 and the Shannon Terrace layout plan in the west courtyard from 1978.[85] Both of these projects remained largely extant in 2015 when the rehabilitation project was commissioned. The following narrative summarizes the design for the landscape project associated with the Rotunda rehabilitation, which formed a smaller, though significant, proportion of LCA 2's overall extent.[86]

Landscape Rehabilitation, 2013–2016

The initial decision to rehabilitate the landscape in connection with the Rotunda project was made by the Office of the Architect and ultimately ratified by the University's Historic Preservation Advisory Committee, as well as by the state's Department of Historic Resources. To undertake this important project, the Office of the Architect commissioned the landscape architect Laurie Olin.[87]

The scope of the landscape-rehabilitation project comprised four areas: the north terrace (described previously as the Rotunda lower forecourt in the 1976 project), the east (historically named Darden) and west (historically named Shannon) courtyards, and the east service area, the latter area largely paved for service access to the new vault under the east courtyard.

At the time of the commission, seven of the eight magnolias (*Magnolia grandiflora*) planted in 1903, along with three replacements planted in 1950, remained: four in the west Rotunda courtyard and three in the east, despite the 1986 study recommending their removal and replacement.[88] To realize the ambition of the wider role of the Rotunda in the life of the University, a new underground service vault would be built under the east courtyard; that facility was not feasible if the magnolias were retained. It was furthermore determined that the large trees, themselves in poor condition and health, significantly impacted the building fabric due to retained moisture, shade, and tree roots. In the view of the Historic Preservation Advisory Panel, the magnolias were not considered of sufficient historic importance to interfere with the proposed rehabilitation and were removed on January 30, 2014.[89]

A kick-off conference call was held on November 12, 2013, with representatives of the Office of the University Architect; the University Facilities Planning and Construction; John G. Waite Associates, Architects; and Laurie Olin and members of the OLIN team. The project was framed by the University, which recognized that the planned construction "created an opportunity to re-imagine landscape which has changed significantly over time."[90] Laurie Olin noted during the same meeting that he understood "from prior conversations that UVA desires that courtyards are to be more usable. North terrace has important, large use role during graduation but, otherwise, is a lonely expanse of brick."[91] The team agreed to hold a work session on December 4, 2013, at the University to visit the site and discuss initial approaches.

At the December site visit and work session, Laurie Olin sketched up proposals for the courtyards that maintained a strong bilateral symmetry comprising a central water feature in each courtyard framed by planting within a "carpet" of paving that sensitively responded to the overall shape of the courtyard. Within this strong symmetry, the design also responded to and celebrated the contrasting environmental conditions that derive from their differing orientation to sun and wind and capitalizes on the potential for a variety of diurnal and seasonal uses.[92]

Following the work session a number of concepts for the north terrace were sketched; they retained Moses Ezekiel's life-size, standing figure of Jefferson and the two flagpoles to its east and west .[93] Each approach respected important criteria laid down during the work session for maintaining sightlines to the Rotunda while forming spaces that would be attractive for everyday activities while allowing occasional larger-scale events to take place, including options for tenting.

More detailed proposals were ready for initial presentation to the Arboretum and Landscape and Historic Preservation Advisory Committees on January 28, 2014. Based on the comments from that meeting, revised proposals were presented again to an online meeting of the Historic Preservation Advisory Committee on April 8, 2014.[94]

The 100 percent preliminary design drawings for the Rotunda landscape rehabilitation (dated September 8, 2014) were submitted to the Department of Historic Resources for the Commonwealth of Virginia on September 29, 2014. The department responded on October 30, 2014; "Based upon a review of the information provided, DHR recommends that landscape plan of the larger rehabilitation project will have *no adverse impact* on the Rotunda or the University of Virginia Historic District, provided that UVA continue to consult with DHR on the archaeological investigations associated with this project, which are being coordinated separately."[95]

Archaeological investigations in the west courtyard took place in the early winter of 2015 in anticipation of the proposed work. It was determined that the uncovered historic cistern under the courtyard would be below any proposed work and would not be impacted.[96]

Courtyards

The design of the courtyards, as built, complements and reinforces the Rotunda and its symmetry. Each courtyard has a similar parti and geometry (inspired by Jefferson's sketch section showing the circular form of the Rotunda dome within the rectilinear form of the building plan) and comprise a central fountain framed with planting that is separated from the facade of the Rotunda by paving. Each courtyard, however, has a special character that responds to their differing orientation and provides inviting spaces for a variety of uses, including for occasional functions.[97]

The paving for each courtyard comprises Old Carolina Brick Company "Tryon" handmade bricks with sandstone banding that matched that used in the Rotunda rehabilitation, all in a sand-set bed on a poured-in-place concrete slab. The plant beds are edged with Pleasant Hill Buff Ohio sandstone with "smooth sawn finish" bands and contain 18" high pair planter lights to enhance views of the planting in the evenings.

The east courtyard consists of a square fountain within a circular form of planting and paving. It was envisioned as a more intimate space that would be particularly attractive given its orientation to the rising morning sun. Four generous high-backed and curved custom-made wood benches of teak were designed to provide comfortable seating. The square central fountain, with a flat water surface to reflect the Rotunda facade and surrounding planting, is of Georgia marble from Policor quarried at Marble Hill, Georgia. The fountain has a low, generously sized, molded perimeter to invite sitting.

Planting design and particular species choices for the project as a whole was a collaboration between the designers the University landscape architect, and the Landscape Services of the University Facilities Department. For the east courtyard, the planting was carefully designed to provide both privacy and intimacy of scale to the persons occupying the benches while maintaining views of the facades.[98] Such planting requires thoughtful stewardship and pruning to retain the design intent and the carefully considered scalar relationship of planting between use and its surrounding architecture. Species comprise two flowering multi-stem Autumn Brilliance (*Amelanchier x.*) trees in each bed framing the curved benches and a variety of seasonally interesting shrubs, such as Chinese Paper Bush (*Edgeworthia chrysantha*), "PeeWee" Oakleaf Hydrangea (*Hydrangea quercifolia "PeeWee"*), "Red Sprite" and "Jim Dandy" Winterberry Hollies *(Ilex verticillata "Red Sprite" and "Jim Dandy")* with Lenten Rose *(Helleborus x hybridus "Mrs. Betty Ranicar")* as ground cover. Virginia bluebell bulbs were also planted within the ground cover.

The layout of the west courtyard deliberately includes more paving and less planting in order to provide space for events and gatherings that might spill outdoors from the adjacent multipurpose room. Its brick paving is framed with sandstone banding with a small tree at each corner with sufficient space between it and the adjacent facade to retain its form. Thoughtful pruning will allow an attractive form to be maintained as the tree reaches maturity. The courtyard was conceived with a 20-foot-diameter circular marble fountain complementing that in the east courtyard. The courtyard with its western setting sun orientation was seen as providing an attractive opportunity for small evening events. The courtyard was designed to have moveable bistro-style chairs and tables in a pale light green color, similar to those seen in the parks in Paris, so that, in the shadow of the Rotunda, students individually or in small groups can study and relax. The water feature was omitted for budgetary reasons and is still envisioned as a potential later phase, should it be desired.

The four trees of the west courtyard are Thornless Cockspur Hawthorn (*Crataegus crus-galli var. inermis)* in square beds of Dwarf Periwinkle *(Vinca minor)* ground cover, edged with "Compacta" Boxwood (*Buxus microphylla "Compacta" "Kingsville Dwarf"*) hedges.

North Terrace

The design of the north terrace was intended, as with the rehabilitation of the Rotunda itself and the two courtyards, to open the space up to greater everyday and event use by the University community. The design can be seen as a cruciform with the flags along the east-west axis and the Rotunda and Jefferson statue defining the north-south axis, with four of the McKim, Mead and White column capitals located centrally in the four planted quadrants around the Jefferson statue.[99] The resulting overall form shapes a family of spaces of different sizes, from smaller-scale niches with benches, the large east-west space with flagpoles and the Jefferson statue that will lend itself to tenting for major events, to the ceremonial north-south axis that culminates to the south in the Rotunda and its portico. The benches use the template of the University's standard bench but are more generous in width as befits the overall scale of the north terrace and allows two people to comfortably and independently share a bench.

The paved surface comprises a University standard machine-made permeable brick ("Pathway" Full Range from the Pine Hall Brick Company) set on a permeable base that allows stormwater to permeate down into large detention chambers below to manage stormwater in accordance with city guidelines. Sandstone bands, as in the courtyards, frame the brick panels.

Planting for the north terrace maintains and extends the existing boxwood hedging; however, the original "Suffruticosa" Boxwood (*Buxus sempervirens "Suffruticosa"*) were in decline and were replaced soon after the project was completed with the "Green Beauty" cultivar. [100]

The form, scale, and species of planting on the terrace resulted from much discussion and careful consideration. The planting is designed to mediate between the scale of the Rotunda and the Stanford White wings and the shaping of human scale and comfortable spaces within the terrace itself. The resulting design proposed species that would retain visibility of the wings and stay below the level of White's balustrades. Eight groups of four fringetrees (*Chionanthus* *virginicus*) frame the space of the north terrace (with the four reclaimed capitals located between the central groups) and provide a low, finely textured base to views of the Rotunda and the Stanford White additions. The fringetree produces masses of fragrant creamy white fringe-like flowers in late spring, which, it is anticipated, will often add drama to the terrace at graduation. At the ends of the east and west axis behind the benches, low masses of Winterberry *(Ilex verticillata "Red Sprite" and "Jim Dandy")* are planted and behind the benches to the north "Mt. Airy" Large Fothergilla are planted to provide seasonal contrast and color to the box hedges. Within the beds, a simple carpet of "Monroe White" Monkey Grass (*Liriope muscari "Monroe White"*) is planted with areas of bulbs, "Fireworks" Naked Ladies (*Lycoris radiata "Fireworks"*) and "Pipit" daffodils (*Narcissus "Pipit"*).

Notes

Abbreviations used in notes are listed at the end of the "History" section.

1. TJ to BHL, 12 June 1817, TJP. Edwin M. Betts and Sylvester H. O'Grince, "Historical Sketch of the Trees and Grounds of the University of Virginia," unpublished manuscript, ca. 1961, 24, UVSC. According to Betts and O'Grince, Jefferson purchased 100 locust trees in 1823, and there were, reportedly in 1830, "double rows of young locust trees, which had been planted on each side of the lawn." Most views of the University made in the 1830s, 1840s, and 1850s do not show trees on the Lawn, with the exception of one steel engraving showing a view looking north dating from 1856, known as the "double row of trees" print. Another steel engraving from the same year, made of the grounds from the east, also shows the Lawn full of trees, though it is not known if this was just a romanticized view. For a collection of views of the University, see William B. O'Neal, ed., *The American Association of Architectural Bibliographers*, Papers, vol. 6 (Charlottesville: Univ. of Virginia Press, 1969).
2. Betts and O'Grince, 15.
3. Betts and O'Grince, 28.
4. TJ to ASB, 1 Nov. 1825, TJP. Jennifer Steen, "The North Rotunda Grove," (1997), 4, copy at Office of the Architect, Univ. of Virginia.
5. Edmund Bacon to Hamilton W. Pierson, cited in *Jefferson at Monticello* (New York: Scribner's, 1862), 20. Kitty Jones, "an old negro woman" who lived behind the Barringer home, quoted by Dr. Paul Barringer and cited in Betts and O'Grince, 13, 15. Both of these sources are cited in Steen, 5. Catherine Zipf, "1895 –1904: Stanford White Rebuilds the University," University of Virginia Cultural Landscape Study (Office of the Architect, University of Virginia, 1997), n.p.
6. BV, Minutes, 5 Oct. 1825, cited in Betts and O'Grince, 25.
7. Steen, 5.
8. BV, Minutes, 18 July 1827.
9. Email, Mary Hughes to Mount Ida Press, 19 Feb. 2007. It is worth noting the discrepancy between the documents indicating the presence of trees and the early views of the Lawn, which do not show trees.
10. Betts and O'Grince, 28.
11. Ibid.
12. BV, Minutes, 15 July 1831.
13. TJ to ASB, 1 Nov. 1825. K. Edward Lay, "Charlottesville's Architectural Legacy," *Magazine of Albemarle County History,* 46 (May 1988): 29-95. "Dinsmore's corner" is a reference to master carpenter James Dinsmore, who had lived and worked at Monticello, James Madison's Montpelier, and the Upper Bremo plantation until ca. 1818, when he moved to Charlottesville and became the principal master carpenter for Pavilions III, V, and VIII; 14 dormitories; and, together with John Neilson, the Rotunda and anatomical theatre.
14. Email, Margaret M. O'Bryant, librarian, Albemarle Charlottesville Historical Society, to Mount Ida Press, 26 Jan. 2007.
15. Steen, 5. In this report Steen includes the following information about the history of the Long Walk: "The first reference to the walk in student publications appears to come in 1858, when it is called the 'plank sidewalk'; in 1858, however, it was already in disrepair, suggesting the walk was planked by 1850. An 1860 source calls it 'the side-walk from Charlottesville to the university,' and rejoices in its recent repairs. The name 'Long Walk' was in use by 1906, and was probably coined much earlier."
16. University of Virginia from the east, [1851?], unsigned lithograph, University of Virginia Collection, in William B. O'Neal, 104.
17. University of Virginia from the east, 1853–1856, wood engraving by Porte Crayon, Edwin M. Betts Collection; University of Virginia from the east, 1856, steel engraving printed by H. Weber, Edwin M. Betts Collection; in O'Neal, 110, 112.
18. *Report of the Rector and Visitors of the University of Virginia* (n.p., n. pub., 1845), 12.
19. *Report of the Rector and Visitors of the University of Virginia,* (n.p., n. pub., 1858), 11.
20. Betts and O'Grince, 33.
21. Philip Alexander Bruce, History of the University of Virginia 1819-1919, vol. 4 (New York: MacMillan Co., 1920-1922), 23.
22. BV, Minutes, 29 June 1854.
23. *Report of the Rector and Visitors of the University of Virginia,* (n.p., n. pub., 1855), 53.
24. Betts and O'Grince, 35.
25. Ibid., 30, 33. According to Betts and O'Grince, "between 1840 and 1847 there was no record of the condition of the grounds."
26. *Report of the Rector and Visitors of the University of Virginia* (Richmond: R.F. Walker, 1882), 6. In this annual report, then-proctor and superintendent of buildings and grounds Green Peyton described Ellet's water-supply system, which had been completed 24 years earlier. Peyton noted that Ellet's system was in use from 1858 until 1869, when Peyton "obtained a sanction of the Board" and disconnected the tanks because the Rotunda's walls were being "seriously damaged by this system, and the annual expense was very great." In spite of the threat to the Rotunda but because of the ever-increasing need for more water, Peyton recommended in his 1881–1882 report that "new connections" be made with the "disused rotunda tanks, and in refitting the steam-pump, thus keeping the old system as a supplement to the new." The new system included a reservoir that was constructed under Peyton's direction sometime after 1869 "in the mountain at an elevation sufficient to distribute water over our buildings by gravity alone, which was connected with the distributing system by a 4-inch pipe." The steam-pump was refit and the tanks back in use sometime during 1881–1882 at a cost of $397.94.
27. Stephen M. Thompson, "A Rain-Fed Cistern in the Poe Alley Courtyard," Rivanna Archaeological Services (2006), 20, 22.
28. Thompson, 16. Thompson cites Frank Edward Grizzard Jr., "Documentary History of the Construction of the Buildings at the University of Virginia, 1817–1825" (PhD diss., Univ. of Virginia, Aug. 1996), ch. 11, note 793. In this note, Grizzard states that "John Smith made a cistern for the chemical laboratory earlier this year [1827], as evidenced by a receipt for $2.50 that Reuben Maury signed for Smith on 27 February 1827, which is in the loose receipts

for 1827 in ViU:PP."

29. University of Virginia from the east, 1853–1856, wood engraving by Porte Crayon; University of Virginia from the east, 1856, steel engraving printed by H. Weber; University of Virginia from the east, 1856, steel engraving by J. Serz, University of Virginia Collection; University of Virginia from the west, 1856, lithograph, E. Sachse and Co., in O'Neal, 110, 112, 114, 116.
30. Betts and O'Grince, 33, 35.
31. Ibid., 36. Email, Mary Hughes to JGWA, 9 April 2007.
32. Betts and O'Grince, 37.
33. George Humphrey Yetter, "Stanford White at the University of Virginia: The New Buildings on the South Lawn and the Reconstruction of the Rotunda in 1896" (master's thesis, Univ. of Virginia, May 1980), 11. Betts and O'Grince, 39–40.
34. Plan of University, Cleared Land, 1858, Mss. 4527, neg. no. 35-7-G, UVSC.
35. Thompson, 3, 25.
36. Betts and O'Grince, 48. "University of Virginia Historic Preservation Framework Plan," 2006, p. 5, accessed 3 Jan. 2007, http://www.virginia.edu/architectoffice/pdf/UVA_HPFP_2006_WEB.pdf.
37. Email, Mary Hughes to JGWA, 9 April 2007.
38. Betts and O'Grince, 30–53.
39. Ibid., 52.
40. Ibid., 53.
41. Plat of the University of Virginia, 1870, UVSC.
42. Charlottesville Land Company, map, 29 Nov. 1890, Mss. 5660, UVSC.
43. Betts and O'Grince, 58.
44. I(Richmond: R.E. Frayser, 1879), 23-24.
45. Sanborn Map Co., *Insurance Maps of Charlottesville, Va.*, July 1891 and Dec. 1896.
46. "The Work of the Restoration," *Alumni Bulletin* (Feb. 1896): 135–136.
47. Skinner to SW, 17 Oct. 1896, Box 172, File 2, MMW, N-YHS. Stanford White, "The Buildings of the University of Virginia," *Corks and Curls* 11 (1898): 128. BV, Minutes, 15 June 1897. Significant grading was done in order to carry out SW's plans for the new buildings at the southern end of the Lawn: "The green drops down to its present finish, and to the eye the new line of buildings is of but slightly more importance in height and character than the old buildings surrounding the old Lawn. This has been accomplished by grading and by a tremendous fill of earth — nearly thirty feet in height — at the end of the Lawn." By June 15, 1897, $6,883.74 had been spent on grading the "New Lawn."
48. MMW, Plan of the Rotunda and Garden, University of Virginia, 7 April 1896, UVSC.
49. MMW, Revised Drawing of the Garden Rear of the Rotunda, 1898, Univ. of Virginia, Office of the Landscape Architect, Binder 3, Rotunda and Lawn. Timeline History of Rotunda Courtyards, from Mary Hughes, Office of the Architect, Univ. of Virginia.
50. Yetter, 82.
51. From University of Virginia, *Manual of Information* (Roanoke: 1899), quoted in Paul B. Barringer, *University of Virginia: Its History, Influence, Equipment and Characteristics* (New York: Lewis Publishing Co., 1904), 112. In early February 1897, Theodore Skinner, who was McKim, Mead and White's on-site project manager, requested that the New York office send prints of the "new north garden steps and fountains" to contractor Ross F. Tucker of the Manhattan Concrete Company so that he could give an estimate for the work. By July 1897 the new specifications had been drawn up, and the "garden steps" at the Rotunda were removed from the plan, allowing a reduction of $526. By October 1, 1897, $475.15 had been spent on the "Rotunda Garden." Skinner to Haase, 8 Feb. 1897, Box 172, File 2, MMW, N-YHS. Ross F. Tucker to MMW, 8 July 1897, Box 171, File 2, MMW, N-YHS. A Classified Statement of the Expenditures of the Building Committee from the 16th Day of November, 1895 to 1st October 1897, RG 5/5, Box 1, Folder 1897–A-H, UVSC.
52. Yetter, 82.
53. Betts and O'Grince, 58. Email, Mary Hughes to Mount Ida Press, 19 Feb. 2007.
54. Timeline History of Rotunda Courtyards.
55. BV, Minutes, 1905, quoted in Catherine Zipf, n.p.
56. Betts and O'Grince, 58.
57. Ibid., 62-63. Though William Lambeth's hand could be seen throughout the grounds, he focused his efforts in particular on the landscape in and around the East and West Ranges and on the grounds around Madison Hall.
58. Bruce, vol. 5, 320.
59. Mary C. Myers, "Ezekiel's Statue of Jefferson," *Alumni Bulletin* 3 (Aug. 1910), 361-362. Ellen Kathleen Daugherty, unpublished study of history statuary at the University of Virginia commissioned by the Public Art Committee, 2001, entry for Moses Jacob Ezekiel; copy provided by Mary Hughes.
60. *Alumni Bulletin* (July 1913): 384.
61. Henry Bacon to Edwin A. Alderman, 17 April 1915, Univ. of Virginia, Office of the Landscape Architect, Binder 3, Rotunda and Lawn. Thompson, 29.
62. *College Topics*, 14 Sept. 1977, p. 7 and Alumni News, Sept. 1922, p. 34, cited in Thompson, 30. Email, Mary Hughes to JGWA, 4 April 2007.
63. Steen, 14. BV, Minutes, 12 Nov. 1948. "Restored West Pavilion Gardens Turn 50," Inside UVa Online, Aug. 19–25, 2002, accessed 31 October 2006, http://www.virginia.edu/insideuva/2002/14/gardens.html. In November 1948, the Garden Club of Virginia pledged to donate the funds collected from its Garden Club Week to the University for the "restoration of the walls and gardens set forth in the plan shown on the engraving done for Mr. Jefferson by Mr. Maverick in 1822 and 1825." Landscape architect Alden Hopkins, of Historic Williamsburg, was selected in 1948 by the club to restore the University's gardens. He oversaw the work until his death in 1960, and the work was completed by his assistant, Donald Parker. It does not appear that any of this work was related to the Rotunda, but rather focused on the Range gardens and repair to the serpentine walls.
64. Betts and O'Grince, 12.
65. Email, Mary Hughes to Mount Ida Press, 19 Feb. 2007.
66. BV, Minutes, 14 Dec. 1957. "Changes in Landscaping Are Started at University," *Richmond Times-Dispatch*, 5 Dec. 1957.
67. "Changes in Landscaping Are Started at University."
68. Proposed Changes, North Approach Rotunda, Dec. 30, 1957, and

Jan. 20, 1958, Univ. of Virginia, Office of the Landscape Architect, Binder 3, Rotunda and Lawn. Brick Terrace, North Approach Rotunda, Sept. 2, 1958, no. 21992, UVSC.

69. BV, Minutes, 11 April 1959; 13 June 1959; 7 Oct. 1959.
70. "Rotunda Terrace to Be Extended," *Charlottesville Daily Progress,* 11 July 1959.
71. Benjamin P. Ford, "Archaeological Mitigation Adjacent to the Cryptoporticus, University of Virginia, Rotunda Access Project," Rivanna Archaeological Consulting (2001), 10. "Foundation Construction Begins," *Charlottesville Daily Progress,* 4 Oct. 1960.
72. BV, Minutes, 30 May 1975. The committee was composed of Visitors Lawrence Lewis Jr., C. Waller Barrett, and George C. Palmer II. Ford, p. 10.
73. Office of University Planning for Garden Club of Virginia, Plans of Rotunda Forecourt, July-Oct. 1976, Univ. of Virginia, Facilities Management Resource Center.
74. Email, Mary Hughes to Mount Ida Press, 19 Feb. 2007. Conversation with Mary Hughes, 11 July 2007.
75. Report of the BGC, 8 Oct. 1981, p. 3, RG-1/1/3, Box 12, Folder Oct. 1981–June 1982, BGC Minutes, UVSC.
76. Report of the BGC, 31 May 1985, p. 3, RG-1/1/3, Box 12, Folder 1984–1985, BGC Minutes.
77. Ibid.
78. EDAW, Inc., University of Virginia Historic Central Grounds Landscape Study, c. 1986, i.
79. JRAB to the BV, 9 Dec. 1986, RG1/1/3, Box 13, Folder 1988-1989, BGC Correspondence, UVSC.
80. Ibid.
81. Email, Mary Hughes to JGWA, 4 April 2007. Report of the BGC 15 June 1999, RG-1/1/3, Box 16, Folder 1997-2000, BGC Minutes, UVSC.
82. *University of Virginia Academical Village Cultural Landscape Report Part 1, Volume I: Cultural Landscape Report*, 380. The CLR noted that "Similarly, the commissioning of this CLR Part I project in 2012 made explicit the growing importance of the cultural landscape of the Academical Village." The introduction to the CLR (page ix), notes that "This research and analysis document describes Academical Village landscape evolution resulting in a highly significant cultural resource that contributes to the outstanding universal value of this National Historic Landmark (1971) and World Heritage Site (1987)."
83. Ibid., Executive Summary, xi. The landscape associated with the Rotunda and the subject of this Historic Structure Report falls into LCA 2 "North Rotunda Lawn" and is described as "The landscape area centered on the Rotunda Terrace and courtyards and characterized by sloping lawns, framed to the north by the historic stone wall, the Long Walk extending to the Senff Gates, and McCormick Road on the west." Additionally, it notes that this area's "Historic Period" is from 1915 to 1947 and that its "Current Integrity to Period" is "High to Moderate."
84. These include LCA 2's "Land Uses," "Spatial Organization, Land Patterns, Visual Relationships," "Topography," "Vegetation," "Circulation," "Water Features & Drainage," "Non-Habitable Structures," and "Small Scale Features & Site Furnishings & Objects" on pp. 334-335.
85. Ibid., 364, figures 8.30 and 31; 365, figure 8.32.
86. The work to the Rotunda and its landscape were determined to be a "Rehabilitation" using the *Secretary of the Interior's Standards*. Email from Mary Hughes to Richard Newton, 28 Nov. 2021.
87. In 2013, Laurie Olin was awarded the Thomas Jefferson Foundation Architecture Medal, an award given by the University and by the Thomas Jefferson Foundation at Monticello. https://www.monticello.org/thomas-jefferson-foundation/thomas-jefferson-foundation-medals/architecture-medal-recipients/laurie-olin-2013/.
88. *Cultural Landscape Report,* 399.
89. Email, Richard Hopkins to Mary Hughes, 21 Jan. 2022.
90. Olin Meeting Minutes, Rotunda Landscape Refurbishment, 12 Nov. 2013, issued 21 Nov. 2013. Mary Hughes further noted that "As landscape design is considered, important to remember that major program objective for project is to make building more accessible to students. Want to open up Rotunda and remove current museum-like atmosphere. The new design should have similar aspirations for courtyards and north terrace."
91. Ibid., Item 2.
92. Sketches formed part of the initial presentations to the Arboretum and Landscape and the Historic Preservation Advisory Committees on 28 Jan. 2014.
93. An option for relocating the Jefferson Statue to the lower terrace to the north giving it more prominence in views from University Avenue and opening up the north terrace was shown at the 28 Jan. 2014 committee presentations and again at the 8 April 2014 virtual committee presentation and ultimately decided against.
94. The proposals were similar to those presented to the two committees in January with the following primary revisions: the fountains in each courtyards were reduced in size by some 10 percent; the planter shapes in each courtyard were simplified to four squares in the west courtyard and a more orthogonal, rather than curved, perimeter facing the Rotunda in the east courtyard; the trees in the North Terrace were revised to multi-stem fringetrees (*Chionanthus virginicus*); and four of the column capitals reclaimed from the Rotunda portico were located within, rather than at the perimeter, of the planting beds framing the Jefferson statue. Material options were also shown for the banding within the north terrace paving.
95. Andrea Kampinen, architectural historian, Review and Compliance Division, to Mary Hughes, 30 Oct. 2014. Italics were included in the letter.
96. Email, Steve Thompson of Rivanna Archaeological Services to Jody Lahendro of the University, 3 Dec. 2015.
97. The pavilion gardens also provided additional references for the designs. An image of Jefferson's drawing and photographs of the gardens were included in the presentations given to the various committees.
98. One comment from the presentations was "Planting should be relatively low so it does not obscure the dominant masonry of the Rotunda."
99. The original McKim, Mead and White column capitals were in poor condition, and new carved capitals were installed as part of the rehabilitation. The remaining capitals were located in other areas of the grounds.
100. Email, Mary Hughes to Richard Newton, 24 Jan. 2022.

FIGURE 137. *The Rotunda during the fire, October 27, 1895, photograph by Wampler.*

THE ROTUNDA
ROTUNDA AND LANDSCAPE
CHRONOLOGY

THE FOLLOWING CHRONOLOGY IS A SUMMARY OF THE ROTUNDA AND LANDSCAPE HISTORIES. In comparing the two narratives, it appears that work on the landscape around the Rotunda has only correlated with work on the Rotunda during major building campaigns: the stone rampart was constructed with the Annex; the Annex was torn down and the north portico and terraces constructed after the 1895 fire; the Garden Club of Virginia extended the north terraces to University Avenue in 1976, at the same time as the reconstruction of the Rotunda interior; and the north terrace and east and west courtyards redesigned during the 2012-2016 restoration of the Rotunda.

	ROTUNDA	*LANDSCAPE*
May 1817	Board of Visitors approves purchase of land for the college and adopts Thomas Jefferson's layout.	
July 1817	Benjamin Henry Latrobe sends Jefferson a sketch for the Rotunda and Lawn.	
January 1819	The Virginia House of Delegates and then the Senate pass legislation stipulating that Central College be the site of the new university.	
1818-1821	Jefferson prepares floor plans, elevations, and other drawings for the Rotunda.	
1823	Shell of the Rotunda completed; walls to settle in preparation for the dome.	
March 1824	Arthur S. Brockenbrough writes Jefferson that Dinsmore and Neilson had "proceeded to purchase scantling and have framed the upper gallery floor of the library."	
March 7, 1825	University opens.	
October 1825		Board of Visitors agree to a faculty vegetable garden laid out in the area extending from north side of the Rotunda to the Corner.

	ROTUNDA	*LANDSCAPE*
November 1, 1825		Jefferson tells Brockenbrough that he plans to erect a fence in the open field north of the Rotunda, directing all traffic through the south end of the grounds; Jefferson prefers planting grass to the north of the Rotunda, as trees would obscure the buildings.
July 4, 1826	Jefferson dies.	
1826-1827	The Rotunda opens as a library; the interior is completed.	
1827	Iron railings are installed at east and west ends of south portico to prevent access to the south wing roofs.	Board of Visitors requests planting of ornamental trees "to the north of the buildings and the public road."
1827-1828	Clock and bell arrive and are installed.	
1828	Faculty recommends that heating stoves be installed in lecture rooms.	A section of grounds north of the Rotunda is enclosed by a post-and-rail fence.
1829	Fireplace in chemical laboratory is to be modified to improve the draught.	
1832	South portico steps are constructed.	
1837	Board of Visitors direct that marble pavement be laid in south portico.	
1838	New bookcases are installed in the library.	
1840	Glass-and-tin lantern is installed over the skylight.	
1841-42	South wings are enclosed, and new lecture rooms created. New hipped roofs are installed over wings.	
1851-1854	The Annex, designed by Robert Mills, is constructed.	Stone rampart is constructed to the north of the Rotunda.
1853-1854	The Rotunda steps are repaired and reset.	
1854	Water tanks installed in the northwest and northeast corners of the Rotunda.	
1855		Artificial pond northwest of the Rotunda may have been created at this time to act as a reservoir for a new water system.

	ROTUNDA	*LANDSCAPE*
1857	William Pratt suggests that two wings be added to the Annex.	
1858	Cisterns are constructed "on either side of the Rotunda."	William A. Pratt becomes the University's first superintendent of buildings and grounds. Plans are made for two large parks east and west of the Ranges. Stables and professors' gardens between the Rotunda and the Corner are to be removed. Pratt prepares map showing a semicircular walkway extending from Staunton Pike (University Avenue) up to the arcade between the Rotunda and the Annex and then back down to the pike. Two cisterns behind the east and west terrace wings of the Rotunda and a third cistern in the field northwest of the Rotunda are also shown.
1858-1860		Norway spruce and European beech trees are planted north of the Rotunda, and trees are planted in east and southwest areas of grounds.
1860	Lantern is removed from the oculus of the dome.	
April 1861	Confederate flag is raised over the Rotunda.	
1861-1865	The Rotunda and other University buildings are conscripted for use as hospital space.	
1870	Sections of decayed cornice are replaced.	1870 map shows areas east, west, and north of the Rotunda planted with many trees and crisscrossed with walks.
1873	Pipes are installed on the roof of the Rotunda to prevent overflow of water tanks.	
1874	Gas pipes are installed in the Dome Room.	
1880		Photograph shows two gas lantern fixtures on posts at the foot of the south steps.
1882	Water tanks above the Rotunda are refilled, and new connections made; affiliated steam-pump is refitted.	

	ROTUNDA	*LANDSCAPE*
1884-1885	Sewers and new water-supply system are constructed, including a reservoir.	
1888	Electric lights are installed on the University grounds and in its public buildings and dormitories.	
1891		Sanborn map shows a well northwest of the Rotunda. The well does not appear on the December 1896 Sanborn map.
October 27, 1895	The Rotunda and Annex are destroyed by fire.	With the Annex demolished, the area north of the Rotunda is again an open space.
1896	McDonald Brothers prepare documents for rebuilding of the Rotunda; reconstruction of the southeast and southwest wings begins.	
	McKim, Mead and White are hired to reconstruct the Rotunda and to design buildings at the south end of the Lawn.	McKim, Mead and White propose a series of terraces, a parterre, and octagonal paths for the area north of the Rotunda. Symmetrical formal paths are proposed for the east and west courtyards.
May 1896-June 1898	The Rotunda is reconstructed.	Construction of the new north terrace wings and the colonnades creates garden courts on the east and west sides of the Rotunda; no formal landscaping is completed in the courtyards. The Rampart wall is retained and filled in. A simplified plan for the area north of the Lawn results in steps leading from north portico to a north terrace.
October 1896	Section of northeast terrace wing collapses.	
1902		Photograph of the west courtyard shows only a grassy area and no plantings.
1905		Granolithic walk had been laid from the Rotunda to the post office.
ca. 1906		Two flagpoles, one for the U.S. flag and one for the Virginia flag, are donated and erected on the north terrace.
1910		Moses Ezekiel's statue of Jefferson is placed on the north terrace.

	ROTUNDA	*LANDSCAPE*
1913		A sundial and two stone benches are donated by the class of 1910 and placed on the north terrace.
1916-1922		Alleys and drives between the West Lawn and West Range are paved with concrete and brick.
1918		Photograph of the west courtyard shows a gravel path surrounding a privet hedge defining a grass center. Three magnolia trees are shown, as well as what appears to be a locust tree.
1921-1922	A heating system is installed in the Rotunda.	
1930s		First boxwoods are planted in the terrace to the north of the Rotunda.
1938	The library collection is moved from the Rotunda to the Alderman Library University applies for federal Public Works Administration grant for improvements to the Rotunda; architect Stanislaw Makielski prepares plans of the wings.	
1938-1939	The marble steps and paving at the north and south porticos are replaced; cast-concrete balustrades are replaced with marble balustrades above the terrace wings.	
January 13, 1955	Professor Frederick D. Nichols meets with Buildings and Grounds Committee of the Board of Visitors, proposing the restoration of the Rotunda to Jefferson's design.	
1957		The stone Rampart wall to the north of the Rotunda is dismantled.
1959		The brick terrace to the north of the Rotunda is extended to the sidewalk near Main Street.
1960		A fountain is installed in the east courtyard to honor Colgate W. Darden.
September 1965	Rotunda Restoration Committee is appointed.	
December 1965	The Rotunda is designated a National Historic Landmark.	

	ROTUNDA	*LANDSCAPE*
December 1970	The University enters into a contract with architects Ballou and Justice.	
1971	Ballou and Justice prepare a full set of drawings for the renovation of the Rotunda.	
1973	The McKim, Mead and White interior is demolished.	
1976	Renovation of the Rotunda is completed and dedicated on April 13, 1976, Thomas Jefferson's 233rd birthday.	The Garden Club of Virginia donates the Rotunda forecourt, extending the north terraces to University Avenue. Work includes demolishing four rectangular beds with hedges and groundcover, laying new brick paving, installing concrete benches, and planting Japanese holly, Delaware Valley white azaleas, and English ivy in curvilinear beds around the paving.
1977	Glass doors are installed in the ground-floor and main-floor south entrances.	
1978		West courtyard is paved with brick and dedicated to University President Edgar F. Shannon.
1981		Sidewalk east of the Rotunda is widened to accommodate food-service trucks.
1984	The terraces above the wings are rebuilt.	
December 1987	The University of Virginia, together with Monticello, is added to the World Heritage List.	
1990s		Grass on the embankment north of the Rotunda is replaced with mondo-grass groundcover; American boxwood is replaced with dwarf English boxwood. Lariape is planted as groundcover in the east and west courtyards. Long Walk widened again to accommodate catering trucks.
1992	Office of the Architect of the University is officially established.	

	ROTUNDA	*LANDSCAPE*
1998	Three access ramps are installed: one at the southwest corner, one on the south side between Pavilion I and the south steps of the Rotunda, and one at the southeast corner. The stone terrace paving above the southwest wing is replaced. Steel-and-brass guardrails are installed at each side of the south portico stair.	
1999		Steps and a ramp were planned to be built in place of a worn earthen path on the hillside northwest of the Rotunda.
2000	The plinth beneath the southwest pilaster in the south portico is replaced. An 1865 two-cent piece and an 1879 one-cent piece are found beneath the plinth.	
2000-2003	Improvements are made to the Rotunda decking.	
2005	Improvements are made to the Rotunda decking.	The only remaining indigenous tree in the area, a large white oak, was destroyed during a storm.
2006-2008	John G. Waite Associates, Architects (JGWA) prepares a historic structure report for the Rotunda.	A landscape history is prepared as part of the historic structure report.
2012-2013	JGWA prepares construction documents for the replacement of the dome roof and restoration of the brick drum.	An Academical Village cultural landscape report is prepared.
2013-2014	JGWA begins design for the full restoration of the Rotunda.	Rehabilitation of the Rotunda landscape is designed by OLIN.
2014	Final construction documents are issued for the restoration of the Rotunda.	Remaining magnolias are removed from the east and west courtyards.
2015	Restoration of the Rotunda continues.	Site construction for the Rotunda landscape rehabilitation begins.
2016	Restoration of the Rotunda is complete.	North terrace and east courtyard plantings are complete.
2017		Replanting of north terrace boxwoods is complete.

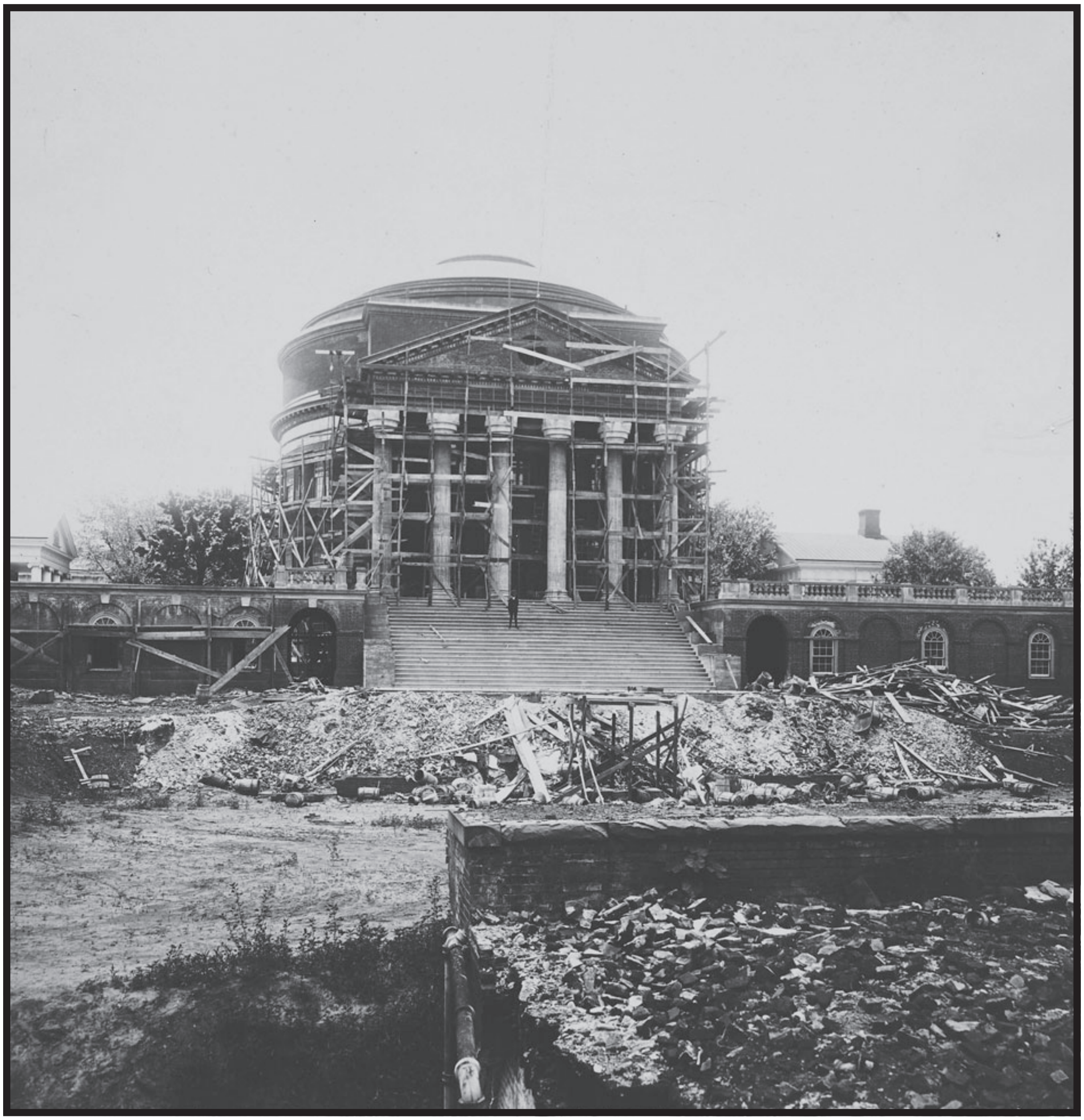


FIGURE 138. *The Rotunda from the north during construction, ca. 1896.*

THE ROTUNDA
ARCHAEOLOGICAL FINDINGS

THIS SECTION OF THE HISTORIC STRUCTURE REPORT presents a summary of the significant findings of archaeological investigations associated with the University of Virginia's Rotunda renovation project. Archaeological excavation, construction monitoring, and documentation work were undertaken both within the basement level of the Rotunda and its wings and in the adjacent landscape between October 2013 and June 2016. The purpose of the archaeological investigations was to mitigate the potential impact of the proposed architectural renovation work and the associated utility work to buried cultural resources.

A research design for the archaeological investigations was developed; its primary goal was to conduct detailed data recovery and recordation in areas that would be adversely impacted by proposed construction activities. The research design was informed by previous archaeological work, historical maps and images, and archival research. The archaeological work was conducted in two phases over the course of nearly three years. Phase one entailed preconstruction excavation of large units and monitoring of construction activities in the east courtyard of the Rotunda between October 2013 and August 2014. Phase two entailed archaeological monitoring of construction activities associated with the restoration and rehabilitation work and the utility work occurring both within and adjacent to the Rotunda between May 2014 and June 2016. A detailed technical report of findings was published for each phase of archaeological work.[1]

Over the last 125 years, new construction, significant upgrades, renovations and restorations of the Rotunda have had a significant impact on the archaeological resources documenting the physical development of Thomas Jefferson's architectural centerpiece. With each of these significant renovation and restoration efforts, utility systems within and adjacent to the Rotunda were also updated and improved. Despite the significant scale of previous renovations and restorations, these archaeological investigations have identified the presence of fragmentary but important material evidence documenting the construction and physical evolution of the Rotunda and its adjacent landscape. This material evidence, combined with new historical research, has broadened our understanding of the original construction and subsequent additions, alterations, and improvements and provided significant new information documenting the changing operation and use of the Rotunda and its adjacent landscape.

The archaeological features documented during these investigations can be broadly grouped into four categories based on their original function: 1. architectural features and construction episodes associated with the Rotunda, its wings, or the Annex, including exterior foundations, interior dividing walls, structural piers, etc.; 2. building-systems features within the Rotunda and its additions that are related to their functioning primarily the heating and ventilation systems but also including mechanical pads, subgrade utility chases, and conduits; 3. pedestrian circulation features including pavements and paths that facilitate circulation within and adjacent to the Rotunda, Annex, and Ramparts; and 4. features associated with infrastructural systems developed for the Rotunda and its additions but that also served the wider Academical Village, including such features as gas-supply lines; water collection, supply, and distribution facilities; and stormwater-drain lines.

This summary of the archaeological findings is organized chronologically. The physical history of the Rotunda can readily be divided into three discrete periods that are based on significant events in the history of the University. The first period is centered on the construction of the Academical Village and includes archaeologically documented features that are associated with the original construction of the Rotunda and its southern wings, ca. 1823-1826. The second period is centered on the construction of the Robert Mills-designed Annex, a large four-story addition on the north side of the Rotunda, which was designed to provide additional classrooms and public spaces and constructed between 1851 and 1854. The second period also incorporates archaeologically documented features that date to the decades that both immediately precede and postdate the construction of the Annex. Most of these features occur in the landscape immediately adjacent to the Rotunda and are associated with water, gas, and sanitary service. The third period is centered on the October 27, 1895, fire that destroyed the Rotunda and Annex and the subsequent period (1896-1898) during which the architectural firm of McKim, Mead and White restored and rebuilt the Rotunda, built the northeast and northwest wings, and redesigned the adjacent landscape. Each period is illustrated with a map and table that locate and briefly describe each archaeologically documented feature. Following the table, one significant feature from each period is also summarized and illustrated in greater detail.

Period One: Construction of the Rotunda, 1823–1826

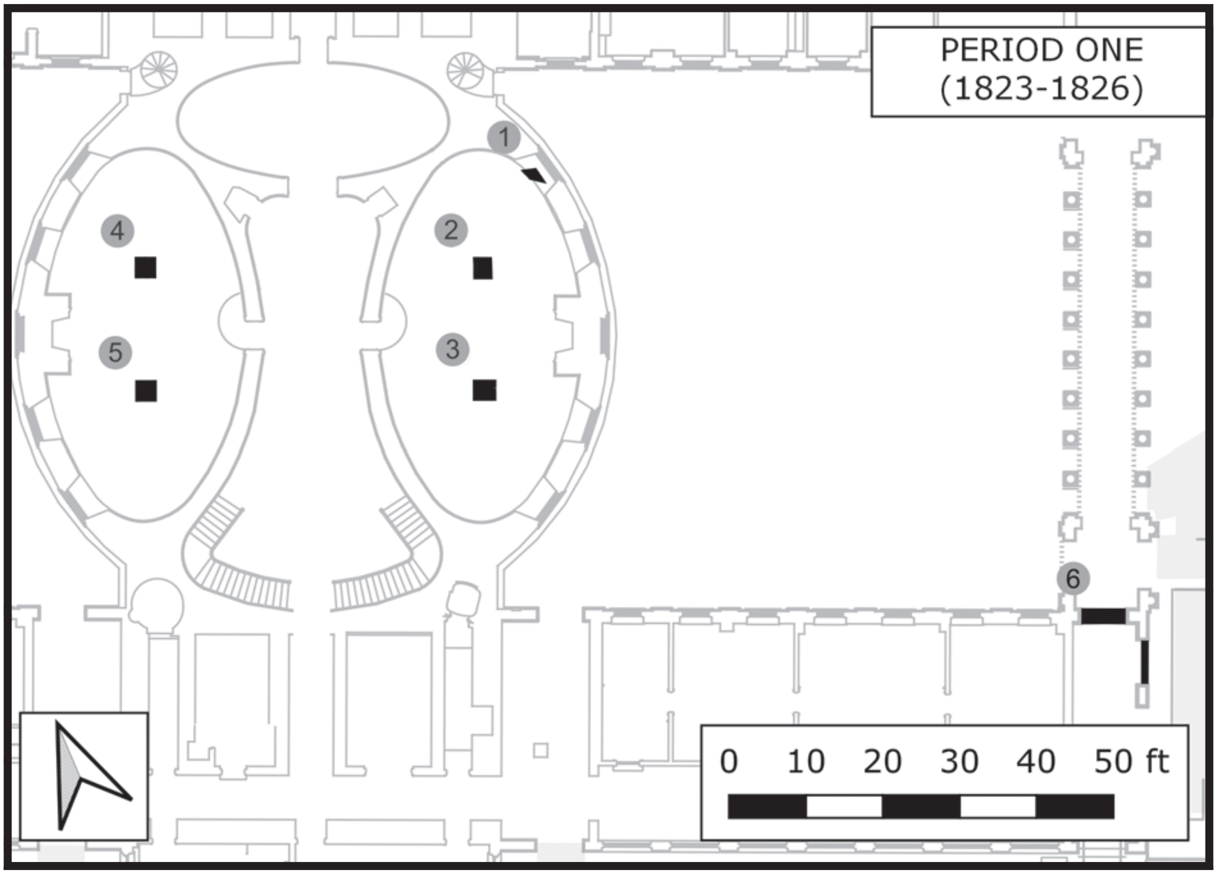
Archaeologically identified architectural features that date to the original construction of the Rotunda were limited in number but nevertheless contribute to the current understanding of the original design and appearance of the Rotunda and its adjacent southern wings.

Brick Piers in the Lower Oval Room

Previously undocumented architectural features were identified in the lower east and west oval rooms. In both rooms, two truncated brick piers set on 16-foot centers, each measuring approximately 2.8 feet square, were identified in line with the central axis of each space. Each of the brick piers possessed remnants of soft lime-based mortar and ghost outlines of at least one additional course of brick above their top surface, suggesting that they once extended to a greater height. Archaeological excavation adjacent to the brick piers identified a narrow builder's trench for each pier. Other than brick and mortar fragments, no diagnostic material culture was recovered from the trench fill. The alignment of the brick piers with the central north-south axis of both oval rooms suggests that they served a structural purpose, most likely as foundations for posts, which, in turn, likely supported a central beam in the ceiling. Their association with a soft lime-based mortar suggests a construction date prior to the 1895 fire.

In June 1825, John P. Emmet, professor of natural history, was assigned the lower oval rooms of the Rotunda using the west room for a lecture room and the east room for a chemistry laboratory. Indeed, archival references document the presence of wooden pillars within both the lower east and west oval rooms shortly after the completion of the Rotunda. In 1843 the Board of Visitors instructed the proctor to determine "the cost of substituting the wood pillars in the Chemical Lecture and Laboratory by hollow pillars of cast iron of

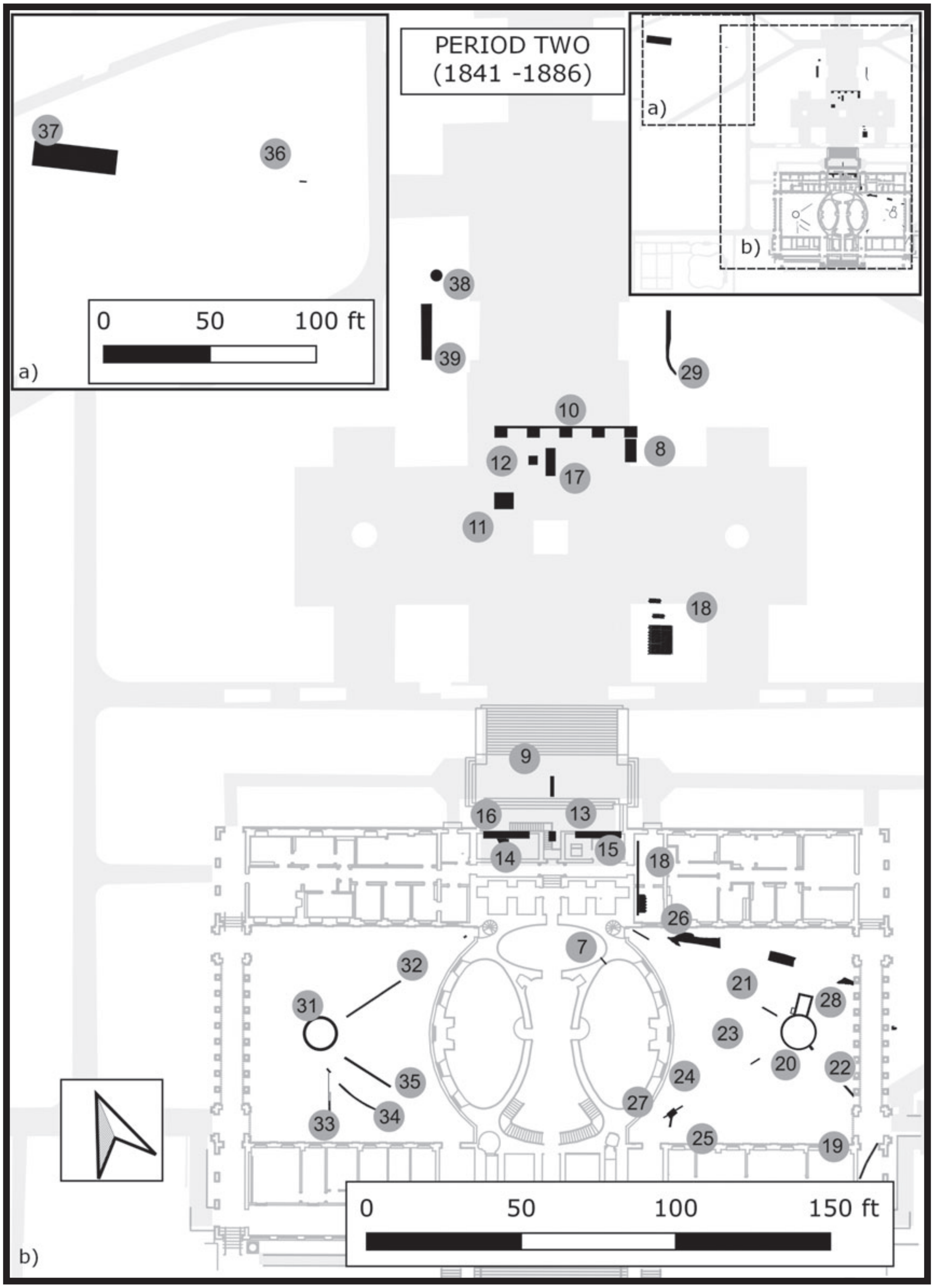
FIGURE 139. *Lower east oval room, looking south, showing centrally located brick piers (top and bottom), adjacent excavation units, and remnant McKim, Mead and White brick conduit (left of piers).*



ARCHAEOLOGICALLY IDENTIFIED FEATURES ASSOCIATED WITH PERIOD ONE (1823-1826)

FEATURE NUMBER	FEATURE NAME AND LOCATION	FEATURE DESCRIPTION
1	Lower east oval room foundation	Mortared-brick foundation adjacent to drum wall. Footer for north elliptical wall of lower east oval room.
2	Lower east oval room north pier	Mortared-brick pier for east oval room column.
3	Lower east oval room south pier	Mortared-brick pier for east oval room column.
4	Lower west oval room north pier	Mortared-brick pier for west oval room column.
5	Lower west oval room south pier	Mortared-brick pier for west oval room column.
6	Southeast wing foundations	Mortared-brick foundations. Original eastern end of the gymnasia's southeastern wing.

FIGURE 140. *Plan and table showing the locations of period one (1823-1826) archaeological features identified and documented during the Rotunda renovation project.*


PERIOD TWO
(1841 -1886)
a)
b)
0 50 100 ft
0 50 100 150 ft
37
36
38
39
29
10
8
12
17
11
18
9
16
13
14
15
18
26
7
32
31
21
28
23
20
22
35
24
34
33
27
25
19

ARCHAEOLOGICALLY IDENTIFIED FEATURES ASSOCIATED WITH PERIOD TWO (1841-1886)

FEATURE NUMBER	FEATURE NAME AND LOCATION	FEATURE DESCRIPTION
7	East oval room void	Below-grade brick channel connecting the east oval room with the north oval room. Possible air duct associated with ca. 1859-1860 Meigs plan for heating the Rotunda and Annex.
8-12, 15-16	Annex walls	Interior and exterior mortared-brick piers and walls associated with the 1851-1854 construction of the Annex.
13	Annex south portico pavement	Brick-paved area between the Annex and Rotunda.
14, 17	Annex south portico and basement chases	Mortared-brick chases in south portico and basement level of the Annex. Possible air duct associated with ca. 1859-1860 Meigs plan for heating the Rotunda and Annex.
18	East Annex walk	Brick-paved walk between the Annex and Ramparts.
19	East colonnade drain	Brick box drain, ca. 1841, draining brick-paved areaway adjacent to south facade of enclosed gymnasia.
20-25, 27-28	East courtyard cistern, tank, settling box, and drains	Cylindrical brick cistern with pargeted interior, 10.5-foot interior diameter, historic inscriptions. Brick, terra-cotta, and iron drain lines in east courtyard.
20	Long Walk illuminating-gas conduit	Square-shaped log with bored center, ca. 1857, serving the Rotunda and Annex.
26	East courtyard pedestrian path	Winding, dry-laid brick herringbone paths, ca. 1859-1860, in east courtyard.
29, 39	East portal east wall	Stone and brick walls associated with the portals at north end of the Ramparts.
31-35	West courtyard cistern and drains	Cylindrical brick cistern with pargeted interior, 9.4-foot interior diameter. Brick, terra-cotta, and iron drain lines in west courtyard.
36-37	West grove brick vault and associated drain	Subterranean brick vault adjacent to former Rotunda pond. Part of ca. 1859 water-supply system designed by Charles Ellet Jr., which supplied water to tanks in the Rotunda dome.
38	West portal manhole	Brick-constructed manhole designed ca. 1885-1886 by Ernest W. Bowditch in association with a new sanitary system for the University of Virginia.

FIGURE 141. *Plan and table showing the period two (1841-1886) archaeological features identified and documented during the Rotunda renovation project.*

such dimensions as the professor of Chemistry may deem most advisable." The wood posts were likely replaced with cast-iron columns by February 1846.[2] The four brick piers located in the lower oval rooms most likely represent the bases for the original wood posts, as well as the iron columns that replaced them.

Period One Summary

Although few in number, the period one archaeological features consisted entirely of brick-constructed architectural foundations. Although they represented the original design and construction of the Rotunda and its south wings, most of these features were ultimately obscured by the 1896-1898 McKim, Mead and White restoration of the Rotunda, the construction of the northwest and northeast wings, and the construction of a colonnade linking the north and south wings. Period one archaeological features elaborate on the original interior and exterior functioning and visual appearance of Jefferson's designs for the library and the gymnasia and further attest to the presence of early remnant architectural features within and adjacent to the Rotunda.

Period Two: The Rotunda Annex (1841–1886)

A significant number of archaeological features associated with the construction of the Robert Mills-designed Annex, as well as building systems and utilities serving the Rotunda and the broader Academical Village, were identified during the investigations. Many of these features were identified in the north Rotunda terrace and adjacent courtyard landscapes.

Cylindrical Brick Cisterns

Throughout the second quarter of the nineteenth century, the University experienced repeated dry spells and shortages of water. Due to a concern about fire in general and to the fact that a large new addition to the Rotunda was being planned, in 1851 the Board of Visitors approved the construction of three additional cisterns within the Academical Village. Two of the cisterns approved for construction during this period are believed to have been placed in the Rotunda's east and west courtyards.[3] Two large cylindrical subterranean brick-constructed cisterns, one in each courtyard, and associated drain lines were identified and documented during the archaeological investigation.

The cistern in the east courtyard was identified below 3.5 feet of fill. It consisted of a two-brick-wythe wall and was held together with a soft, lime-based mortar. The interior of the cistern measured 10.5 feet in diameter and was lined with hydraulic-cement pargeting. A rectangular-shaped brick tank with pargeted interior was found to be appended to the north side of the cistern. At the base of the tank, in its southwest corner, was the end of a crimped and perforated 2-inch-diameter lead pipe, which likely served to draw water from the tank. Outside of and to the west of the brick tank was a smaller single-wythe brick-constructed valve box. The rectangular brick tank, brick valve box, and lead pipe are believed to have been constructed as appendages to the cistern to serve the chemical laboratory that was established in the ground floor of the Annex in 1853.[4] Several conduits tying in to adjacent downspouts on the southeast wing were identified as feeding the cistern.

The base of the cistern was found to be approximately 12.0 feet below nineteenth-century grade. Assuming that the cistern was not filled to a level above the base of the conduits feeding it, the maximum capacity of the cistern would have been approximately 900 cubic feet or 6,735 gallons of water. It is not yet clear how the coverings of the courtyard cisterns were configured. Excavation of the brick cistern in the east courtyard revealed six legible inscriptions and one illegible inscription made in the wet pargeting during its early 1850s construction. Two names, James W. Brand and Charles Carter, laborers who helped build the cisterns, were inscribed in the pargeting.

Period Two Summary

Numerous archaeological features identified during the investigations spanned the seven-decade period between the construction of the Academical Village and the October 1895 fire that destroyed the Rotunda and the Annex. All of these

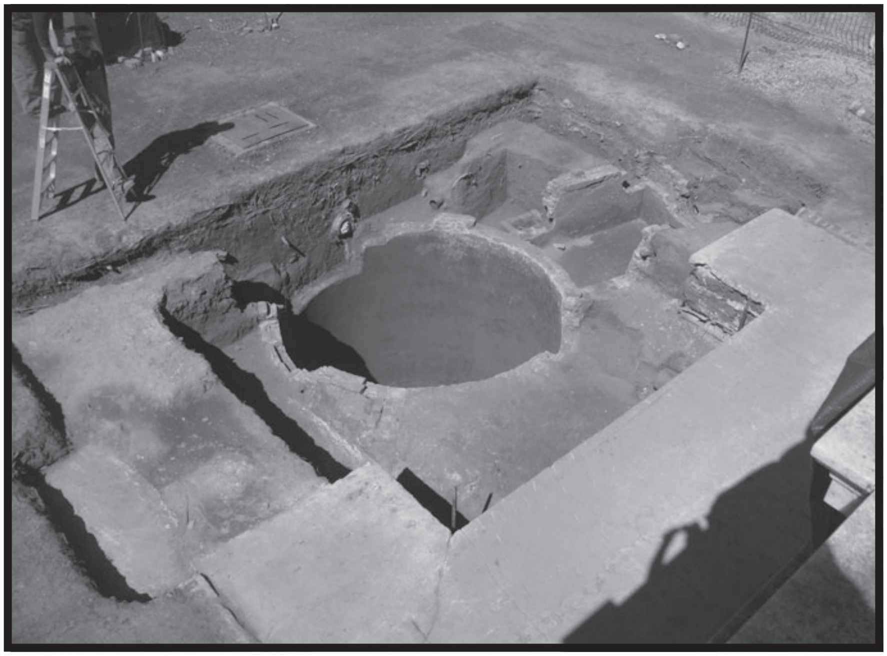
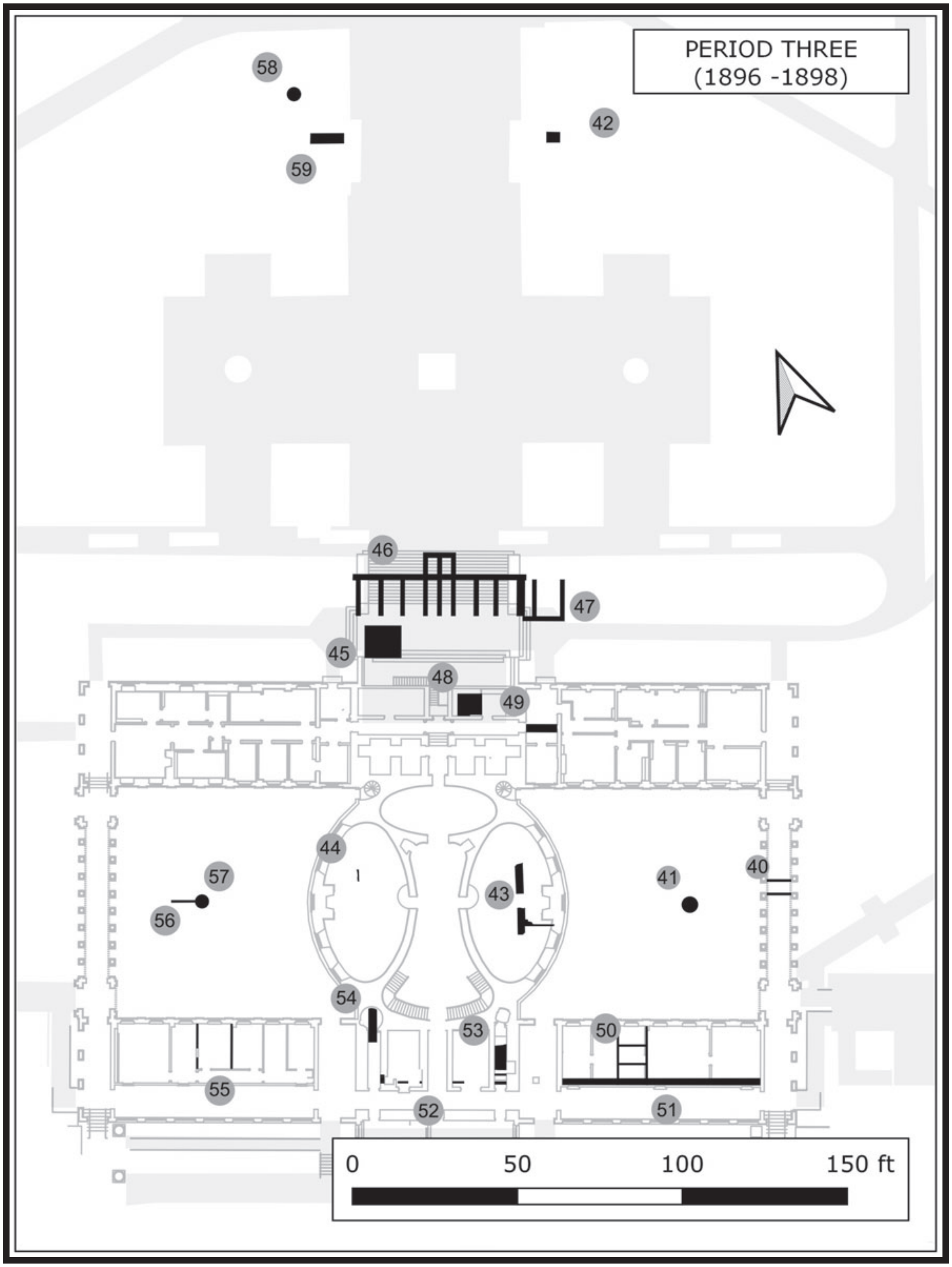


FIGURE 142. *Fully excavated cylindrical brick cistern and northern tank and valve box in east courtyard.*

FIGURE 143. *The north facade of the Rotunda, the north steps to Rotunda, and the supporting brick buttresses (foreground).*


PERIOD THREE
(1896 -1898)
58
59
42
46
47
45
48
49
44
57
56
43
41
40
54
53
50
55
52
51
0
50
100
150 ft

ARCHAEOLOGICALLY IDENTIFIED FEATURES ASSOCIATED WITH PERIOD THREE (1896-1898)

FEATURE NUMBER	FEATURE NAME AND LOCATION	FEATURE DESCRIPTION
40	East colonnade drain wall	Brick-constructed wall sheltering terra-cotta drain exiting brick manhole in east courtyard.
41, 56-57	East and west courtyard manhole and drains	Brick-constructed manholes and settling basin.
42, 59	East and west portal blocking walls	Brick infill of stone-constructed portal entrances.
43-44, 49, 51-52, 54	Lower oval rooms, northeast wing, southeast wing, south sub-portico, and southwest shaft utility ducts and steam-heating conduits	Subfloor brick- and Guastavino-tile-constructed utility chases and heating and ventilation ducts located throughout the basement level of the Rotunda and its wings.
45, 48	North mechanical room and north wing utility wells	Brick-constructed subfloor wells with concrete base.
46-47	North stairs foundations	Brick-constructed buttress walls supporting north terrace stairs.
50, 55	Southeast and southwest wings interior walls	Brick-constructed room partition walls.
53	Southeast hall utility mount	Brick foundation with portland cement floor and bolts.
58	West portal manhole	Brick-constructed manhole and settling basin.

FIGURE 144. *Plan and table of the period three (1896-1898) archaeological features identified and documented during the Rotunda renovation project.*

features can be associated with the expansion of or upgrades to the Rotunda and its wings or improvements in the adjacent landscape, and they were driven by several factors. Construction of new University buildings and structures and the creation of a more aesthetically pleasing landscape during this period were driven primarily by increasing student enrollment. In the decade between the 1846-1847 and 1856-1857 academic years, the student population of the University grew from 163 to 645, a nearly threefold increase. As a result, the original physical facilities of the Academical Village, including student dormitories, administrative and laboratory space, and lecture rooms, were found to be increasingly inadequate. The enclosure of the gymnasia wings in 1841 and the construction of the new public hall or Annex between 1851 and 1854 reflect this need for new and enlarged facilities. William Pratt, the University's first superintendent of buildings and grounds, had a prominent role in guiding the development of both new construction and the beautification of the landscape between 1858 and 1865. The construction of meandering, graceful brick paths north, east, and west of the Rotunda also occurred under Pratt's tenure.

From the opening of the institution in 1825, periodic drought and an inadequate supply of spring water, as well as leaky and inefficient pipes, plagued the Academical Village. Water was not only needed for potable and non-potable general uses but also was conceived from the beginning as a safeguard against fire. Over the years, the University addressed this constant need for an adequate water supply with stopgap solutions that included the expansion of reservoirs and the construction of additional cisterns that linked them with adjacent downspouts. Although several surveys and studies to improve the water supply were conducted throughout the 1830s and 1840s, the work was deemed impractical or unaffordable. It was not until the completion of the Annex and the need for an adequate means to protect the new building from fire, as well as the appropriation of $25,000 from the General Assembly to fund repairs and a new water-supply system, that the University hired prominent engineer Charles Ellet Jr. to address the problems.[5] The construction of the subterranean brick cisterns and associated drains within the Rotunda's east and west courtyards, the construction of the subterranean brick vault northwest of the Rotunda, and the installation of a new water-supply system conveyed in iron pipes to the Rotunda are a reflection of these needs.

Although financial considerations frequently impeded the adoption of new technology and delayed upgrades to existing technology, the University did ultimately take advantage of advances in gaslighting, steam heating, and sanitary science. For example, although the manufacture of coal gas had been a reliable technology used in Great Britain since the early nineteenth century, a local plant to produce illuminating gas was not established in Charlottesville until 1856. Likewise, although the faculty had complained about the inadequacies of stove heating in the Rotunda, providing more efficient heating to the public spaces was not initiated until after the completion of the Annex, a system that was retrofitted into the brand-new public hall. Although steam-heating technology was known in the early nineteenth century, the University did not pursue professional advice on the matter until Gen. Montgomery C. Meigs became available. Meigs designed a plan for the heating and ventilation of the Rotunda and the Annex, which is believed to have been partially implemented. The University was not able to take advantage of improved sanitary principles until after the adoption of a new water-supply system designed by Ernest W. Bowditch and the widespread availability of vitrified terra-cotta drainpipe. For Bowditch, water supply and sanitary drainage were inextricably linked and formed the foundation of a safe and healthy community.

Period Three: McKim, Mead and White Restoration and Rebuilding (1896–1898)

Although much of the McKim, Mead and White Rotunda interior was removed during the renovation by the firm of Ballou and Justice in the 1970s, remnant foundations, machinery pads, ducts, and utility chases were found in limited areas of basement-level spaces. Compared to earlier periods, the features of the McKim, Mead and White building systems are readily identifiable due to their use of Guastavino tile and portland cement.

North Terrace

Following the removal and replacement of the Rotunda's north stairs, a total of nine brick-constructed buttress walls sloping down from the mid-stairs landing to the base of the north terrace were identified. The buttresses measured approximately 1.5 feet thick and spanned the gap between the north wall of the north mechanical room and an east-west-oriented mortared-brick wall at the base of the steps. The three central buttresses continued further north than the rest and likely reflect an early McKim, Mead and White design to provide access to a three-tiered sunken courtyard that was never built. Portions of several bricked-in, horizontally set windows in the upper wall were identified behind and adjacent to the brick buttresses. These windows also reflect an early McKim, Mead and White design to provide light to the subterranean north mechanical room.

Period Three Summary

While clear material evidence of the construction and functioning of the McKim, Mead and White steam-heating system in the form of supply and return chases was identified throughout the Rotunda, the archaeological evidence also suggests that the proposed framework for a ventilation system was completed by 1898, although the system may not have been fully functional until 1899-1900. In particular, multi-tiered and compartmentalized utility chases were identified in two locations. One chase identified during these investigations ran in an east-west direction through the northeast wing, and the other chase, which was identified during the 1970s Ballou and Justice renovation, ran in a north-south direction through the lower central hall. The presence of multiple compartments separated by brick, concrete, and Guastavino tile within a single utility chase suggests different functions. The multiple compartments would not have been needed for the steam-heating system, as a single compartment could have conveyed multiple supply lines if necessary. Likewise, many return lines conveying condensed steam from individual radiators likely passed down the drum wall through vertical chases, features that were itemized in the 1896 McKim, Mead and White specifications. The tiered compartmentalized chases therefore may have served as ventilation conduits supplying fresh air to rooms via floor registers.

The north mechanical room played an important role in housing most of the Rotunda's mechanical equipment that ran the heating, ventilation, and water-supply systems. Located underneath the Rotunda's north stairs, the mechanical room was isolated from the rest of the Rotunda's public and ceremonial space.

Notes

Abbreviations used in notes are listed at the end of the "History" section.

1. The archaeological findings as detailed in this chapter are taken from two reports: Stephen M. Thompson, *Archaeological Investigations Associated with the Rotunda Renovations Project, University of Virginia. Volume I: The East Courtyard Cistern. VDHR File No. 2013-0478.* (Charlottesville: Rivanna Archaeological Services, 2016), and Stephen M. Thompson, *Archaeological Investigations Associated with the Rotunda Renovations Project, University of Virginia. Volume II: Construction Monitoring. VDHR File No. 2013-0478.* (Charlottesville: Rivanna Archaeological Services, 2018). All of the maps presented in this chapter detailing the locations of archaeological features were produced by Stephen M. Thompson and Nick Bon-Harper.
2. John G. Waite Associates, Architects, *The Rotunda, Chemical Hearth: Historic Structure Report* (Albany: John G. Waite Associates, Architects, 2017), 38-40. BV, Minutes, 10 July 1829; 11 July 1831; 4 July 1843. *Document No. 8: Annual Report of the Rector and Board of Visitors of the University of Virginia to the President and Directors of the Literary Fund*, 1846: 9.
3. BV, Minutes, 28 June 1850; 25 June 1851.
4. BV, Minutes, 25 June 1853. See also John G. Waite Associates, Architects, *The Rotunda, Chemical Hearth: Historic Structure Report*, 62-64.
5. BV, Minutes, 1 Sept. 1853; 26 June 1854; Rector and Board of Visitors of the University of Virginia, "Report of the Rector and Board of Visitors of the University of Virginia, Document No. 12, July 1, 1857," in *Governor's Message and Reports of the Public Officers of the State of the Boards of Directors and of the Visitors, Superintendents and other Agents of Public Institutions or Interests of Virginia* (Richmond: William F. Ritchie, 1857), 35-136.

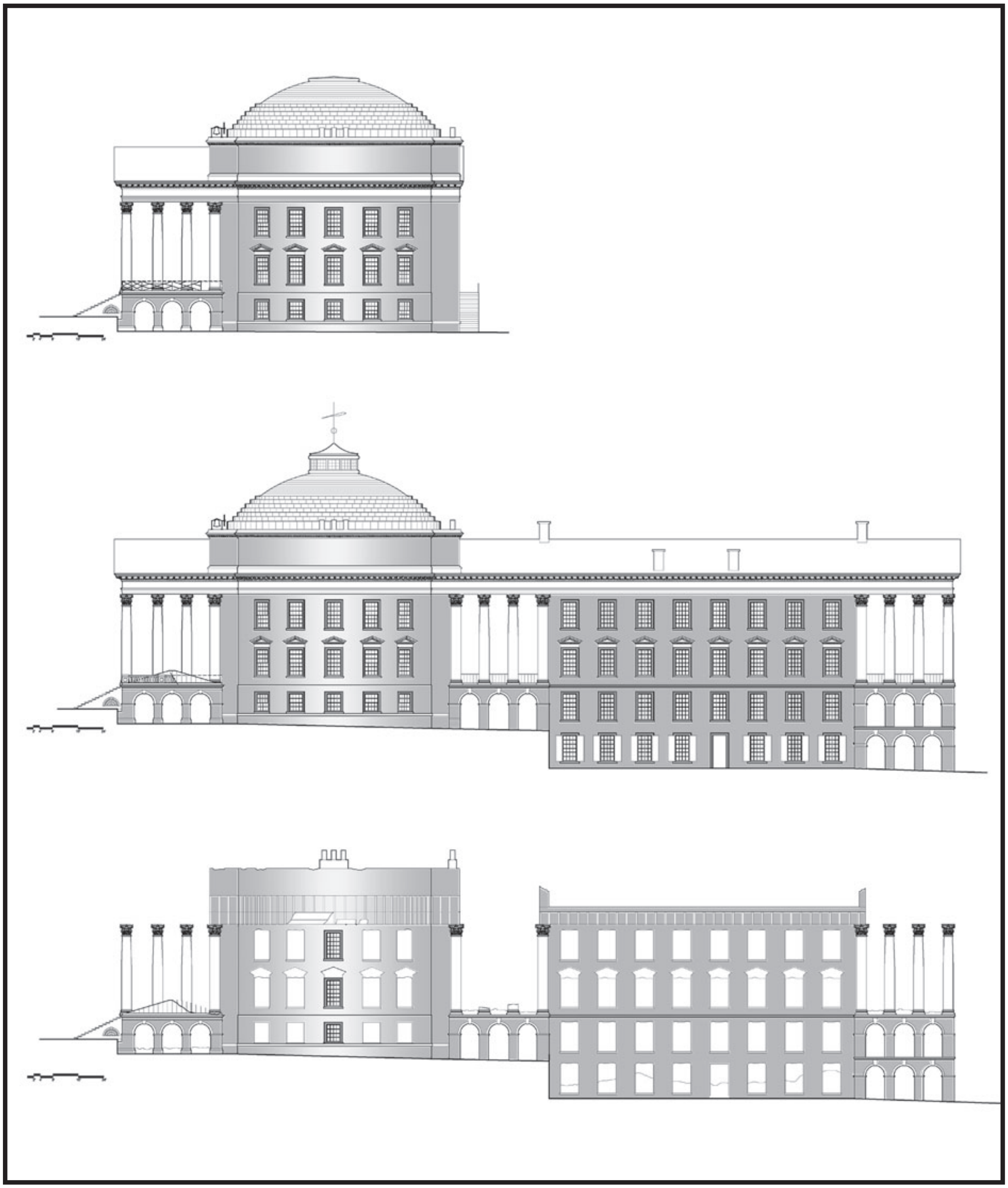


FIGURE 145. *East elevations of the Rotunda in 1827 (top), with the Annex in 1854 (center), and after the 1895 fire (bottom). Drawings by John G. Waite Associates, Architects, 2007.*

THE ROTUNDA

ARCHITECTURAL DESCRIPTION

Jefferson's rotunda as it exists today is the result of a remarkable series of circumstances and events. To accomplish the intent of this historic structure report—to gain an understanding of the evolution of this significant American architectural icon—the team undertook a thorough visual inspection of all exterior surfaces, as well as each interior space. Each surface and feature were analyzed to determine their place in the evolution of the Rotunda complex as it evolved over some 200 years. This evolution began before the construction process commenced. From Jefferson's initial concept for the University, which did not include a structure of the scale and in the location of the Rotunda, to suggestions made by Thornton and Latrobe that gave birth to the prominent, centrally positioned building, the structure evolved during construction and later.

Early Drawings of the Rotunda

To understand the Rotunda as it now exists and as it existed prior to the 1895 conflagration, it was necessary to thoroughly study the few original documents, both drawings and written material, that were from the hand of Jefferson and his favored craftsmen. The plans, section, and south (front) elevation drawings produced by Jefferson between about 1818 and 1819 are all that survive from the design process, which must have produced many more detailed drawings.

Information from Jefferson's drawings is supplemented by conditions revealed in drawings produced by John Neilson at the time of construction (Figures 19-20), and in much later drawings from the end of the nineteenth century, immediately after the Rotunda fire. The plans produced by McDonald Brothers Architects and McKim, Mead and White (Figures 61-72) provide information about pre-1895 conditions that confirmed some of the plan features shown on the original Jefferson drawings.

There is remarkably little visual information concerning the Rotunda as it appeared after completion in 1827 and before the 1895 fire. The earliest image, actually predating the construction, is the handsome, tinted ink drawing of the south elevation (including the terraces and Pavilions IX and X) dating from February 1823 (Figure 25). This beautifully rendered image has been variously attributed to Cornelia Jefferson Randolph and more recently to John Neilson, and it has also been speculated that Benjamin Latrobe was responsible. Regardless of the attribution, it is the most fully realized image of the Rotunda and the flanking terraces to survive from that time. Significantly, the fenestration does not include the pedimented architraves of the windows on the main floor that are seen in all of the later photographic images of the building. In fact, none of the pre-1850 drawn images show this important feature. This includes a ca. 1827 E. Watts bookbinder label, as well as the various views of the Rotunda and pavilions as seen from the east and west (Figures 30-31, 124).

Only images produced after the construction of the Annex, designed by Robert Mills, record these window pediments. Even the important series of views of the Rotunda, the pavilions, and the Lawn as seen from southern viewpoints fail to record these pediments, although a pediment is shown at the main entrance door beyond the portico. The pediments as they now exist were designed by McKim, Mead and White.

Early Views of the Terraces

The series of images taken from the south record the terraces in various forms. The view by engraver Benjamin Tanner from 1826 (Figure 26) appears to be the most accurate, showing arcades flanking the Rotunda steps. Physical and photographic evidence indicates that the arches were in fact lunette-form window openings, originally open and later (probably 1841) fitted with sash. The original open-arch appearance of the terraces is best illustrated by the March 1824 drawing of the north face of one of the gymnasia arcades by John Neilson (Figure 23).

The development of the plan of the terraces is illustrated by Neilson's drawings from 1821 and 1822 (Figures 19-20). The Peter Maverick plan, as drawn by Neilson (Figure 21), clearly shows the large open spaces that existed beneath the terrace roofs, a condition that was to exist until work was undertaken in 1841 to enclose and replan these structures.

The terraces originally had flat, serrated wood shingle roofs, probably covered by a flat deck. The 1826 Tanner illustration shows people on the roof of the west wing, an indication that one could walk on these surfaces. In 1841, hipped roofs were constructed and remained in place until they were severely damaged in the 1895 fire. Illustrations and photographs record various balustrades along the south edges of the terraces, as well as the absence of such a feature just before the fire. The earliest railings appear to be delicate Chinese fretwork designs, while the later features (possibly added in 1841 or by Robert Mills) are formed of turned balusters positioned between paneled plinths.

Interior of the Rotunda

The analysis of Jefferson's surviving floor plans for the main floor and the Dome Room (no plan of the ground floor, or basement, is known to exist) revealed a significant omission. The main-floor plan (Figure 6) illustrates door and window openings as they existed and still exist today. Even the false windows situated behind the east and west chimney masses are shown by Jefferson at both plan levels. The Dome Room plan (Figure 8) also includes the real and false window openings in the east and west elevations, but no openings are shown in the curved and flat surfaces forming the north and south sides of the plan on this otherwise carefully drawn plan. The same omission exists in the plan drawn by John Neilson. Jefferson's August 10, 1823 letter to Arthur S. Brockenbrough concerning the center opening in the south wall of the Dome Room reveals how design decisions were made as the building was under construction; this was probably the case for many features of the building.

The absence of pre-fire interior images of the Rotunda and terraces, except for several later nineteenth-century photographs of the north side of the Dome Room, makes it difficult to visualize the appearance of the many important spaces in the three structures.

The stair system in the Rotunda is an important feature whose appearance can only be speculated upon. Jefferson's plan of the main floor clearly indicates a pair of symmetrical double-flight stairs at the south end of the curiously shaped hall. The southeast stair includes a small fireplace at its intermediate landing. There are no surviving visible clues concerning the appearance and construction of the stairs, but the October 28, 1895 image (Figure 53) shows what appears to be the outlines of the destroyed stair stringers on the walls of the hall, as seen through the open south windows.

The main-floor plan does not show the stairs to the ground-floor, or basement, level. These flights (if there were two) likely existed beneath the first runs of the main stair and were probably enclosed single runs. The enclosures would provide full support for the lower runs of the main stairs. Such support would result in only the upper portions of the main stairs rising upward in an unsupported manner. The repositioning of the ground-floor stairs would provide for greater area at the main entrance and allow for access to the windows flanking the entrance, a more acceptable and likely condition for the formal entrance into the building.

Jefferson's Dome Room plan records the main stairs at that level. The point of their arrival, a small square patch of floor at the south end of the large circular room, was to be the location of a pair of glazed doors that opened to the upper

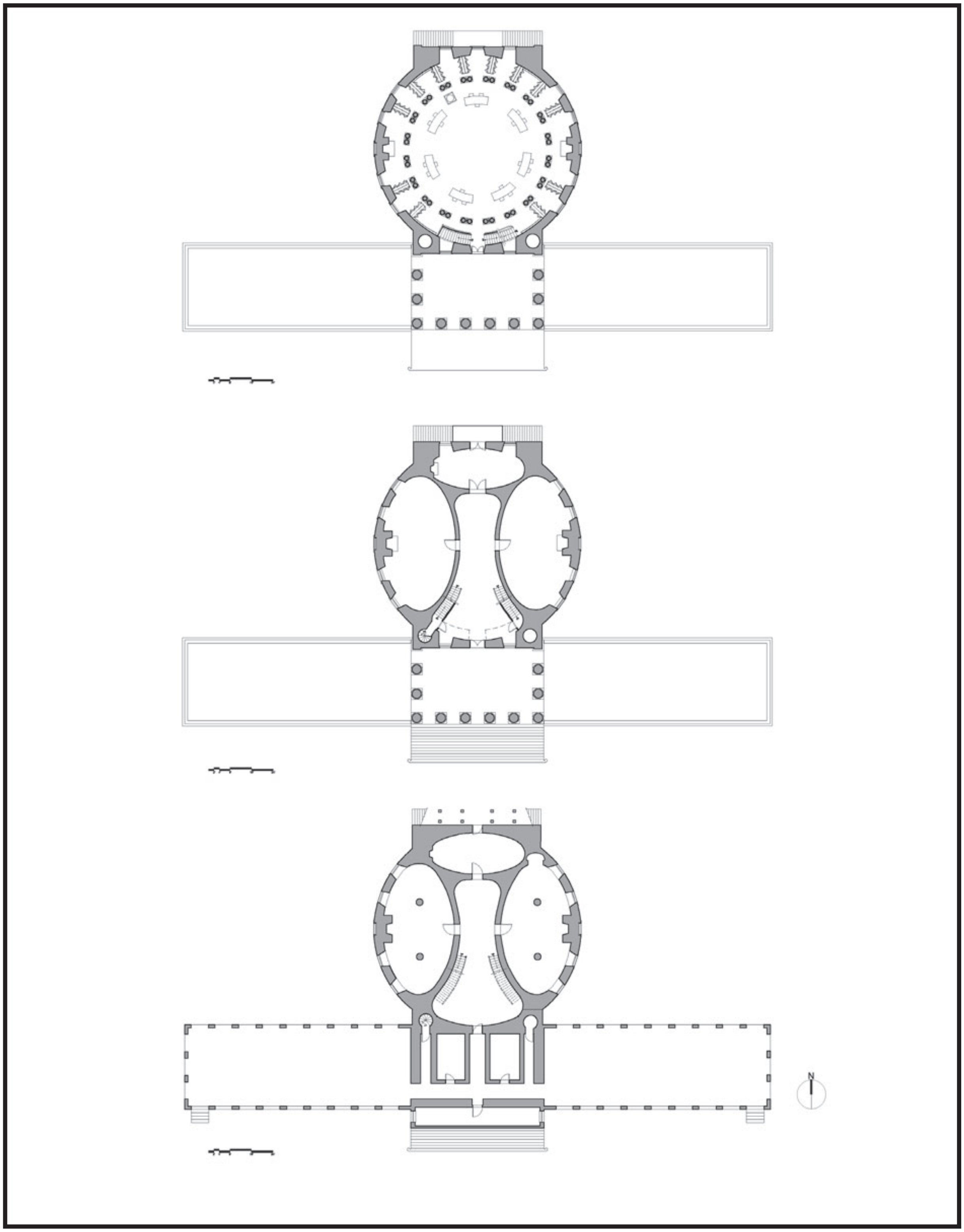


FIGURE 146. *Conjectural floor plans of the original Rotunda and terraces in 1827: Dome Room (top), main floor (center), and ground floor (bottom). Drawings by John G. Waite Associates, Architects, 2022.*

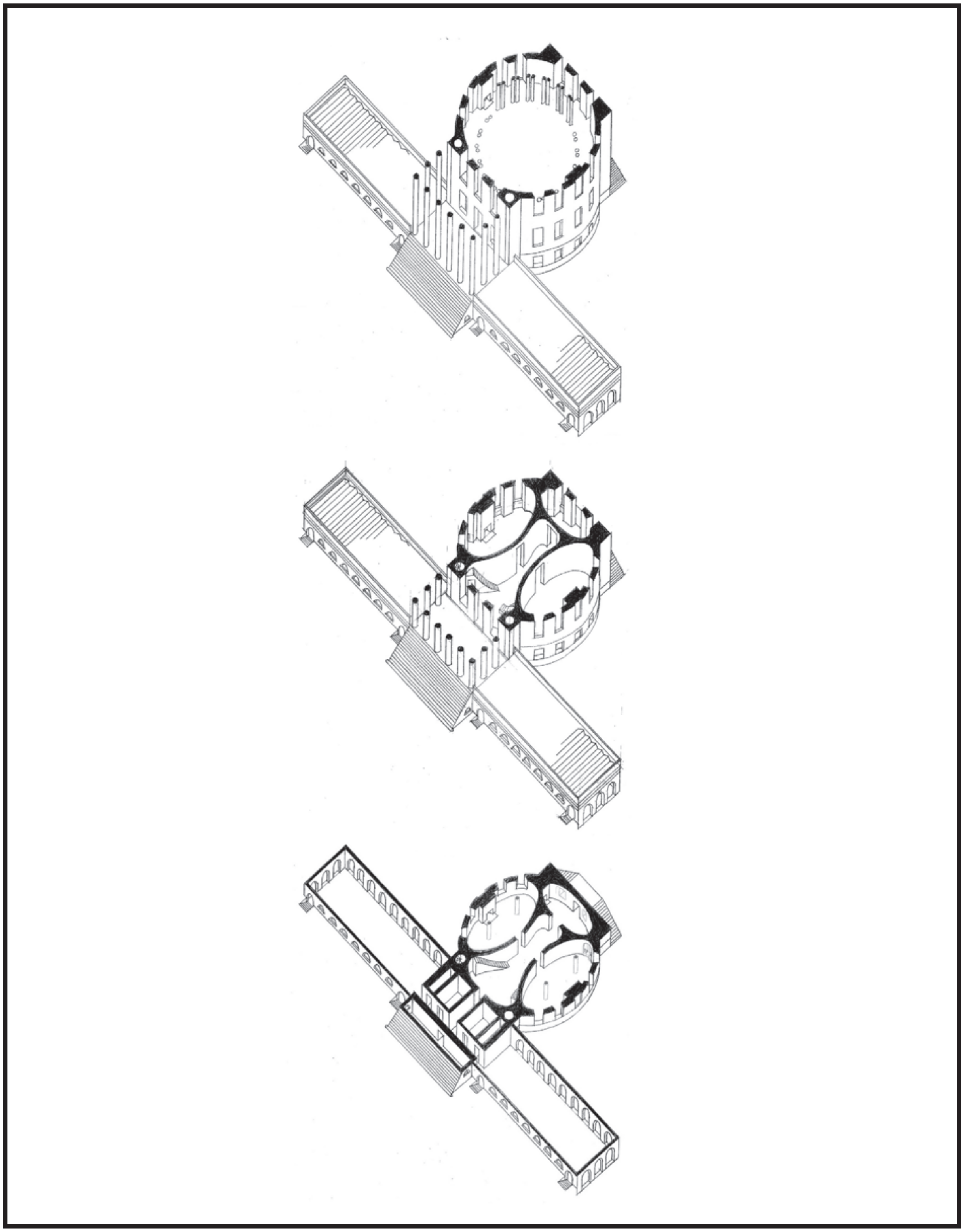


FIGURE 147. *Sketch axonometrics of the original Rotunda and terraces in 1827, showing the ground floor, main floor, and Dome Room. Drawings by John G. Waite Associates, Architects, 2022.*

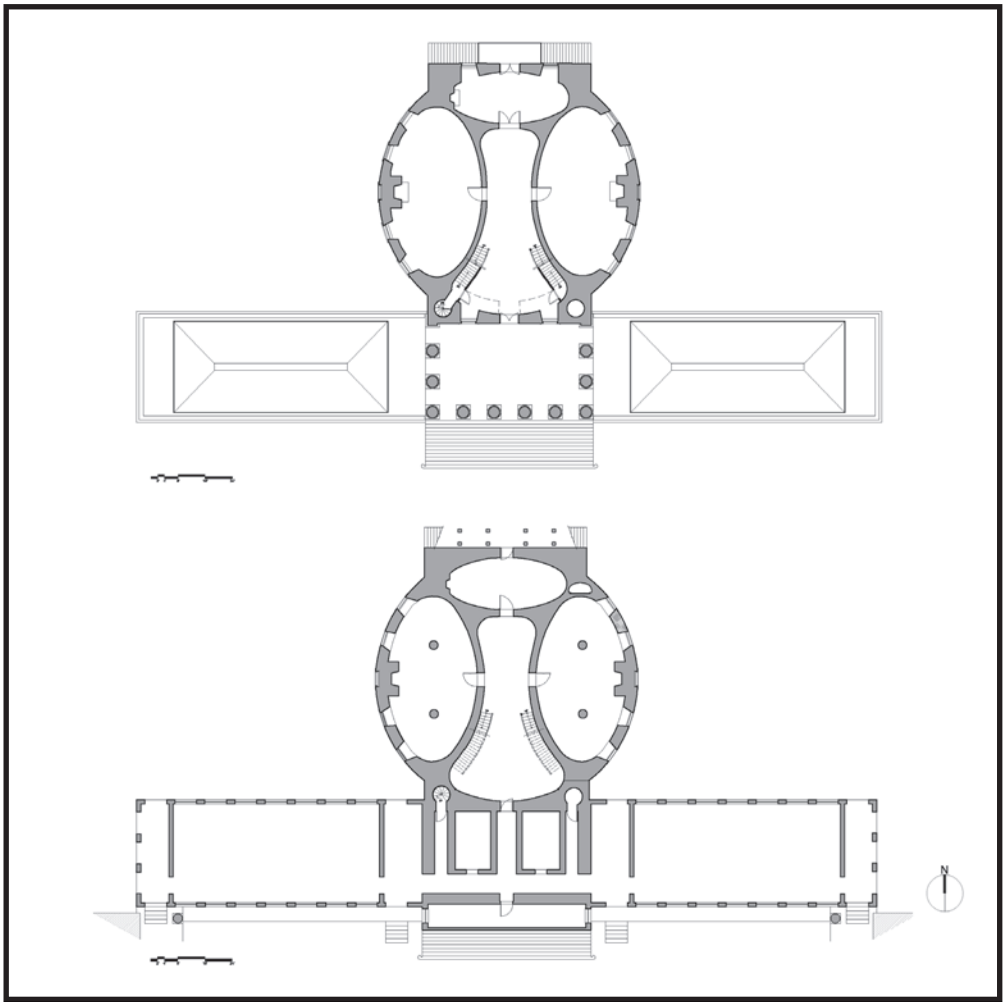


FIGURE 148. *Conjectural floor plans of the Rotunda and terraces in 1841; main floor (top) and ground floor (bottom). Drawings by John G. Waite Associates, Architects, 2022.*

area of the portico. A railing, not a balcony, was to be positioned in front of this opening. Jefferson was persistent about this door placement.

The Dome Room plan does not appear to show how the two gallery levels were to be accessed, but it seems likely that one or two stairs were intended to be built directly above the flights rising from the main floor. Jefferson's simple drafting technique would have placed one stair above the other.

Other questions and revelations concerning the original plan and appearance of the Rotunda are found in the various room descriptions in this report. This information was collected during several trips to the Rotunda between June and December 2006. The investigations involved careful inspections of the exterior and interior of the Rotunda and its wings. The inspections did not involve any probing of the building's fabric, but the 2012-2016 restoration revealed some of the historic conditions.

An important aspect of the investigative process was the concurrent analysis of the various plans, illustrations, and photographs of the exterior and interior of the complex of buildings. For example, the pre-fire photographs of the Dome

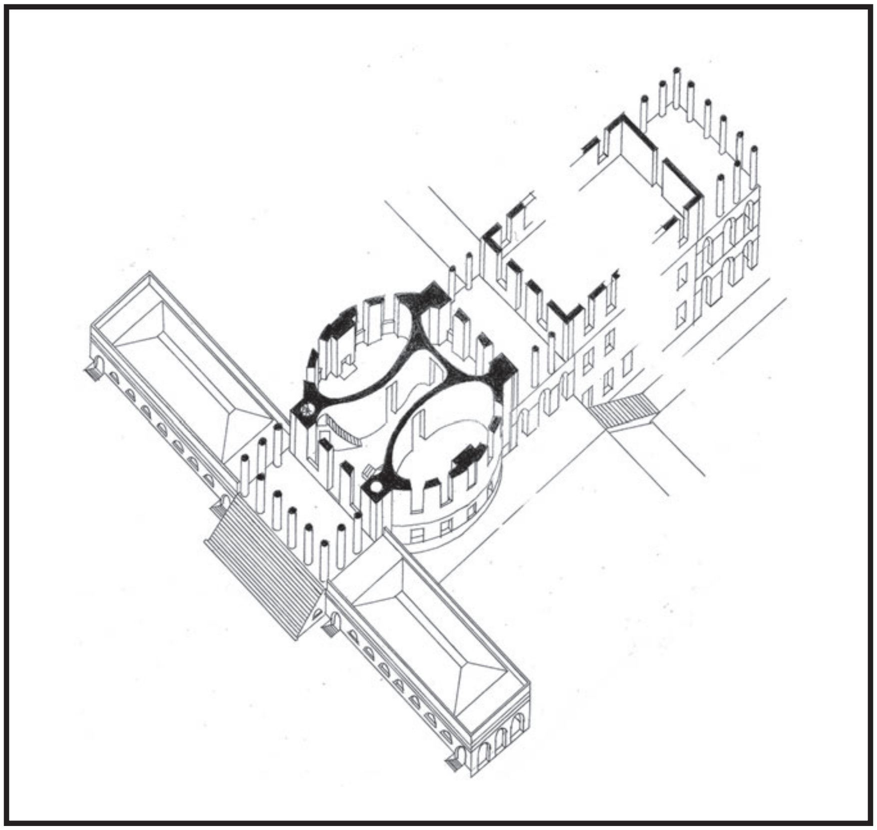


FIGURE 149. *Sketch axonometric of the plan of the main floor of the Rotunda and terraces after the construction of the Annex. Note the hipped roofs on the terraces, constructed in 1841. Drawing by John G. Waite Associates, Architects, 2007.*

Room were carefully compared to the existing conditions. The same procedure was used for the exterior, where the pre-fire photographs could be compared to the conditions resulting from the McKim, Mead and White reconstruction. The Ballou and Justice drawings were also helpful in recording the conditions found in the mid-1970s.

An unfortunate result of the McKim, Mead and White reconstruction project was the destruction or covering over of the original interior conditions that probably survived on the internal brick wall surfaces. To support the heavier Guastavino dome, an inner surface of brick was placed over the inside face of the Rotunda walls at the main-floor and Dome Room levels. This condition is seen in the dramatic mid-1970s photographs of the interior after all of the 1898 floors and finishes were removed (Figures 107-111). Close inspection of the wall surfaces during the 2016 restoration revealed no evidence for pre-1895 conditions. The evidence may still exist behind the veneer of brick, waiting to be studied.

Exterior and Interior Descriptions

For the following descriptions, certain generalizations were made for dating the various periods of construction, modification, reconstruction, and restoration.

- The date 1819 refers to the plans, section, and elevation completed by Jefferson in that year.
- The term "original" and the date 1827 refer to conditions that resulted from Jefferson's design and the construction that continued over several years; the Rotunda was not completed until after Jefferson's death.
- The date 1841 includes all work carried out to remodel and enclose the southeast and southwest terrace wings.
- Work carried out in the Rotunda and wings in succeeding years is specifically dated when possible. This includes the expansion carried out from the designs of Robert Mills and completed in 1853.
- The fire in 1895 nearly destroyed the entire Rotunda complex. Fortunately, the masonry walls of the Rotunda and the flanking south wings survived and were repaired as part of the reconstruction by McKim, Mead and White. In the description, their work is labeled as 1898, the year that the complex project was fully completed.
- The next round of significant work is dated to 1939, the date on the set of drawings produced by architect Stanislaw J. Makielski of Charlottesville, Virginia. This project included extensive exterior work on the Rotunda and its wings, as well as work in the interior of the wings.
- For the ambitious project carried out by the firm of Ballou and Justice, the term "mid-1970s" is used, unless a more specific date is known.
- The 2012-2016 restoration and rehabilitation replaced the roof, fully restored the exterior, refinished the interior, replaced the mechanical systems, and created a new mechanical vault and underground service spaces. One significant aspect of this work was the discovery and exposure of the original chemical hearth in the ground-floor east oval room. In the description, all of this work is dated to 2016, the year that the project was completed.

The exterior and interior descriptions not only record the existing features and conditions but also include information about previous and original conditions. The room numbering follows the system established by the University.

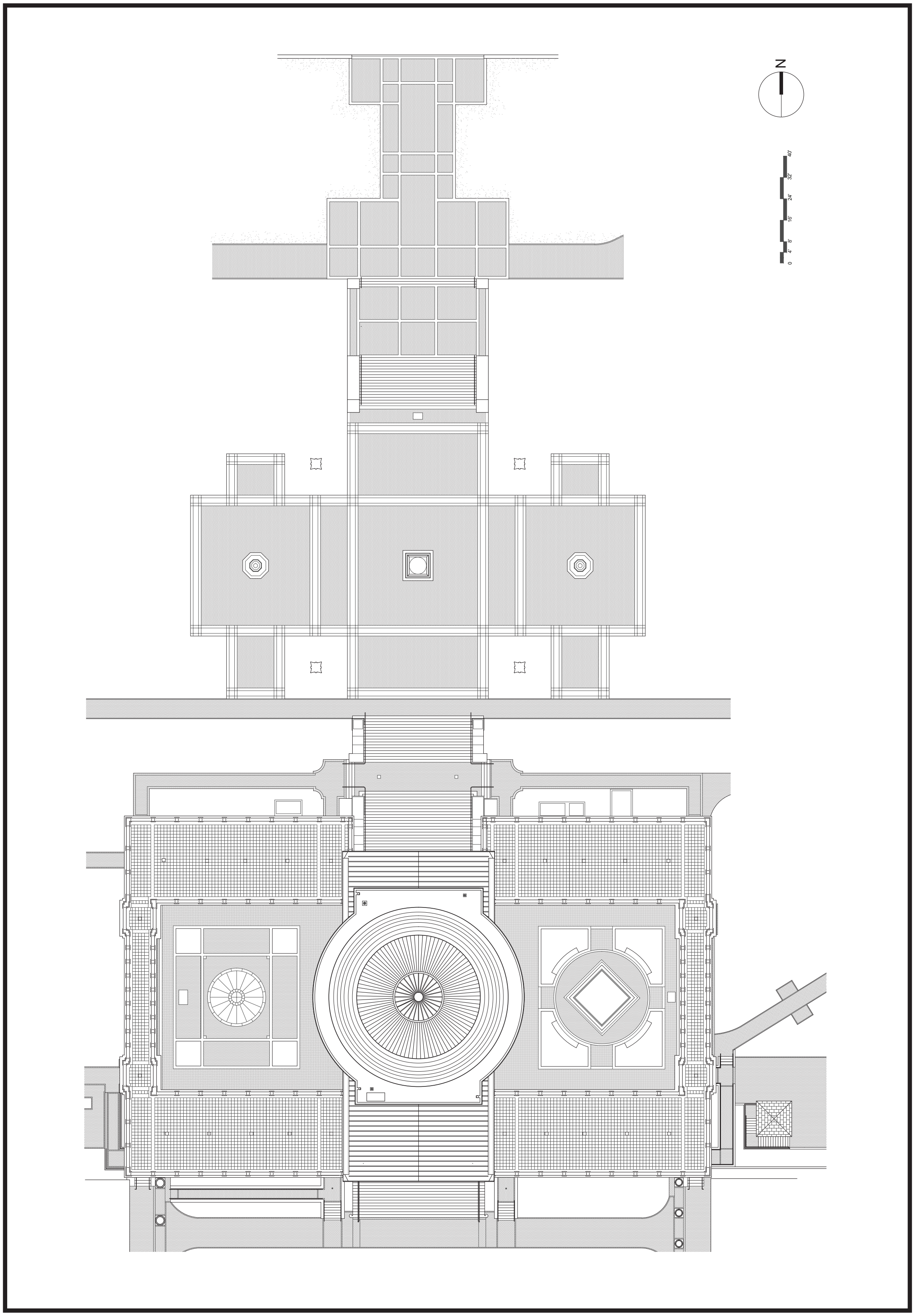


FIGURE 150. *Site plan. Drawing by John G. Waite Associates, Architects, 2022.*

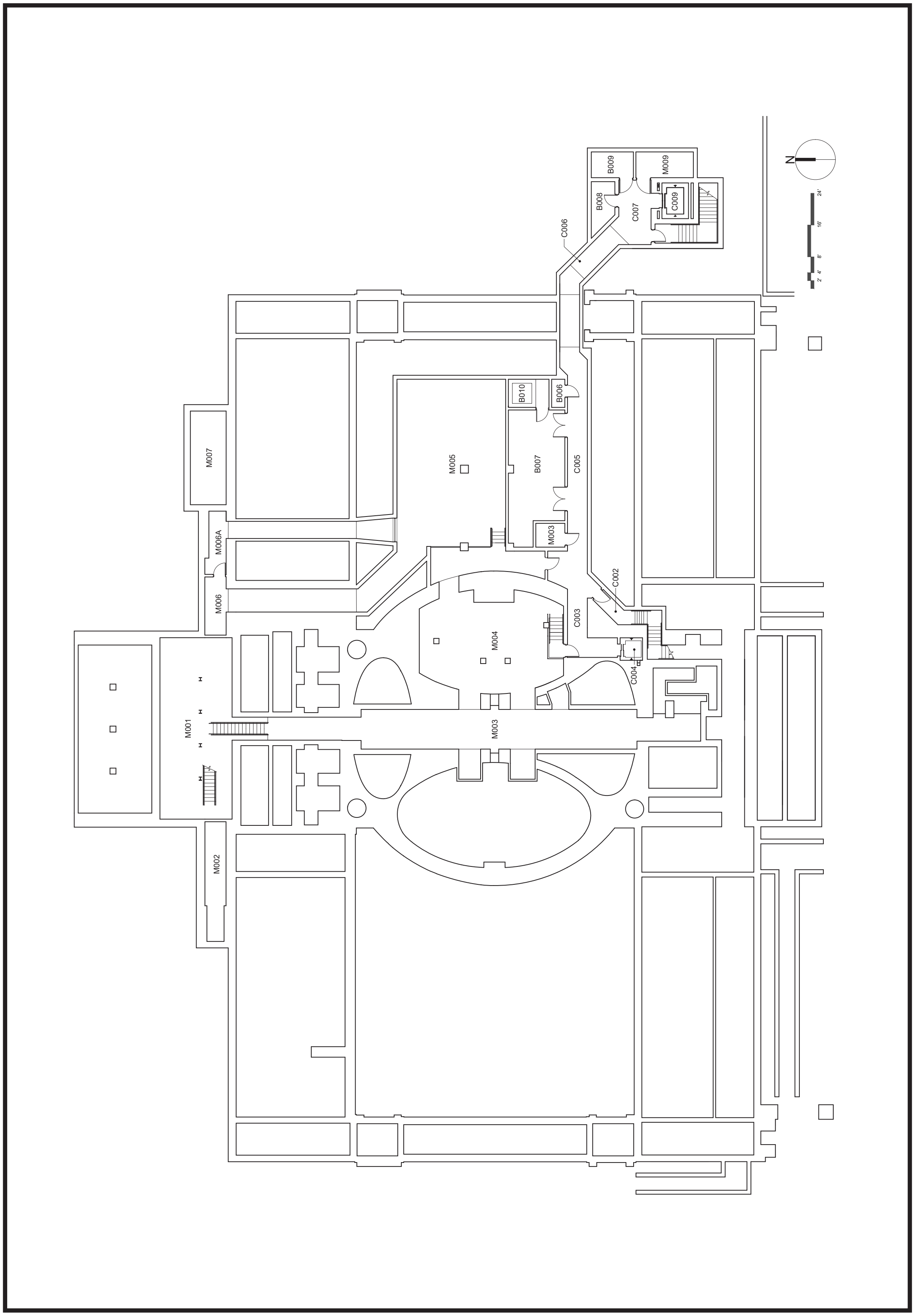


FIGURE 151. *Vault plan. Drawing by John G. Waite Associates, Architects, 2022.*

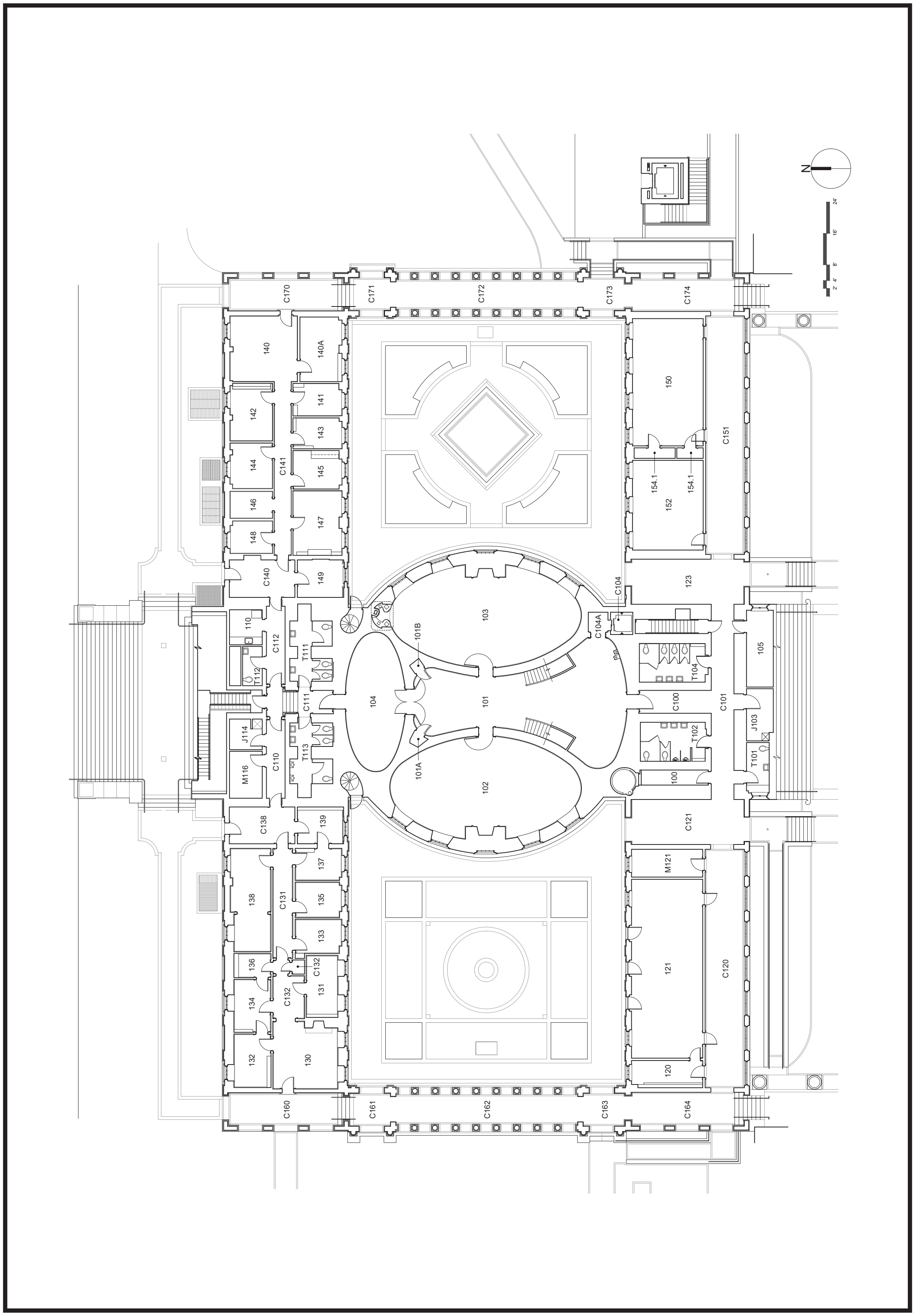


FIGURE 152. *Plan of the ground floor. Drawing by John G. Waite Associates, Architects, 2022.*

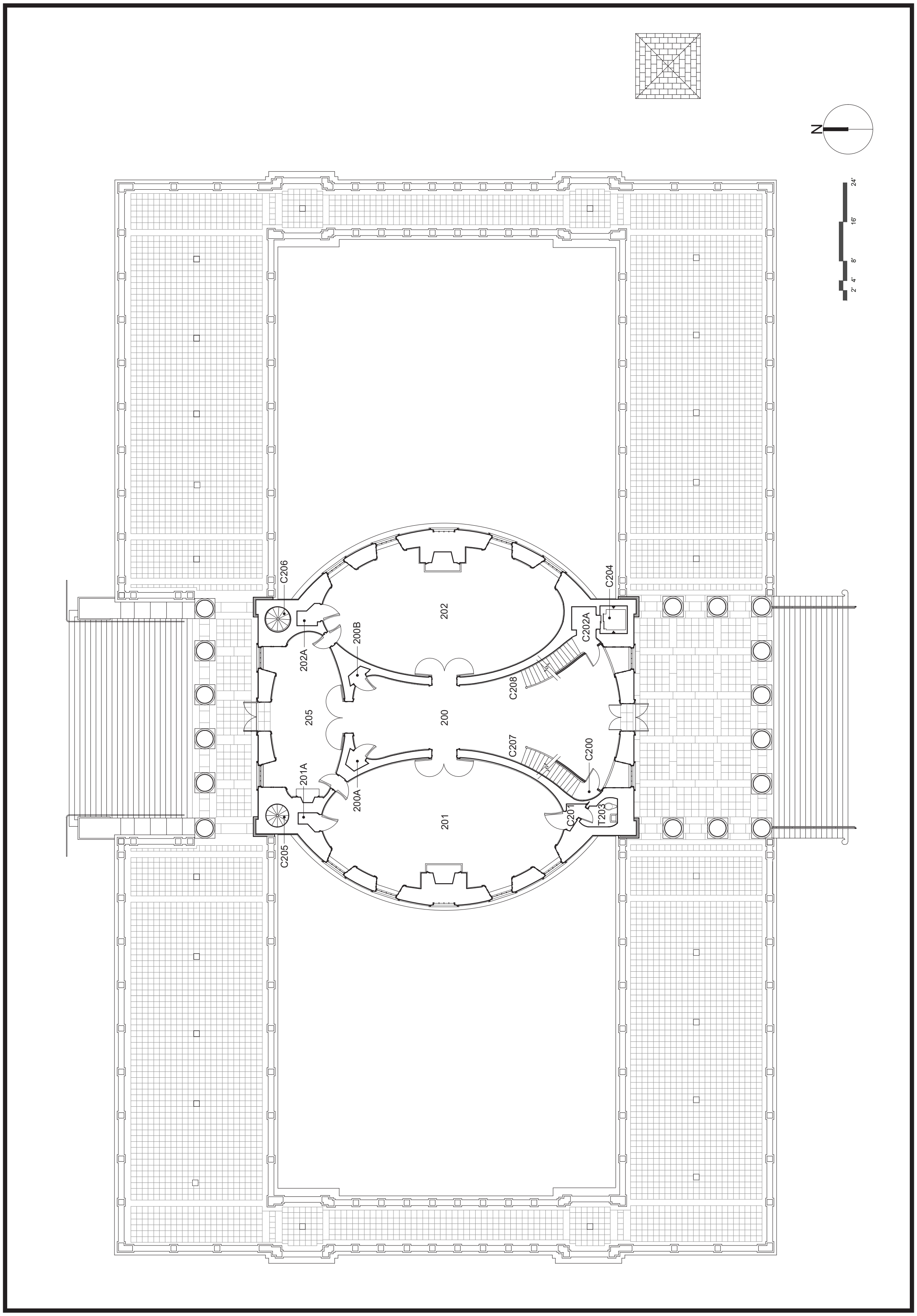


FIGURE 153. *Plan of the main floor. Drawing by John G. Waite Associates, Architects, 2022.*

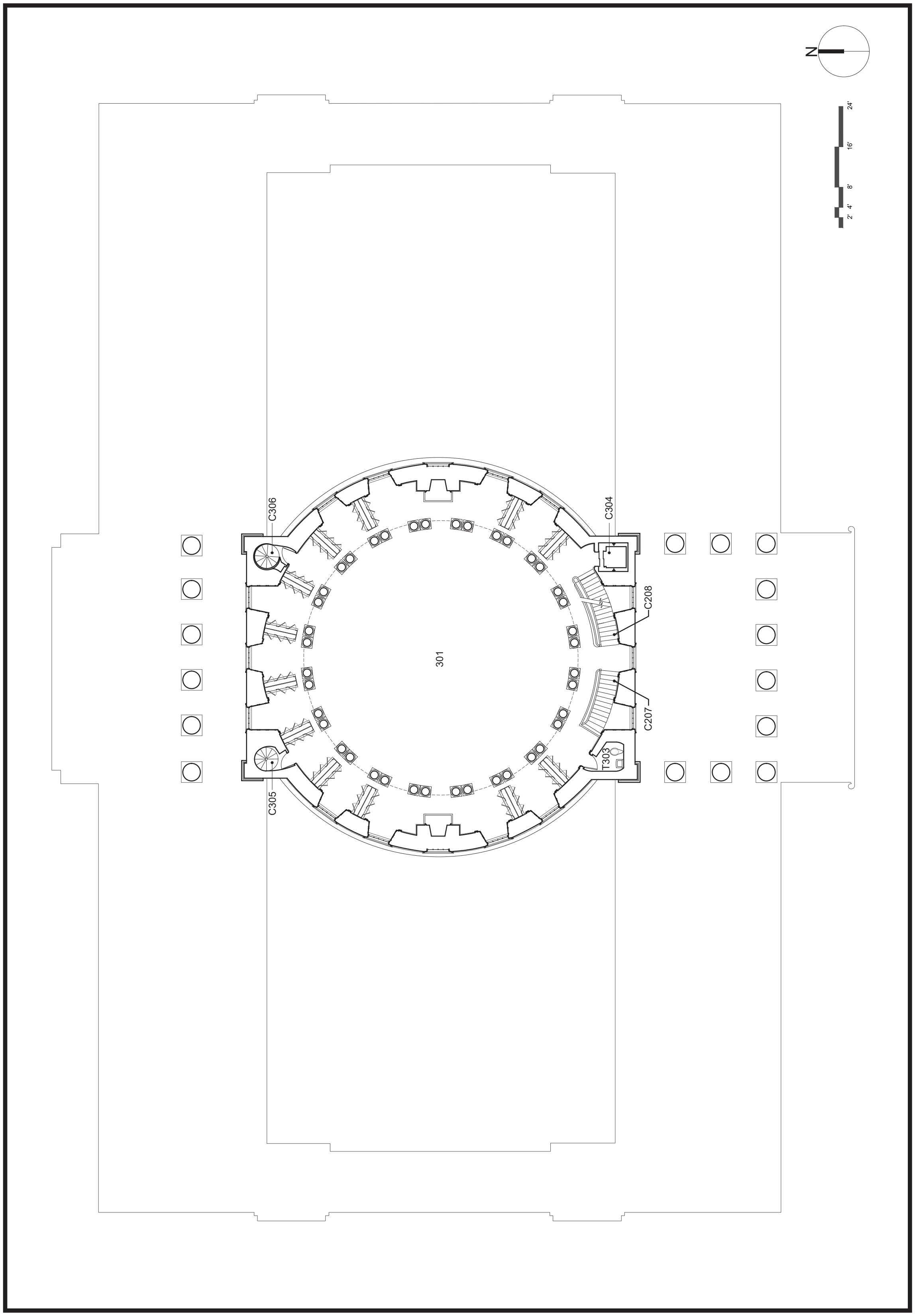


FIGURE 154. *Plan of the Dome Room. Drawing by John G. Waite Associates, Architects, 2022.*

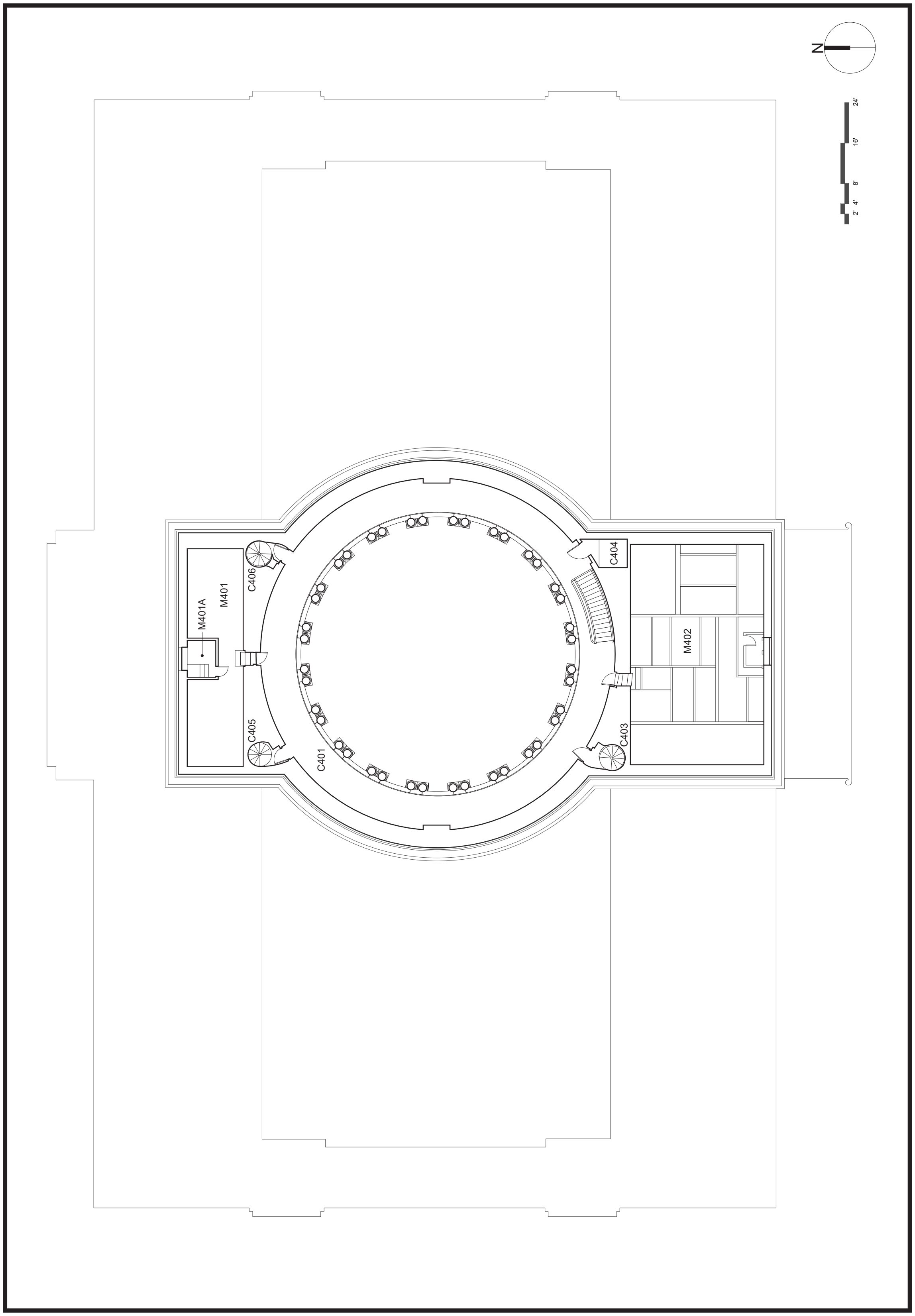


FIGURE 155. *Plan of the middle gallery. Drawing by John G. Waite Associates, Architects, 2022.*

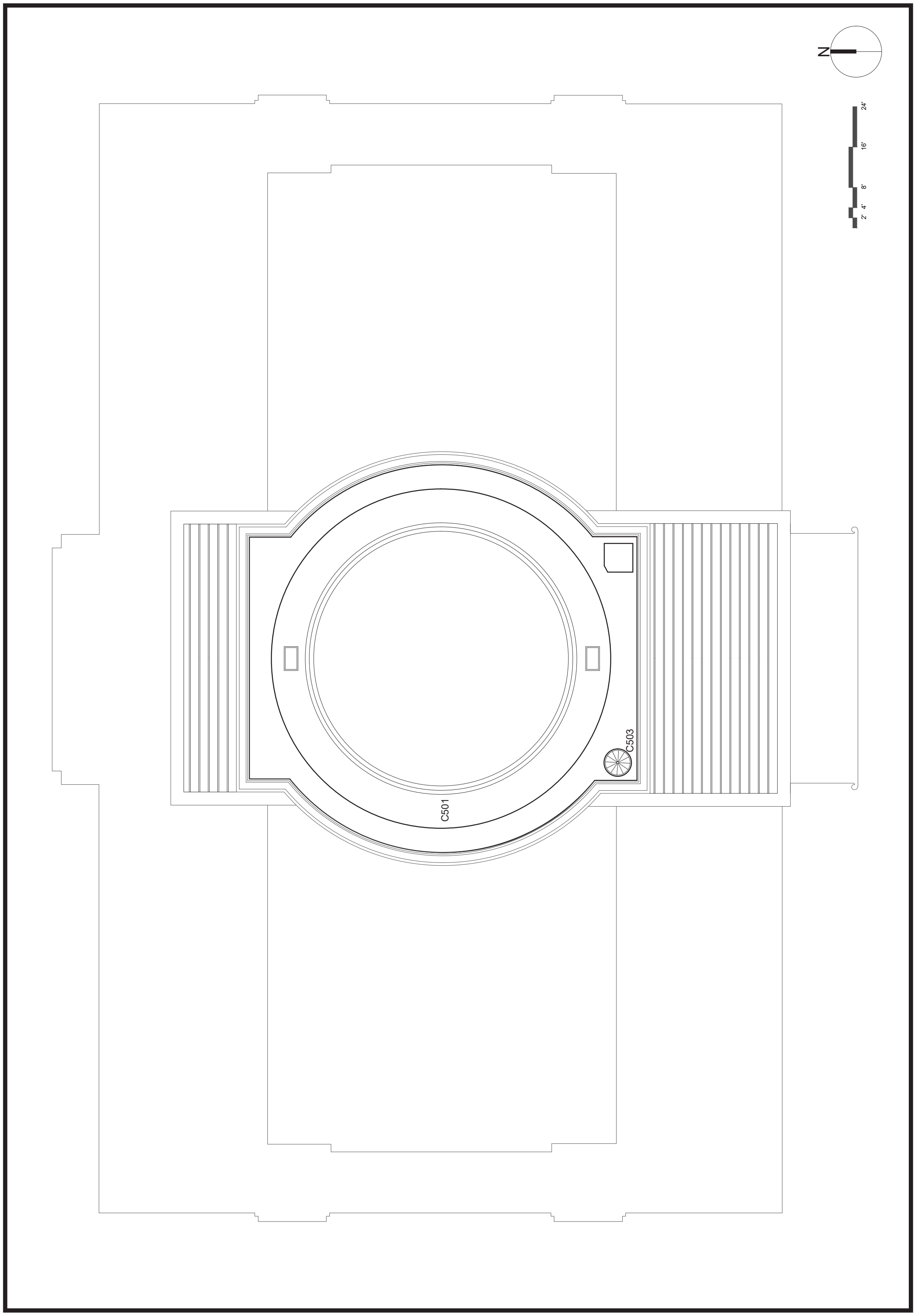


FIGURE 156. *Plan of the upper gallery. Drawing by John G. Waite Associates, Architects, 2022.*

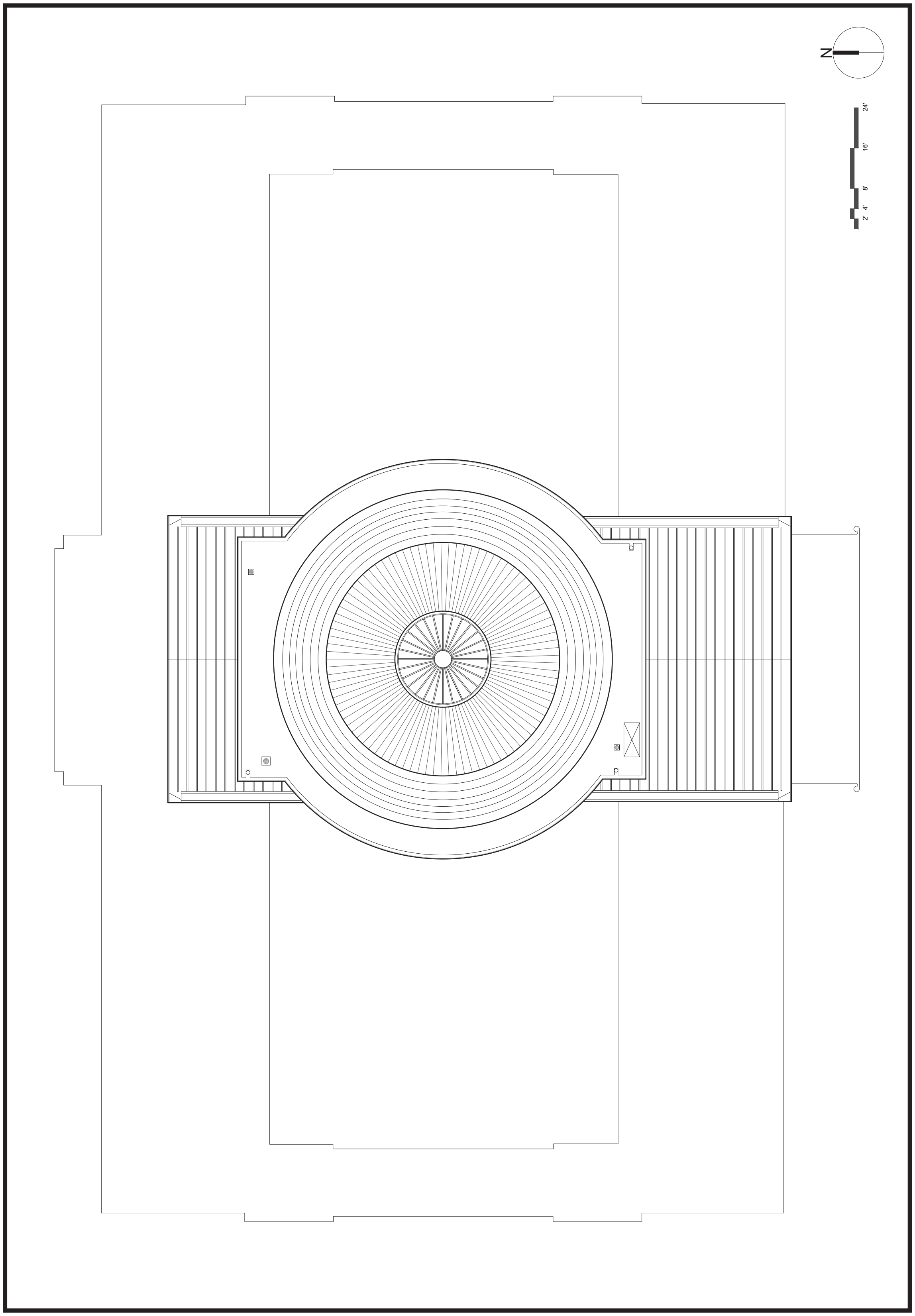


FIGURE 157. *Roof plan. Drawing by John G. Waite Associates, Architects, 2022.*

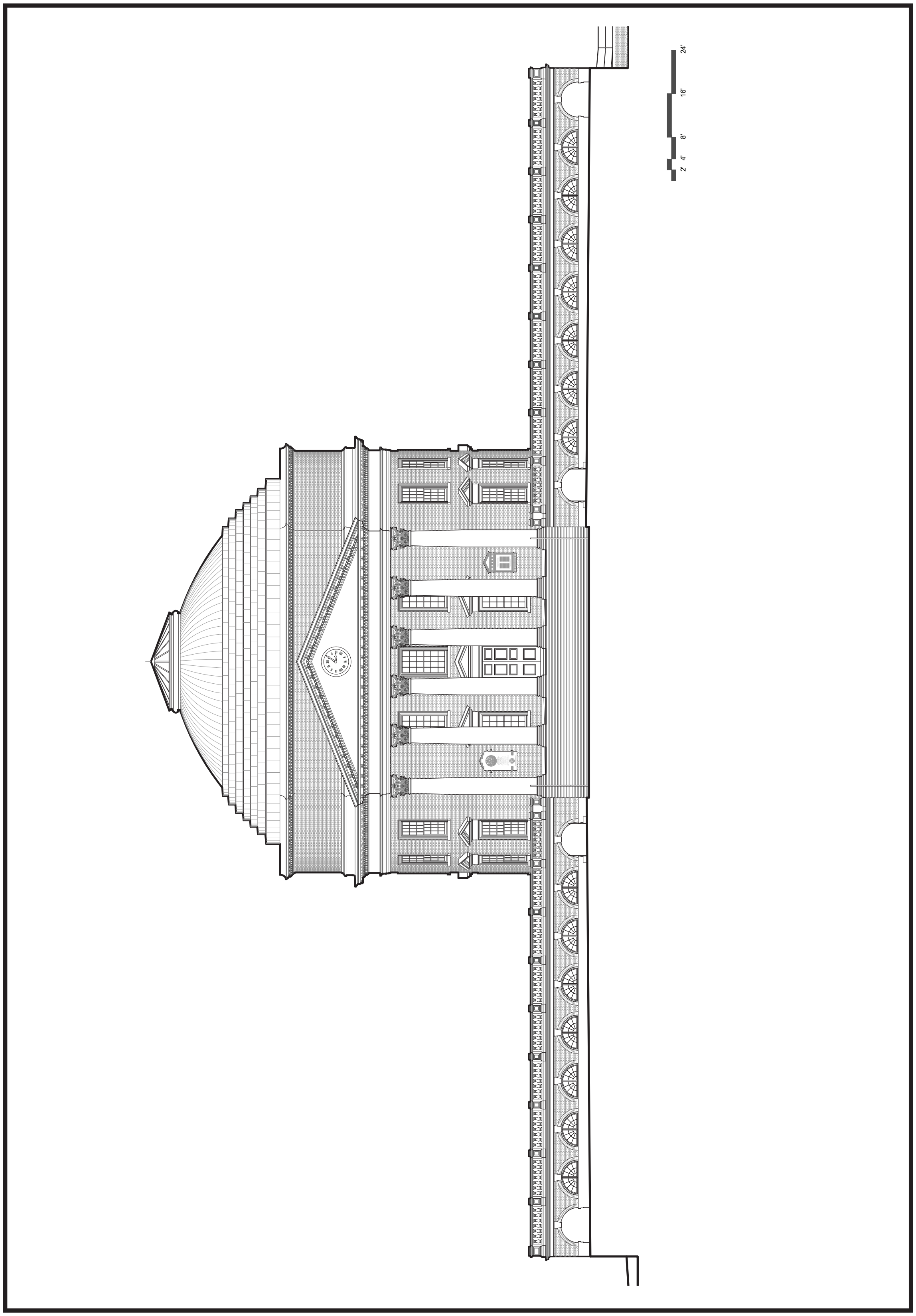


FIGURE 158. *South elevation. Drawing by John G. Waite Associates, Architects, 2022.*

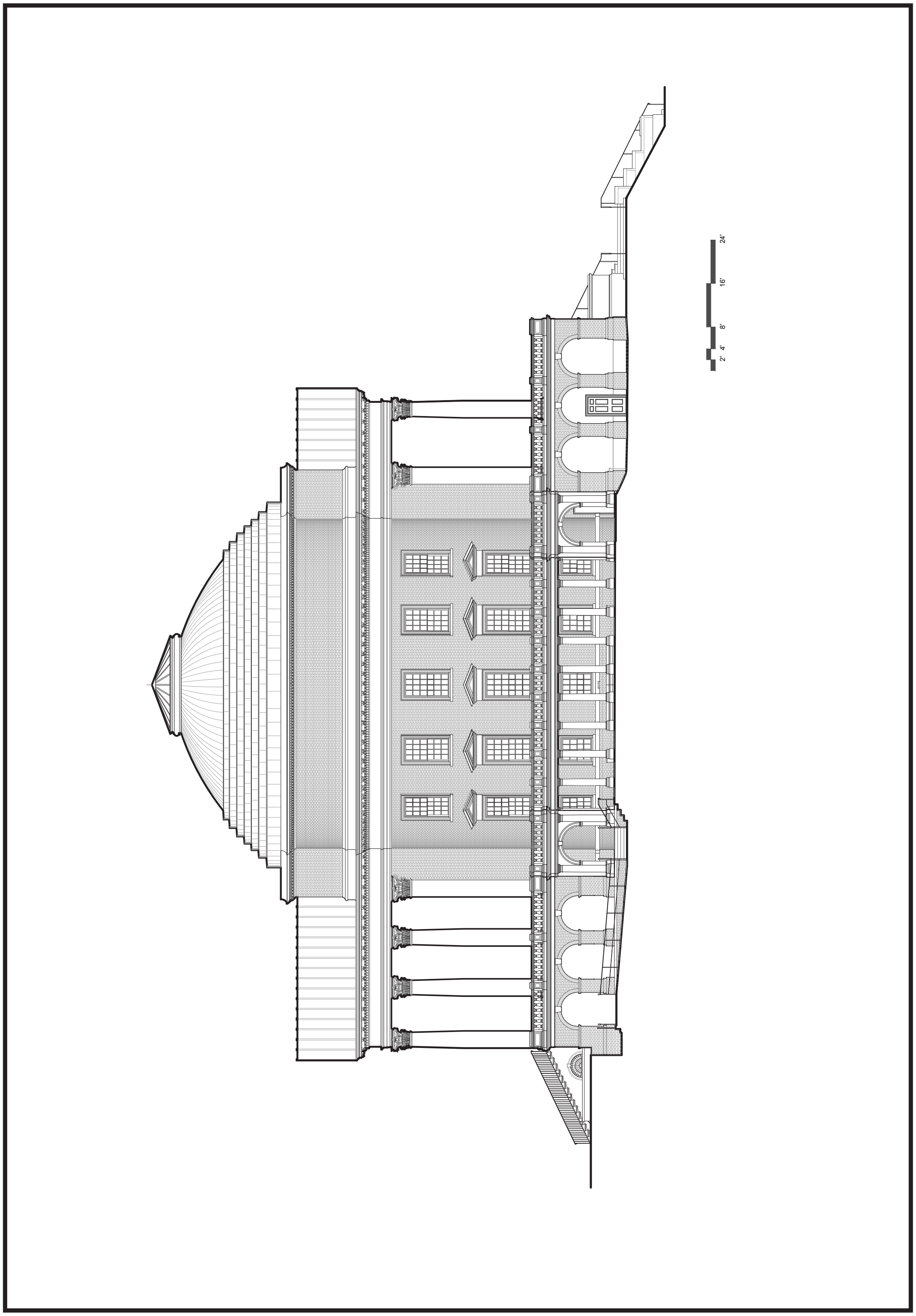


FIGURE 159. *East elevation. Drawing by John G. Waite Associates, Architects, 2022.*

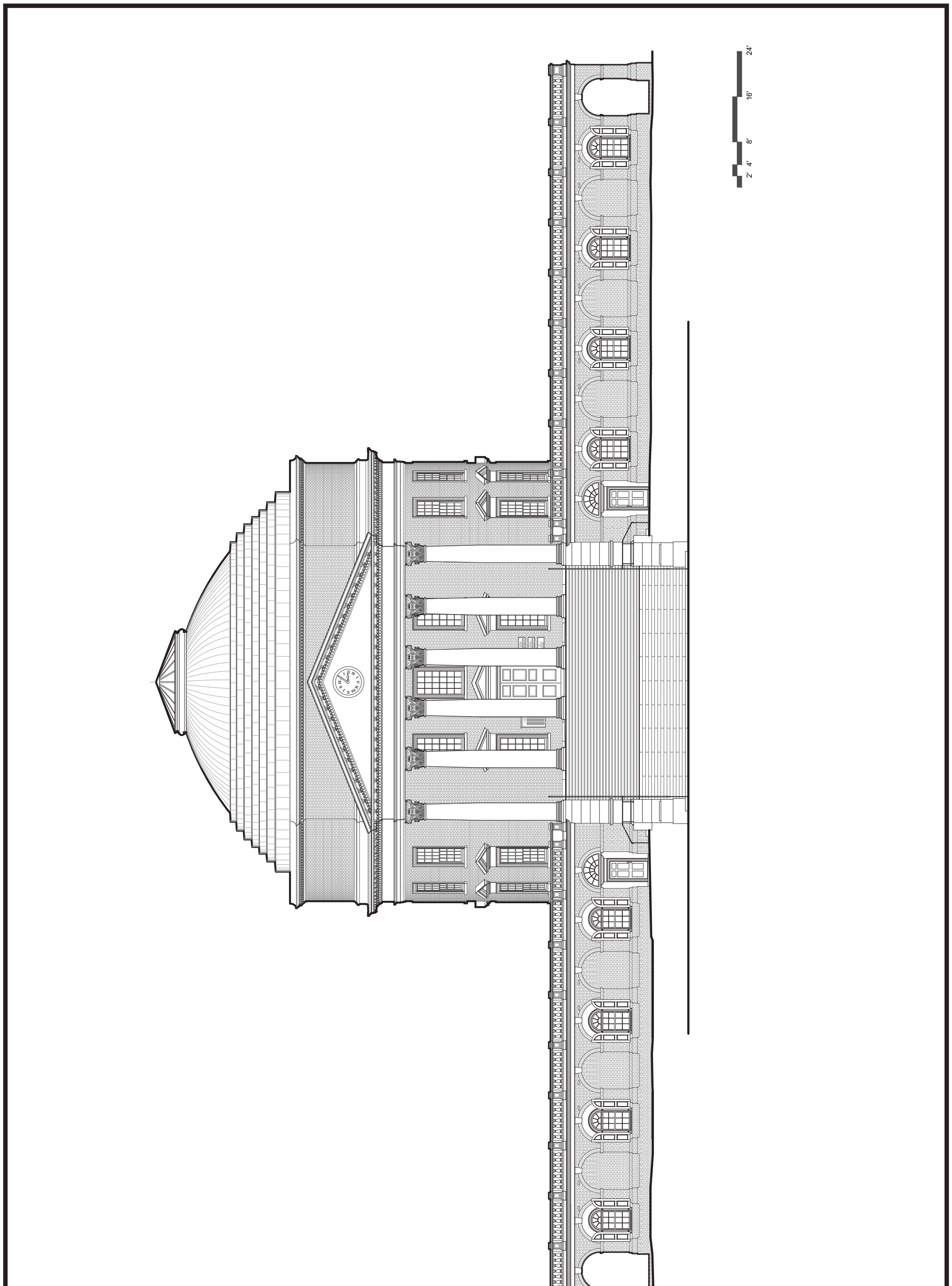


FIGURE 160. *North elevation. Drawing by John G. Waite Associates, Architects, 2022.*

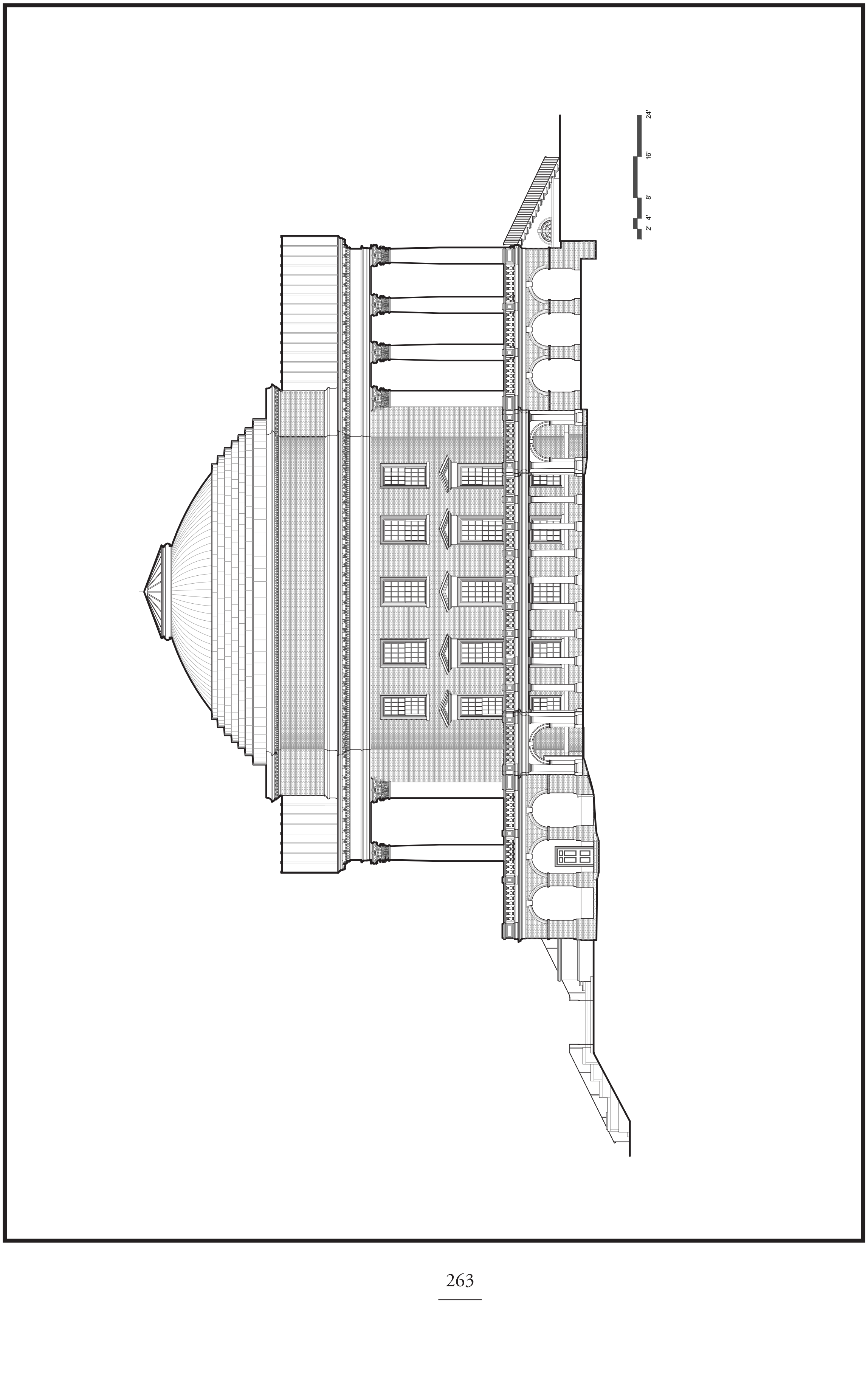


FIGURE 161. *West elevation. Drawing by John G. Waite Associates, Architects, 2022.*

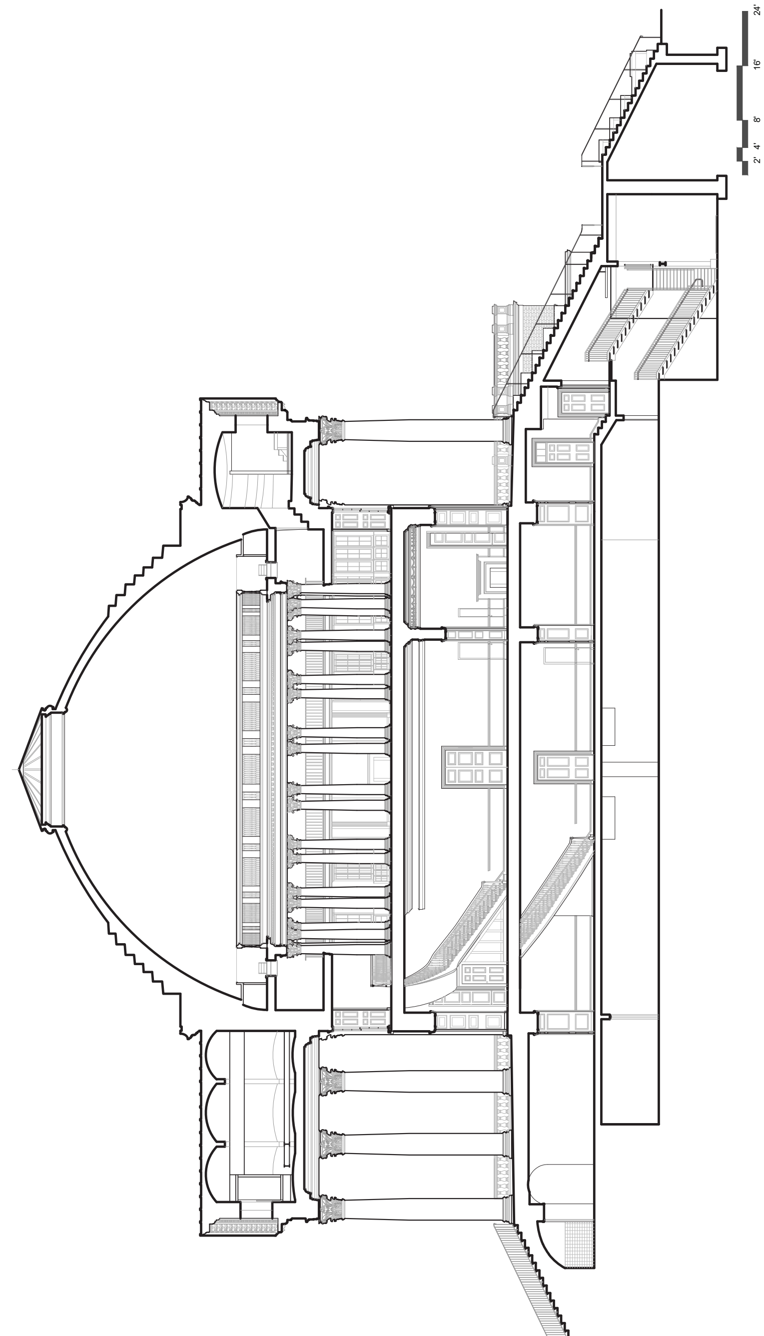


FIGURE 162. *Longitudinal section, looking west. Drawing by John G. Waite Associates, Architects, 2022.*

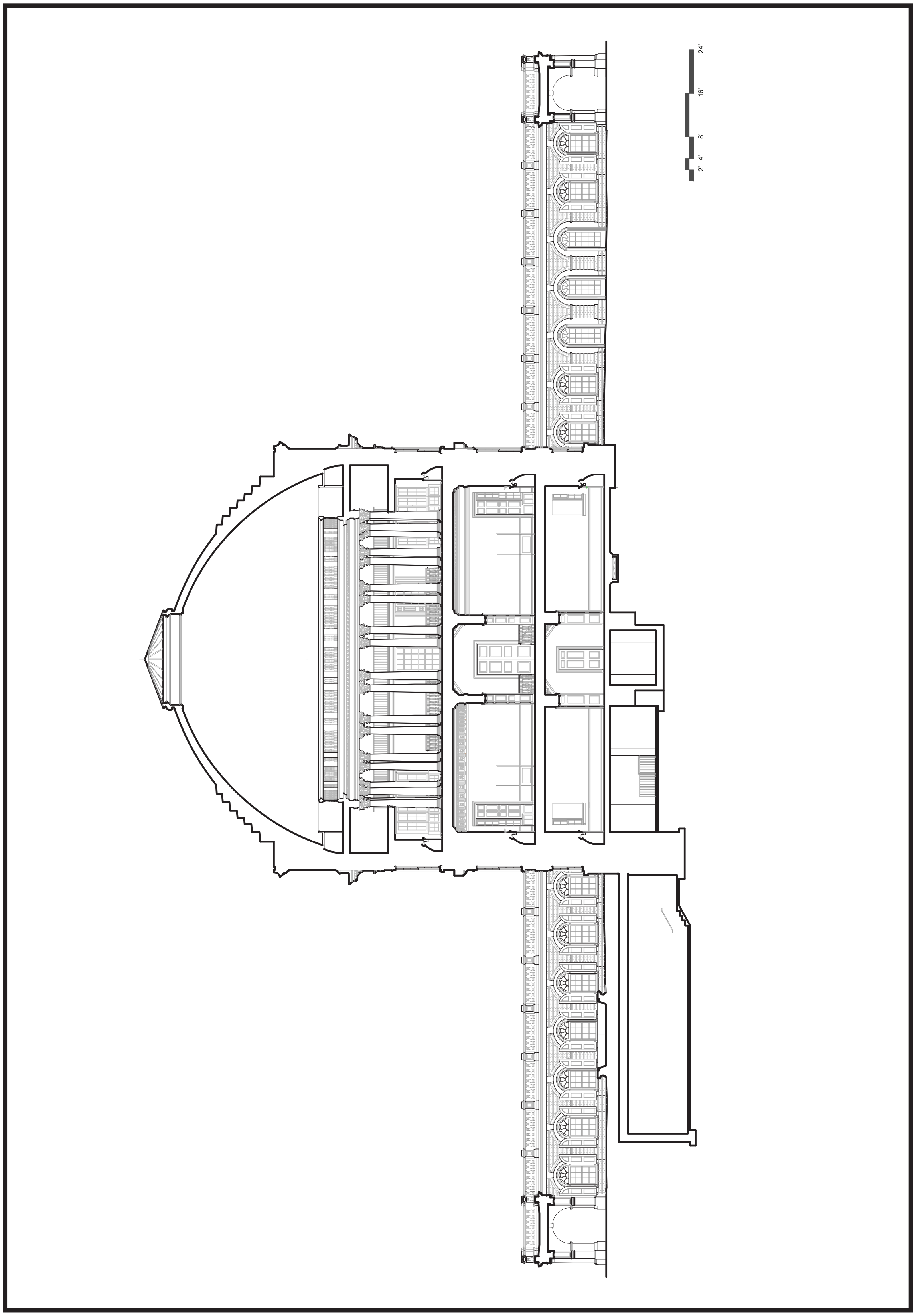


FIGURE 163. *Transverse section, looking south. Drawing by John G. Waite Associates, Architects, 2022.*

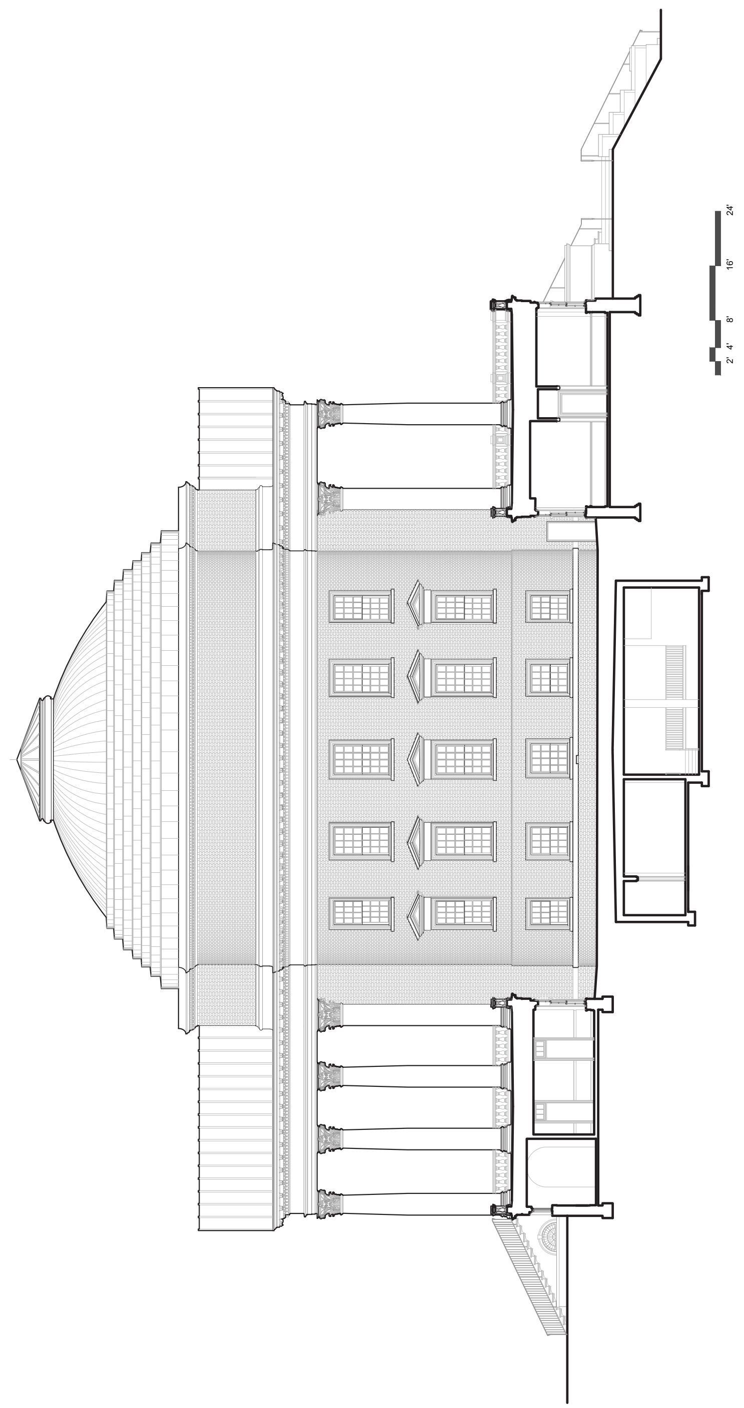


FIGURE 164. *Section through the east courtyard, looking west. Drawing by John G. Waite Associates, Architects, 2022.*

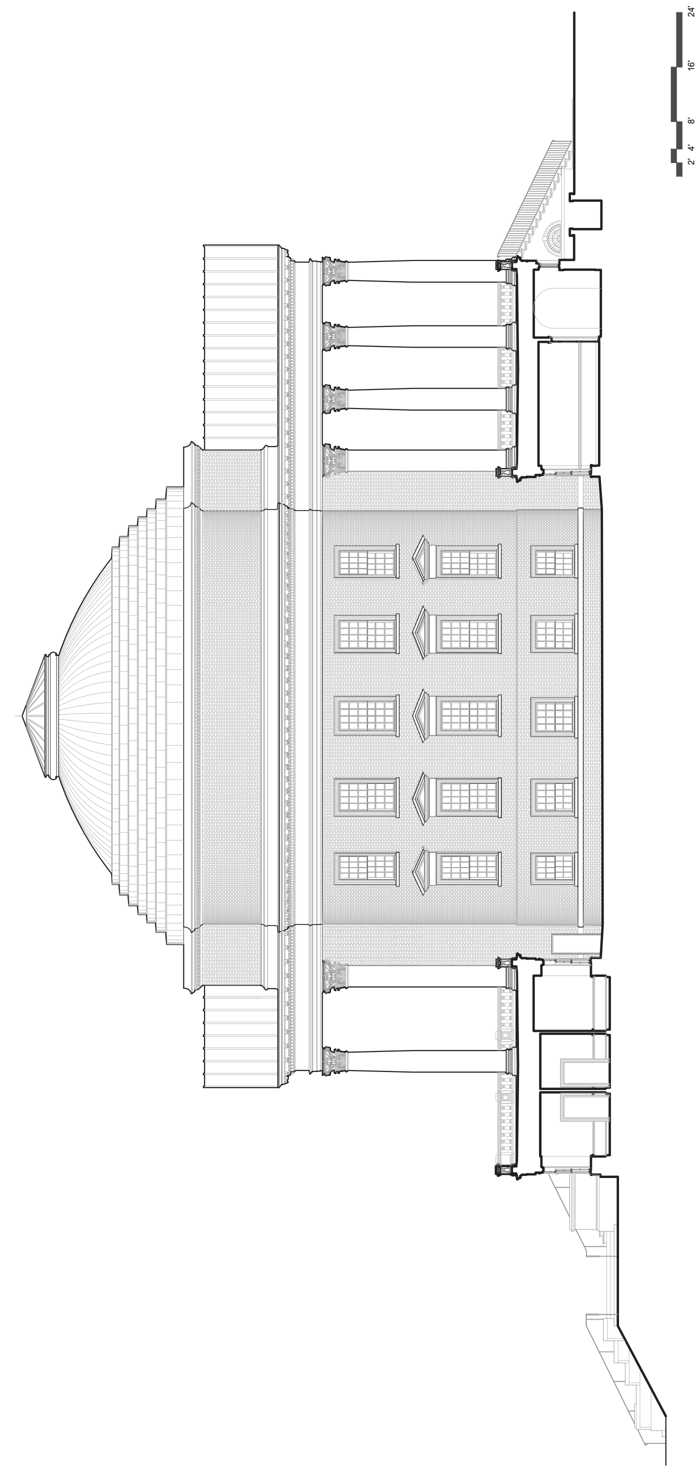


FIGURE 165. *Section through the west courtyard, looking east. Drawing by John G. Waite Associates, Architects, 2022.*

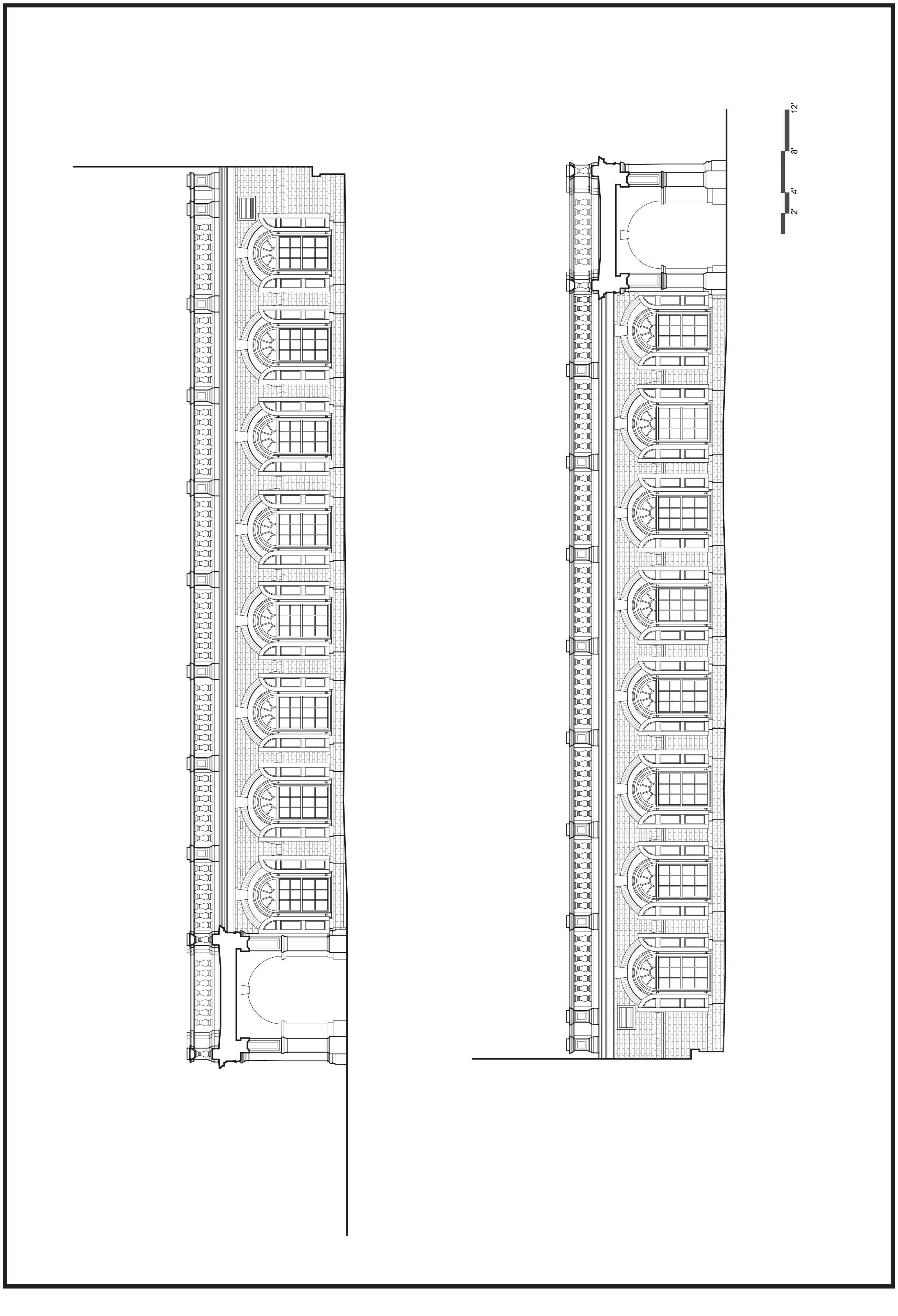


FIGURE 166. *South elevations, northwest wing, west courtyard (top); and northeast wing, east courtyard (bottom). Drawings by John G. Waite Associates, Architects, 2022.*

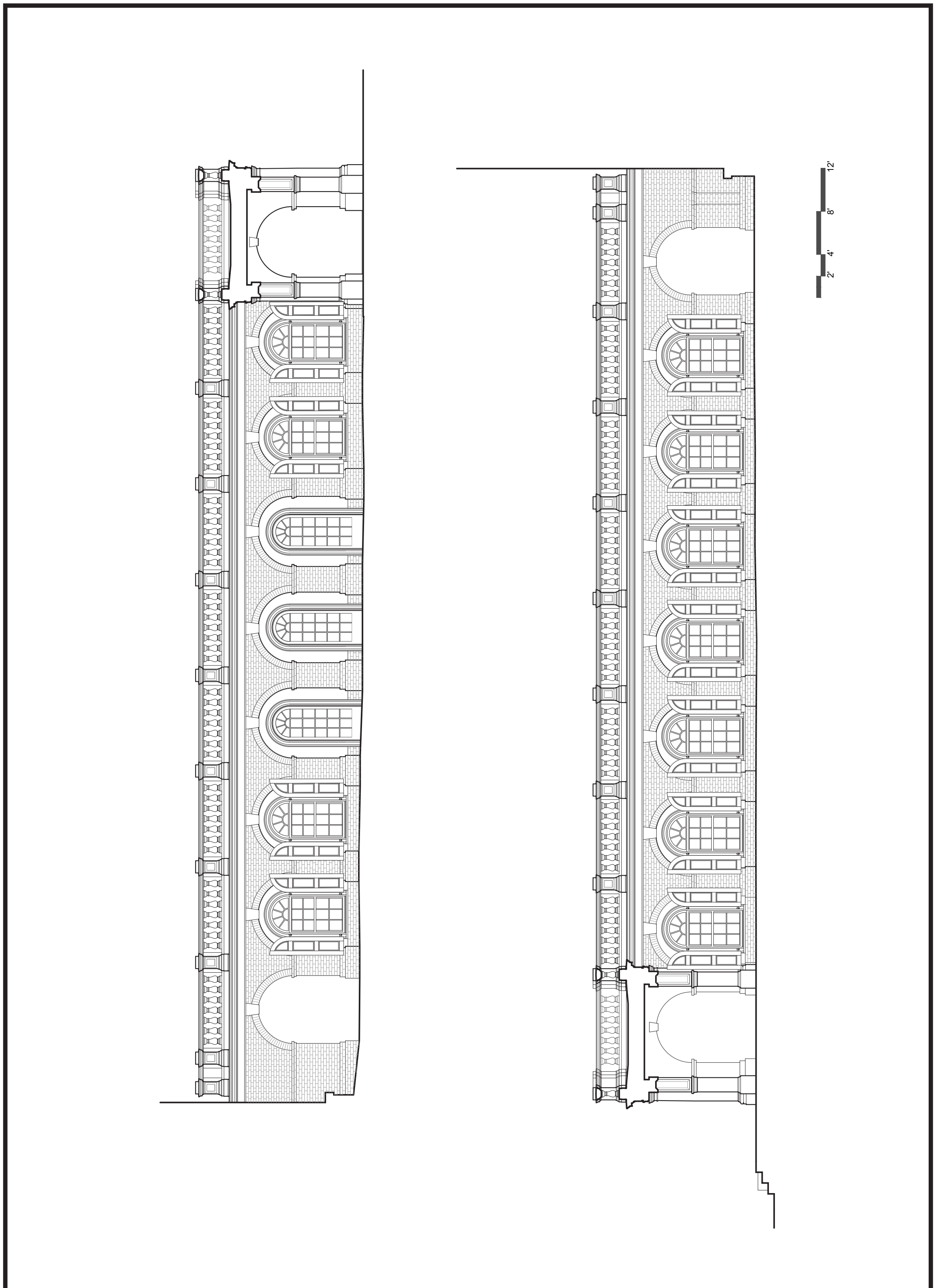


FIGURE 167. *North elevations, southwest wing, west courtyard (top); and southeast wing, east courtyard (bottom). Drawings by John G. Waite Associates, Architects, 2022.*

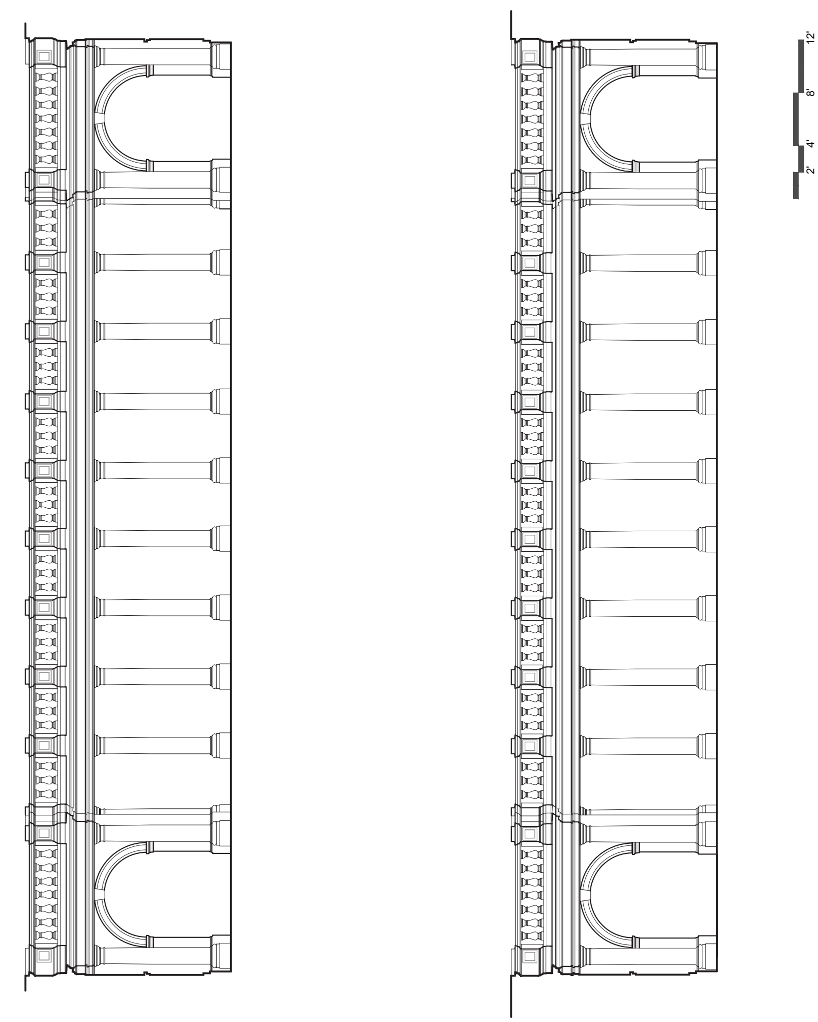


FIGURE 168. *East elevation, east colonnade (top); and west elevation, west colonnade (bottom). Drawings by John G. Waite Associates, Architects, 2022.*

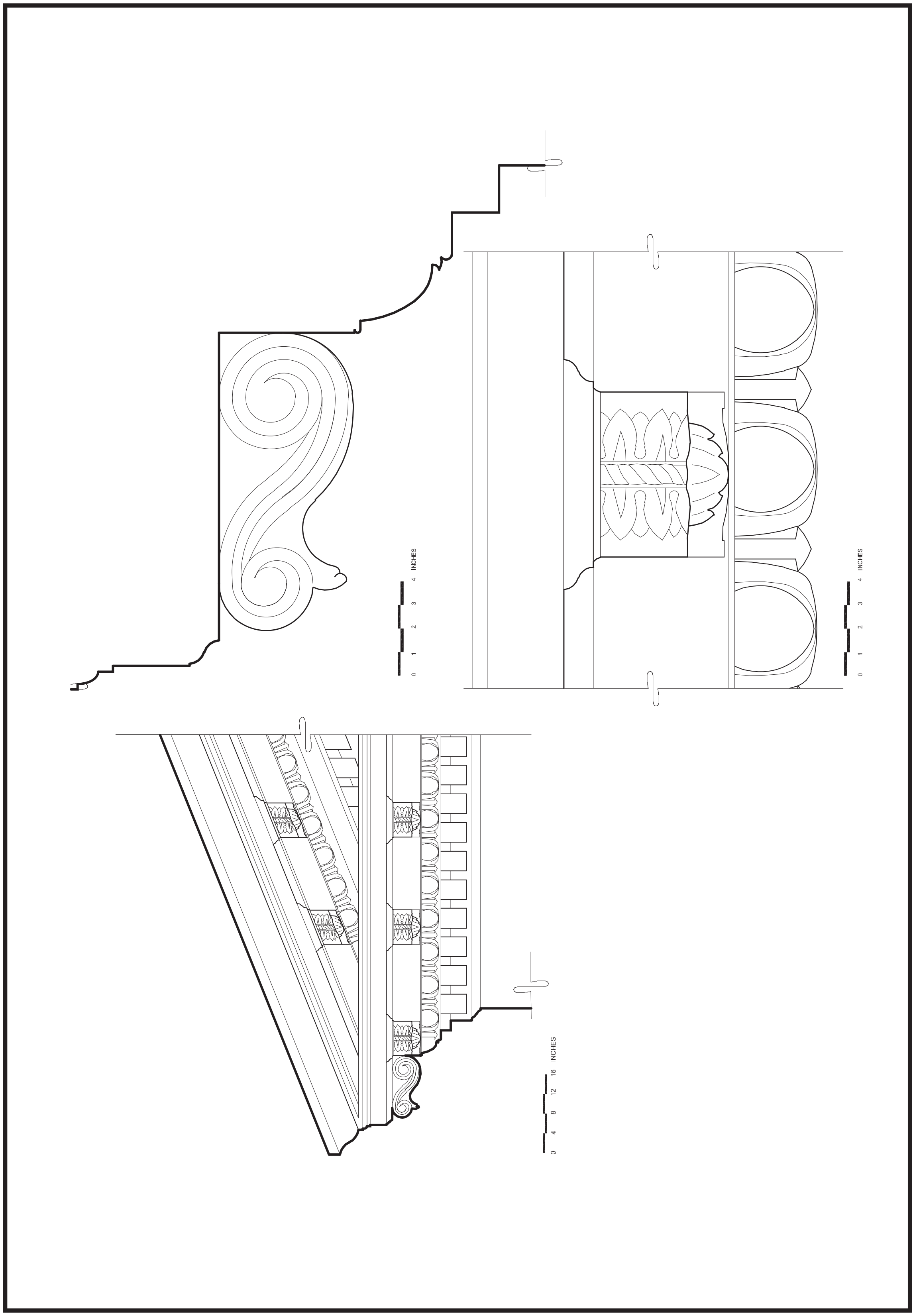


FIGURE 169. *Details, south pediment. Drawing by John G. Waite Associates, Architects, 2022.*

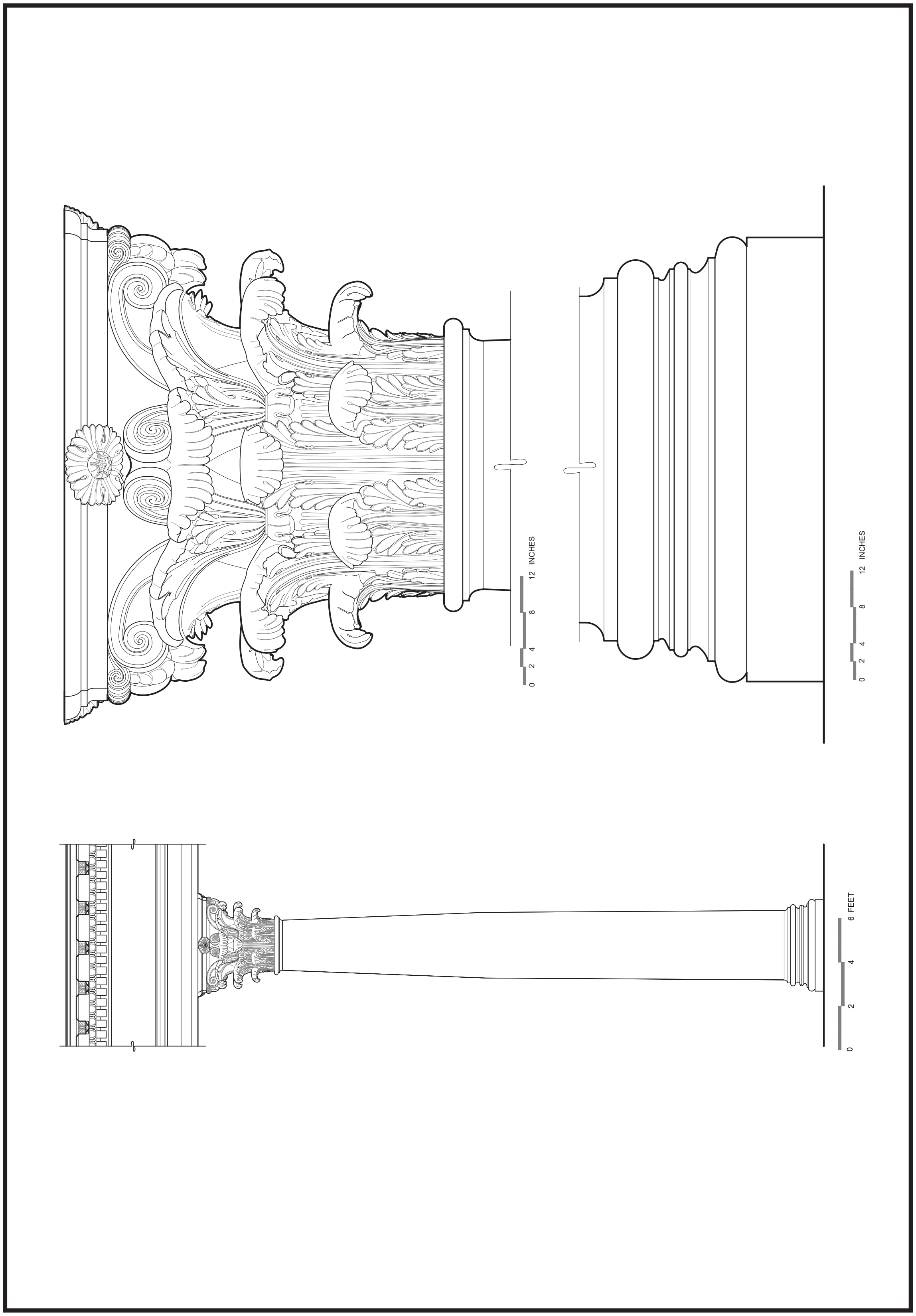


FIGURE 170. *Details, exterior column. Drawing by John G. Waite Associates, Architects, 2022.*

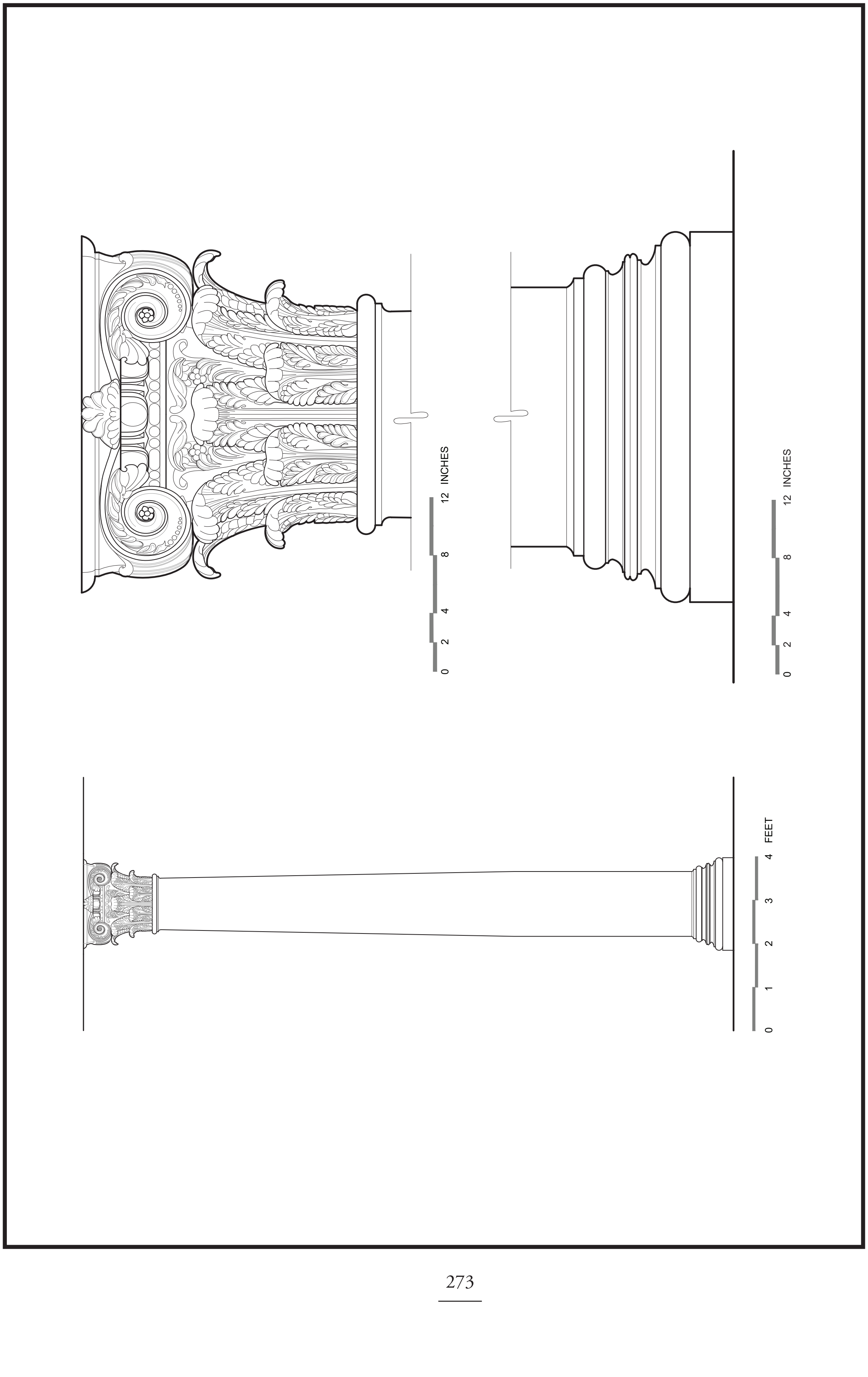


FIGURE 171. *Details, interior column, Dome Room. Drawing by John G. Waite Associates, Architects, 2022.*

Exterior

The Rotunda as it exists today is still the anchor and focal point of Jefferson's Lawn, but the building's exterior appearance is largely the product of the McKim, Mead and White reconstruction. The Jefferson structure survives as the central brick drum, with its window and door openings, and the south wings or terraces. Stanford White rebuilt the dome and the south portico and added a north portico and north wings to echo the features and colonnades of the south facade and the colonnades to connect the wings.

There are numerous photographs that record the Rotunda as reconstructed and enlarged by McKim, Mead and White, but only a handful that show the building before 1895. The earliest photograph, from 1868, shows the Rotunda and flanking terraces as seen at a distance from the south (Figure 32).

The following description lists the prominent features of the building and evidence of earlier building campaigns. The description begins with the general features and then covers the south portico and south elevation; north portico and elevation; east and west elevations; the roof; the south wings; the north wings; the colonnades; the terraces; and the courtyards.

General Features

Walls: The wall surfaces of the original drum, except in specific small areas, are composed of the original brick laid up in Flemish bond by Abiah B. Thorn and Nathanial Chamberlain beginning in 1823. The bricks are 2⅜" to 2⅝" high x 7⅜" to 7¾" wide x 3⅝" thick, and are laid such that the ten courses are approximately 2' 2½" to 2' 4½" high. By June 1824, the attic story was under construction. In that year, Benjamin Borden was paid for oiling the brick surface and penciling the mortar joints.

Windows: In an April 22, 1823, letter, Jefferson indicates that the "handsomest entablatures for windows . . . can be found on Plates XXXV and XXXVI of Palladio." Jefferson also stated that he would adopt the architrave at the left-hand bottom corner of Plate XXXV. Although these plates show various entablatures suitable for window and door openings, none indicates a pediment atop the cornice. The sheet-copper architraves designed by McKim, Mead and White generally duplicate the Palladio profile; they were fully restored in 2016.

Entablature: The brick walls extend up and behind a carefully proportioned, 6' 0" high sheet-copper Corinthian entablature: the architrave, frieze, and cornice are each approximately 2' 0" high. The entablature was fabricated from the design of McKim, Mead, and White, based on the original wood entablature designed by Jefferson.

The original entablature, fabricated by James Dinsmore and John Neilson, was based on Plate XXVI of Book 1 in the Leoni edition of Palladio (Figure 14). Post-fire photographs show closely spaced, vertical wood nailers on the brick surface, to which the wood entablature was attached (Figures 53-59). When McDonald Brothers measured the evidence remaining for the entablature after the fire, they found that the height of the original entablature, together with the attic base, was approximately 8' 9½" (the existing entablature, with the attic base, forms an 8' 11¾" high band). The original rosettes that ornamented the soffit of the wood cornice and the rake of the pediment were of "burnt composition" (probably terra cotta), ordered from William J. Coffee of New York City in 1824. Jefferson indicated that 330 rosettes were needed.

The McKim, Mead and White entablature begins with a three-fascia architrave culminating in a cyma recta molding. The frieze is a series of flat metal panels imprinted with shallow flutes. The cornice includes a bed molding (made up of a cyma recta, a denticulated course, and an egg-and-dart course); a modillion band with scrolled modillions (ornamented with acanthus leaves); a corona ornamented with rosettes in the soffit; and a crown molding with a fillet, ovolo, fillet, and cymatium.

This entablature continues around the north and south porticos. The surface above the crown molding includes a shallow metal gutter that connects to the gutters on the roofs of the porticos.

FIGURE 172. *The Rotunda from the southeast.*

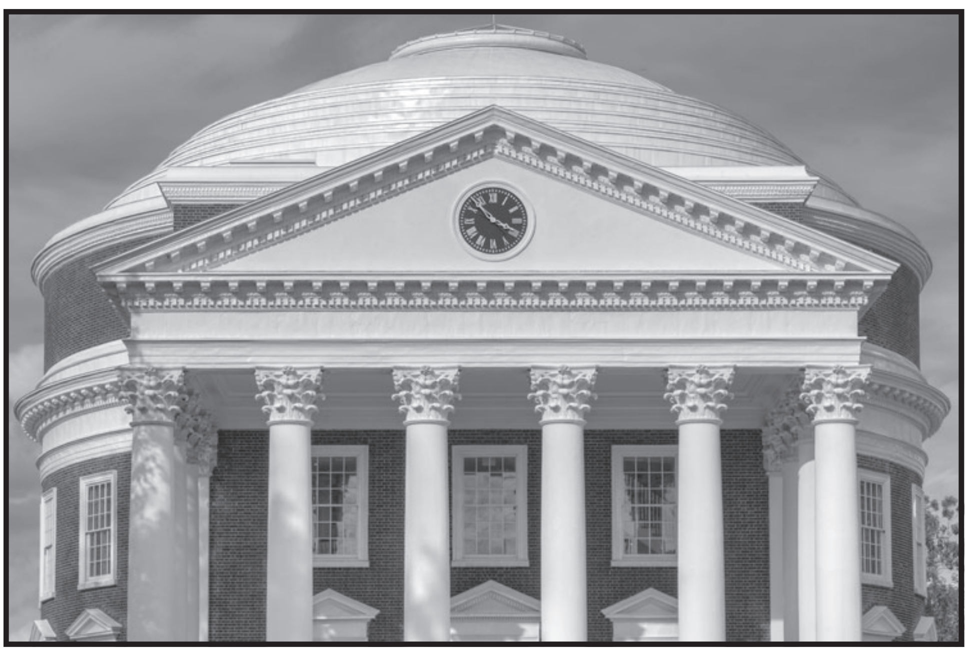


FIGURE 173. *The south portico.*

FIGURE 174. *Intermediate cornice and support system revealed during restoration.*

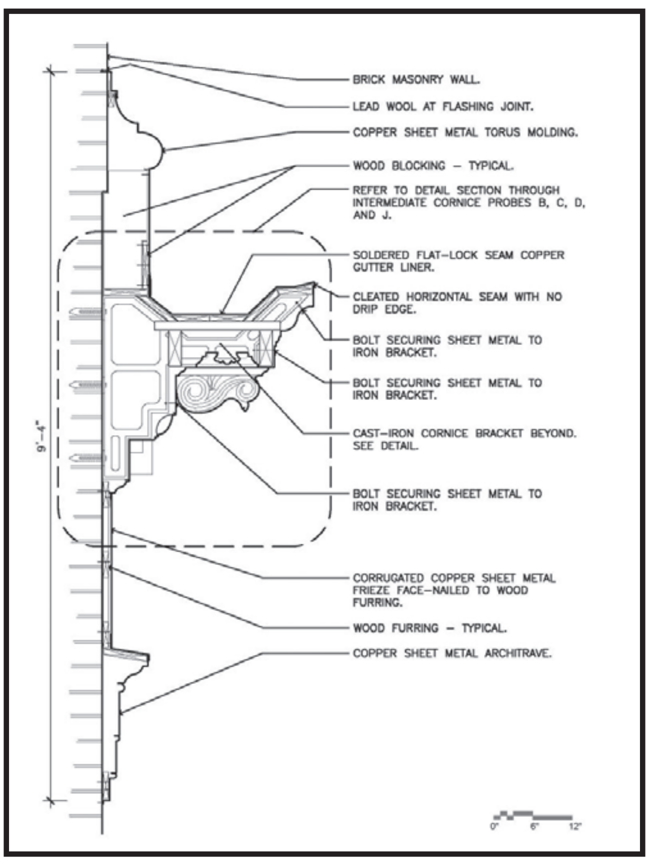


FIGURE 175. *Section through the intermediate cornice. Drawing by John G. Waite Associates, Architects, 2012.*

In the 2016 restoration, the metal trim was removed from the building, stripped, restored, and re-installed. Historically, it was supported by a cast-iron armature that was not well anchored to the building, so the 2016 work supplemented the existing structure and created a new anchoring system (see the structural analysis section of this report for a more thorough discussion of this work).

Attic story: Above the entablature, the brick walls rise 12' 8½" to form an attic story; this surface was constructed in 1824, after the dome structure was completed. The 2' 5½" high sheet-copper base includes a frieze, torus, fillet, and cavetto molding.

At the top of the attic story, a 1' 8¼" high metal cornice is composed of a cavetto, fillet, and egg-and-dart course below a dentil course and a cymatium. Above the cornice, the metal sweeps up in a 1' 1" deep scotia to the rim of the roof gutter.

Rotunda: South Portico

The south portico is five bays wide and projects three bays from the south facade. Ten columns and two engaged pilasters, which replaced the original features designed by Jefferson, support an entablature, pediment, and gabled roof.

The existing fireproof south portico, designed by McKim, Mead and White, replaced the wood frame structure that was destroyed in 1895. A photograph of the south front of the Rotunda immediately after the fire shows that only the brick wall of the south facade and the ten structural brick columns that supported the pediment survived the fire (Figure 53). The pediment, roof, and ceiling of the portico were destroyed. The photograph shows the triangular outline of the pediment on the brick wall, and a tall doorway centered in the wall that opened from the attic of the portico into the upper gallery of the original Dome Room.

In a letter dated February 2, 1896, McDonald Brothers described what evidence remained of the original portico:

> Measurements taken from the old walls show the height of the columns of the portico, including base shaft and capital to be 28'6". The survey also shows the diameter of the columns at the base to be about 2'11" . . . The height of the base of the old columns measured from the floor to the top of the torus is 17⅞", within ⅛" of the proportions of the same members on the Pantheon.

The portico as designed by Stanford White seems to follow these proportions. The concrete columns, including the marble bases, shafts, and capitals, are 28' 6½" high. Above the apophyge, the concrete column shafts are approximately 3' 2" in diameter.

By 2000 the deterioration of the 1896 capitals necessitated their replacement. For the 2016 restoration, new capitals, each weighing 7,000 pounds, were carved in Carrara, Italy, of the same marble specified by Jefferson to match the design and craftsmanship of Jefferson's originals. Fragments of the originals and pre-fire photographs were analyzed using computer enhancement to authenticate the design of the new capitals.

The 2016 restoration also replaced the plaster ceiling and restored the plaster cornice and the 1896 cast-plaster eagle that adorns the center of the ceiling. New recessed light fixtures and ventilation grilles were installed in the ceiling.

The first stone steps were not installed until about 1832. Pre-fire photographs reveal that originally there were fourteen risers. There were no handrails. Although all of the Jefferson and Neilson drawings show massive cheek walls flanking the steps, these walls were never constructed. The current marble steps, installed in 1939, descend south in fifteen risers to the sidewalk. The 2016 restoration renewed the brick structure below these steps and installed newly designed handrails.

Rotunda: South Elevation

The three-bay-wide south elevation is the flat south surface of one of the "buttresses" that Jefferson designed to support the dome. The original brick is laid in Flemish bond, such that ten courses are approximately 2' 4¼" high. Engaged pilasters

FIGURE 176. *New column capitals in Italian workshop.*

that project 6" from the east and west ends of the elevation extend up to Corinthian capitals to support the portico roof; the entablature of the portico ceiling extends across the facade. The base of the facade is trimmed with a marble fascia. The brick wall surface, as it returns north at the corners, is slightly battered as it rises upward. This subtle condition is evident in the corners, where the battered wall attaches to the curved wall of the drum.

Above the portico roof, the brick facade extends straight up to the roof at the base of the dome.

The first-story doorway and flanking window openings, along with the three second-story window openings, are original 1827 features. The pressed -and rolled-copper trims and wood window sash date to the McKim, Mead and White reconstruction. These features were removed, stripped, repaired, repainted, and installed as part of the 2016 restoration.

The current window entablatures and pediments differ in proportion from those seen in pre-fire photographs. The old images record a frieze that is only three bricks in height; the current sheet-copper frieze is a full five brick courses in height. The reason for this change, made by McKim, Mead and White, is unknown. Post-fire photographs reveal that the destroyed wood frieze and pediment were attached above each opening to three symmetrically placed vertical wood nailers affixed to the brick wall surface (Figure 53). The identical method of attachment can be seen in post-fire photographs of Robert Mills's Annex (Figure 60).

The same 8¼" two-fascia copper profile is used to trim the three second-story window openings that light the Dome Room. These openings have marble sills and 12/12 wood sash from 1898.

Curiously, these three second-story openings were not shown on Jefferson's 1819 floor plan of the Dome Room, and neither of the John Neilson's plans (November 1821 and 1822) show the three openings. It appears that initially Jefferson did not intend to have windows in the south wall of the Dome Room; perhaps he was leaving additional wall space for the library bookcases. Eventually, openings were included, presumably at Jefferson's direction. In an August 10, 1823, letter to Brockenbrough, Jefferson wrote, "I have omitted to place a door in front, opening under the Portico . . . it should be of the width of the main door below." Jefferson also asked for a railing across the lower portion of the opening: "a folding sash door so as to give light when shut. its bottom to be closed by an open pannel either Chinese or iron."

FIGURE 177. *North elevation.*

FIGURE 178. *North portico.*

The next day Brockenbrough suggested that a window would work better than a door and explained that he had already prepared a stone sill and window frame for that opening. Jefferson immediately wrote back that he thought a door would be "greatly preferable to a window both as to appearance & use, exactly such as in my parlour, except that the bottom panels had better be of wood." It is not known if a door was ever placed in the opening. In the earliest known photograph of the Rotunda (1868) 12/12 sash are clearly shown in all three second-story openings.

Plaques mounted to the north elevation commemorate Woodrow Wilson (a graduate of the University) and students who died in World War I. Plaques commemorating Confederate soldiers from the University who died in the Civil War were removed in the 2016 work.

Rotunda: North Portico

The McKim, Mead and White portico on the north elevation is similar to that on the south elevation but only one bay deep; as explained by Professor William Thornton, the portico was "much less in depth, in order to not detract from the dignity of the southern front."

The 2016 restoration replaced the column capitals, renewed the plaster ceiling, and installed new recessed light fixtures.

Rotunda: North Elevation

The north elevation generally duplicates the conditions of the south elevation. To the east of the doorway three vertically-placed bronze plaques mounted to the brick wall memorialize soldiers from the University who died in World War II, Korea, Vietnam, and Iraq.

There are no known Jefferson-era drawings of the north face of the Rotunda. The Jefferson and Neilson plans indicate that a central door flanked by window openings was the significant feature at the main-floor level. Neilson shows a platform with flanking steps in front of the doorway. In 1824, 160 square feet of marble tiles were ordered for the "Platform of the back steps." The November 1821 Neilson plan includes a representation of the back steps. in which the porch platform extends to the outer (east and west) edges of the windows flanking the doorway. Short flights of steps then ascend to the ground. The reality of the ground level on the north side of the building makes this scheme impossible; the steps would be much too steep, much like those that ascend a Mayan pyramid. Either the platform was much shorter (its depth is unknown), or the steps would have to extend well beyond the outer edges of the facade. This situation is discussed in a letter from Brockenbrough to Jefferson dated July 14, 1824. Regardless of their form, the platform and steps likely included some sort of iron railing.

At some date during or after the original construction, three window openings were placed in the wall surface above the doorway. Neither Jefferson's nor Neilson's floor plans show window openings in this location, and no evidence was found of openings during the recent restoration work. Post-fire photographs show that the existing elements are attached to the brick surface at each opening by three evenly spaced vertical wood nailing strips, the same condition seen on the other facade and on the Mills Annex.

The entablature that originally encircled the building continued across this facade, and evidence for this feature is preserved in the north pediment attic. There is no obvious evidence for a raking pediment on the surface of the attic story, but a careful analysis of photographs taken of the north elevation in 1896 reveals that Jefferson did place a pediment above the entablature (Figure 73). It was removed when Robert Mills carried out the expansion in 1853. A possible reconstruction of the appearance of this elevation was developed by Peter Hodson and drawn by Calder Loth in 1966 (Figure 27). An update of that drawing by John G. Waite Associates, Architects shows the pediment and the arches of the terrace wings as open, as they originally were constructed (Figure 28).

Rotunda: East Elevation

The east elevation includes the curved east face of the Rotunda drum, five bays wide, between the tall, narrow north and south "buttresses."

The original bricks are laid in Flemish bond, such that ten courses of brick are approximately 2' 2½" high.

The brick foundation is capped with a 9½" high stone water table, which projects approximately 1' 0" out from the brick. This coping stone was quarried in 1833 and set in 1834. The brick extends up thirty-seven courses above the water table to a course of blackened bricks, then steps back to the main surface of the drum. The blackened brick course aligns with the marble crown molding below the balustrade of the wings; it is not seen in the post-fire photographs.

Windows: There are five original 1827 window openings in each of the three stories; the center openings at each level are false windows, set in front of the reconstructed east chimney. The trim and sash date to the McKim, Mead and White restoration and reconstruction.

The post-fire photographs reveal that the false windows survived the conflagration but were removed when McKim, Mead and White created functional window openings in these locations. In those photographs, a brick wall surface can be seen behind the broken glass of the false windows (Figures 57-58).

Each ground-level window opening is framed by a 7¾" wide two-fascia architrave set in the opening. The sandstone sills sit directly on the water table. The sills are 5½" high at the outside ends and then dip down to 5" at the center. The top surface of each sill retains a curved outline, which may indicate that the original sash were curved. The openings are fitted with 8/8 sash from 1898.

The tall first-story window openings have similar trim to the south window openings (8¼" wide two-fascia architraves; marble sills; pediments; and 12/12 wood sash), but the trims are curved to follow the surface of the drum and are positioned on the face of the brick wall rather than within the openings.

Like the front and rear elevations, the window entablature and pediment vary slightly in size from the conditions seen in pre-fire photographs.

The second-story window openings that light the Dome Room are also similar to the south windows, with 8¼" two-fascia architraves, marble sills, and 12/12 wood sash.

There is a noticeable notch at the base of the water table, below the center ground-floor window opening. This notch may be related to a chemical hearth at the east fireplace in the lower east oval room. A similar notch, at the north end of the water table, served the chemical hearth at the north end of the room. That notch was inadvertently repaired/removed in the 2016 work.

Rotunda: West Elevation

The west elevation is currently a mirror image of the east elevation, but the post-1895 fire photograph taken by Wampler (Figure 55) reveals some features that were unique to this elevation. In the photograph, the south buttress wall surface includes four small circular openings, one above the other. The very top opening is in the attic story. Fire debris obscures the wall surface at ground-floor level, where a fifth opening may have existed. These openings may have been vents for the shaft that housed the bell rope. The origin of the openings is unknown, and they do not appear in the 1892 photograph of the Rotunda from the southwest. The Wampler image also records a small rectangular opening at the bottom of the west buttress, just above the stone water table.

Roof and Dome

The existing roof construction predominantly dates to the 1896-1897 restoration of the Rotunda, as designed and supervised by Stanford White. This work involved the complete replacement of Thomas Jefferson's wood-framed Delorme dome and gabled south portico that were consumed in the 1895 fire.

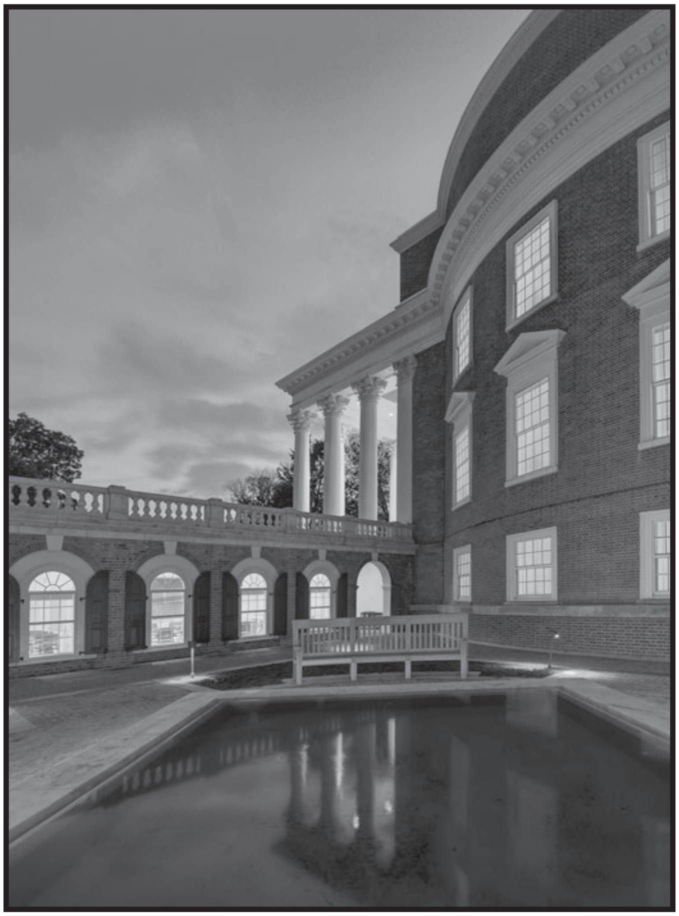


FIGURE 179. *East elevation and courtyard, looking southwest.*

FIGURE 180. *Copper pediment from ground-floor window during restoration.*

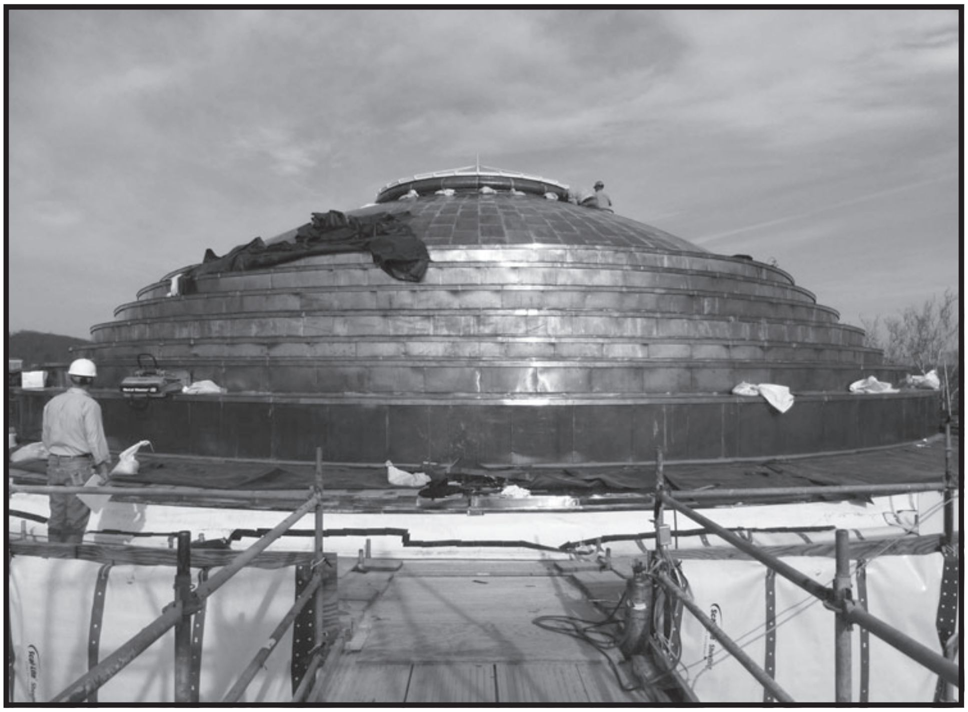


FIGURE 181. *The roof under construction, 2013.*

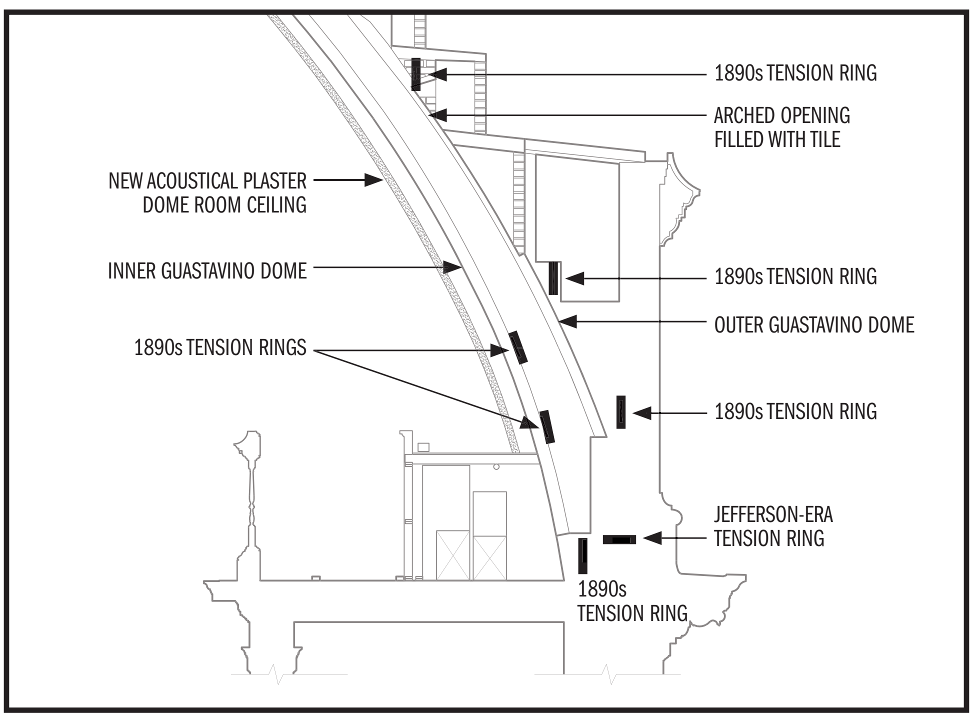


FIGURE 182. *Section through Guastavino domes showing tension rings. Drawing by John G. Waite Associates, Architects, 2022.*

The 2016 restoration uncovered the construction details of Rafael Guastavino's tile dome and vaulting. As constructed, the inner and outer tile domes each consist of three layers of flat 1" thick terra-cotta tiles with approximately 1" of mortar between the layers of tiles. The outer dome appears to have a fourth layer of tile. According to the April 20, 1896, specifications prepared by McKim, Mead and White, "All the surfaces of main dome and roof space where copper is to be laid, will be furnished with porous terra cotta." Rafael Guastavino's March 11, 1896, estimate for work on the Rotunda specifically notes furnishing "Dome step rings of porous terra cotta to allow nailing of metal roof architrave." It seems that porous terra-cotta was specifically provided to receive nails; this would make the application of copper sheet-metal roofing straightforward.

Both the inner and outer domes spring from the brick drum of the building. A cavity between the domes varies in depth, ranging from approximately 1' 4" deep at the base of the domes and 3½" deep near the oculus. The outer dome has a rough oculus opening of 21' 6". The inner dome has a rough oculus opening of 18' 8½".

Three steel tension rings, each with a vertical orientation, encircle the base of each of the two tile domes. The seventh tension ring at the base of the outer dome is embedded in the brick construction of the drum of the building. This tension ring has a horizontal orientation with lapped splice joints. It is probably wrought iron and may date to the original ca. 1828 construction of the Rotunda, when it may have been anchored into a heavy wood sill and the masonry wall below. This composite metal and wood construction likely formed the tension ring for Jefferson's wood-framed Delorme dome.

As constructed in 1896-1897 the inner dome was finished with plaster applied directly to the face of the tile. All of the plaster was removed from the tile in the 1970s; however, clear evidence of the plaster remains. Round wood pegs that appear to have been installed in the tile as nailing grounds were found at the base of the inner dome during the 2016 work.

The nearly flat deck that comprises the drum roof surrounding the dome steps on the exterior of the building is constructed with terra-cotta tile that spans inaccessible chambers separated by brick rib walls radiating from the dome to the outer edge of the drum walls. The decking is constructed of one layer of flat terra-cotta tile (approximately 1" thick and reddish in color) covered with approximately ¾" of mortar and a second layer of open-cell tile (approximately 3¼" thick and yellowish in color).

The steps at the base of the dome were reconstructed when the roofing was replaced in the 1970s. The riser of the lowest step was constructed with concrete block set in mortar. The tread of this step is constructed of cast-in-place concrete, poured over loose rubble topped with roofing felt. Each of the upper six steps are constructed of cast-in-place concrete.

Skylight: Jefferson's skylight was problematic, as it leaked. There were constant requests to fix it, as water continued to come into the library. To remedy the problem, in around 1840 a large glass-and-tin lantern was installed over the opening. Atop the lantern, a weathervane included a large 8'- to 10'-long quill. This lantern is seen in several images, including the 1856 Casimir Bohn lithograph. The weathervane was removed in 1860, and the lantern soon followed.

Sometime after 1880 (a photograph of that date shows no lantern) a large twelve-sided wood-and-glass lantern was placed over the opening and remained in place until the 1895 fire.

A modern aluminum-framed skylight was constructed above the oculus in the 1970s. The 2016 restoration replaced that feature with a new metal-framed skylight utilizing a muntin pattern that replicated the technology of the first quarter of the nineteenth century. A pattern was applied to the insulated glass to recreate the appearance of nineteenth-century lapped glass panes.

Stanford White originally intended to have skylights through the outer dome and in the portico roofs as well. Openings for these skylights were made during the 1896 work, but they were later filled in.

Roofing: The 2016 restoration replaced the 1970s painted, terne-coated steel sheet-metal roofing, as well as the copper roofing on the porticos, with copper roofing. While the 2008 historic structure report indicated that the portico roofing dated to McKim, Mead and White, investigations during the restoration found that it was a later feature. Copper sheet metal was also used to cover the built-in gutters.

Other Features: Access to the roof is through a 2016 aluminum roof hatch in the southwest corner, which opens to stairs that descend to the southwest stairwell (C403). The opening dates to the post-fire construction. The flat roof surface immediately east of this hatch may be the location of the original bell.

Chimney caps protruding through the east and west ends of the roof were removed during the 2016 restoration, and the flues were capped with concrete decking and sheet-metal roofing. Plumbing vents extend up through the northeast, northwest, and southwest corners of the roof. Roof drains at the four corners of the roof connect to internal downspouts. A single air terminal is mounted atop the skylight for lightning protection.

Originally, there were probably chimney flues at all four elevations. The 1856 lithograph published by Casimir Bohn shows some of these chimneys, and they are seen in views taken after the fire. In 1827 sheet-metal funnels may have been installed at each flue. The north and south chimneys were needed for the fireplaces in the north oval rooms and the stair landing fireplace in the main hall. A chimney must have also vented the chemistry hearths in the ground-floor east oval room.

South Wings

The wings flanking the south portico were designed by Jefferson to join the Rotunda to the east and west covered walks and to the pavilions flanking the Lawn. The wings served initially as gymnasia for the students. The 1825 Maverick plan shows that the rectangular wings were nine bays wide and three bays deep, with arcades along the north, east, and west elevations; the south elevations had lunette openings at the higher grade.

While accounts of the 1895 fire infer that these wings were "blown up" to prevent the fire from spreading, post-fire photographs reveal that the exterior walls seem to have survived without serious damage; only the later hipped roofs and interiors were partially destroyed. McDonald Brothers partially reconstructed the southeast wing, and subsequently both wings were fully reconstructed by McKim, Mead and White.

The wings, as they now exist, are still nine bays wide, with arched open passages in the end bays. The walls are brick, laid in a Flemish bond. Along the north elevations and the end elevations, the arched bays are delineated by brick piers. The piers rise from plain plinths and two-course-high bases up to two-course-high corbeled "capitals." The brickwork of these piers varies slightly, perhaps due to the repairs after the fire. For instance, in the southwest wing, the shafts at the three northeast openings are seventeen courses high, while the shafts at the three northwest openings are made up of larger bricks and are sixteen courses high.

Windows: The arched openings in the south elevations spring from 7½" high water tables. Each of the lunette openings is framed by a 2¾" wide ogee molding and is fitted with a pair of nine-light, quarter-round casement sash with radiating muntins. In each opening, only the west sash is hinged, opening into the corridor. Similar sash appear in photographs taken before the fire, and it is possible that some sash survived the fire. The sash were installed in 1841, when the gymnasia were enclosed to create interior spaces.

On the north elevations the seven center openings of each elevation were filled in and fitted with arched window sash in 1841. The openings have 6½" wide two-fascia architraves and sit above simple square-cut sills. Each opening has a 6/6 wood sash and a 6-light semicircular fanlight, dating to the 1898 post-fire reconstruction. The space between the window frames and the original, wider arched openings are infilled with masonry covered in cement parging.

During the 2016 restoration, the three center north openings in the southwest wing were opened and fitted with doors for access from a new multipurpose room (122) to the west courtyard. New paneled shutters were installed at the remaining window openings.

Balustrade: At the top of the walls, a 1' 5⅜" high marble cornice includes a bed molding (composed of a frieze, a fillet, a bead, and ovolo) and a crown molding (composed of a corona, a fillet, a bead, and a cyma recta molding). Above the cornice, a 2' 9½" high marble balustrade extends along the edge of the terrace roofs. The cornice and balustrade were installed in

FIGURE 183. *The southwest wing from the south.*

FIGURE 184. *The southwest wing from the northeast.*

FIGURE 185. *The northeast wing from the northeast.*

FIGURE 186. *The northeast wing from the southwest.*

1939 to replace the cast-concrete McKim, Mead and White balustrade. The original wood cornice was extensively damaged by the fire and then removed.

Photographs from the end of the nineteenth century, just before the fire, show no balustrade along the wings, but this was not always the case. The earliest detailed images of the Rotunda and wings show railings along the south sides of the terraces. The February 1823 Neilson south elevation rendering includes simple rails in a lattice (diamond) pattern, but later views from 1826 to 1845 consistently record railings of delicate Chinese-influenced fretwork, much like the current railings between the pavilions. The 1856 Bohn's album image shows a different railing, with vertical balusters. The earliest photograph, from 1868, shows that the railing had groups of nine turned balusters separated by square paneled plinths. This same arrangement is seen in several later photographs.

Stairs/ramps: The wings connect to Pavilions I and II with steps in the east and west bays of the south elevations. The steps in the outermost bays are concrete and are eight risers high, with 1' 1" deep treads.

In the bays flanking the south portico steps, the concrete steps descend from the brick-paved walkway that is directly south of the portico steps. The steps have seven risers, with 1' 0" deep treads. Drains are set into the center of the herringbone-brick-paved landings.

A ramp descending from the front of Pavilion I to the landing at the east bay of the southeast wing was installed in 1998. The ramp is paved with herringbone brick, to match the adjoining passages and walkways.

The steps and ramp are set within concrete retaining walls. There are also ramps along the west and east elevations (outer) elevations of the wings. Wrought-iron railings along the steps and the ramps were installed in 1998.

North Wings

The north wings were designed by Stanford White to expand the capacity of the Rotunda. Originally, each north wing held a single large lecture room, flanked at each end by open passages. The outer passages still remain open; the passages flanking the north portico were enclosed beginning in 1939.

The wings are nine bays wide and three bays deep, with arched open passages in the end bays. The bricks are laid in stretcher bond (typically between the piers), Flemish bond (typical in the spandrels and tympanums), and common bond (in some of the pier shafts). Ten courses measure 2' 4½" to 2' 5⅜" high.

As in the south wings, the bays are delineated by brick piers. The piers begin at the brick foundation with two-tier bases; the shafts extend up to two-course-high corbeled "capitals." The shafts are made up of eighteen to nineteen courses, depending on the size of bricks used. The marble cornice and balustrade extend across the tops of the wings.

The north elevation of each bay includes a door in the original inner passage and four window openings in alternating bays. The south elevations include windows in each of the enclosed bays.

The doorways are framed by 6½" wide two-fascia architraves and are fitted with six-paneled doors. Above each opening is a cornice and a fifteen-light fanlight.

Each of the window openings (four in each of the north elevations and seven in each of the south elevations) is framed by a 6⅜" to 6½" wide two-fascia architrave, and is fitted with a 6/6 wood sash and a six-light fanlight. Most of the sash date to the 1898 reconstruction; the window sash in the 1939 openings are later. Paneled shutters, installed in the 2016 restoration, flank the openings.

Colonnades

Stanford White designed the colonnades to connect the original south wings to the new north wings. The colonnades are eight bays wide and one bay deep; one-bay-wide connecting archways join the colonnades to the wings.

FIGURE 187. *The east colonnade and new elevator to the vault.*

FIGURE 188. *West colonnade terrace, looking north.*

Tuscan columns delineate the colonnade bays. The 9' 3" high columns sit on two-tier, 11" square plinths and support a marble soffit that is integrated into the marble balustrade. Engaged pilasters are set at the north and south ends of the colonnades, flanking the connecting archways.

The interior of each colonnade is paved with brick, set in the typical herringbone pattern. One-brick-wide borders extend along the edges of the column plinths. The plaster ceiling is approximately 11' 7" above the paving and is trimmed with a 6" cornice that sits above the marble soffit.

The connecting archways at the north and south ends of the colonnades feature a single arch in each bay. Each arch is edged in a 8½" wide two-fascia architrave and springs from an engaged pilaster. Within the connecting archways, the plaster ceilings are approximately 10' 6" above the paving.

The colonnades are lit by light fixtures mounted to the ceiling: two in each colonnade, and one in each of the connecting archways. In the northwest and southeast archways, the fixtures are set in access panels.

Terraces

Stanford White created the hard-surfaced terraces that extend above the wings and the colonnades to connect the south and north porticos. Before the fire, the 1841 hipped roofs above the south wings prevented the wings from being used as walkways. Originally, the south wings were covered by serrated wood-shingle roofs. These irregular surfaces were probably covered in decking that formed a flat surface. The 1826 Tanner engraving shows people standing on the terrace above the southwest wing, but in 1827 it was proposed that iron railings be placed in to the right and left of the portico to exclude access to the gymnasia roofs.

McKim, Mead and White's cast-concrete balustrade was replaced with the existing 2' 9½" high marble balustrade in 1939. The balustrade is composed of 7¼"-square turned balusters spanning between paneled piers that are centered over the piers of the wings and the columns of the colonnades. A 5¼" molded railing extends across the balusters and wraps around the piers; 3¼ slabs sit above the railing over the piers.

The terraces have been through numerous roofing campaigns. The most recent construction, in 2016, resulted in fields of new granite pavers set between salvaged bands of white marble. New metal drains are set into the pavers.

East Courtyard

The east courtyard, fully redesigned in the 2016 restoration, now includes a square central fountain of Georgia marble with a flat water surface, set in a circular field of brick paving. Teak benches curve along corner planting beds. Between the beds, the central paving connects to a perimeter path. The brick paving and planting beds are bordered with sandstone.

West Courtyard

Like the east courtyard, the west courtyard was redesigned in the 2016 restoration. The courtyard is nearly fully paved with brick, punctuated with a center sandstone circle. Sandstone banding forms borders along the paving and frames square corner plant beds, each with a single tree. The open nature of the courtyard was designed to allow this space to host events and connect with the new multipurpose room (121) in the southwest wing. Power and plumbing lines were roughed-in in anticipation of the installation of a fountain.

New Service Elevator and Stair

In the 2016 restoration, an elevator and a stair with access to the new vault were constructed to the east of the Rotunda. The concrete stair wraps around the south and east sides of the central brick elevator structure, descending within a brick-lined retaining wall. The elevator structure is built of brick, laid in Flemish bond, with a four-course-high base at the ground level. At the top, a painted wood frieze and entablature extend up to a shallow pyramidal roof covered in flat-seam metal

FIGURE 190. *The Rotunda and east courtyard from the east.*

FIGURE 189. *The west courtyard from the northwest.*

FIGURE 191. *The north terrace, looking northwest.*

FIGURE 192. *One of the 1896 marble capitals now placed on the north terrace.*

roofing. The elevator opening on the north elevation is set beneath a flat brick arch. Above that arch is a two-course-high corbeled brick string course that wraps around all four elevations. On the west and east elevations, that string course forms the spring line of a recessed blind arch and inset panel.

Landscape Features North of the Rotunda

After the 1895 fire destroyed the Annex, formal landscaping was introduced to the north of the Rotunda for the first time. McKim, Mead and White designed a series of formal terraces, but these designs were scaled back to a landing at the base of the steps and a second terrace set within the Rampart walls.

In 1959 the Rampart was removed, and the large intermediate brick terrace and brick paths were constructed. The northernmost and lowest terrace was added by the Garden Club of Virginia in 1976.

In the 2016 campaign, the intermediate terrace was redesigned to provide more open space for students.

North Portico Stair

The marble stair of the north portico is set between marble cheek walls. The marble steps date to 1939 and replaced the McKim, Mead and White concrete steps. They have 6½" high risers and 1' 1" deep bullnose treads. The 2016 work restored the underlying structure and installed a waterproof membrane.

The stair descends north to a 2016 herringbone brick landing. From the east and west ends of the landing, concrete steps, replaced in 2016, descend in three risers to herringbone brick walkways that extend along the north wings.

Intermediate Terrace

From the landing, a concrete stair, rebuilt in 2016, descends north in sixteen risers to the intermediate brick terrace.

The 1959 design featured a central square plaza of bricks with areas of grass to the east and west. As redesigned in 2016, a wide paved plaza extends across the full terrace, paved in fields of permeable bricks set in a permeable base. Sandstone bands separate the terrace into a large center square bay flanked by narrower bays with large square bays at the east and west ends. Brick paths connect the outer bays to paths that lead to the east and west; directly across from these paths, small paved areas extend north into planting beds.

At the middle of the center terrace is a statue of Thomas Jefferson by the sculptor Moses Ezekiel, dedicated in 1910. The statue still reflects Mary Myer's description in a 1910 *Alumni Bulletin*:

> The pedestal of Roman marble [8'-1" high] rests on a low [9" high] granite base. The pedestal decreases in circumference, until its top is the exact size of the lower edge of the bronze Liberty Bell which it supports. On top of the bell a small platform, decorated with laurel boughs, and formed apparently of a section of the beam from which the bell depended, supports the life-size statue of Jefferson.
>
> Around the top of the bell, which forms part of the pedestal, is the inscription on the original Liberty Bell; around the lower edge, these words "To perpetuate the teachings and example of the founders of the Republic this monument to Thomas Jefferson was presented to the people." Placed at regular intervals against the bell are four winged female figures, symbolic of Liberty, Justice, Religious Freedom, and Human Freedom. The statue of Liberty faces north, Justice, south, Religious Freedom, west, and Human Freedom, east.
>
> . . . Above these symbolic figures stands Jefferson . . . The sculptor represents him as he looked at the time of the Declaration of Independence, a copy of which he holds in his hands.

Light standards: Light poles are positioned in the corners of the outer square bays. The octagonal standards are set on concrete bases.

Flagpoles: Two bronze flagpoles, donated to the University in 1917 (one for the United States flag, and one for the Virginia flag), are set in the east and west bays. Each of the flagpoles rests on an octagonal concrete base/bench. The east flagpole bears a plaque that reads: "A GIFT/FROM THOMAS FORTUNE RYAN/TO THE UNIVERSITY OF VIRGINIA/APRIL 13-1917." On the west flagpole, a similar plaque reads: "A GIFT/TO THE UNIVERSITY OF VIRGINIA/FROM PAUL GOODLOE M^C^INTIRE/CLASS OF 1879/DECEMBER 14TH 1917."

Sundial: In the paved area north of the east bay there is a bronze sundial set in a cast concrete base. The sundial was donated in 1913 by the class of 1910, along with two stone benches. The benches are no longer in place. The existing sundial, donated by the Seven Society in 1968 to replace the original, sits on the original cast concrete base.

1896 capitals: Four of the 1896 column capitals, removed from the porticos in the 2016 restoration, now feature prominently in the planting beds to the north and south of the outer bays.

Lower Terrace

At the north end of the intermediate terrace, bluestone steps with brick risers descend in sixteen risers to a smaller terrace with nine panels of herringbone bricks set in modified box borders. This lower terrace remains from the 1959 work; the University rebuilt the steps during the 2016 restoration. Brick cheek walls, laid up in stretcher bond, flank the steps.

1976 Brick Terrace ("Forecourt")

At the north end of the lower 1959 terrace, three shallow brick risers descend to the 1976 brick "forecourt." This brick paving, which uses fields of herringbone bricks and borders of modified boxed bricks similar to the 1959 work, extends to the low stone wall at University Avenue.

Wide brick paths lead east and west from the south end of the terrace and then divide off to diagonal walkways. Stanchions are set at the openings to these paths. The planting beds flanking the terrace are planted with boxwood and trees. Light standards flank the steps and the north end of the paving.

Interior

Ground Floor of the Rotunda

Although there is no known plan of the ground floor from Jefferson's hand, written references indicate that the plan duplicated that of the main floor. Jefferson's main-floor plan illustrates three oval rooms surrounding an irregular dumbbell-shaped hall, all fitting neatly within the circular outline of the Rotunda.

Reference is made to the ground-floor oval rooms in a letter dated May 10, 1832, from James Madison to Joseph C. Cabell, and by a visitor in October 1824 who noted that "On the ground floor are two elliptical rooms 50 ft by 30 ft (guess) & one much smaller."

The plan as completed by 1827 included the unusual dumbbell-shaped hall and probably a pair of symmetrical stairs at the south end ascending to the main floor. The ground-floor entrance was positioned in the south wall, between the two flights of stairs. This doorway opened to a passage and corridor beneath the portico platform. The corridor provided access to the outdoors through the gymnasia, or wings, flanking the portico.

Doorways in the curved walls enclosing the central stair hall provided access to the large east and west oval rooms and the smaller north oval room. The hall was a dark space, since there were no windows to the exterior. The only natural light could have come from the main-floor window openings at the top of the two south stairways, but it is likely that those stairs were enclosed, blocking the natural light.

Each of the two large oval rooms featured a pair of window openings flanking a fireplace centered on the outer wall. A single door opposite each fireplace provided access to the hall. Each room included a pair of centrally positioned

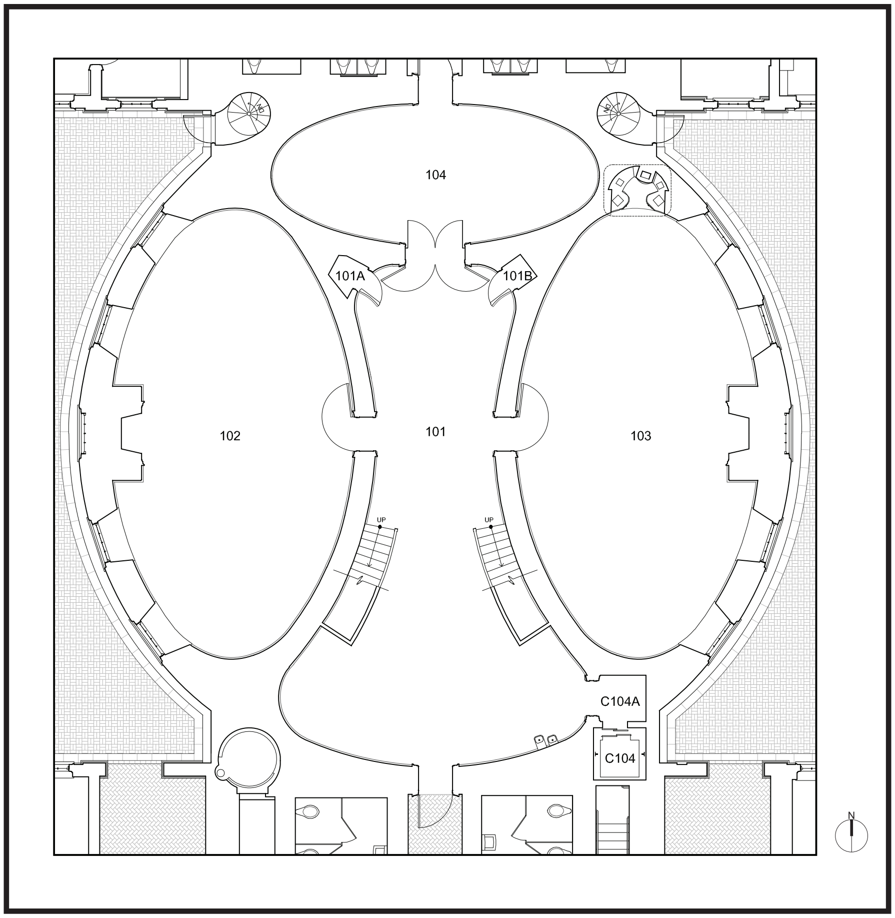


FIGURE 193. *Detail, ground-floor plan of the Rotunda (not to scale).*

columns to help support the floor structure above. The east oval room featured a curved recess at the north end of the space, which housed a chemical hearth.

The exterior and interior walls forming these spaces were laid up in brick. These brick surfaces survived the 1895 conflagration that destroyed all of the finishes in these rooms, and the interior curved surfaces of the two larger rooms survive to this day.

No known drawings or written descriptions provide clues to the appearance of the ground-floor rooms as completed in 1827. However, it can be assumed that the walls and ceilings were finished in plaster and that the floor surface was composed of brick. In 1826 B. Phillips was paid for paving in the basement. There is no evidence for the other finishes, such as the wood trim, doors, and stairways. Whether the fireplaces had fully detailed mantelpieces is also unknown.

No known photographs record the ground-floor rooms before or immediately after the 1895 fire.

The McDonald Brothers Architects Plan

Evidence for the original plan of the ground floor is found on the floor plan produced by McDonald Brothers Architects in 1895-1896 (Figure 61). This well-delineated plan, complete with measurements, shows the two surviving east and west oval rooms and notes that the chimney masses in those spaces are to be "cut away" to provide for new window openings. The fireplaces are shown as dotted outlines on the plan, as are the pairs of columns in the two large oval rooms. The inner brick wall of the smaller oval room is dotted in the plan for removal but is mistakenly shown at the south end of the central hall. This mistake probably occurred in the rush to produce a set of proposal drawings.

The McDonald plan also includes the layout of the area beneath the original south portico and steps. Their proposal does not seem to indicate any work in this area, which generally retains the same plan that exists today.

The McKim, Mead and White Plan

McKim, Mead and White's ground-floor plan (Figure 68) records conditions much like those shown in the McDonald Brothers plan. The two large oval rooms remain, minus their fireplaces and the columns`. The smaller north oval room is removed with the space becoming part of the dumbbell-shaped hall. Two significant differences include the placement of two toilet rooms and storage areas beneath the proposed new north portico (the McDonald Brothers plan places a lecture hall in that location) and the positioning of a double flight of stairs at the south end of the hall. The McKim, Mead and White stairs, as initially conceived, were directly inspired by Jefferson's double stairs in the same location, as seen on his plan of the main floor. The McKim, Mead and White plan records the same arrangement of space beneath the original south portico as shown in the McDonald plan.

The ground-floor plan as actually completed in 1898 is recorded by the 1939 Makielski floor plan (Figure 88). The pairs of stairs located at the south end of the dumbbell-shaped hall ultimately did not duplicate the arrangement probably favored by Jefferson. The stairs were confined to a much smaller area at the south end of the hall.

The 1970s Plan

The McKim, Mead and White plan survived minor changes in finishes until the restoration of the Rotunda was carried out in the mid-1970s. That project retained the two original oval rooms and reconstructed their missing fireplaces. The smaller north oval room was rebuilt, and a pair of stairs, based on Jefferson's main-floor stair design, was placed at the south end of the hall. The mid-1970s finish detailing was based on precedents found in surviving buildings designed by Jefferson.

At the end of the ambitious mid-1970s restoration, the only building fabric from 1898 or earlier that survived in the ground floor was the brick of the outer walls and inner walls of the large oval rooms and the window sash and related hardware installed by McKim, Mead and White.

The 2016 Plan

The 2016 restoration maintained the 1970s plan. The floors, walls, and ceilings were refinished. A new pair of stairs at the south end of the central hall was designed to more accurately reflect the original conditions. The discovery of the chemical hearth during the restoration offered the opportunity to fully exhibit that feature to students and visitors.

Typical Finishes

The following are the typical finishes found in the ground floor of the Rotunda.

Floor: 2016 brick pavers are laid in a herringbone pattern.

The 1939 Makielski plan indicates that asphalt tile was used throughout the ground floor. The floor finish in place in 1898 after the post-fire reconstruction is unknown. It is likely that brick was placed here in 1827.

Walls: The brick masonry walls are finished with plaster on metal lath, installed in 2016. Original brick from 1827 remains in place in the outer walls and in the walls of the two large oval rooms.

Ceiling: The plaster-on-lath ceilings, installed in 2016, are 10' 10½" above the floor. Acoustical plaster was used in the three oval rooms. The probable original 1827 plaster finish would have been applied to split-wood lath.

Baseboard: The typical 7¾" high baseboard includes a splashboard and a cap molding composed of (from top to bottom) a cavetto, bead, and ogee molding. No evidence of the original 1827 or 1898 baseboard was found on the original brick surfaces during the 2016 restoration.

Chair rail: The 3¼" high chair rail is composed of a fascia with two beads and a cavetto at the bottom edge and with an ogee and fillet at the top edge. Evidence for the placement of a chair rail in the ground-floor rooms in 1827 is not known to exist.

Doors: The doorways into each room are framed by 7¼" wide two-fascia architraves, installed in the 1970s. Each reveal is lined with three tiers of raised panels that align with the panels on the doors. The door openings as they now exist are in locations used in 1827, but the exact character of the trim at that time is unknown.

The 1970s doors are slightly curved to follow the curve of the elliptical rooms' walls. The typical door is 3' 8⅝" wide x 8' 2¾" high x 2⅜" thick and has six raised panels. Whether the 1827 doors were curved and what their panel arrangement was is undocumented. Typically, each door is hung on four 5" high butt hinges; the locksets vary slightly at each door. Some of the surface-mounted rim locks were antique at the time of their 1970s installation.

Windows: The original 1827 window openings are set deeply into the exterior masonry walls above 6" high wood sills; each opening is framed by a simple, narrow, mid-1970s fascia-and-bead surround.

Each of the McKim, Mead and White 8/8 chain-hung sash have a pair of 1898 brass inset sash lifts on the bottom rails and an 1898 thumblatch on the meeting rail. The original Jefferson-era sash may have been slightly curved to follow the curve of the stone sills.

Lower Center Hall (101)

The original dumbbell shape of the hall plan was Jefferson's solution for the central space resulting from the placement of three oval rooms within the confines of the circular building form. There is no known Jefferson plan of this hall. The south, east, and west brick walls date to the original 1827 construction, as do the door openings in those surfaces.

The curved wall surfaces at the north end of the hall date to the mid-1970s reconstruction but are based on Jefferson's 1823 floor plan, which shows the faint outlines of such walls, and the June 16, 1823, letter instructing Arthur Brockenbrough to construct them of brick or wood frame. Both documents actually refer to the main floor.

There is no visual or written evidence for the configuration or appearance of the 1827 stair from the ground floor to the main floor. It is likely that a single enclosed run existed on one or both sides of the hall, ascending beneath the bottom runs of the main-floor stairs. This rationale was used to design the two 2016 staircases at the south end of the room. The stairs follow the curve of the walls. Their details are based on those of the 1970s stairs on the main floor. The wood stair surfaces conceal a steel stair structure. The wood handrail is supported by three balusters per tread; the center baluster at each tread is steel, providing additional structural support.

Plaques listing the presidents and rectors of the University were moved from the outer passage into this space and installed on the east wall in 2016, along with plaques commemorating preservation designations, architectural awards, donors to the Jefferson Circle and Jeffersonian Grounds Initiative, and the dedication of the building.

Closets (101A and 101B)

The two closets were created as part of the reconstruction carried out in the mid-1970s. There is no documentary evidence that Jefferson intended such features in these locations.

FIGURE 194. *Lower center hall (101), looking southwest.*

Lower West Oval Room (102) and Lower East Oval Room (103)

The oval brick masonry shells that enclose these rooms survived the 1895 fire and were retained in the McKim, Mead and White reconstruction. Only the extant window sash survive from that project. Other than the 1970s doors, the other finishes in the rooms date to the 2016 restoration.

In 1825, Jefferson agreed to Professor John Emmet's request to use these rooms for "chemical purposes."

The original chimney breasts and fireplaces were removed as part of the post-fire reconstruction by McKim, Mead and White. There is no documentation of the original appearance of the fireplaces and mantels. The existing features date to the mid-1970s.

During the 2016 restoration, two brick column bases were found below the floor of each room. Apparently, columns originally provided support to the main-floor framing. The 2016 herringbone brick floor in each room includes square fields of bricks to indicate the locations of these bases.

The 2016 restoration uncovered Emmet's chemical hearth that occupies a semicircular niche at the north end of the east oval room. Two shallow piers support a shallow brick arch at the opening. The ceiling of the niche is a flat surface constructed of red Guastavino tile, and the floor of the niche is loose clay brick laid in a herringbone pattern set on a sand bed. The hearth floor, approximately 7¾" above the current floor level of the east oval room, may represent the historic floor level of the room. Projecting from the walls of the niche are five distinct work stations constructed of brick with a thin plaster finish. At the outermost and center stations, stone slab work surfaces sit atop brick fireboxes. The intermediate stations have exposed brick work surfaces above plastered brick chambers. A brick chamber with a corbelled brick hood rises above the center station. See the Chemical Hearth section of this report for a more thorough discussion.

FIGURE 195. *Lower east oval room (103), looking north.*

Lower North Oval Room (104)

As it now exists, this oval room is a result of the mid-1970s reconstruction of the curved south wall that was removed as part of the McKim, Mead and White renovation. In 1828 “the natural and artificial curiosities given to the University” by Jefferson were moved to this room. The room now houses the office of the Rotunda Administrator.

The opening in the north wall probably survives from the original 1827 construction; the south doorway was reconstructed in the mid-1970s. The original width of the south doorway is unknown. All of the door trims date to the mid-1970s work. To meet modern building codes, a pair of glazed doors was installed in the south doorway in 2016, and the 1970s doors were fixed open.

There are currently no window openings in this room. Investigations of the brick wall surfaces flanking the north doorway during the 2016 work revealed no evidence for original window openings like those in the room directly above this space.

Elevator Shaft (C004, C104, C204, C304, C404)

An elevator was first installed in the mid-1970s in the circular brick shaft that was originally constructed to house the weights of the Willard clock. The clock was ordered just prior to Jefferson’s death in 1826. After the 1895 fire, the shaft housed one of the gallery access stairs created by McKim, Mead and White. The shaft was enlarged in 2016 to accommodate a new elevator; the opening now extends down to the underground vault.

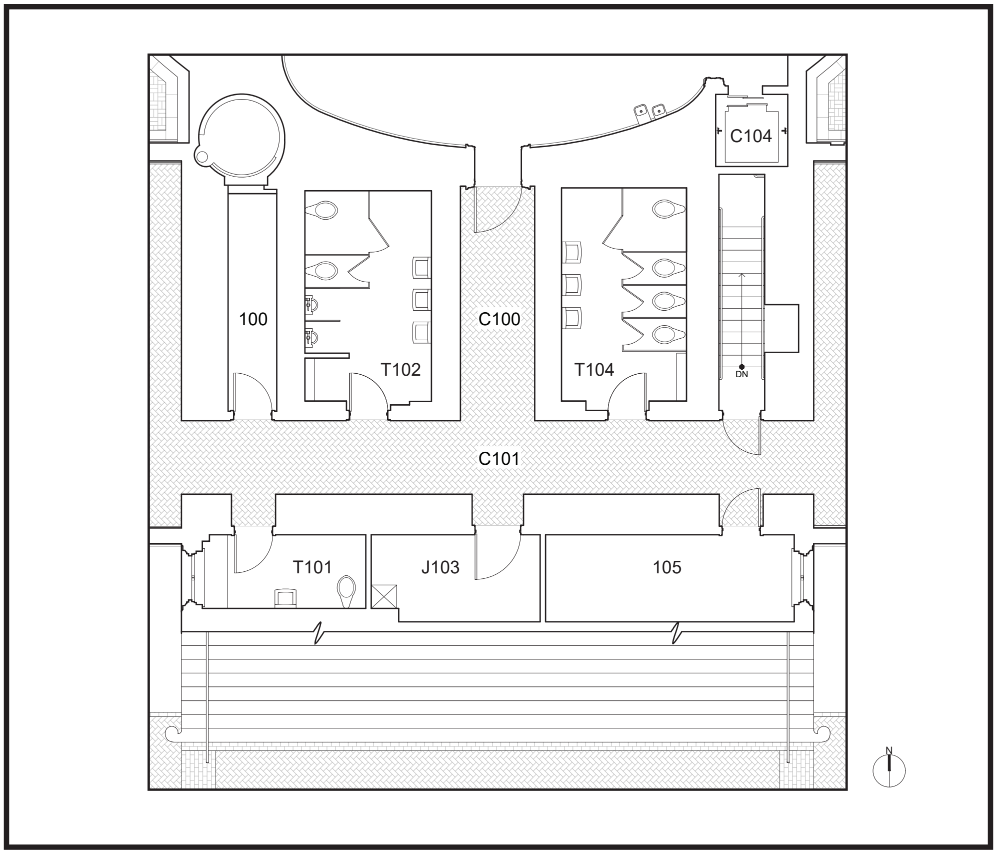


FIGURE 196. *Detail, ground-floor plan of the rooms below the south portico (cryptoporticus) (not to scale).*

Ground Floor: Below South Portico (Cryptoporticus)

This collection of corridors and rooms below the south portico survived the 1895 fire. The spaces include an east/west passage (C101); a central hallway that currently provides the ground floor access into the Rotunda (C100); utility spaces beneath the north portico platform (100, T103, T104, C102); and three rooms (T101, J103, and 105) beneath the portico steps. All but the two south rooms retain their brick masonry walls and original 1827 barrel-vaulted ceilings.

East/West Passage (C101)

This vaulted corridor survived the 1895 fire; it probably exists much as it did in 1827, although the various surfaces and finishes have been renewed.

Ground-Floor Entrance Corridor (C100)

The finishes in this corridor are similar to those of C101. The original 1827 doorway in the north wall is currently used as the main entrance into the Rotunda.

Closet/Passage (100)

This original passage provides access to a circular brick shaft that featured a wood stair winding its way to the main floor and possibly to higher levels. The shaft may have housed the rope that controlled the original bell positioned on the roof.

At the north end of the space is an original brick stairwell. The opening into the circular stairwell is 2' 8" above the closet floor; the sill of the opening is made up of new bricks set in portland cement mortar. At the east side of the opening is a 7¾" thick charred framing member.

Within the stairwell, recesses in the brick walls that remain from the stair indicate that the stair began at the south end of the space, and ascended clockwise. The recesses are 2½" high and 1' 4" to 1' 5" wide and are spaced 8" apart vertically (from top of tread to top of tread).

Men's Toilet Room (T102) and Women's Toilet Room (T104)

These two 1827 spaces survived the 1895 fire. Their original function is unknown. The current finishes and fittings as toilet rooms date to the 2016 restoration.

Stairs to Vault (C103)

Originally this passage probably provided access to the bottom of the circular shaft that housed the weights of the Willard clock, ordered in 1826. In 2016 a stair was inserted to provide access to a new underground vault.

Family Toilet Room (T101), Janitor's Closet (J103), and Storage Room (105)

Originally, these rooms formed a single long, narrow space with small semicircular windows at each end and a single doorway in the north wall. The current finishes and configuration date to the 2016 restoration work.

There is an original 1827 semicircular window in the west wall of T101 and another in the east wall of 105.

Ground Floor: Below North Portico

The spaces beneath the north portico generally date to the McKim, Mead and White work in 1898. The rooms include a central corridor that provides access to the ground floor of the Rotunda (C111); corridors leading to the northeast and northwest wings (C110, C112); toilet rooms beneath the north portico platform (T111, T113); and a series of rooms beneath the north portico steps (M116, J114, T112, 110).

In these spaces are some of the few finishes and hardware remaining from the McKim, Mead and White renovation.

Northwest Corridor (C110)

This corridor dates to the work completed by McKim, Mead and White in 1898. At that time, the passage extended, without divisions, to the doorway at the east end of corridor C112. In the mid-1970s, partitions and doors were inserted at the original long corridor's midpoint to create three separate spaces. The 2016 restoration installed a new herringbone brick floor.

Central Corridor (C111)

The upper corridor and the area at the bottom of the steps exist in the portion of the building completed in 1898 as an addition to the north side of the Rotunda. The doorway in the south wall is positioned in the north elevation of Jefferson's Rotunda. In 1827, the foundation and structure for the rear entrance porch and steps existed here. The 2016 restoration installed a new herringbone brick floor.

Northeast Corridor (C112)

This is the east end of the long corridor situated below the north portico completed by McKim, Mead and White in 1898. In the mid-1970s, the west partition and doorway were inserted in the corridor dividing it into multiple spaces. The 2016 restoration installed a new herringbone brick floor.

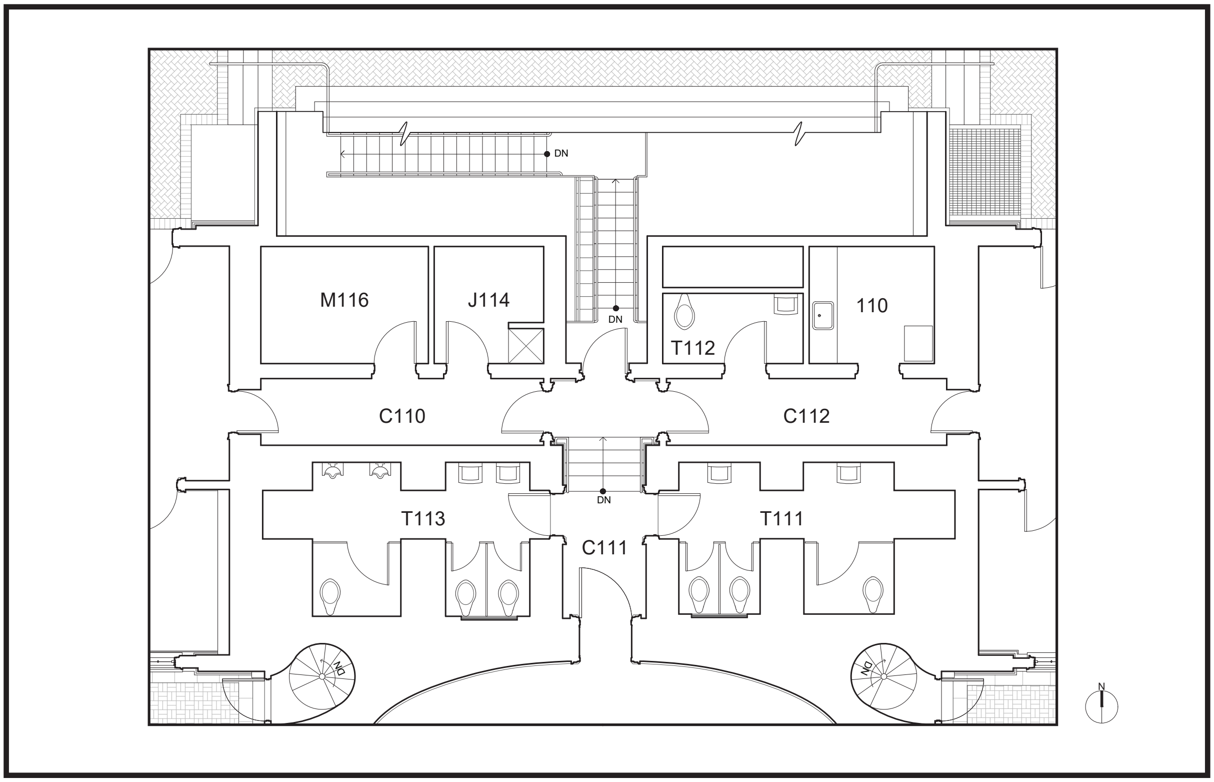


FIGURE 197. *Detail, ground-floor plan of the rooms below the north portico (not to scale).*

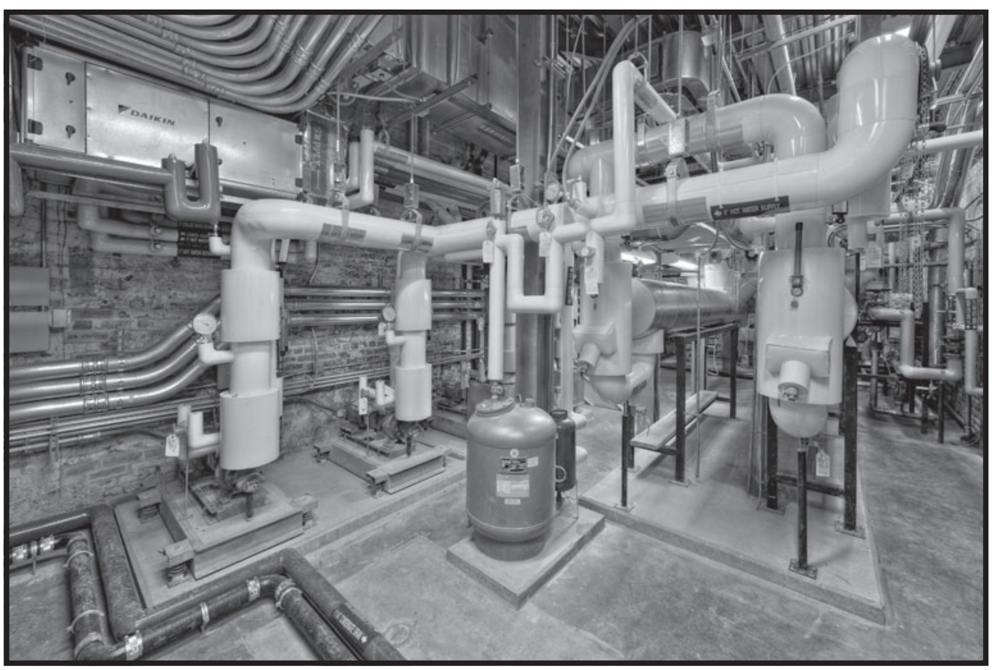


FIGURE 198. *Mechanical room below north portico and terrace.*

Women's Toilet Room (T111)

This space has functioned as a toilet room since its creation in 1898, and the 1939 Makielski plan indicates that it was the "Women's Room" at that time. The space is situated beneath the portico completed as part of the McKim, Mead and White reconstruction and expansion of the Rotunda. Originally there was a window opening in the east recess, but the 1939 plan shows a doorway in that location; the doorway has since been removed. A glazed panel in the plaster on the south wall exhibits ghosting for an original exterior stair, discovered during the 2016 work.

Men's Toilet Room (T113)

This space has functioned as the men's toilet room since its creation as part of the restoration and expansion of the Rotunda by McKim, Mead and White, completed in 1898. The room is situated beneath the platform of the north portico; the masonry forming the south wall is part of the original rear (north) elevation of Jefferson's building. Originally, in 1898, there was a small window opening in the recessed area at the west end of the room. The 1939 Makielski plan shows a doorway in that location. The door opened to a short flight of steps that led to the open passage and the west courtyard. The opening is now closed. A glazed panel in the plaster on the south wall exhibits ghosting for an original exterior stair, discovered during the 2016 work.

Data Equipment (109) and Janitor's Closet (J114)

These two spaces were, until 2016, an unfinished storeroom beneath McKim, Mead and White's north exterior steps. The 2016 door to the new janitor's closet was designed to match the 1898 door that remains in the opening to room 109.

Toilet Room (T112) and Break Room (110)

These spaces are situated beneath the north exterior portico steps added by McKim, Mead and White. The finishes all date to the 2016 restoration, when a toilet room was inserted into the west half of the space and a break room equipped with cabinets and a sink was installed in the east half of the space. The door to the toilet room was designed to match the typical McKim, Mead and White doors.

Mechanical Room (M001)

The mechanical room below the north portico stairs and terrace was created by McKim, Mead and White. The large rectangular space opens to a narrower south passage that connects the space to the Rotunda's ground level and to a pipe and duct shaft that runs north/south below the Rotunda.

The walls are brick masonry. As part of the 2016 work, four steel posts were installed to support a new corrugated-metal deck on a steel frame; above the deck are the concrete slab and concrete-encased steel beams and girders supporting the north stairs and terrace. The original design by McKim, Mead and White probably had steel-pipe columns on square concrete pedestals raised above the slab height.

All of the mechanical equipment housed in this space was replaced in the 2016 campaign. See the Mechanical Systems section of this report.

Utility Tunnel (M003)

This shaft extends below the ground floor, south from the north mechanical room. The shaft now connects to the 2016 underground vault below the east half of the Rotunda.

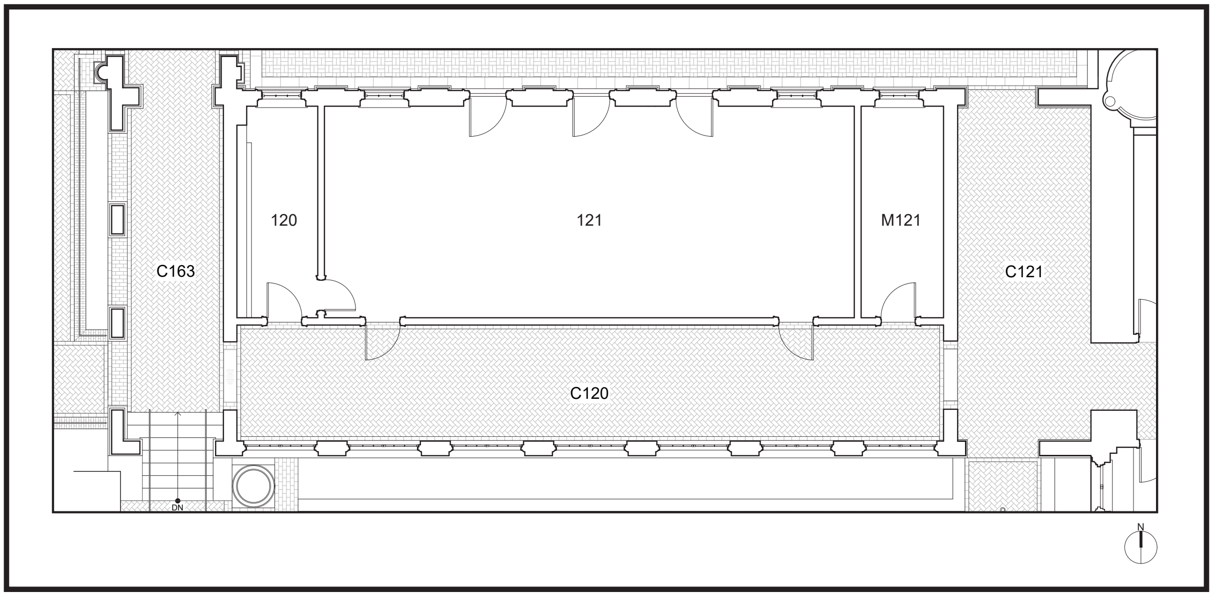


FIGURE 199. *Detail, ground-floor plan of the southwest wing (not to scale).*

Ground Floor: Southwest Wing

This is one of the original flanking wings or terraces designed by Jefferson to join the Rotunda to the easst and west covered walks and pavilions flanking the Rotunda. As completed, and as recorded by the 1825 Maverick plan drawn by John Neilson (Figure 21), the southwest wing was a large, rectangular, covered spaced with arched openings in three walls. The north and west openings formed arcades, and the south openings were lunette windows at grade. This space was to serve as a gymnasium for the students, a covered area for recreation and other activities.

The Maverick plan records a rectangular space that is nine bays long and three bays deep, exactly the condition that still exists. Accounts of the 1896 Rotunda fire indicate that the two terrace wings were blown up to prevent the spread of the fire, but post-fire photographs reveal that the brick arcades survived serious damage; only the roof and interior appear to have been partially destroyed.

The original open interior space was modified in 1841, when it was enclosed to serve as a "Lecture room for the professor of Natural Philosophy & for the reception of the philosophical apparatus and of the objects of natural History &c bequeathed to the University by Mr. Jefferson." It was probably at this time that brick walls were inserted at the east and west ends of the long space to create the still extant passages (C121 and the west passage). The west passage was extended by Stanford White to provide a connection to the northwest wing completed in 1898.

The installation of the semicircular casement sash in seven of the nine original lunette openings in the south wall of the terrace may date to 1841. Window sash of some type must have been placed in the seven north arcade openings at the same time. Pre-fire photographs and images taken immediately after the fire record low hipped roofs, covered in sheet metal, rising above each terrace. The McDonald Brothers and McKim, Mead and White plans seem to illustrate those conditions.

At an undetermined date, the large lecture room was divided into smaller spaces and 1902 and 1907 fire-insurance maps indicate that the southwest wing was used for offices.

The 1939 Makielski floor plan (Figure 88) illustrates six offices and a short corridor in the space north of the wide passage that extended along the south side of the wing. Three doorways from the corridor provided access to the offices.

FIGURE 200. *Multipurpose room (121) in the southwest wing, looking east.*

The 2016 restoration retained the 1939 corridor (C120) and combined the offices to create a large multipurpose room (121) with a mechanical room (M121) at the east end of the wing and a storage room (120) at the west end.

Storage (120)

This narrow space was created in 2016 at the west end of what was the 1939 block of offices. The finishes match those in the adjoining multipurpose room (121), except that the ceiling is open to the decking supporting the terrace above. The door and transom in the south wall date to 1939. The arched window opening in the south wall is covered with wood panels; behind the panels, the 1898 sash and transom remain in place.

Multipurpose Room (121)

This large, rectangular space was created in 2016. Unless otherwise noted, all of the finishes date to that renovation.

Floor: Random-width floorboards (3½" to 5¾" wide) are laid east/west. The 1939 plan shows asphalt tile throughout the wing.

Walls: The brick masonry north wall, formerly an open arcade, was part of the original 1827 gymnasium. The south wall, also brick masonry, was inserted in 1939. The east and west partitions were installed during the 2016 work. All four walls are finished in plaster. An area of the 1827 brickwork was left exposed on the south wall to exhibit the brick and the original penciled tooling.

Ceiling: The 2016 ceiling has a field of acoustical tile with an outer border of plaster and lath, 9' 2½" above the floor. The ceiling and structure above this recent surface date to the rebuilding of the terrace surface in 1939.

Baseboard: The 2016 baseboard consists of a 6" high splashboard trimmed with a quarter-round shoe molding.

Chair rail: The 2016 chair rail is 4¾" high. The symmetrical profile consists of a rounded fascia with ogee and fillet moldings at the top and bottom edges; the trim was modeled after a fragment of a chair rail that was found in one of the wings during construction. The top edge is 2' 9½" above the floor.

Doors: The two south openings are framed by 5¼" wide two-fascia architraves. Above the openings are three-light operating transoms. These conditions date to the work carried out in 1939; the Makielski drawings include an elevation drawing of this door type. The doors were reinstalled in 2016 to swing out into the adjoining corridor. Both openings have 2' 11¾" wide x 6' 11" high x 1¾" thick stile-and-rail doors, each with six raised panels, dating to 1939. The hardware varies slightly at each door.

The three center openings in the north wall were opened to their original full height and new 3' 3" wide x 8' 2" high x 1¾" thick arched doors were installed in 2016. The trim is modeled after the 1898 window architraves. Each door has a six-light fanlight above a twelve-light panel with a recessed panel in the bottom rail.

A 2016 doorway in the west wall has trim and a door that match the features in the south openings.

Windows: The outer two window openings in the north wall have sash and trim installed in 1898 as part of the post-fire reconstruction. The typical 5" wide two-fascia architrave is composed of two fasciae trimmed with a flush bead at the inner edge and an ogee and fillet at the outer edge. The openings sit above 2¾" high bullnose molded sills.

Each opening is fitted with an 1898 6/6 chain-hung wood sash and a 6-light fanlight. Typical original hardware includes pairs of flush brass sash lifts in the bottom rails and brass thumblatches on the meeting rails.

Heating: Supply and return vents are integrated into the ceiling. Ventilation grilles are placed in the east wall.

Lighting and electrical: The room is lit by light fixtures in the acoustical tile section of the ceiling.

Mechanical Room (M121)

This narrow space at the east end of what was the 1939 block of offices now houses mechanical equipment for the wing. The arched window opening in the south wall is covered with wood panels; behind the panels, the 1898 sash and transom remain in place.

South Exterior Passage (C120)

This passage is situated along the south side of the original large covered gymnasium completed in 1827. The east and west walls that form the ends of the passage may date to 1841. The north wall that forms the enclosed passageway dates to sometime after the 1898 reconstruction of the Rotunda and terraces; possibly as late as 1939, when the two south terraces were remodeled.

The seven lunette-type openings in the south wall date to the completion of the west terrace in 1827. Each opening is fitted with a pair of nine-light, lunette-form casement sash with radiating muntins. These sash may predate the 1895 fire, or they may be 1898 replicas of the sash installed in 1841. Identical sash can be seen in photographs taken before and immediately after the fire.

Southwest Wing, East Exterior Passage (C121)

This open passage at the east end of the southwest wing has arched openings in each wall. The north, south, and east walls are original 1827 brick masonry. The west wall was inserted in 1841.

Southwest Colonnade (C164)

This open passage is the west bay of the original 1827 gymnasium space. The wall along the east side of the passage was probably inserted in 1841. The passage is one bay wide and three bays deep.

Ground Floor: Southeast Wing

This is one of the two original flanking wings or terraces designed by Jefferson to join the Rotunda to the East and West Lawns. As originally completed and as recorded by the 1825 Maverick plan drawn by John Neilson (Figure 21), the southeast wing was a large, rectangular, covered space with arched openings in all three walls. The north and east openings formed arcades, and the south openings were broad, arched lunette windows positioned at ground level.

This space and the matching space west of the Rotunda were to serve as gymnasia (covered areas for recreation and other activities) for the students.

The Maverick plan records a rectangular structure that is nine bays wide and three bays deep, exactly the condition that still exists.

Although accounts of the 1895 Rotunda fire indicate that the two wings were blown up to prevent the spread of the fire, post-fire photographs reveal that the brick arcades were not seriously damaged, although the roofs and interiors appear to have been partially destroyed.

The open space was modified in 1841, when it was enclosed and "fitted up" for "the general meetings of the University & as a place of religious worship —." It was probably at this time that the brick walls were inserted at the east and west ends of the long space to create the still extant passages (C151 and the east passage). The east passage was extended by Stanford White to provide a connection to the northeast wing completed in 1898.

The installation of the semicircular casement sash in seven of the nine original lunette openings in the south wall of the terrace may date to 1841. At the same time sash of some type were inserted in seven of the north arcades. Pre-fire photographs and images taken immediately after the fire record low hipped roofs, covered in sheet metal, rising above each terrace; these roofs also date to 1841.

The McDonald Brothers' plans and the McKim, Mead and White plans seem to illustrate the conditions created in 1841.

At an undetermined date, the large interior space was divided into offices. A 1902 fire-insurance map indicates that this wing was then used for offices, and a 1907 map refers to classrooms in this location.

The 1939 Makielski plan (Figure 88) illustrated conditions that include an open passage (C150) along the south end of the wing and five offices and a lavatory positioned north of the passage. The plan shows three doorways positioned in the north wall of the corridor in the same position as the current doorways. That plan was later modified but made use of the 1939 doors, trims, and transoms.

The 2016 campaign removed the offices and created two large classrooms (153, 154) divided by a narrow closet (154.1) and a mechanical space (M150).

South Exterior Passage (C150)

This long corridor exists along the south side of the original large open gymnasium completed in 1827. At that time, the arched openings in the south wall likely had no sash. The construction of the masonry walls forming the east and west ends of the corridor may date to work carried out in 1841. The north masonry wall is of a later, undetermined date, possibly 1898 or soon after, or 1939, when extensive work was carried out.

There are seven original 1827 lunette openings in the south wall. Each opening is fitted with a pair of nine-light, lunette-form casement sash with radiating muntins. These sash may have survived the 1895 fire and are visible in the photographs taken before and after the fire. If this is the case, then the sash probably date to work carried out in 1841.

Classrooms (150, 153)

These classrooms were created in 2016.

Floor: The random-width (3½" to 5½" wide) floorboards are laid east/west. The 1939 floor plan indicates that asphalt tile was to be the floor finish.

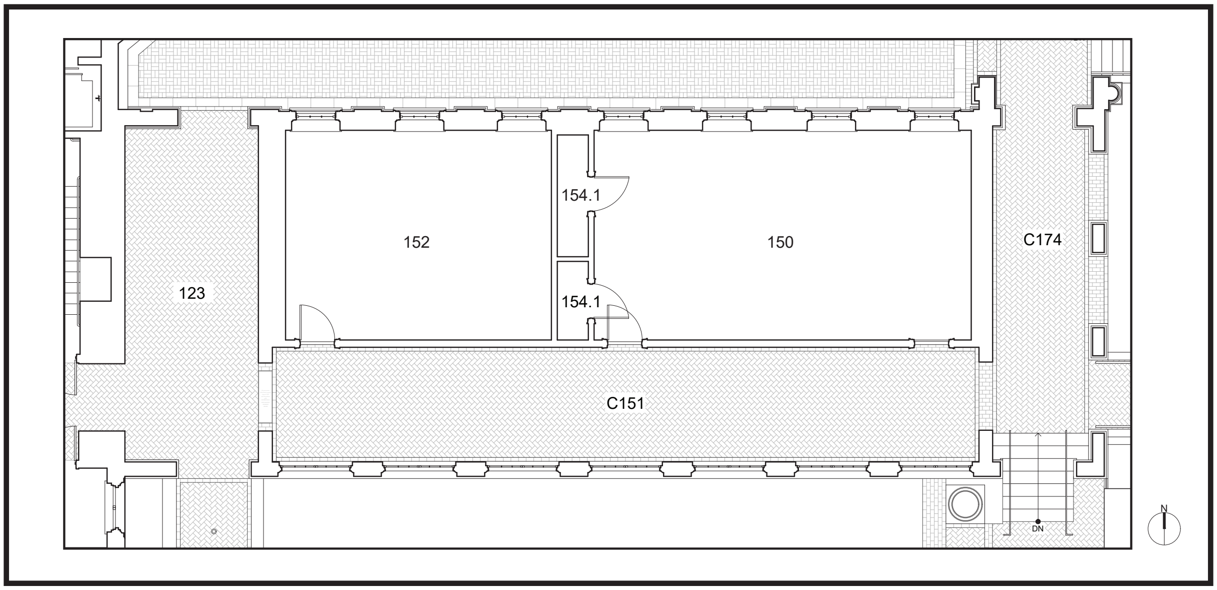


FIGURE 201. *Detail of ground-floor plan of the southeast wing (not to scale).*

FIGURE 202. *New classroom (152) in southeast wing, looking northwest.*

FIGURE 203. *Southeast wing, south exterior passage (C151), looking west.*

FIGURE 204. *Southeast wing, east exterior passage, looking north.*

Walls: The exterior walls are brick masonry. Although partially rebuilt after the 1895 fire, much of the north wall dates to 1827. The east and west exterior walls may date to the work carried out in 1841. All of the walls are finished in 2016 plaster.

The framed partitions that form the closet and mechanical room were built in 2016.

Ceiling: In each classroom, a field of acoustical tiles is set within a plaster border, 9' 1" above the floor. The ceiling and structure above this recent surface date to the rebuilding of the terrace surface in 1939.

Baseboard: Both classrooms have 5¾" high plain splashboards. In the west room (153), the baseboard is trimmed with a beveled shoe molding; a quarter-round molding trims the baseboard in the east room (150).

Chair rail: The 2016 5" high chair rail is a rounded fascia trimmed with symmetrical ogee and fillet moldings. The profile was modeled after a fragment of a chair rail found during the restoration. At the top edge, the rail is 2' 8½" above the floor.

Doors: The three south doorways are framed with 5⅛" wide two-fascia architraves. Above each opening is a transom with a three-light hopper sash. The 1939 Makielski drawings include an elevation drawing of this door type.

Each of the three south doorways have a 2' 11¾" wide x 6' 11" high x 1¾" thick stile-and-rail door with six raised panels from 1939. The 1939 hardware at each of the south doors includes three 4½" high butt hinges, a 7¾" mortise lockset with brass knobs and a deadbolt (turnkey interior, key cylinder exterior), and a brass mail slot.

Two new doorways in the west partition of the east classroom (150) are fitted with 1939 doors salvaged from the offices during the 2016 work. Both of these doors are similar to the south doors but have new hardware.

Windows: Each of the original window openings in the north wall were originally (in 1827) part of an open arcade. Sash were first installed in 1841, when the gymnasium was enclosed. The current sash date to the post-fire reconstruction completed in 1898.

Each opening is framed with a 5" wide two-fascia architrave, composed of two fasciae trimmed with a flush bead at the inner edge and an ogee and fillet at the outer edge. The openings sit above 2¾" high bullnose molded sills.

Each opening is fitted with a 6/6 chain-hung wood sash and a 6-light fanlight. Typical original 1898 hardware includes pairs of brass flush sash grips in the bottom rails and brass latches on the meeting rails. Some of the 1898 latches have been replaced.

Heating: Heating and air-conditioning supply and return are integrated into the ceiling. There is a ventilation panel between the east classroom (150) and the mechanical space (M151).

Lighting and electrical: The rooms are lit by fixtures in the acoustical tile ceilings.

Closet (150) and Mechanical Room (M151)

The north wall of the mechanical room (M151) and the south wall of the closet (150) are 1827 masonry. All of the other finishes date to 2016, when these spaces were created.

Southeast Wing, West Exterior Passage (C151)

This open passage at the west end of the southeast wing has original 1827 arched openings in each wall. The east wall was inserted in 1841.

Southeast Wing, East Exterior Passage

This open passage is the east end of the original 1827 gymnasium space. The wall along the west side of the passage was inserted in 1841. The passage is one bay wide and three bays deep.

Ground Floor: Northwest Wing

The northwest wing was completed in 1898 as part of the reconstruction and restoration of the Rotunda carried out by Stanford White. At that time, the interior consisted of a single large lecture room flanked at each end (east and west) by open covered passages. The interior is now divided into twelve rooms and a central corridor, with the original open west passage remaining. Fire-insurance maps from 1902 and 1907 indicate that this wing was used for classrooms at that time. The 1939 Makielski plan (Figure 88) reveals conditions similar to what now exists: the east passage is partially enclosed, and a central corridor flanked by offices fills the original large, open space of the wing. The rooms were occupied by the bursar's office at that time. The area is now primarily occupied by the Office of the Board of Visitors.

The only change to the floor plan in the 2016 work was the removal of a kitchen from what is now the northwest vestibule (C138).

Typical Finishes

The following are the typical finishes for the northwest wing.

Floor: The floors are covered with carpet. There is no visible evidence for the floor finish in 1898. The 1939 floor plan records asphalt tile throughout the area.

Walls: The exterior walls are 1898 brick masonry; typically, the other walls are framed partitions. The walls are finished with plaster and/or gypsum board.

Ceiling: The ceilings are typically 2016 plaster on metal lath.

Baseboard: The typical 8" high wood baseboard includes a splashboard and a cap molding composed of (from top to bottom) a cavetto, bead, and ogee molding, similar to the 1970s trim in the Rotunda.

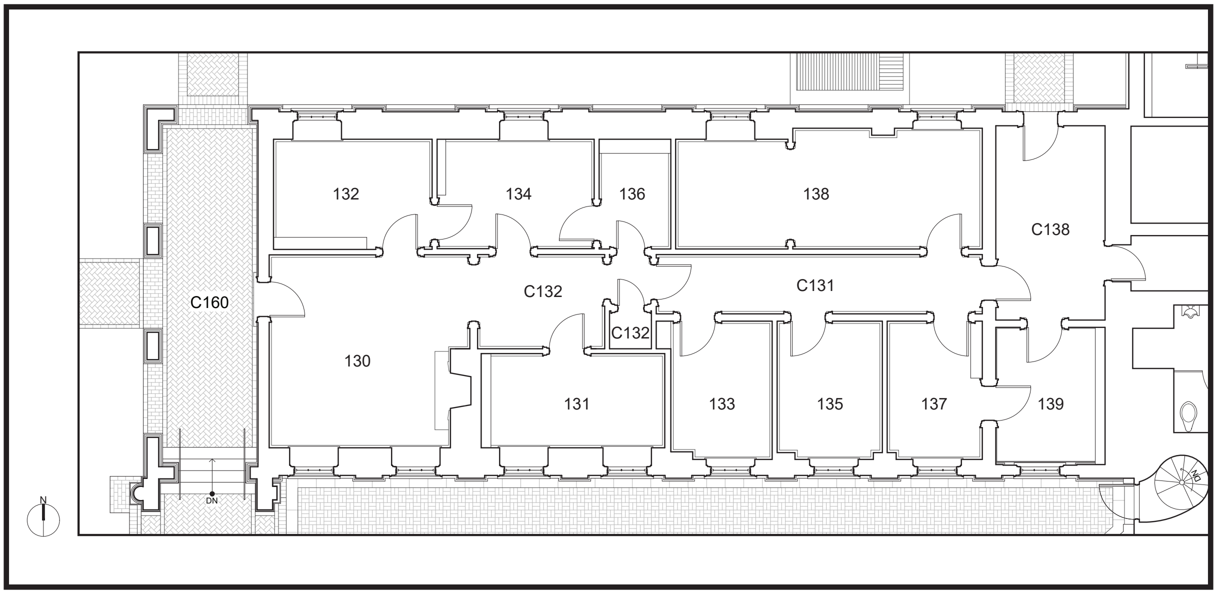


FIGURE 205. *Detail of ground-floor plan of the northwest wing (not to scale).*

Chair rail: The typical 3¼" high wood chair rail is composed of a fascia with two beads and a cavetto at the bottom edge, and an ogee and fillet at the top edge. The top edge of the rail is typically 2' 10" above the carpet.

Doors: The doorways are typically framed by 6" to 7" wide two-fascia architraves. The typical doors are 2' 10½" to 2' 11¾" wide x 6' 11½" high x 1¾" thick and have six raised panels.

Windows: Each of the original 1898 window openings in the north and south exterior walls is framed with a 5" to 5¼" wide two-fascia architrave, composed of two fasciae trimmed with a flush bead at the inner edge and an ogee and fillet at the outer edge. The openings sit above 2¾" high bullnose molded sills.

Each opening is fitted with a 6/6 chain-hung wood sash and a 6-light fanlight. Typical original hardware includes pairs of flush brass hand grips in the bottom rails and brass thumblatches on the meeting rails.

Lighting and electrical: The rooms are lit by 2016 fluorescent fixtures.

Heating: Heating and air-conditioning return and supply ceiling vents date to the 2016 work.

Reception (130)

The reception room can be entered directly from the exterior west arcaded passage. The formal appearance of the room results from the presence of the fireplace with its handsome mantelpiece and the classically inspired cornice. This woodwork was installed sometime after the mid-twentieth century, possibly when the Rotunda was restored in the 1970s. The 1939 Makielski floor plan records a very different condition in this area (then occupied by the bursar's office). At that time, the west entrance opened to a centrally positioned public space, flanked by counters. The large room occupied the space that now includes Rooms 129 and 132.

A brick chimney breast projects from the south end of the west wall. The fireplace does not function, and there is no external chimney. A 1976 floor plan labeled "Buildings and Grounds" records the outline of the space occupied by this fireplace, but it does not show the firebox or hearth.

Office (131)

This room is included in the 1976 floor plan issued by the Office of Buildings and Grounds. In that drawing, the door is shown opening into the office, rather than into the hall as it currently does.

Office (132)

This small office occupies the northwest corner of the northwest wing. This was the north third of the larger room used in the public contact area of the bursar's office shown on the 1939 Makielski plan. The 1976 plan shows the room in its current form.

Offices (133, 134)

These small offices exist as shown on the 1976 floor plan from the Office of Buildings and Grounds.

Office (135)

The 1976 floor plan from the Office of Buildings and Grounds reveals that this space and the adjoining office (137) were at that time a single large space that included the portion of the corridor (C133) immediately north. The 1976 plan indicates that a "staggered stud wall (24" oc) with insulation" was to be constructed to form a large office separate from the corridor.

FIGURE 206. *Room 130 in the northwest wing, looking east.*

Office (136)

This small, windowless space was created in 1990 from the west half of a larger office shown on the 1976 floor plan as room 133. The remainder of that office now exists as the west end of the large office in room 136.

Office (137)

The 1976 floor plan from the Office of Buildings and Grounds reveals that this space and the adjoining office (135) were at that time a single large space that included the portion of the corridor (C133) immediately north. The 1976 plan indicates that a "staggered stud wall (24" oc) with insulation" was to be constructed to form a large office separate from the corridor. An acoustical tile ceiling was installed in 2016.

Office (138)

This large room was created in 1990, when the west partition was removed and the space was joined to the adjacent office (formerly room 133, according to the 1976 Buildings and Grounds floor plan).

Walls: The north and east walls are 1898 brick masonry, and the south and west walls are framed partitions. The west partition dates to 1990. Near the center of the room, a partition that divided this space was partially removed in 1990. To the west of that partition, the north wall is furred out from the original 1898 brick masonry.

Vestibule and Closet (C131, C131A)

These small spaces are shown on the 1976 plan.

Corridor (C133)

The current form of this corridor is the result of the 1976 construction of a partition that encloses what are now office spaces 135 and 137. Only a short section of corridor existed west of the door to room 135 prior to that time. An acoustical tile ceiling was installed in 2016.

Entrance Vestibule (C138)

As completed in 1898, this room, along with room 139, formed a single open passage with arched openings at the north and south ends. In 1939 a masonry partition was constructed across the passage (the wall that now includes the doorway to room 139), and the north arched opening was partially filled and a doorway inserted. These conditions are shown on the 1939 Makielski floor plan.

The new space functioned as an enclosed entrance vestibule. A later partition that formed a kitchen in the north end of the space was removed in the 2016 campaign to recreate the 1939 large vestibule. The space now features a herringbone brick floor.

Office (139)

This office exists in what was the south half of the original 1898 open passage that extended along the east end of the northwest wing. In 1939 a brick wall was constructed to separate this space from the north half of the passage. At that time, the space remained open through the south archway. A doorway was inserted in an original 1898 window opening in the east wall to provide access to the men's toilet room (T113). In the 1970s, this space became an office with the insertion of a window opening in the south archway.

Vestibule (C130)

The plan of this area as it now exists is the same as that shown on the 1976 Buildings and Grounds plan. The 1939 Makielski floor plan has the corridor (C133) continuing through this area to the partition and opening.

Northwest Wing, West Exterior Passage

This open passage was designed to connect the lecture room in the northwest wing with the west colonnade. The passage is one bay wide and three bays deep.

Ground Floor: Northeast Wing

The northeast wing was completed in 1898 as part of the reconstruction, restoration, and expansion of the Rotunda. At that time, the interior consisted of a single large lecture room flanked at each end (east and west) by open passages. The 1939 Makielski plan (Figure 88) shows two small rooms situated at the east end of the large room and a room formed from the north end of the original open west passage. In the plan, the east passage remains open. The lecture room is now divided into eight rooms and a connecting corridor.

The finishes in this wing are similar to those of the northwest wing. New plaster-on-metal-lath ceilings were installed in the 2016 campaign.

Northeast Vestibule (C140)

As completed in 1898, this room and the adjoining space (149) formed a single open passage with arched openings at the north and south ends. This vestibule was created in 1939 from the north half of that space. A recessed plaster arch in the west wall was re-established in the 2016 work.

The 5¼" high chair rail may have been installed in 1939.

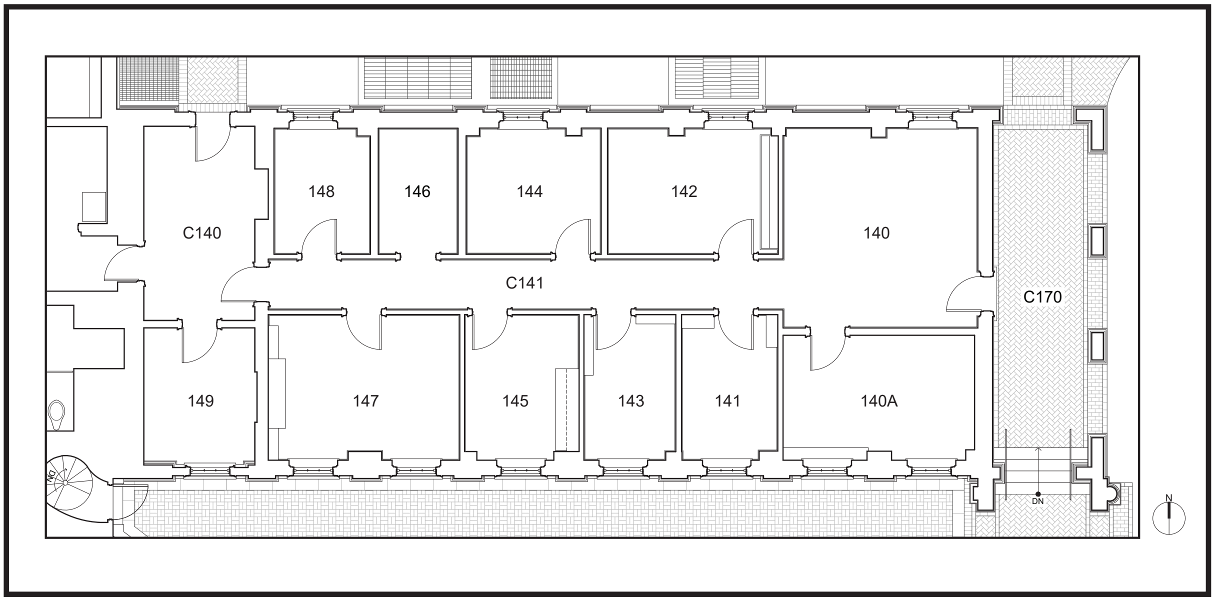


FIGURE 207. *Detail of ground-floor plan of the northeast wing (not to scale).*

There are four doorways, one in each wall of the room. The 1898 arched west opening is framed by a 5⅛" wide two-fascia architrave; the doorway is set below a five-light fanlight. The east opening has a 5¼" wide single-fascia architrave.

The north entrance was originally (1898) an open arch, and was enclosed in 1939. The doorway is framed by a 5⅛" wide two-fascia architrave. A 1939 fifteen-light fanlight fills the tympanum of the original arch.

The south doorway is the most recent opening in this space. It was inserted in the 1939 partition when room 141 was created; its trim is similar to the later trim of the opening to room 142.

Natural light is provided by a fanlight in the north wall, in the original arched opening. The 1939 fifteen-light sash is hinged at the base; there is a latch and chain at the top.

Office (148)

This room exists at the south end of the 1898 open passage. In 1939 the north arched opening was enclosed, and a partition was inserted, forming room 140. The south archway remained open, and an original 1898 window opening was converted into a doorway to provide access to the women's toilet in room T112.

More recently the south opening was filled in with a window, and room 141 was created. At the same time, the door opening in the west wall was closed up.

The shallow, 8' 8½" high arched recess in the east wall was originally (in 1898) a doorway with transom, opening to the original lecture room. A matching arched opening existed in the east wall of room 140, where the current modified doorway now exists.

C141 (Corridor) through Room 149, Typical Finishes

These spaces were inserted in the large lecture room created in 1898 and later (1939) housing the Registrar's offices.

The following finishes are typical of the office suite in the northeast wing.

Floor: The floor is covered with carpet. The 1939 Makielski plan shows asphalt tile in these spaces.

Walls: The exterior walls are brick masonry; the other walls are wood-framed partitions. All are finished with plaster and/or gypsum board.

Ceiling: The original ceilings are typically plaster on metal lath, installed in 2016.

Baseboard: The typical 5" baseboard is composed of a plain fascia trimmed with a flush bead at the top edge.

Chair rail: The typical 3" high chair rail is composed of (from top to bottom) a fillet, ogee, fascia, quarter-round, and cavetto. The top edge of the rail is 2' 6¼" above the face of the carpet. This profile matches the chair rails installed in the Rotunda in 1976.

Doors: Typically, the doorways in the northeast wing are framed with 5½" wide single-fascia architraves, composed of a fascia trimmed with a flush bead at the inner edge and an ogee and fillet at the outer edge.

The typical 2' 11¾" wide x 6' 11½" high x 1¾" thick stile-and-rail door has six raised panels. Each door is hung on three 4½" high butt hinges and has an 8" high polished bronze "Corbin" mortise lockset with knobs and a deadbolt.

Windows: Each of the original 1898 window openings in the north and south exterior walls is framed with a 5" wide two-fascia architrave, composed of two fasciae trimmed with a flush bead at the inner edge and an ogee and fillet at the outer edge. The openings sit above 2¾" high bullnose molded sills.

Typically, each opening is fitted with an original 1898 6/6 chain-hung wood sash and a 6-light fanlight. Typical original hardware includes pairs of flush brass sash grips in the bottom rails and brass thumblatches on the meeting rails.

Lighting and electrical: The rooms are lit by 2016 fluorescent fixtures.

Heating: Heating and air-conditioning return and supply ceiling vents date to the 2016 work.

Northeast Wing, East Exterior Passage

This open passage was designed by Stanford White to connect the lecture room in the northeast wing with the east colonnade. The passage is one bay wide, and three bays deep.

Main Floor

The floor plan of the main floor as it now exists was created in the mid-1970s and was based on the ca. 1819 plan from Jefferson's hand (Figure 6). That carefully drawn but undetailed plan defines all of the conditions as they now exist with only a few exceptions. Even the curved wall surfaces at the north end of the unusually shaped central hall are visible upon close examination of the Jefferson document. Window openings, doorways, and fireplaces are positioned exactly as shown by Jefferson.

Significant differences today include the greater width of the door openings into the two large oval or elliptical rooms. Jefferson's openings are only about 3' 0" wide, indicating a single leaf door rather than the pair of doors created in the mid-1970s. The pair of matching stairs that ascend to the Dome Room level duplicate those drawn by Jefferson. Unfortunately, the ca. 1821 plan does not record Jefferson's intent for the configuration of the stairs leading to the ground floor, nor is there a comparable plan of that level. Finally, Stanford White added a single course of brick to the inner surface of the walls at this level, increasing the overall wall thickness by about 4".

Jefferson's intent for the main-floor finishes is generally unknown, but it is possible that molding profiles, door configurations and stair details would relate to those found in the pavilions. This assumption was made when the rooms were recreated in the mid-1970s. Evidence for the level of finishes is provided by drawings given to William Coffee for work to be carried out in the Rotunda. Coffee provided prices for a Corinthian cornice that was to be ornamented with husks, leaves, rosettes, and ox sculls, but it is not known if this work was carried out.

A unique feature of Jefferson's plan for which evidence was found and which is now restored is the small fireplace on the landing of the southeast stair. It is unlikely that this functioned as an open fireplace; more likely a coal grate was placed in the firebox, resulting in a more controlled fire and a safer situation.

Typical Finishes

The following are the typical finishes found in the main floor of the Rotunda. Most of these features date to the 1970s; those finishes that were modified in the 2016 restoration are noted below.

Floor: Random-width, heart-pine floorboards are laid east-west. The east-west direction of these boards was based on a pre-fire photograph of the Dome Room that shows the floorboards at that level placed in this manner. The Ballou and Justice drawings of August 25, 1972, show the floor structure to be poured concrete over steel joists.

Walls: The brick masonry and concrete-block walls are finished with 2016 plaster. The addition in 1898 of brick to the inside face of the surviving 1827 brick drum shell slightly changed the position of the curved outer walls and increased the depth of the window and door reveals by 4".

Ceiling: The 2016 plaster-on-lath ceilings are 15' 0" above the floor.

Baseboard: The typical 7¾" high baseboard includes a splashboard and a cap molding composed of (from top to bottom) a cavetto, bead, and ogee molding.

Chair rail: The 3¼" high chair rail is composed of a fascia with two beads and a cavetto at the bottom edge, and an ogee and fillet at the top edge; this profile is the same as that of the chair rail used in the ground-floor rooms. The top edge of the rail is 2' 10" above the carpet.

Doors: The doorways into each room are framed by 7¼" wide two-fascia architraves (same profile as the architraves used on the ground floor). Each reveal is lined with four tiers of raised panels that align with the door panels.

Blind doorways to closets, toilet rooms, and connecting passages are framed with 2½" wide flush fascia surrounds trimmed with interior flush beads.

The doorways to the oval rooms are fitted with pairs of doors, slightly curved to follow the curve of the elliptical rooms' walls. Each leaf is approximately 2' 6" wide x 9' 1" high x 2¼" thick and has four raised panels. Typically, each door is hung on four 5" high butt hinges. The locks vary slightly at each door.

The blind doors are plain, flush doors, curved on one side and trimmed with the chair rail and baseboard moldings to blend in with the wall surfaces of the stair hall and oval rooms. Each door is 6' 11½" high; the widths of the doors vary. The blind doors are hung on concealed pivot hinges at the top and bottom edges. Typically, each door has a 4¾" high "Union" mortise lockset marked "Parkes Willenhall England" with brass knobs; and a 6" high mortise lockset with a key cylinder and a turnkey.

Windows: The original window openings are set deeply into the masonry walls with paneled lintels and reveals and framed with 7¼" to 7½" wide two-fascia architraves. The bullnose sills sit above paneled aprons (each with three raised panels). The wythe of brick added to the wall surfaces in 1898 increased the depth of the reveal by about 4".

Each of the 12/12 chain-hung sash have a pair of flush sash lifts on the bottom rails and a thumblatch on the meeting rail. The sash and hardware date to the reconstruction carried out by McKim, Mead and White and completed in 1898.

Center Stair Hall (C202, 203)

The plan of the hall as it now exists is the result of the extensive reconstruction carried out in the mid-1970s. It is based on the ca. 1819 floor plan from Jefferson's hand. That plan includes the curved north wall as very faint lines added to the

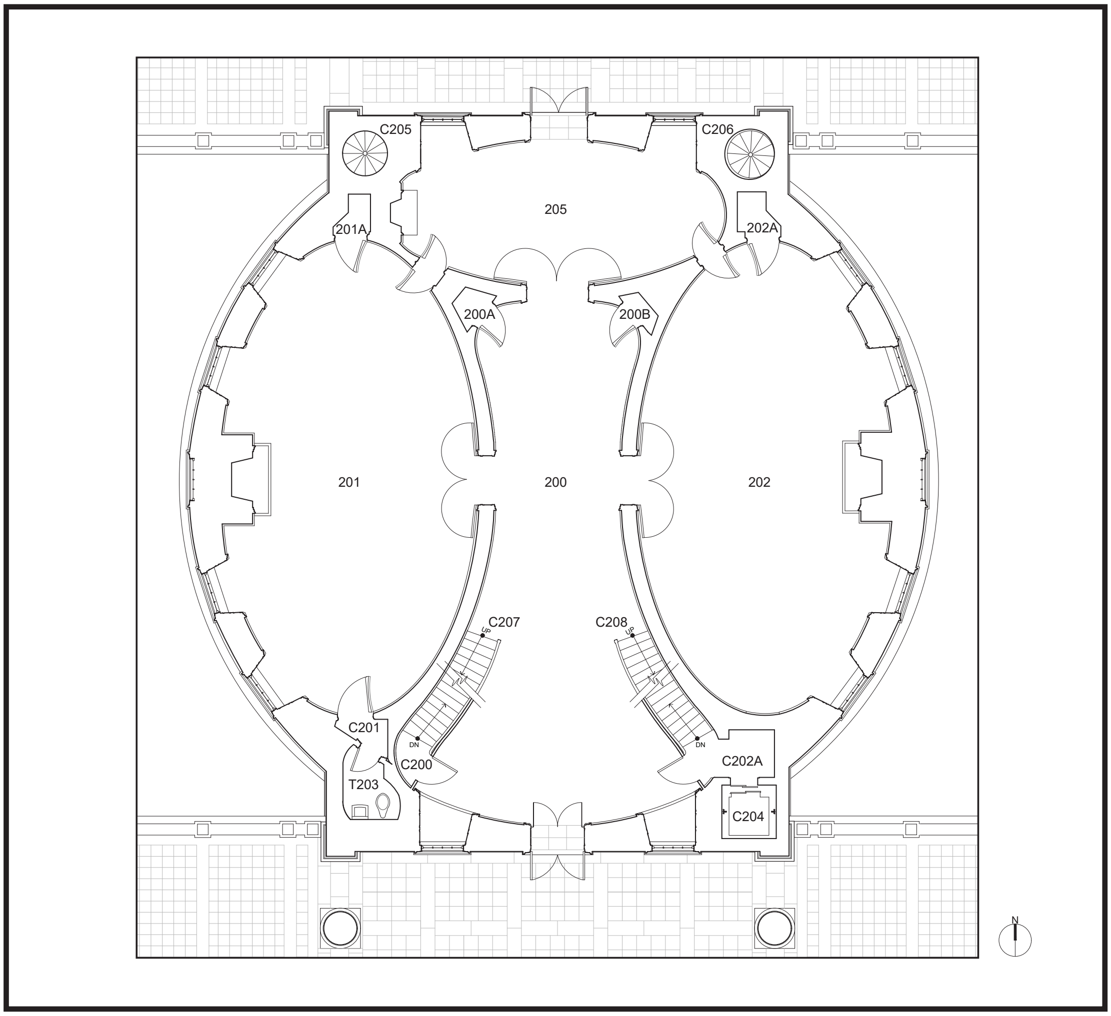


FIGURE 208. *Detail, main-floor plan (not to scale).*

boldly delineated plan. The only evident differences that now exist are the wider door openings into the large oval rooms and the two closet spaces; Jefferson shows narrower openings and no closets.

Cornice: The 2' 9¼" high plaster entablature, installed in the mid-1970s, was based on the moldings used in the main-floor spaces of the pavilions. The entablature begins with a two-fascia architrave. Above the architrave the plaster surface of the wall is used as a frieze. A cavetto and cyma recta bed molding support a plain corona; and the cornice meets the ceiling with a fillet, cyma recta, and fillet cymatium. The type of entablature that Jefferson may have intended for the entrance hall is undocumented.

Doors: All of the door openings are in locations shown on Jefferson's floor plan, but the current width of the east and west openings (6' 0") is greater than that shown by Jefferson (3' 0"). He likely intended single door leaves in these openings. New glazed doors were installed in the south entrance in 2016.

Stairs: Each of the two mid-1970s open-stringer staircases that ascend to the Dome Room begin with fifteen risers ascending south to a landing. Fourteen risers then wind up along the curved wall to arrive at the south end of the Dome Room. The wood surfaces conceal a fully functional structural-steel stair.

The stairways to the Dome Room, as constructed for the mid-1970s restoration, duplicate conditions shown on Jefferson's ca. 1819 floor plan. Details of the original stairs' construction and appearance remain unknown but likely would relate to contemporary stairs found in the pavilions.

The 2016 stairs from the ground floor arrive beneath the landings of the 1970s stairs that ascend to the Dome Room. New paneled partitions that match the panels below the 1970s stairs were added in 2016 to enclose the ground-floor stair landings.

Fireplace: An original small fireplace is set into the southeast wall at the southeast stair landing. Jefferson's ca. 1819 floor plan includes this unusually positioned fireplace, and evidence for the firebox was revealed during the mid-1970s restoration.

Lighting and electrical: Three large mid-1970s brass-and-glass lanterns are suspended by chains from the ceiling. Each lantern includes a two-tier electric candle fixture. The lanterns were designed by E. R. Steinmetz of Horsham, Pennsylvania and produced by the Wibes Manufacturing Company of Plumsteadville, Pennsylvania. The placement of these lanterns was probably influenced by the common practice of using lanterns with small oil lamps in hallways during the first half of the nineteenth century.

Furnishings and fittings: There are no known images of the hall, no other documentation, and no surviving original surfaces that could provide evidence for objects placed here in the nineteenth century.

A feature sometimes found in a nineteenth-century entrance hall, in both private and public buildings, was a coat rail, a narrow horizontal wood board positioned on the plaster wall surface. Wood pegs or metal hooks were attached to the rail to hold coats and other garments.

Some sort of seating (benches or chairs) was likely used here.

Since the mid-1970s restoration, the marble statue of Jefferson by Alexander Galt has been prominently displayed at the north end of the hall. Prior to the 1895 fire, this important artifact was displayed in the library (Dome Room).

Upper West Oval Room (201)

The mid-1970s reconstruction of the plan of this large oval room is based on Jefferson's floor plan from ca. 1819. Significant differences that exist today include the blind doorways at the north and south ends of the room (which Jefferson did not show) and the greater width of the doorway to the hall. Jefferson's opening was shown as about 3' 0" wide, an indication that a single-leaf door was intended for the opening.

In 1824 the Board of Visitors officially decided that this room and the east oval room, referred to as the "larger elliptical rooms," were to be used for annual examinations, lectures, and religious worship. However, in 1825 Jefferson convinced Brockenbrough not to hold the religious services.

Cornice: The 2' 10¼" high entablature, installed in the mid-1970s, is based on the Doric entablature that Jefferson used in the original second-floor parlor in Pavilion VI; there is no documentation for its placement here originally. A Corinthian cornice, to include ox skulls, was proposed for the museum room (the small oval north room), an indication of the level of finish intended by Jefferson for the primary spaces. The entablature begins (at the base) with a two-fascia architrave that includes the guttae and taenia (base) of the triglyphs. The metopes are ornamented with "female heads" above ribbon ornaments. The cornice includes a denticulated bed molding that supports the projecting corona and crown molding/cymatium (composed of a fillet, cyma reversa, fillet, cyma recta, and fillet).

At Pavilion VI, the masks (of terra-cotta) and the ribbons (of cast lead) were supplied to Jefferson by William Coffee of New York City. The "female heads" supplied by Coffee in 1822 cost 46 cents each at that time.

FIGURE 209. *Center stair hall (200), looking south.*

FIGURE 210. *Center stair hall (200), looking north.*

FIGURE 211. *Upper west oval room (201), looking north.*

Fireplace: A mid-1970s concrete-block chimney breast projects 3' 2⅝" from the west wall. The brick-lined firebox is painted black, as is the plain plaster surround. The surround is bordered by a 7¼" wide two-fascia architrave. Above the architrave a plain frieze extends up to a denticulated crown molding, which supports the mantel shelf. While similar in style to the pavilion fireplace mantels, the profile and moldings are slightly different in this mantel reconstruction. The firebox and hearth are paved with brick.

The Jefferson floor plan includes a fireplace in this location with a blind window on the exterior. The post-1895 fire reconstruction did not restore the chimney breast and fireplaces but instead exposed the window opening. Generally, the 1970s reconstruction of this fireplace and the others in the Rotunda duplicated the size of the firebox as shown on the ca. 1819 Jefferson floor plans, but the current chimney breasts are much wider than those shown on the plans.

Lighting and electrical: The room is lit by two fifteen-light chandeliers, and by 2016 recessed ceiling fixtures. The reproduction brass and glass chandeliers are two of the five chandeliers designed by E. R. Steinmetz of Horsham, Pennsylvania, based on the Argand fixture used in the House of Representatives in the U.S. capitol (recorded in an 1822 painting of the chamber by Samuel F. B. Morse.) The reproductions were manufactured by the Wibes Manufacturing Company in Plumsteadville, Pennsylvania, in 1976, and restored in 2016. It is unlikely that such an elaborate and expensive fixture (at that time) would have been used here and certainly not two fixtures of this type.

Toilet Room (T201)

This small toilet room was created in the mid-1970s in space that was originally part of a circular shaft that housed the rope that controlled the 1826 bell. Later, it was occupied by a circular stair created by McKim, Mead and White to provide access to the library galleries. The existing conditions (tile floor and wainscot, with plaster above the wainscot) date to 2016.

Upper East Oval Room (202)

The mid-1970s reconstruction of the plan of this large oval room is based on Jefferson's floor plan from ca. 1819. Significant differences that exist today include the blind doorways (not shown by Jefferson) and the greater width of the reconstructed doorway to the hall. Jefferson's opening was shown as about 3' 0" wide.

In 1824, the Board of Visitors decided that this room and the west oval room were to be used "for annual examinations, lectures and for religious worship."

Cornice: The 3' 0" high Corinthian entablature, installed in the mid-1970s, was likely derived from Palladio's drawing of the Pantheon's portico entablature (Book IV, Plate LVI). The entablature begins (at the base) with a three-fascia architrave and a plain frieze. Above the frieze the cornice includes a bed molding composed of a bead, cyma reversa, fillet, corona, bead, and egg-and-dart molding. Acanthus scroll brackets support the projecting corona (ornamented with rosettes) and cymatium (fillet, cyma recta, fillet).

There is no documentary or physical evidence for the placement of this entablature here. The Corinthian cornice proposed by William Coffee for one of the main-floor oval rooms was to include husks, leaves, rosettes, and ox scull ornamentation.

Fireplace: The mid-1970s concrete-block chimney breast projects 3' 2⅝" from the east wall. The fireplace and mantel mirror those of the west oval room (201): the brick-lined firebox is painted black, as is the plain plaster surround. The surround is bordered by a 7¼" wide two-fascia architrave. Above the architrave, a plain frieze extends up to a denticulated crown molding that supports the mantel shelf. The firebox and hearth are paved with brick.

The Jefferson floor plan includes a fireplace in this location with a blind window on the exterior. The post-1895 fire reconstruction removed the chimney breast and fireplace and exposed the window opening. The chimney breast is wider than that shown on the 1819 plan.

Lighting: The room is lit by two 1976 fifteen-light chandeliers (like those in the west oval room) that were designed by E. R. Steinmetz and produced by the Wibes Manufacturing Company.

Heating: Originally, the fireplace heated the room, but it proved inadequate, and in 1828 the faculty requested that heating stoves be placed in each room.

Upper North Oval Room (205)

The mid-1970s reconstruction of this room is based on Jefferson's ca. 1819 floor plan. At that time, the north doorway opened to an exterior marble tile platform with stairs descending east and west to grade. This was to be the museum room, but that function was moved to the ground-floor oval room directly below. In 1824 the Board of Visitors decided that this room would be used "by schools of instruction in drawing, music or any other of the innocent and ornamental accomplishments of life."

Cornice: The 2' 4" high entablature, installed in the mid-1970s, is based on the one that Jefferson used in what is now the master bedroom of Pavilion I. The entablature begins (at the base) with a three-fascia architrave. Above the architrave the frieze is ornamented with bucrania and putti connected by garlands. The cornice includes a denticulated bed molding that supports the projecting corona and crown molding/cymatium (composed of a fillet, cyma reversa, fillet, cyma recta, and fillet). William Coffee provided prices for a Corinthian cornice for the museum room. The molding was to include ox skulls, husks, leaves, and rosettes.

Fireplace: At its deepest point, a fireplace projects 1' 3¾" from the curved west wall. The brick-lined firebox is painted black, as is the plain plaster surround. The surround is bordered by a 3½" wide ogee molding. Above the molding, a plain frieze

FIGURE 212. *Upper east oval room (202), looking north.*

extends up to a denticulated crown molding that supports the mantel shelf (with profiles matching the mantels in the west and east oval rooms (201, 202). The firebox and hearth are paved with brick.

All of these features were reconstructed in the mid-1970s. Jefferson's ca. 1819 floor plan seems to show the firebox recessed into a flat wall surface at the west end of the narrow oval room, unlike the curved surface that now exists. There is no Jefferson precedent for the unusual form of this mantelpiece.

Lighting and electrical: The room was lit by a 1970s fifteen-light chandelier like those in the west and east oval rooms (201, 201); in 2016 it was modified by removing the upper tier to create a ten-light fixture.

Heating: Originally the fireplace heated the room, but it proved inadequate, and in 1828 the faculty requested that heating stoves be placed in each room.

Dome Room, Galleries, Fire Stairs, and Attics

Jefferson's floor plan of the Dome Room was begun in 1818 and completed by March 29, 1819 (Figure 8). Inspection of the drawing reveals that Jefferson made a significant change to the plan as his design evolved: the paired columns shown on the drawing were preceded by single larger-diameter columns in the same general locations. The plan shows a circular room that is 74' in diameter, but as constructed it was not a perfect circle.

The drawing is sufficiently detailed to include representations of the false windows positioned in the exterior face of the curved walls surfaces behind the fireplace, but it curiously omits other important features. The plan shows no window openings in the flat north and south elevations. It is as if Jefferson wanted to preserve some of the curved wall area for bookcases. Significantly, all of the plans drawn by John Neilson (November 1821 and 1822) also omit openings in these locations. For the main-floor plan, Jefferson and Neilson include these openings in both the north (rear) and south (front) elevations, where they flank wide doorways. The omission of these windows in the Dome Room seems to be a purposeful decision by Jefferson.

At some point, a decision to place openings in these locations was likely made by Jefferson or some other involved party. Jefferson, in his August 10, 1823, letter to Brockenbrough, stated, "I have omitted to place a door in front, opening under the Portico... it should be of the width of the main door below." Jefferson went on to request that the opening should have "a folding sash door so as to give light when shut. its bottom to be closed by an open pannel either Chinese or iron." This "pannel" would be an exterior railing across the lower portion of the opening.

On August 11, 1823, Brockenbrough informed Jefferson that he had already prepared a stone sill and window frame for the proposed door location and that he thought that a window would answer better than a door. The same day, Jefferson responded to Brockenbrough, "I think a door greatly preferable to a window both as to appearance & use, exactly such as in my parlour, except that the bottom panels had better be of wood." Clearly Jefferson wanted a doorway in that location.

Whether a door was placed in the opening is unknown, but the earliest photograph of the front of the Rotunda, taken in 1868, clearly shows 12/12 sash in the three openings above the portico entrance doors and windows. Later interior photographs of the library (Dome Room) record three window openings in the north wall of that space.

Jefferson's floor plan includes a pair of stairs at the south side of the room behind the paired columns, which descend to the main floor. Unlike the 1970s stair opening configurations, Jefferson does not show the curved returns of the railings as they extend and attach to the wall plane. This plan (restored in 2016) would have allowed for more wall surface for bookcases.

Jefferson's plan for the Dome Room does not show any indication of spaces, circular or otherwise, in the four corner areas of the north and south elevations. In fact, there was a circular, tubelike space in the southeast area that was intended for the weights of the Willard clock, and it was so indicated on his plan of the lower floor. Investigations in the mid-1970s revealed that the four corner spaces in these locations did originally exist. The southeast shaft contained the clock weights, and the southwest shaft held the bell rope; the north spaces were not used at this level. For the reconstruction, McKim, Mead and White inserted gallery stairs in the four shafts. Since the mid-1970s restoration, the two north shafts have housed circular steel stairs that descend from the lower gallery of the Dome Room to the exterior at grade, where doors open to the east and west courtyards. The southeast shaft (originally used for clock weights) now houses the elevator, and the southwest space is now a toilet room.

If Jefferson did not use one or more of these corner shafts to house stairs to the library galleries, then the stair or stairs to those levels were situated somewhere within the Dome Room itself. Looking at Jefferson's plan, it seems likely that the gallery stairs were situated directly over the two stairs that ascend from the main floor, an obvious and simple solution. All of the known images of the pre-fire Dome Room look towards the north (to record the statue of Jefferson), and so the stairs are never seen.

Many, if not all, of the bookcases were in place in the Dome Room in late 1826, and they can be seen in the pre-fire images, which show the bookcases, with their glazed doors, positioned on the Dome Room floor below the lower balcony (Figure 46). Cases are also seen lining the walls below the lower balcony and on that balcony (Figure 47).

The bookcases, as constructed in the mid-1970s, appear to accurately duplicate what can be seen in the pre-fire photographs, but wall units need to be installed to truly create the ambiance of the original library space.

Dome Room (301)

Floor: The floor is finished with random-width heart-pine antique floorboards, ranging from 3" to 6" wide. The boards are laid east-west based on an 1890 Kenneth Brown photograph acquired during the mid-1970s restoration (Figure 44).

Frederick Nichols described the structure of the 1970s floor as being poured concrete over steel joists. Two-by-four sleepers were nailed to the concrete; the voids were filled with insulation as a sound-deadening measure. The sleepers were covered with a plywood subfloor, and the finish floorboards installed above the subfloor.

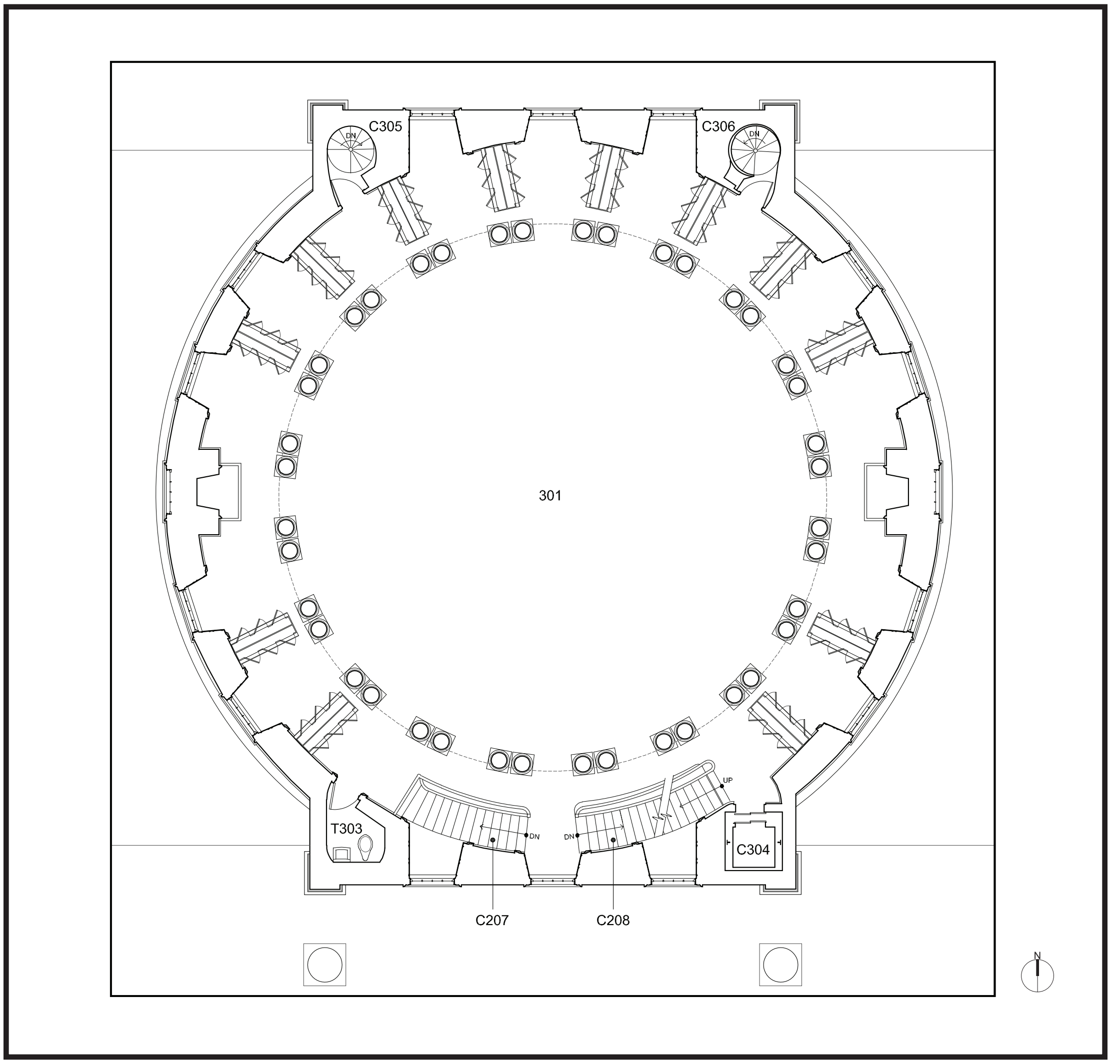


FIGURE 213. *Detail, Dome Room plan (not to scale).*

In 2016 the 1970s vinyl tiles in the southeast corner of the floor, near the elevator shaft, were replaced with wood floorboards.

Walls and columns: The perimeter walls are plaster-on-brick masonry. The massive outer wall surface is the original brick wall surface that survived the 1895 fire. At the time of the reconstruction by McKim, Mead and White, an inner surface of two layers of brick, approximately 8" thick, was installed against the 1827 surface to help support the Guastavino tile dome. This condition explains why no early evidence is visible on the brick wall surfaces that were exposed during the 1970s restoration.

Twenty pairs of non-structural wood columns with wood Corinthian capitals are set approximately 8' 8" from the perimeter walls. The columns are approximately 1' 6" in diameter at the base, and 1' 3½" in diameter below the capitals. The 2' 1¼" square wood plinths support wood Corinthian bases. The 3¼" high plinths are taller than those that appear in pre-fire photographs, and the horizontal openings at the bottoms of the plinths are not historic details.

The original capitals, carved by Philip Sturtevant of white pine from Maine, were destroyed in the 1895 fire. The 1970s renovation installed plaster capitals that approximated the originals; these features were replaced in 2016 with new, more accurately detailed mahogany capitals. The design of the new capitals relied on the pre-fire photographs of the Dome Room and other examples of Sturtevant's work, as well as letters between Sturtevant and the University's proctor, Arthur S. Brockenbrough, which included details on Jefferson's specifications for the capitals.

The columns extend up to a 2' 11⅜" high plaster entablature; according to the 1973 drawings, the plaster is applied to metal lath. The entablature begins with a two-fascia architrave that supports a frieze and a bed molding (from top to bottom, a fillet, ovolo, cyma reversa, fascia). Above the bed molding, modillions are set below a corona and a cymatium/crown molding (cyma reversa, fillet, cyma recta, fillet). The 1970s slots for air supply, hidden behind the corona, were filled in with plaster and lath in 2016. A wood balustrade extends along the edge of the upper gallery.

In each pair of columns, one of the columns holds a 5" diameter hollow steel-pipe column. Chord beams extend from the perimeter walls to the steel columns to support the middle and upper galleries.

Ceiling: The dome that rises above the room is constructed of the Guastavino tiles installed in 1896. As part of the mid-1970s work, an acoustical ceiling of perforated aluminum panels was installed over the tiles. In 2016 these panels were removed and replaced with an acoustic plaster ceiling finish installed over mineral-wool panels and gypsum board, furred out from the tile dome.

The dome rises to a central oculus fitted with a glazed skylight. The opening is trimmed with a metal cyma reversa molding at the base and a plaster cymatium/crown molding at the top. The 2016 metal-framed skylight with overlapping layers of insulated laminated safety glass replaced the 1970s extruded aluminum skylight frame with double glazing. The size of the current opening, first established by the metal and glass skylight installed by McKim, Mead and White, is of a slightly greater diameter than the approximately 16' diameter of the Jefferson opening.

The 2016 plaster ceiling surface below the middle gallery is 8' 8" above the floor.

Baseboard: The 7¾" high baseboard (typical of the mid-1970s work) includes a splashboard and a cap molding composed of (from top to bottom) a cavetto, bead, and ogee molding.

Doors: The doorways leading to the stairwells in the northeast and northwest corners of the room and to the southeast opening to the elevator are trimmed with plain metal frames, painted to match the wall finish. The southwest doorway (to the toilet) has a typical 7¼" wide two-fascia architrave. These openings were first created as part of the McKim, Mead and White reconstruction to provide access to the stairs continuing to the second balcony level. Evidence seen in the mid-1970s revealed that Jefferson did not use the spaces beyond these doorways for stairways.

There were no doorways in the Dome Room as completed by Jefferson. The only references to a door opening at this level are found in two 1823 letters from Jefferson to Brockenbrough in which Jefferson makes known his wish to have a folding sash (glazed) door in the center opening in the south wall.

Windows: There are three window openings in the north wall, three in the south wall, and four each in the east and west walls. Each opening is set deeply into the masonry walls with mid-1970s paneled reveals and a paneled lintel (four tiers of paneling per reveal). These reveals must be deeper than the original condition, due to the addition of the brick that was added to the wall surface by McKim, Mead and White.

The McKim, Mead and White 12/12 chain-hung sash have latches on the meeting rails and flush sash lifts in the bottom rails.

Original window openings also exist behind the chimney breasts constructed in the mid-1970s. Jefferson intended that these be false windows, as they are now. Jefferson's ca. 1821 plan shows only the openings in the west and east walls. No openings are shown in the north and south surfaces. Later, in two letters dating to 1823, Jefferson makes clear his desire

FIGURE 214. *Dome Room (301), looking east.*

to have an opening (a window/door) placed in the center of the south wall. Whether Jefferson decided to place window openings in these locations or another person made the decision is undetermined.

Some of the window reveal panels are fitted with small access panels; hardware includes small concealed hinges and brass flush ring pulls.

Fireplaces: The mid-1970s concrete-block chimney breasts project 2' 0" from the east and west walls. Small areas that form the north and south extensions of the chimney breasts are hollow and are constructed of plaster on metal lath over a frame wall. The brick-lined fireboxes are painted black, as are the plain plaster surrounds. Each surround is bordered by a 3¼" wide wood ogee and bead molding.

The appearance of the pre-fire mantels or surrounds is not known, but Jefferson's plan shows a chimney breast that is 8' wide and 3' deep.

Stairs: Along the south end of the room, the stairwells for the staircases from the main floor are edged with railings that match the stair handrail and balusters. Jefferson's ca. 1819 plan of the Dome Room shows stairs in these locations, but the openings are not shown with curved ends as they were recreated in the mid-1970s. The 2016 restoration squared off the ends of the stair openings.

The stairs shown on the Jefferson plan may also represent the stairs that would have provided access to the two tiers of the galleries. A new stair to the middle gallery, installed in 2016 above the southeast stair, ascends seventeen risers, curving along the southeast wall. The handrail and balusters match those of the 1970s stairs.

Lighting and electrical: There is no documentation concerning the artificial lighting used in the Dome Room prior to the installation of illuminating gas in 1874. Pre-fire photographs show a ring of utilitarian vertical gas fixtures at the top edge of the entablature, as well as a series of simple inverted "T"-shaped pendants suspended in front of the entablature

FIGURE 216. *Dome Room (301), column capitals.*

FIGURE 215. *Dome Room (301), looking north.*

from the same ring. Original lighting may have included an oil chandelier, possibly suspended below the oculus and/or wall brackets and lamps. Oil lamps may have been placed on the large curved tables made for the room in 1827. Fixtures installed in 2016 include recessed fixtures in the ceiling below the middle gallery; LED fixtures in the upper gallery provide ambient light on the domed ceiling.

Heating: Originally this large room was heated by the two relatively small fireplaces, but by 1828 the faculty requested that heating stoves be installed in the various rooms of the Rotunda. Stoves were certainly used here, probably positioned out in the space beyond the galleries with the stove pipes extending to the chimney breasts.

See the Systems Overview section of this report for a description of the 2016 installations.

Furnishings and fittings: In the north half of the space, double-sided bookcases extend behind the eight pairs of columns to the perimeter walls. Four similar bookcases are centered behind the four column pairs that flank the stairwells in the south half. Each bookcase is three bays wide, with shelving enclosed behind glazed doors on both sides of the unit. A 3¾" high ogee molding trims the top of each bookcase; at the base, the units are trimmed with plain fascia boards.

The glazed doors (four-light doors in the lower bays, and six-light doors in the upper bays) are hung on pairs of 3" high butt hinges and fasten with key-operated latches; in 2016, small brass knobs were added.

These cabinets are based on evidence seen in the various pre-fire photographs of the Dome Room and on the original 1820s construction correspondence, which includes mention of bookcases with glazed doors. The photographs reveal that there were additional bookcases against the curved wall surfaces that now feature the doorways to the northeast and northwest stairs and also along the wall surface of the lower gallery.

FIGURE 217. *Dome Room (301), new stair to middle gallery.*

A significant extant furnishing that existed here prior to the 1895 fire is the marble statue of Jefferson by Alexander Galt that was placed in the Rotunda in 1861. The tall pedestal upon which the statue rested was not removed at the time of the fire, but it can be seen in various photographs. An elaborate wood and iron "fence" surrounded the statue's base.

Other significant furnishings revealed in the various photographs include several large, slightly curved, rectangular tables that were made for the room and placed here in 1827. The curved tabletops would allow for the placement of the tables around the room in front of the columns.

The images also reveal that by the late nineteenth century, the Dome Room was filled with numerous oil portraits in various sizes, from small head-and-shoulders likenesses to large, life-size full-body images. They were suspended in front of the paired columns, as well as on the lower surfaces of the dome at the upper balcony level.

The last images of the room prior to the 1895 fire record the placement of a small clock (with a circular face against a square support) on the front edge of the middle gallery, directly in front of the central north window.

Toilet Room (T301)

This small corner toilet room was inserted as part of the 1970s renovation. The current finishes—hexagonal ceramic floor tiles, a subway-tile dado, and plaster walls and ceiling—as well as the plumbing and lighting fixtures, date to the 2016 work.

Middle Gallery (C401)

This mid-1970s gallery is in the same position as the middle gallery designed by Jefferson and seen in his section drawing of the Rotunda from ca. 1819 (Figure 9). This is also the same approximate position of McKim, Mead and White third-tier gallery that surrounded the 1898 Rotunda space. Originally, Jefferson had bookcases installed against the curved wall surfaces around the entire gallery, except along the south area, where the access stairs were likely situated. The 2016 restoration added a stair from the Dome Room for easy access to the gallery, which is now furnished with tables, chairs, and electrical outlets to accommodate students.

Floor: Wood floorboards, installed in 2016, are angled to follow the curve of the walls.

According to the Ballou and Justice drawings, the poured-concrete floor structure is supported by a corrugated deck resting on chord beams that extend to the 5" diameter steel-pipe columns in the Dome Room wood columns. Radial beams span between the chords.

Walls: The perimeter brick wall is finished with 2016 plaster, furred out from the brick installed as part of the McKim, Mead and White reconstruction. That wythe covers the original outer brick wall. The wall curves up slightly to support the base of the Guastavino tile dome.

The Dome Room columns and capitals define the interior edge of the gallery. A simple 3' 0" high iron railing follows the edge of the floor behind the columns; the rail is attached to the columns with horizontal iron bars. Although a railing in this location cannot be seen in the pre-fire photographs of the library, it is very likely that a railing did exist. An 1827 payment for “wire work” for the library may refer to some sort of wire-mesh railing.

Stairs: The 2016 stair from the Dome Room arrives near the south end of the gallery. The railing around the opening matches the 1970s stair railings.

Two folding ladders were installed in the north and south ends of the ceiling in 2016 to provide access to the upper gallery.

Furnishings and fittings: The pre-fire photographs reveal that bookcases were positioned against the curved wall surface of the gallery. In the 1894 R. H. Laughlin drawing published in *Corks and Curls*, the cases and books are clearly shown (Figure 48).

North Portico Attic (M401)

In this utilitarian attic space located in the north pediment is preserved a portion of the original north facade of Jefferson’s Rotunda. The brick wall surface that forms the south wall in this room was exposed to the exterior only from 1827 to 1852 and briefly after the 1895 fire. The bricks and the mortar joints retain their original appearance, and there is evidence of the original north cornice and its related flashing.

This attic space is the location of the south end of the attic of the Mills addition.

Floor: The irregular floor surface is a combination of brick and the Guastavino tile vaults above the north portico ceiling.

Walls: The walls are brick masonry. The south wall is made up of bricks laid in Flemish bond. This is the original upper (attic) portion of the north facade of Jefferson’s Rotunda. It was exposed until the Annex was constructed in 1852. The original character of the brick and the mortar joints is preserved here. Benjamin Borden was paid for oiling the brick and penciling the mortar joints in 1824. At the base of the wall surface, there are evenly spaced vertical nailing locations for the original north cornice. The vertical recesses that held the wood nailing surfaces do not extend upward as far as those seen in the post-fire photographs of the east and west elevations. This face, and other evidence seen in the 1896 photographs, indicates that Jefferson placed a full pediment on the north attic story.

Fragments of rusted iron in a horizontal brick joint above the cornice location survive from the original flashing.

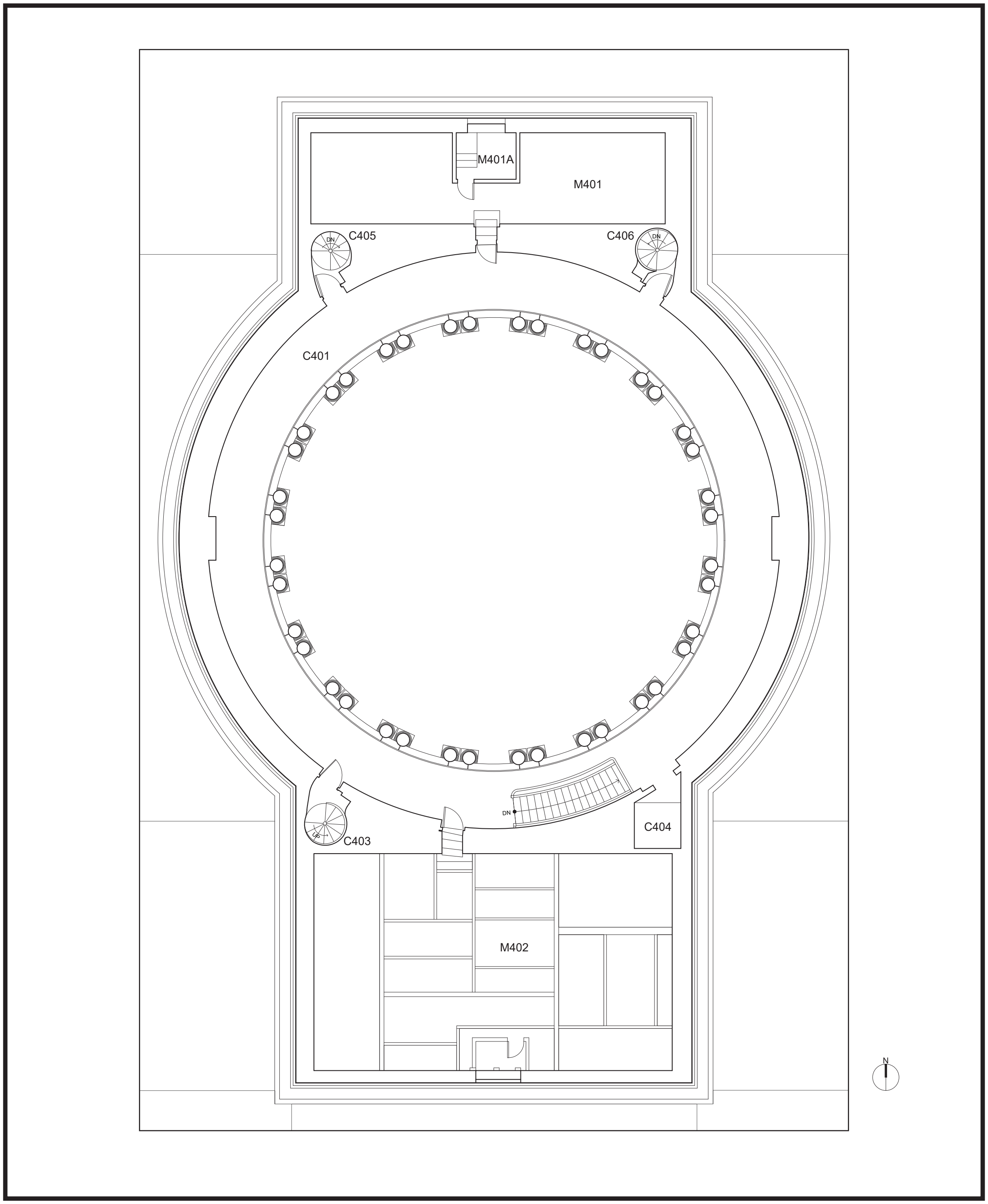


FIGURE 218. *Detail, plan of middle gallery (C401), north portico attic (M401), and south portico attic (M402) (not to scale).*

Above the doorway in the south wall, a section of the wall has been filled in with concrete block to decrease the size of the opening that originally opened to the upper gallery in the Dome Room.

The north wall that forms the McKim, Mead and White pediment is laid in a common bond, with four to five courses of stretchers between single courses of headers. At the roof rake, the bricks are corbelled.

The east and west knee walls are laid in stretcher bond.

Against the north wall, vertical tongue-and-groove boards fastened to wood framing form an enclosure for the clock mechanism (M401A).

Ceiling: The vaulted ceiling is made up of Guastavino tiles laid east-west above 1' 6" deep curved brick ribs supported by 2¾" wide steel plates. The closely-spaced ribs are approximately 4" wide.

Doors: The south doorway is set deeply into the south wall. This opening was modified (moved downward) as part of the post-fire reconstruction. The 1852 opening connected to the upper gallery in the Dome Room. In 2016 the doorway was slightly enlarged, and the door frame moved to the gallery edge of the opening. Steep, ungainly concrete steps leading up to the mechanical room floor were rebuilt in 2016 to allow easier access to the space.

Clock Room (M401A)

The floor of the clock room is made up of wood boards, approximately 6" above the floor of the attic. The bases of the wood-framed partitions are trimmed with a plain fascia board. The ceiling is 8' 2" above the floor.

The clock face is set in a round opening in the north wall; the mechanism was updated in 2016.

The room is lit by a fluorescent fixture hung from the ceiling.

South Portico Attic (M402)

In its current form, this large attic space dates to the reconstruction of the Rotunda carried out by McKim, Mead and White. This fireproof structure replaced the wood-frame portico destroyed in 1895. A remarkable photograph dated October 23, 1895, records the south front of the Rotunda and this area after the fire. Only the ten columns that supported the portico and the brick wall that it abutted survived the fire; the rest of the portico was destroyed. In the photograph, the triangular outline of the pediment can be seen at the top of the brick facade, and a tall doorway centered in the wall that would have opened to the upper gallery of the original Dome Room is clearly shown.

The Willard clock was housed in this space, but the evidence of plaster and paint indicate that the large space also had other functions. The bell purchased in 1827 was positioned above the portico roof, possibly on the ledge of the south facade immediately in front of the dome. The 1856 Bohn view (Figure 124) shows a small, box-like object in this location, and the 1868 photograph (Figure 32) definitely shows the bell in that position.

Floor: The floor is made up of 1898 brick jack vaults that extend east/west.

When this space became a mechanical room in the mid-1970s, a structural-steel frame with a concrete slab floor was installed approximately 1' 10" above the jack vaults to hold the mechanical equipment. Steel catwalks provide access to the newly installed mechanical equipment.

Walls: The walls are brick masonry. The north surface is the original upper portion of the front facade of Jefferson's Rotunda. An October 23, 1895, photograph of the front of the Rotunda clearly shows this wall with a white finish (paint and/or plaster) that existed within the outline of the original pediment. The photograph shows three openings in the wall surface: the tall central opening, a shorter doorway to the shaft housing the bell rope and possibly a narrow circular stair, and a small rectangular opening to the east that opened to the shaft for the clock weights. The other brick surfaces date to the McKim, Mead and White reconstruction.

FIGURE 219. *South portico attic (M402) before installation of mechanical equipment.*

Against the south wall, the clock room is enclosed with vertical tongue-and-groove boards fastened to wood framing; according to the 1973 drawings, the north partition was moved 2' 3" to the south to provide room for the air-handling equipment.

Ceiling: The ceiling is made up of three bays of Guastavino tile vaults, extending east/west between iron beams encased in brick. The beams slope down to rest on 8" to 8½" wide piers projecting from the east and west walls.

Clock Room (M402A)

The floor of the clock room is made up of wood boards, approximately 1' 9½" above the floor of the attic. The bases of the tongue-and-groove partitions are trimmed with a plain fascia board. The ceiling is 7' 8" above the floor.

The clock face is set in a round opening in the south wall. The mechanism was updated in 2016. The original clock supplied by Simon Willard in 1826 was located in this same area. The original dial was about 5' 0" in diameter and was set in a circular opening in the original wood pediment. Exterior pre-fire photographs show two small rectangular doors in the wood pediment at each side of the clock face frame. In the photographs, the doors are painted the same white as the pediment to blend with that surface.

Jefferson's original specifications for the clock in 1825 stated that the weight mechanism was to extend straight back for about 30 feet from the clock mechanism, then turn at a right angle for 21 feet, and then descend through a 5-foot-diameter hole (the current elevator shaft) for 50 feet.

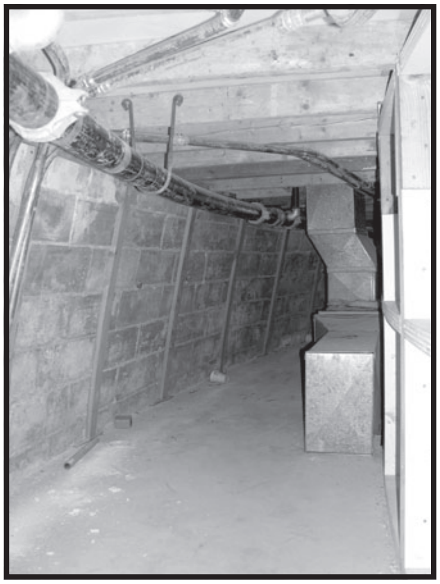


FIGURE 220. *Upper gallery (C401) duct enclosure in 2006. The Guastavino (inner) dome is visible within this space.*

FIGURE 221. *The outer dome, as seen during the 2010 investigative probes. Note the filled-in arched opening.*

Upper Gallery (C501)

Jefferson's section drawing of the Rotunda from ca. 1819 shows this gallery at about 17' 0" above the Dome Room floor. He indicates a balustrade or railing that is 3' 0" tall, but the pre-fire photographs reveal that a much taller railing was actually constructed. Access to the original gallery was probably from a continuation of the stair system at the south side of the Dome Room. The balustrade created in the mid-1970s closely replicates what can be seen in the early photographs; there may be some slight differences in proportion and profiles.

Floor: The floor is covered with 10" square vinyl tiles, installed in 2016.

According to the 1973 drawings, the poured-concrete floor structure is supported by a corrugated deck resting on chord beams that extend to the 5" diameter hollow steel-pipe columns in the Dome Room columns/capitals. Steel joists span between the chords.

Walls: The gallery is built along the lower portion of the dome. The wood railing that extends along the inner edge (Dome Room side) of the gallery is 4' 5¾" high. The railing is more intricately molded on the Dome Room face than on the gallery face.

On the Dome Room face, the base of the railing begins with a fascia, bead, cyma, fillet, and ogee molding; on the gallery face, a higher fascia is capped with a bead and cavetto molding.

Above the base, 2⅜" square and turned balusters are grouped between 1' 2½" wide plain panels. The sets of balusters alternate between sets of two (with half-balusters against the panels) and fourteen (with half-balusters against the panels). The intricately turned balusters are 2' 6¾" high and are spaced approximately 1¾" apart. They are similar in design to the balusters of the stairs. Jefferson supplied the drawing for the baluster design in June 1825.

A comparison of the profile of the current baluster with the ones seen in the pre-fire photographs reveals only a slight variation in the character of the turning of the upper part of the shaft.

The top rail, on the Dome Room face, begins with a fillet, cyma reversa, and fillet bed molding, then continues with an ovolo, a fillet, dentils, a bead, a cyma recta, and then curves deeply back to the top face of the railing. The interior face is a fascia trimmed at the top and bottom with cavetto and bead moldings.

Along the perimeter of the base of the dome, a 2016 gypsum-board enclosure with a plywood top hides the ductwork for the mechanical systems. The front face of the enclosure, curved to follow the radius of the gallery, extends up 6½" above the top surface to create a "parapet" masking the ambient lighting fixtures.

The 1896 Guastavino tiles forming the dome are visible inside of the enclosure.

Two folding ladders were installed in the north and south ends of the floor in 2016 to provide access from the middle gallery.

Northwest Fire Stair (C105, C205, C305, C405)

Prior to the post-fire reconstruction, this space was not thought to be accessible. Although some sort of space did exist here, there were no formal access doors. There are references to the upper portion of the space being used as a water cistern. In 1824 Brockenbrough suggested that they "put reservoirs in the two North corners of the Attic." In 1854 two 7,000-gallon tanks were constructed here and at the northeast corner. The cisterns proved unsatisfactory because they leaked, causing exterior and interior damage. The tanks continued to be a problem and were repaired in 1882. They ceased to exist after the 1895 fire.

Floor: The floors at each level are poured concrete.

Walls: The wall surfaces are a combination of original brick, later fire-resistant terra-cotta fire tile, and concrete.
Above the main floor a flue in the southwest corner is encased in brick.

Stairs: The spiral, open-riser steel stairs were installed in 1976. The diamond plate winders begin at the south wall, and wind around a central 4" diameter steel column, with three winders making a 90-degree turn. The risers are approximately 10½" high. A pipe rail extends up the exterior perimeter of the stairs.

Northeast Fire Stair (C106, C206, C306, C406)

This space evolved in the same manner as the northwest stairwell (C105, C205, C305, C405). There was a water cistern at the upper level.

Stair to Roof (C403/C503)

This area became the access to the roof as part of the reconstruction carried out by McKim, Mead and White.

Vault/Basement

The 2016 excavation of the east courtyard provided a subterranean vault to separate new mechanical and service areas from the public spaces. Underpinning of the east walls of the Rotunda allowed the new service level to extend from the north/south mechanical tunnel at the center of the Rotunda to a new stair and elevator beyond the east courtyard.

The east elevator (C009) and stair open to a lobby (C007), with two storage rooms (B008, B009) and an elevator machine room (M009) arranged to the north and east of the lobby. A long corridor (C005) leads west to a second lobby (C003) with an elevator (C004) and stair (C002), which provide access from the Rotunda itself.

Beneath the east courtyard is a large mechanical room (M005) to the north. The space between the mechanical room and the corridor includes a service support room or catering kitchen (B007), a janitor's closet (B006), a fountain pump room for the fountain in the east courtyard (B010), and an elevator machine room (M003) to the south.

The mechanical room is part of a series of spaces that connect to the utility service room (M001) below the north portico: a large mechanical distribution room (M004) underneath the east oval room; the utility tunnel (M003) that extends north/south below the center of the Rotunda; and duct banks to the northeast areaways (M006, M006A).

The excavation revealed the original brick foundation of the Rotunda. Two sections of the interior foundation walls are now visible in the west lobby (C003) and in one of the mechanical rooms (M004). The brick is laid in a combination of stretcher bond and common bond with thick mortar joints. Both sections include inverted brick arches, built of soldiers alternating with pairs of rowlock bricks.

The walls, floors, ceilings, and stairs of the new basement are typically poured concrete. Interior partitions are built of concrete block. Doorways with steel trim are fitted with metal doors. Fluorescent ceiling fixtures light the spaces.

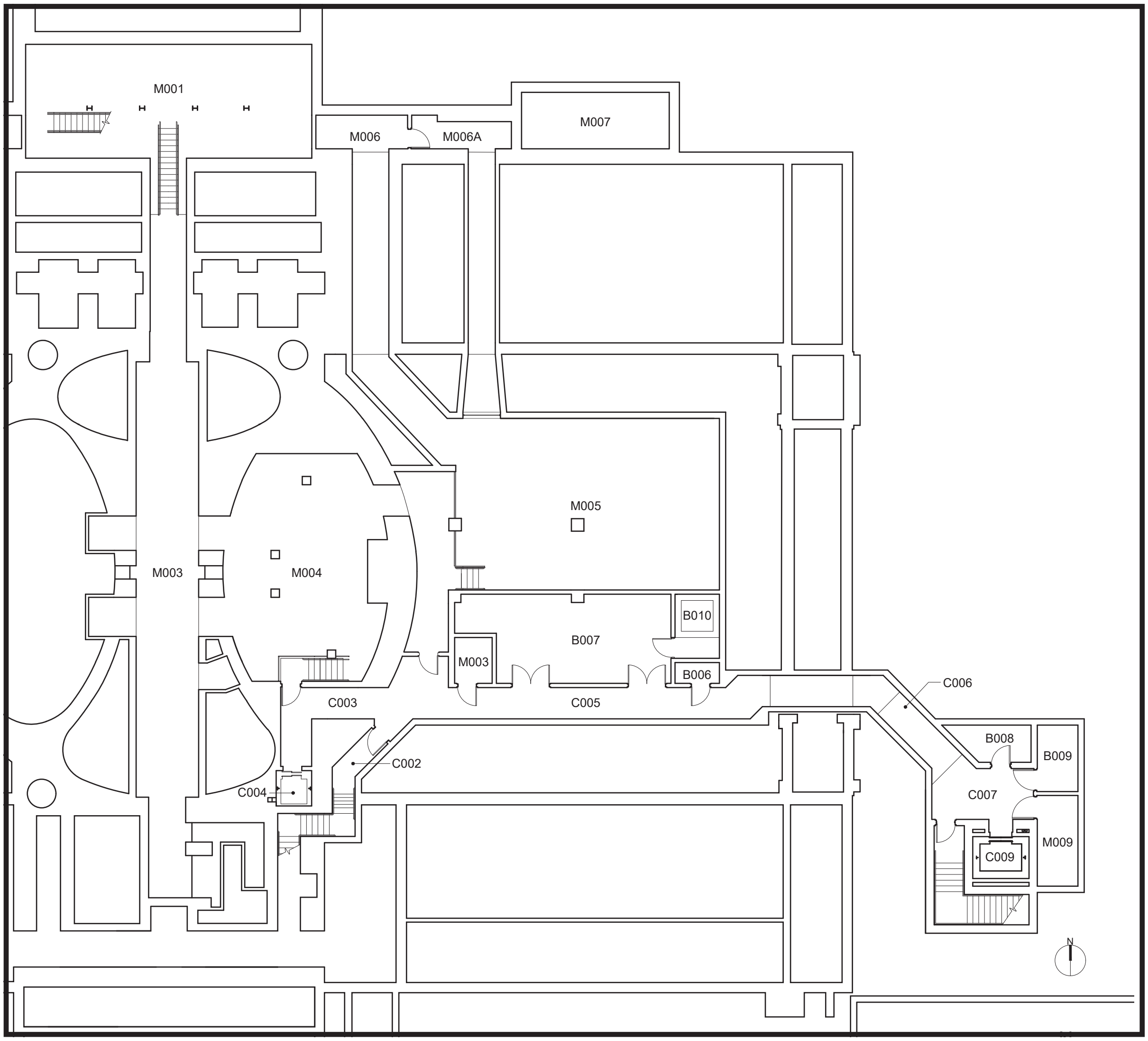


FIGURE 222. *Detail of vault plan (not to scale).*

FIGURE 223. *Inverted arches in the original foundation, now revealed in corridor C003 and room M004.*

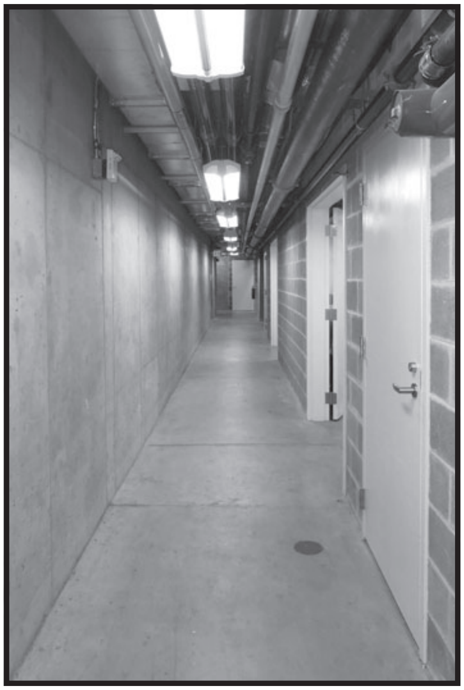


FIGURE 224. *Central corridor (C005) in the vault, looking west.*

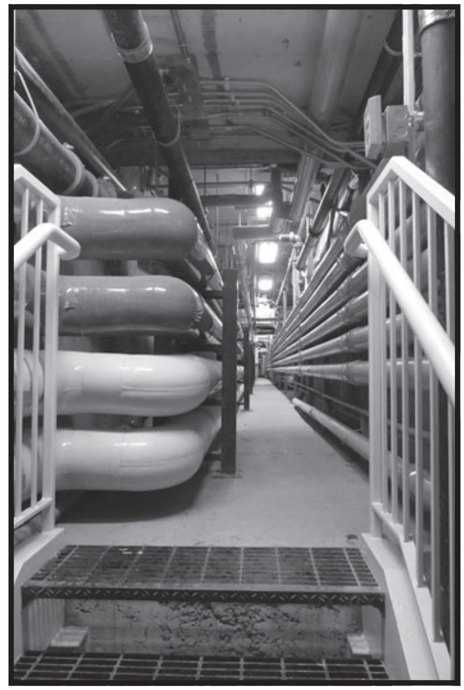


FIGURE 225. *Utility tunnel (M003), looking south.*

FIGURE 226. *Service support room (B007), looking east.*

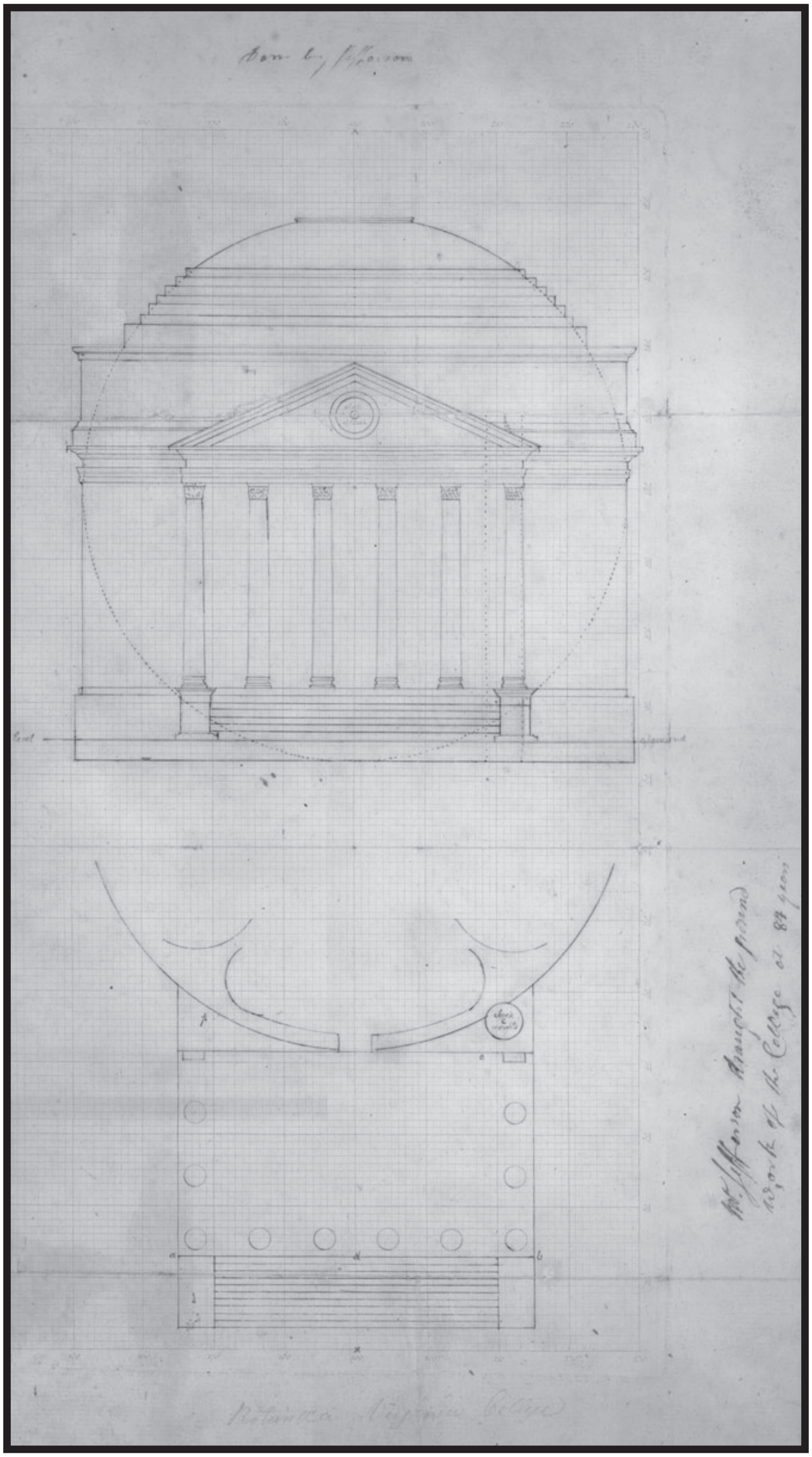


FIGURE 227. *Thomas Jefferson, south elevation of the Rotunda, showing the locations of the pediment clock and of the southeast shaft that would hold the clock weights.*

THE ROTUNDA
STRUCTURAL ANALYSIS

As part of the 2008 historic structure report, Robert Silman Associates (RSA) reviewed historical documentation and recent records of structural modifications, investigated the building to identify structural systems and current conditions, and performed selected structural analyses of building components to inform recommendations for repairs, maintenance, and future use. The production of the original historic structure report and associated investigations set the stage for the design and construction of two major projects at the Rotunda: the 2012 roof replacement and the 2014-2016 restoration and rehabilitation. The structural engineering for these projects was undertaken by RSA in conjunction with 1200 Architectural Engineers (1200 AE). The following brief history provides a record of the historic structural systems and their modifications over time.[1]

The Pantheon Paradigm and the Evolution of Structural Systems at the Rotunda

The image of Rome's Pantheon resonates and reemerges throughout architectural history. In achieving this visual lineage, a parallel history of structural design and construction can be traced—a history that carries its own significance and offers added dimensions to our evaluations. Building from within the context of structural design and construction precedent, the infusion of contemporary technologies and methods creates both opportunity and risk. This lineage is perhaps no better exemplified than at the Rotunda at the University of Virginia, where the fire of 1895 resulted in multiple construction campaigns where different structural systems were employed, reflective of the same place but different times. Fire was also the reason for two separate reconstructions of Rome's Pantheon—the one seen today being the third version on the same site.[2] Given that history, it is likely that the robust Roman concrete structure and the monolithic Egyptian granite portico columns were built with resistance to fire in mind, an evolution of structural resilience that has a clear parallel with the Rotunda in Charlottesville.

A basic understanding of the structural behavior of domes offers good reason for the increased mass and weight of the step rings around the lower perimeter of the Pantheon dome. The lower portion of domes that are approaching a spherical profile will be in tension in the horizontal or hoop direction and will have a tendency to push outward. Structural analysis of the Pantheon has shown the structural necessity of both the step rings, as well as the 20-foot masonry thickness of the perimeter wall or drum. At the Pantheon, the outward thrust and base tension of the dome are resisted by the skillfully placed masonry and the weight of the perimeter structure.

This approach to resisting outward thrust and base tension in dome structures is in sharp contrast to that employed by Jefferson in his original design of the Rotunda. Built in rural Virginia, the original structure was constructed from local building materials, primarily consisting of brick masonry and wood framing.

Jefferson was first introduced to Delorme's method during his time in France and employed this system at Monticello's central dome (built primarily between 1796 and 1809). Delorme domes are constructed from smaller pieces of wood that are laminated together to create the large ribs of a dome structure. The lightweight design of the laminated wood dome and the relatively inexpensive and quick construction were among the great advantages of the system.

Jefferson was introduced to Delorme's method during his time in France and employed this system at Monticello's central dome (built primarily between 1796 and 1809).[3] Benjamin Henry Latrobe used the Delorme dome system at the Baltimore Cathedral (built between 1806 and 1821). Likewise, Robert Mills used a Delorme dome system in his 1813 design of Monumental Church in Richmond, Virginia. There, the system includes primary and secondary longitudinal ribs, which carry the primary axial compressive forces of the dome down to the edge supports. Wood members of similar size, regularly spaced along the latitudes of the dome and referred to as hoop members, connect the primary ribs with pegged mortise-and-tenon joints. The hoop members carry secondary forces that run latitudinally through the dome diaphragm; these forces can be compressive or tensile, depending on the shallowness and radius of the curvature of the dome. The lower portion of the dome would have hoop members in tension. Thus, the near-hemispherical dome of the Rotunda would have had to provide for tension resistance in its hoop members, likely by way of pegged mortise-and-tenon joints. The axial forces at the base of the dome generally require resistance to the horizontal force component, typically by way of a tension ring. Because of the near-hemispherical form of the Rotunda dome, the horizontal component of the axial force is relatively small in comparison to the vertical force. A segmental iron ring located at approximately the base of the wood dome survives.

The use of wood and timber for floor and roof framing in the United States was very common in the early nineteenth century. The ancient lesson learned at the Pantheon with respect to fire resistance had evidently lost its stature in the range of building priorities, and the Rotunda was largely lost in the 1895 fire. As fires and the associated losses had become more common in the late nineteenth century, the development of fire-resistant construction had gained prominence, particularly in the construction of public buildings in urban settings.

The restoration and rebuilding of the Rotunda after 1895 was designed by architects McKim, Mead and White, who were well versed in fire-resistant construction and had an established relationship with Rafael Guastavino. Guastavino, an immigrant from Catalonia, Spain, brought to the United States his extensive experience with traditional clay-tile vaulting, which offered a solution to the problem of fires and the search for fireproof construction. The reconstructed (and current) dome and main-floor arches at the Rotunda were designed by the Guastavino Fireproof Construction Company using its patented mechanism of overlapping clay tiles and thick layers of cementitious mortar. Guastavino domes are constructed from long, slender tiles; the dome construction is typically three tiles thick, overlapping at the joints and sandwiching two wide layers of portland-cement mortar. Specifically patented to be durable and fast-drying, the cementitious mortar gave the dome a solid binder at the joints. The tiles were also specifically designed by Guastavino. He experimented with the tiles and quantities of cement to arrive at the cement ratios and optimal tile configuration. The Rotunda dome construction consists of two nearly hemispherical vaults about 18 inches apart. Between tile layers, the cement-mortar layers are approximately ½" thick each, creating a composite shell 4" thick.

Although the new dome had the great advantage of being a non-combustible fireproof material, it also had the disadvantage of being significantly heavier. Similar to the behavior discussed for the Delorme dome, both a vertical and horizontal force must be resisted at the base. Because the overall load is greater, the horizontal thrust is correspondingly greater. To resist this horizontal thrust, a series of steel-plate tension rings were installed. And also as noted for the Delorme dome, in the lower portion of the near-hemispherical structure, tensile hoop stresses would need to be resisted. For the wood structure, the pegged mortise-and-tenon hoop members would largely provide for this, with some contribution from the iron ring at the base. However, in the tile structure, it was common to introduce a series of embedded tension rings within the shell; these rings were often in the form of metallic rods with a twisted or deformed cross section to enable an integrated bonding within the tile-and-mortar assembly. At the Rotunda, these rings were made of flat plates of various sizes bolted together. Additional wythes of brick were added to the interior face of the drum at the first and second floor levels to help support the added weight of the new masonry dome.

Renovation of the Rotunda, 1970s

In preparation for the U.S. Bicentennial celebrations in 1976, the University decided to reinstate Jefferson's original design intent for the Rotunda. Work began in 1973. Ballou and Justice, Architect and Engineers, from Richmond, Virginia, were the primary designers of the renovation and adaptation of the Rotunda. Photographs reveal that all of the interior floor structure and finishes were removed. A mechanical tunnel was added below the Rotunda basement; the tunnel is 10 feet wide and runs under the basement hallway. Reinforced-concrete walls and floors are depicted in the structural plans. The basement floor consists primarily of a 5" reinforced-concrete slab on grade. The original curved masonry walls, from the basement to the first floor, support new steel beams and open-web steel joists, which carry the new concrete-on-metal-deck first-floor slab.

As part of that project, new masonry was added above the existing masonry walls to mimic the same curved design and thereby reinstate the Jeffersonian plan at the first-floor level. In the McKim, Mead and White design, the second floor was removed. The 1970s restoration project reinstated the second-floor framing. The 1970s second-floor framing was composed of steel beams and open-web joists with a concrete slab-on-metal-deck. In addition, the middle and upper galleries were reinstated with a system of steel-beam framing, which supports concrete slabs-on-metal-deck; a series of steel girders, set radially at each gallery level, bear on brick masonry at the exterior ends, while the interior ends are connected to steel-pipe columns; the columns are in turn supported on the second-floor framing below. Architectural finishes encase the steel-pipe columns, each of which is paired with a nonstructural decorative column. New steel lintels were added above the window openings, except for those over the false windows at the center of the east and west elevations; at these locations the existing rail-steel lintels were to remain. Thus, little of the interior construction from the McKim, Mead and White renovation remained, with the notable exception of the Guastavino-domed roof. On the exterior, the north portico and north stairs remained. Also remaining is the steel and Guastavino tile framing in the north and south porticos..

Existing Conditions Surveys, 2006

In the structural assessment survey made by RSA personnel in August 2006, as part of the first historic structure report, the documented exterior masonry conditions included localized cracking, particularly around some terminating areas of the arcades supporting the terraces, along with some minor shifting of masonry. The north stair was among the worst areas for structural deterioration, with significant cracking in the concrete steps on the treads and risers and severe deterioration of the structure within. Most significantly, the north and south porticos were found to have rusting steel framing at the architrave level, and the stone column capitals were severely deteriorated.

Floor and Roof Framing

Dome: The interior face of the dome was observed through the mechanical spaces in the upper gallery and above the north and south porticos. The visible tiles and cementitious mortar appeared to be in satisfactory condition. Steel tension rings were found in two locations. One ring measured 4" by ½" with the long side perpendicular to the floor; it was located between the two domes, approximately 38" below the outer dome. Near the same location, 1" wooden pegs had been driven into some of the tiles. The reasons for the use of the pegs were not apparent. The other tension ring measured 3" by ¾" and was positioned parallel to the floor approximately at the base of the inner dome. These tension rings appeared to be in relatively good condition, with localized surface rust but no appreciable loss of cross section. Additional tension rings were discovered during subsequent investigations prior to the roof replacement project and are described below.

North Portico Attic: Above the north portico, barrel vaults made from Guastavino tiles span from the east wall to the west wall and frame both the floor and the roof. The ceiling vault is supported by regularly spaced ribs composed of brick supported by a ½" x 2½" steel plate. The steel is in effect a tensile catenary, where the end thrust is resisted by a continuous steel ledger and by the compressive resistance of the masonry ribs and the vault itself. The tension plate is 17" from the bottom surface of the Guastavino-tiled vault at midspan, with the depth of the rib tapering to effectively zero at the north and south end bearings. At the attic-floor level, the walking surface is a combination of Guastavino-tile vaulting with some cementitious fill. The floor vaulting is 2½" thick; it is comprised of two layers of 1" tile separated by a ½" cement-mortar layer. The horizontal thrust of the floor arch is resisted with steel tie-rods at the base of the arch. From the top of the floor arch to the top of the ceiling below is approximately 19". The tile arch construction appeared to be in sound structural condition. Some rusting of the steel components, particularly the ledger elements embedded in the masonry wall, was observed. However, the conditions observed did not appear to represent a significant loss of cross section. Small penetrations in the vault and mechanical attachments did not appear to be having any structural impact. No active leaking or water infiltration was apparent.

South Portico Attic: The south portico also has Guastavino tiles framing the floor and roof. The roof is constructed of three adjacent barrel vaults that are on a slope, peaking in the center tile. The vaults are separated by steel I-beams encased in brick and terra-cotta masonry. The encasement is 7½" wide by 11" deep. There are six north-south tie-rods, approximately 1" in diameter, at the bottom of the vault. On either side of the peak, there are rectangular concrete patches in the center vault. These filled openings were apparently cut out for the 1970s-era mechanical systems and later repaired. The concrete patching does not appear to be compromising the structural performance of the vault construction, as the lines of compression were maintained and there was no significant cracking or displacement observed in the area of the penetrations. The floor is framed by brick ribs with Guastavino tiles.

Dome Room: The Dome Room is encircled by twenty pairs of columns of the Composite order. One column in every pair had two vertical cracks at the time of the 2006 survey: one on the surface facing the center of the room and the other on the side of the column facing the windows. The 1972 drawings had called for steel columns in one of each pair of columns. A comparison revealed that the cracked columns consistently were the ones encasing the structural steel. All cracked pairs were 180 degrees from each other, as if the decorative encasement had been installed as two halves and brought together to enclose the structural column. The cracking appeared to be the result of a failed seam in the architectural finish, which may have been the result of temperature or humidity cycling in the domed space.

Middle Gallery: Supported by the steel columns introduced in the 1970s and the exterior wall, the middle gallery encircles the Dome Room approximately 9' 6" above the floor. The 1972 framing plans of the middle gallery depict W6x15.5 beams spanning from the exterior wall to a column. Spanning between these beams, there are four W6x12 beams with a 2½" composite concrete floor.

Mechanical Room below the North Stair: The 2006 survey found that the condition of the steel framing in the mechanical room below the north stair to be very poor, with extensive temporary shoring in place. A history of water penetration through the north stair had resulted in the structural deterioration. The conditions warranted a design for the full replacement during the 2016 rehabilitation.

Structural Analysis of the Dome, 2008

The capacity of the current dome was investigated through two different methods. Both methods are based upon the common assumption of both self-weight and applied loadings being uniform over the dome surface. More sophisticated analysis approaches would be appropriate for a current dome design; however, for the purposes of the historic structure report, these approaches were both adequate and useful to the general understanding of the structure. One method is based on meridional (longitudinal) forces and hoop (latitudinal) forces in the plane of the dome. The other analytic method had been developed by the designer of the dome, Rafael Guastavino.

Guastavino outlined his technique for analyzing his domes in a treatise entitled *Essay on the Theory and History of Cohesive Construction, Applied Especially to the Timbrel Vault*, which he presented to the Society of Arts in Boston, Massachusetts, in 1893. According to the essay, Guastavino had experimented with special tiles and cement that he had created to obtain an optimal arch and dome design. The best system consisted of three layers of tiles interlaced with thick layers of mortar. For this design, Guastavino obtained average values for transverse resistance, tensile, shear, and compression strength. Through experimentation, Guastavino derived an equation (EQ. 1) for three layered-tile domes under uniform loading conditions.

According to this equation, the allowable load, L, for one of the two shelled domes equals 398 kips. If the dead load of the dome is 40 psf and the applied live load is 30 psf, the actual maximum load on the dome is 378 kips. Thus, according to Guastavino's analysis, his tiled dome structure satisfies the design requirement.

GUASTAVINO'S ARCH ANALYSIS

$$\boldsymbol{T = \frac{L \times S}{8 \times r \times 12 \times C \times 2}} \qquad \text{[EQ. 1]}$$

T = thickness of dome at midpoint (in.)
C = coefficient of compression derived from Guastavino's experiment
= 2060 lbs.
S = span of the arch (ft.)
r = rise of the arch (ft.)
L = total load (lbs.)

The second method of dome analysis is a modern approach for designing thin-shelled domes. The procedure involves two perpendicular forces, meridional forces, and hoop forces. Meridional forces occur from the bottom edge of the dome, across the top and to the other bottom edge, or in what would be the north-south (longitudinal) direction on a globe. Hoop forces occur on horizontal planes through the dome, or in what would be the east-west (latitudinal) direction on a globe. The meridional and hoop forces in the domes were calculated using Equations 2 and 3.

MERIDIONAL FORCES: $$\boldsymbol{N'_{\emptyset} = -a \times q \times \frac{1}{1+\cos\emptyset}} \qquad \text{[EQ. 2]}$$

HOOP FORCES: $$\boldsymbol{N'_{\theta} = -a \times q \left(\frac{1}{1+\cos\emptyset} + \cos\emptyset\right)} \qquad \text{[EQ. 3]}$$

a = radius of dome (ft.)
q = load (psf.)
Φ = angle from vertical to point on dome

The maximum meridional forces, which occur at the maximum angle Φ, were used to calculate the base tension-ring force T in the inner and outer domes, using Equation 4.

TENSION-RING FORCE: $$\boldsymbol{T = rN'_{\emptyset} \times \cos\emptyset} \qquad \text{[EQ. 4]}$$

r = radius of dome in plan (ft.)

The tension-ring force in the outer dome was calculated at 25 kips. The inner dome would have less of a tension ring since there is no live loading applied. The steel pieces found embedded in the walls were 4" x ½" and 3" x ¾". In the 1970s drawings there are three metal bands. Assuming an 18,000 psi allowable metal strength for the bands, an approximate total resisting force is 112.5 kips. This value is sufficient to carry the combined tension-ring force for the inner and outer domes.

The above dome analysis summary was developed further subsequent to the 2006 report and is summarized in a publication by Kaup and Matteo, "Guastavino Dome Analysis: A Comparative Approach for Jefferson's Rotunda at the University of Virginia."[4]

Seismic Loadings

The cylindrical form of the Rotunda and the robust interior masonry supports ,which define the elliptical rooms on the ground floor and main floor, create a stiff structure that would appear to perform well when subjected to seismic loadings. The correlation of floor cracking to possible seismic loadings appears unlikely. Because such lateral forces would first be taken by the stiff masonry, any significant lateral movement would first be communicated by extensive masonry cracking. As noted above, the cracking pattern observed in the ceilings corresponds well to the direction of the floor framing. The patterns observed are not consistent with what would be expected in the transfer of lateral forces from the masonry shear walls into the floor diaphragms. Seismic activity of note in the Charlottesville area, prior to 2008, includes a 1929 event centered in Albemarle County that measured 4.5 on the Richter Scale, a 1984 earthquake located 15 miles southeast of the University measuring 4.0, and a 3.2 event in Shadwell, Virginia, in 2001.

In 2011 the region was subjected to a much more significant seismic event when an earthquake measuring 5.8 occurred; the epicenter was Mineral, Virginia, less than 40 miles from the Rotunda. No substantial damage to the building was documented.

Roof Replacement, 2012

Probe Investigation

Prior to the final design and construction of the roof replacement for the Rotunda, an extensive probe investigation, which included both destructive and nondestructive methods, was undertaken. Knowing that the step rings would likely need to be modified, the nature of their construction needed to be evaluated. Similar to what has been described for the Pantheon, the step rings offered the potential to benefit the structure, both as strategically placed weight and also as a tension ring around the base of the dome. The 1972 drawings showed the step rings to be largely nonstructural in nature; however, even their weight, if removed, could play a role in the state of equilibrium for the dome at the time.

The step rings were constructed of concrete with little reinforcement. This is consistent with their nonstructural role; however, their placement continues to represent a significant, beneficial weight placed at the lower portion of the dome.

Porous, hollow tiles served both as insulation and as a nailing surface for the roofing.

Multiple steel tension rings set against and integral to the outer dome were found to be largely structurally intact, but they suffered from surface rust and limited delamination. Accessing the tension rings as part of the roofing and step-ring replacement would afford the proper treatment of this critical structural component.

Structural Analysis for the Guastavino Dome

Structural analysis of the dome was performed to evaluate the impact of the proposed changes to the loading on the dome, with modifications to the step rings and replacement of the skylight in the oculus. In addition, the analysis served to evaluate the potential impact of removing weight at the step rings during construction, as the weight is known to benefit the stability of the outer dome. The analysis showed that with the adequate functioning of the steel tension rings, the proposed modifications in loading could be adequately accommodated by the dome.

New Findings During Construction

The construction phase of the roof replacement uncovered some previously unknown aspects of the McKim, Mead and White construction. When the lower step rings were removed, a series of perimeter arches and piers was revealed. This

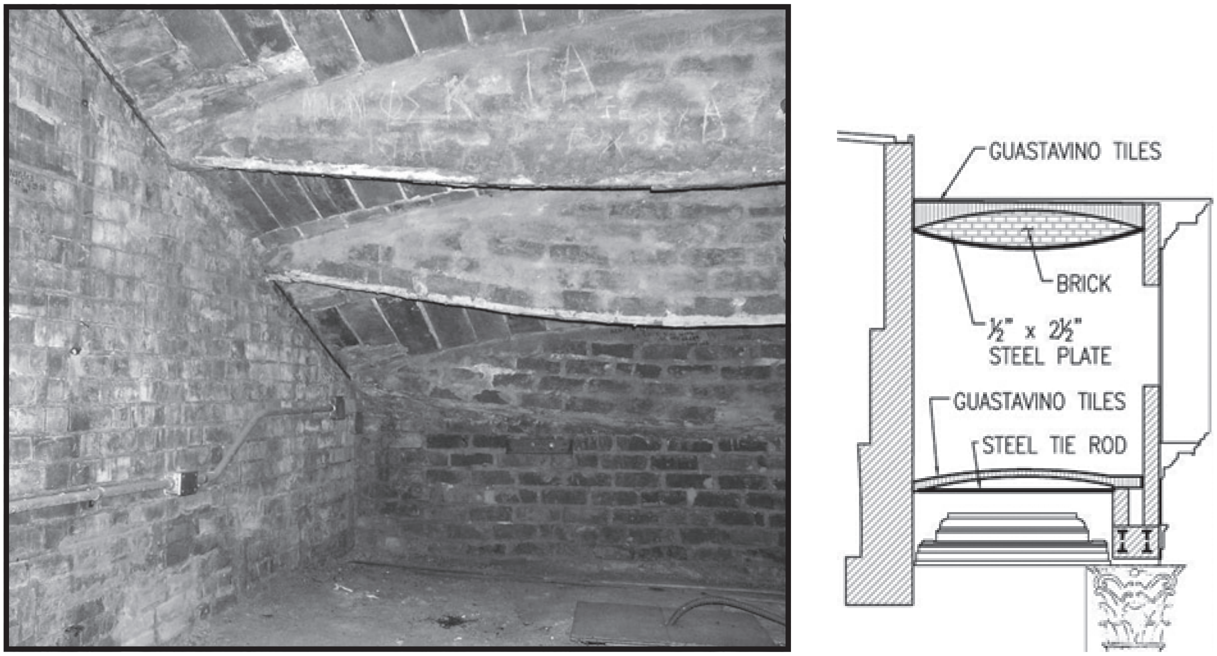


FIGURE 228. *North portico attic (M401), and section through the attic showing the structural elements.*

FIGURE 229. *Removal of the lower step rings during the roof work uncovered a series of perimeter arches and piers.*

discovery paralleled the finding of glass inserts in the lowest step ring, which indicated that at some point a series of perimeter skylights was considered. The arches were infilled with tile. Like the drum of the Pantheon, these arches are in effect like relieving arches and will still likely have some residual stiffness that would tend to direct load to the piers.

The tension rings that were uncovered were exposed sequentially to allow for surface treatments while never fully disconnecting them from their roll in restraining the dome at its lower sections. The tension-ring steel exhibited surface rust and mild delamination at a splice location. The deterioration had minimal impact on the structural capacity, but the rusting mechanism would only continue and ultimately lead to a loss of structural capacity if not treated.

Phase II of the Restoration and Rehabilitation, 2014–2016

The East Courtyard Vault

Monitoring: The proposed construction of an underground vault in the east courtyard posed some significant risks to the surrounding historic structures if not designed and implemented with great care. Therefore, a program of monitoring was recommended and then designed to provide nearly continuous measurement of physical movements or vibrations. Thresholds and appropriate responses based upon the measured movements were established, all in advance of the start of construction.

Monitoring points at the east courtyard and the main building represented points in space that would be measured relative to established benchmarks; the measurements would be taken at relatively short intervals with high precision to allow for measurement of movement throughout construction. Additional monitoring points were established on Pavilion II as well, which would be potentially subjected to foundation movement due to the planned excavation along its north facade.

The measurements were taken with a series of total stations that used lasers to document the physical position of each target. One total station was also mounted onto a column at Pavilion II.

Underpinning and Courtyard Excavation

To build below the foundation level of an existing structure requires careful execution of sequenced work that incrementally undermines, but then re-supports, the foundations at a new, lower elevation. The foundations were exposed and excavated beneath in 4-foot segments, staggered around the perimeter; until new foundation walls from the linked underpinning shafts were established at a lower elevation.

The original brick masonry wall construction included inverted arches at their base, set below window and door openings. This approach is akin to the use of arches above openings in masonry walls. Above the openings, the more uniform loadings are carried by the arch to direct them away from the opening toward piers or wall areas on either side. Likewise, but in reverse, at the foundation level, the concentrated loads on the sides of openings are distributed by the arch to be more uniform in bearing on the soil below. These masonry arching systems were common prior to the use of reinforced concrete for foundations.

New Vault Structure

The new vault is constructed of reinforced concrete. The vault roof slab and beams support the current landscape materials and the fountain and allow for a live-load capacity of 100 psf. The reinforced-concrete side walls of the vault are designed to resist lateral soil pressure and surcharge pressures from the adjacent colonnade structures.

On the south and east sides of the Rotunda, several openings through the underpinning level create doorways within the basement space that allow for access to a new underground space in the east half of the Rotunda. This space also serves as access to the new service elevator and stair east of the Rotunda.

North Stair Deconstruction and Reconstruction

The north stair was in very poor structural condition and required full replacement. The concrete steps were found to have rusting reinforcement and disintegrating concrete. Below the concrete was a series of brick masonry buttresses to the north of the underground mechanical space. During the recent restoration, these buttresses were largely kept in place, and the new lower stair was poured over top. The cheek-wall foundations were reinforced, and reinforcing dowels to tie into the stair at the base were added.

Exterior Cornice Deconstruction and Reconstruction

The exterior cornices of the Rotunda that were rebuilt following the 1895 fire were structured with a series of cast-iron brackets fastened to the brick masonry and with wood framing spanning between the brackets. The iron brackets and wood create the armature over which decorative copper was set. The cast-iron brackets were found to be in largely good structural condition, although the presence of surface rust was consistent. The wood components of the cornices were typically in poor condition.

The brackets work structurally as cantilevers, spanning outward to support the cornice from the wall surface. The brackets themselves have robust capacity as they are designed to follow the cornice profile, which in and of itself is a favorable structural form for a cantilever as it offers increased depth of structure as it approaches the wall surface. However, the cornice capacity is then very much limited by the integrity and capacity of the connections of these brackets to the masonry wall.

In the 1896 restoration and rehabilitation, holes were drilled into the brick masonry, and then hardwood dowels were driven, or simply set, into the holes. Screw connections into the wood, which would expand around the screw, would create an internal pressure that would provide pullout resistance by way of friction. Over time, both the wood and the fasteners suffered from deterioration, which in turn led to an overall weakening of the cornice system. Many of the cornice brackets were found to have shifted away from the wall, with the upper connections, which would be in tension, representing being the weak link in the system. The connection failures were typically with the wood or fasteners, and the brick masonry generally was found to be in relatively good condition.

Considering the masonry's ability to support the cantilevered cornice system, it should be noted that the circular plan and wall curvature offer a structural advantage over a straight wall. That said, the wall thickness in general appears to have been adequate to support the cornice loads. Given the fundamental weakness of the connections and the general deterioration of the wood, the repair approach required the full disassembly and rebuilding of the cornices. The brackets were removed, cleaned, and coated with a zinc-rich paint and then reattached to the masonry using an epoxy adhesive anchorage system. The brackets would again support a rot-resistant wood framework, which in turn supports a rehabilitated copper surface.

North and South Porticos and Column Capital Replacement

Temporary Shoring

The work at the north and south porticos was necessitated by the combined deterioration of the stone column capitals, as well as the deterioration of the steel lintels that spanned from column to column within the architrave. As noted above, the frameworks within the portico roof structures are primarily masonry, with both Guastavino vaulting and conventional brick masonry. Steel framing is integrated into the masonry assemblies, serving to direct the significant loads of the portico structures onto the columns. Thus, replacement of the column capitals and the steel lintels within the architrave would require a carefully considered temporary shoring system.

Temporary shoring, consisting of trussed steel towers, was integrated into the access system and was also designed to support the temporary loads imparted by the stone capitals as the old ones were removed and the new ones were installed. Needle shore beams were installed through the brick masonry directly above the lintels within the architrave. The weight

FIGURE 230. *Reinstallation of the exterior cornice brackets. The McKim, Mead and White brackets were cleaned and recoated, and new angles were added to provide additional support.*

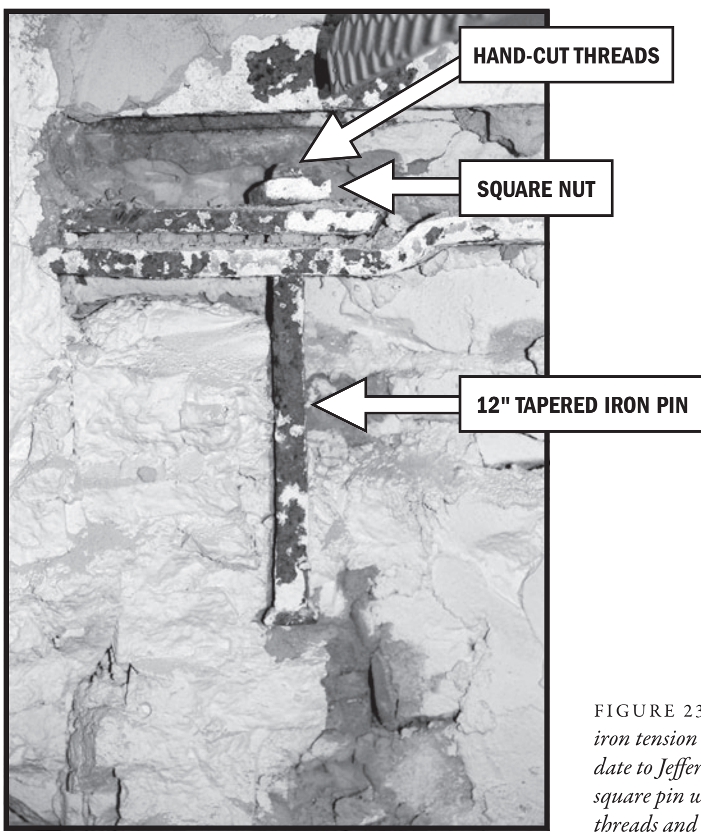


FIGURE 231. *Splice at flat iron tension ring (thought to date to Jefferson dome). Note square pin with hand-cut threads and square nut.*

of the portico was then engaged onto these beams in incremental fashion. Once fully engaged, the masonry and existing stone capitals could be removed below the needle shores.

Architrave Structure

The lintel beams within the architrave are galvanized steel. The beams are grouped side by side and have a steel plate over the top. The beams are discontinuous at the column bearings but share bearing plates over the stone capitals with the adjacent lintel group, providing both vertical support for the structure above, as well as a continuous perimeter link around the portico's front, corners, and sides.

In addition to new architrave beams with greater corrosion resistance and new marble capitals offering a renewed lifespan, the porticos were also strengthened structurally to better resist lateral forces, including earthquake loadings. Given that the Mineral earthquake had only recently occurred, and that its effects were in many ways still being dealt with, seismic resistance had an increased presence and relative importance in the rehabilitation design. Most directly impacted was the design of the connection between the portico roof and attics and the main body of the Rotunda. The circular form of the masonry offers favorable resistance to lateral forces, much more so than traditional 90-degree wall arrangements. However, the porticos created significant masses that extended outward from this core of resistance. There is now a strongly reinforced link between the new architrave-level framing and the transitional block of masonry that approaches the circular building core. The added connection offers a resistance to lateral forces that the Rotunda has never had before.

New positive connections were introduced to tie the architrave beams of the porticos to the capitals and column shafts below. At each column, a threaded stainless-steel rod was fastened to the steel architrave beams, routed through the hollow shaft in the marble capital, and embedded 6 inches into the concrete column. The hollow shaft was then grouted solid. This system replaced the simple gravity connections used by McKim, Mead and White.

The new capitals clearly show the renewed life of the building, while behind the finishes there is a much-reinvigorated structure that was designed with longevity and sustainability of this building as the highest priority.

Notes

1. John A. Matteo, PE, worked at RSA and directed the preparation of the 2008 structural report and served as structural engineering project manager during the 2012 roof replacement project. Subsequently, as principal at 1200 AE, Matteo was structural engineering project manager during the full building rehabilitation in 2014 and prepared this structural update.
2. Mark Wilson Jones, *Principles of Roman Architecture* (New Haven: Yale University Press, 2000), 177.
3. Douglas Hamsberger, "In Delorme's Manner . . .," *APT Bulletin: The Journal of Preservation Technology* 13, no. 4 (1981): 2-8.
4. Jillian Kaup and John A. Matteo, "Guastavino Dome Analysis: A Comparative Approach for Jefferson's Rotunda at the University of Virginia," in *Structural Analysis of Historic Construction*, vol. 2, ed. Dina D'Ayala and Enrico Fodde (London: CRC Press, 2008).

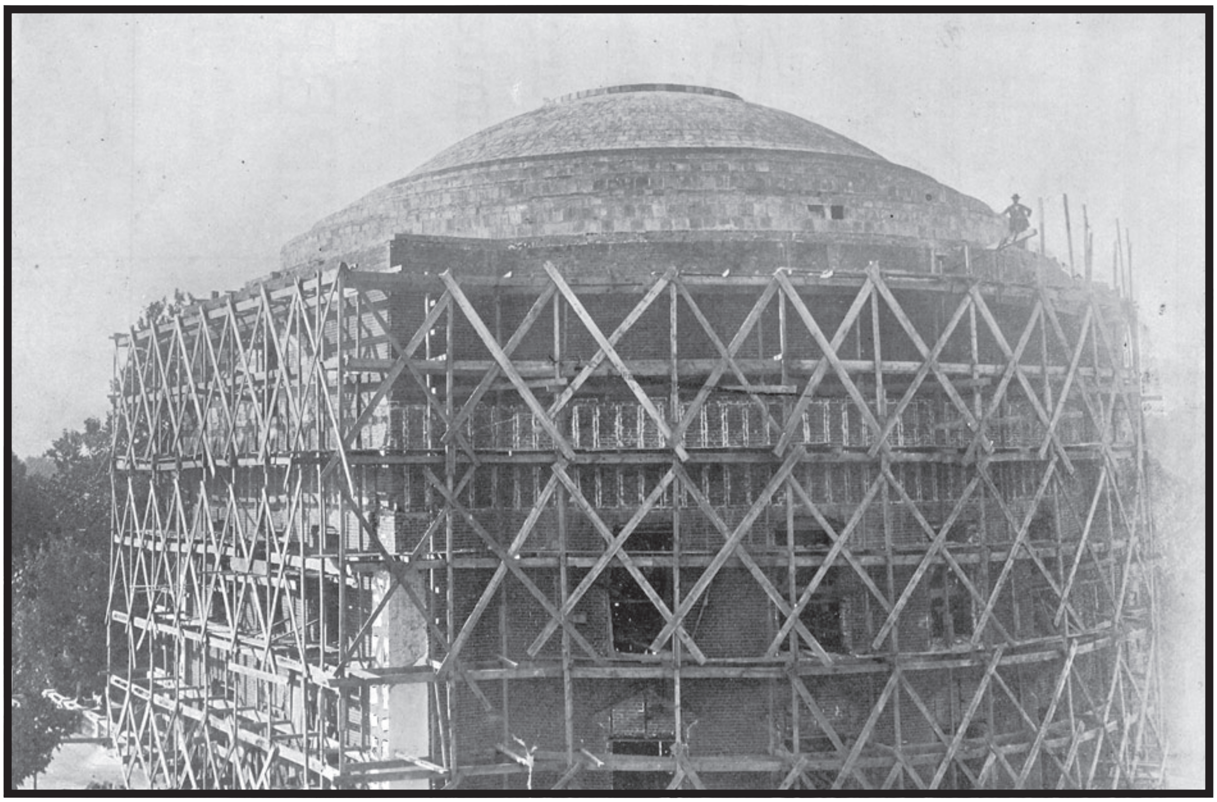


FIGURE 232. *The Rotunda under construction, from an advertisement for R. Guastavino in the November 7, 1896, issue of* The American Architect and Building News.

THE ROTUNDA

BUILDING SYSTEMS DESIGN

THE REHABILITATION OF THE MECHANICAL, electrical, plumbing, and fire-protection (MEP/FP) systems of the Rotunda between 2012 and 2016 was the first major undertaking of this type since the renovation completed by Ballou and Justice, Architects and Engineers, in the 1970s. The recently completed restoration established goals that prioritized building preservation, increased energy efficiency, increased serviceability of the MEP/FP equipment, improved accessibility, and restored original program space that was allocated in the 1970s renovation for MEP equipment.

To address preservation concerns, the architects and the MEP/FP consultants integrated proper access for service and maintenance of major pieces of MEP/FP equipment early in the project. This goal was achieved through the introduction of new subgrade mechanical-equipment rooms to house air-handling units, variable air volume (VAV) boxes, and supporting equipment. In addition, the existing utility tunnel was repurposed as a central pathway for utilities from the north utility room south to the new subgrade mechanical room and on down to the south terraces. The utility tunnel provides a pathway for the main ductwork, chilled- and hot-water mains, fire-protection mains, electrical and telecom conduits, domestic-water plumbing distribution, and sanitary mains. The utility tunnel and the new subgrade mechanical room now provides proper access and maintenance space for equipment while maintaining the historic fabric of the Rotunda and providing maximum space for program uses. The utility tunnel also allows for a pathway for technology equipment to be routed and accessed for future upgrades. The MEP/FP equipment was specified to optimize the life span of the equipment and ductwork while allowing for planned replacement and upgrades in the future.

The energy-efficiency goals for the project met the University's target by achieving LEED Silver Certification. MEP systems were optimized by utilizing low-flow fixtures, efficient VAV air-handling units, demand-control ventilation, LED lighting, and lighting controls.

Space proofing, which utilized three-dimensional modeling software, was performed during design to review and confirm service-equipment sizing, serviceability, and accessibility in the utility tunnel, utility rooms, and the new subgrade mechanical rooms. The text below describes the new systems installed as part of the recent restoration and rehabilitation.

Heating, Ventilation, and Air-Conditioning

Heating Plant

The heating plant consists of medium-temperature hot-water distribution from the high-temperature hot-water campus loop. As designed, two shell-and-tube heat exchangers convert the medium-temperature water to low-temperature water. Two base-mounted centrifugal pumps circulate hot water to air-handling units, unit heaters, and fan-coil units. Pumps are controlled in a variable primary/standby configuration and furnished with variable frequency drives. Equipment associated with the heating plant is located in utility service room 001. The high-temperature campus loop is in the process of being converting to a low-temperature loop. The shell-and-tube heat exchangers provided in utility service room 001 in 2016 have subsequently been removed and low-temperature hot water from the campus loop is now delivered directly to the building heating system. The heating hot-water temperature for the building-system heating equipment is controlled via a three-way mixing valve.

Cooling Plant

The cooling plant consists of chilled-water distribution from the chilled-water campus loop. Two base-mounted centrifugal pumps circulate chilled water to air-handling units and fan-coil units. Pumps are controlled in a variable primary/standby configuration and furnished with variable frequency drives. Campus chilled water enters utility service room 001 and is routed to the pumps within this room.

Air-Handling Equipment

Oval Rooms on the Ground and Main Floor

The oval rooms on the ground and main floors are served by a single air-handling unit. The unit is located in mechanical room B005 in the subbasement. This room was built to provide for dedicated service and access to this air handler. The previous air handler that served the oval rooms was located in a room off the cryptoporticus passage. Access to the air handler was extremely limited, and the space was needed for other program uses.

Ductwork distribution from this air handler is routed to VAV boxes with hot-water reheat coils located within mechanical distribution room M004. This room was designed to allow for a single point of access and maintenance of the VAV boxes serving the oval rooms and to eliminate any equipment requiring access in the utility tunnel. The 1970s renovation located hot-water reheat coils in the utility tunnel where maintenance and access were limited. A portion of the ductwork was routed as direct buried double-wall fiberglass-reinforced plastic (FRP) ductwork as it transitions from utility tunnel M003 to risers below the oval rooms.

Supply-air distribution is routed to vertical risers, matching the existing supply riser locations from the 1970s renovation. Lattice supply grilles are provided along the curved walls of the oval rooms for supply distribution. Return-air distribution is routed to vertical risers, matching the existing return riser locations from the 1970s building renovation. Return air is provided at common points via lattice supply grilles within each oval room. Utilizing the existing risers allowed for the preservation of the existing historic fabric and did not require additional shafts or slab openings in the building. Acoustically lined ducts were removed and replaced with insulated ducts as required by the UVA Facility Design Guidelines.

Dome Room and Middle Gallery

These spaces are served by a dedicated air handler. The unit is located in the existing mechanical room 402 located in the attic of the south portico. The air-handling unit was installed via the existing fresh-air opening located at the ceiling of the south portico due to the limited access to the space.

The Dome Room is served by numerous small supply ducts routed down through the furred-out wall at the middle gallery down to linear supply diffusers at each window niche of the Dome Room. These supply diffusers address the perimeter heating and cooling loads of the Dome Room.

The return air for the Dome Room and middle gallery is via a single-point return located high at the upper gallery utilizing a series of large return grilles.

Four custom-curved linear slot diffusers were provided to serve the middle gallery. The 1970s-era continuous-supply air slot located in the soffit of the cornice of the gallery was removed.

Northeast and Northwest Wing Offices and Support Spaces

These spaces are served by four pipe (chilled- and hot-water) fan-coil units. The fan-coil units are located above the ceiling in support spaces. Supply ductwork is provided to each space via wall- or ceiling-mounted supply grilles. Each wing fan-coil unit is also served by a ducted energy-recovery unit to provide the required amount of fresh air to the spaces. Intake and exhaust air louvers are located in the exterior walls on the southern face of the wings. Motorized zone dampers are provided on each supply branch serving offices, allowing individual airflow adjustment.

Southeast and Southwest Wings

The southeast wing was programmed as a multipurpose room and is served by a dedicated air-handling unit located in mechanical room M120. Ductwork distribution is delivered overhead to supply and return diffusers. Ventilation was designed to be supplied by operable windows.

The southwest wing was programmed as classroom 153 and classroom 154. These classrooms are each served by small vertical fan-coil units located in the mechanical room between the classrooms.

Post-occupancy, carbon-dioxide readings greater than 800 PPM were identified in the multipurpose room and the classrooms and required additional mechanical-system interventions. Outside-air ducts connected to the air handlers and associated louvers at the passage walls were added to provide ventilation to these spaces.

Mechanical Equipment and Electric Rooms

These spaces are served by hot-water unit heaters. Thermostatically controlled exhaust fans are provided for ventilation. Unit heaters were provided to ensure that these spaces remain above freezing and to provide protection for the wet fire-protection piping located in those areas.

In the toilet rooms, all toilet exhaust was ducted outdoors via inline fans. All toilet rooms on the first floor are served by four pipe fan-coil units, located within the toilet rooms.

The tele/data room is air-conditioned via dedicated four pipe chilled-water and hot-water fan-coil units.

Janitors' closets are continuously exhausted to the exterior via inline fans.

Electric snowmelting is provided for a small area of paving just outside the exterior doors of the two spiral exit stairs at the northeast and northwest corners of the building. At the east stair adjacent to elevator C109, electric snowmelting is provided for the total exposed hardscape area of the exterior stairs.

Building Control System

The building control system is a complete direct digital control system that includes control panels, sensors, thermostats, temperature and pressure transmitters, gauges, valves, dampers, operators, relays, and other equipment and appurtenances, including electrical wiring. The building control system was furnished and installed by University Automation Services, utilizing Automated Control Logic.

Post-Construction Dome Room Material Damage Review

Post-construction, Kohler Ronan worked with the University staff, the design team, and the construction team to provide a detailed response to the Affiliated Engineers Incorporated (AEI) report regarding material damage in the Dome Room of the Rotunda. The report noted water staining on ceiling paneling, paint buckling, open wood-trim joints, and moisture damage to plaster. The response included on-site review of the construction concerns in the Dome Room, including review of cold bridging, duct insulation, duct/connection installation, duct sealing, diffuser installation, and air-handler controls and operations.

Controls engineers with Kohler Ronan, Whiting-Turner, AEI, and University Automation services established new control sequences for the air-handling unit serving the Dome Room. The sequences were established with the protection of the building and building materials as the main priority. The sequences were reviewed by all design team members; all revisions were incorporated; and a final sequence distributed for the record.

Plumbing

All existing plumbing systems and equipment were removed in their entirety except for the Dome roof drains which were previously updated as part of the roof restoration project. Temporary connections for roof drains were provided as necessary to maintain services during construction.

Domestic Water Service

A new 4" domestic water service was provided to service the plumbing systems. The domestic water enters the utility service room 001 and is routed to backflow preventers. New copper hot- and cold-water distribution piping is provided to all plumbing fixtures. Domestic hot water for handwashing in toilet rooms is provided by point-of-use electric instantaneous water heaters and is controlled with a thermostatic mixing valve assembly at each sink. Domestic hot water is provided to the service support room by an electric tank-type water heater.

Sanitary Sewer System

A completely new sanitary sewer system was connected to the existing sanitary sewer manhole in the street. Sanitary, waste, and vent piping serve new plumbing fixtures and floor drains throughout the building. The sanitary system is provided as a gravity building drain with only the lower-level mechanical room drainage connected to a duplex sewage ejector assembly.

Storm Sewer System

A completely new storm sewer system was provided with connection to the existing campus site storm manholes. New piping was connected to the existing roof and gutter drains located on the dome and upper gallery roofs. New terrace drains and areaway drains were provided with new piping connected to the existing storm sewer. Areaway drains at lower levels incorporated backwater valves to prevent flooding.

Elevator Sump Pit

The elevator pit was provided with a pumping system approved for safe operation of pumping, alarming, and monitoring of elevator sump pits. The Oiltector system activates the pump to remove water from elevator pits without discharging oil and other harmful substances into the environment. An alarm is activated in the event of a high-water condition or high-oil concentration. A float switch with alarming and monitoring is connected to the building management system.

Fountain

Water piping was provided to supply the east courtyard fountain. Piping was provided with proper slope, valving, and more, to allow for complete drainage in the winter. Drains and drainage piping were provided in support of the fountain and connected to the sanitary/storm sewer.

The pump system for the fountain was designed by Fountaincraft. Water is recirculated via a pump located in the mechanical vault below the east courtyard. An ultraviolet-light filter system was fitted as the design intent was to fill the base of the fountain with water lilies. This system proved to be less effective than desired at controlling algae growth on the fountain surfaces. A conventional chlorine treatment system was later added.

Fire Protection System

The Rotunda is protected by a wet-pipe fire-sprinkler system supporting sprinklers on all levels.

The fire-sprinkler system is fed from a new 6" underground fire main connected to an existing 12" underground campus water main. The 6" fire main is routed into utility service room 001 and then into two riser check-valve assemblies.

One check-valve assembly supplies the sprinklers within the building; the second assembly supplies the three dry exterior fire hydrants.

A post indicator valve (PIV) is located near University Avenue. If closed, it will shut off all street water pressure to both the Rotunda's fire sprinklers and the three exterior dry hydrants. The sprinklers and the dry hydrants can still be supported by the two fire department connections. Fire standpipes were also not provided.

The design, operation, and locations of the exterior hydrants, fire-department connections, and valving were coordinated with the Charlottesville Fire Department.

A double interlock preaction valve assembly supports the sprinklers within the east and west elevator shafts and elevator machine rooms as required by the Facility Design Guidelines, University of Virginia Facilities Management, and the University Building Official (UBO).

The building is not considered to be fully sprinklered as sprinklers were not provided in some areas including beneath the plaster dome, several exterior passages, and the portico ceilings.

The fire-protection design was informed by a smoke movement and egress study prepared by Hughes Associates.

Electrical System

Electrical Service

The Rotunda's electric service originates from the existing campus primary medium-voltage switch and transformer located in a below-grade areaway adjacent to the building on the north facade. The service conductors are extended from a campus medium-voltage transformer within the areaway to a 1,600 amperes, 208/120 volt, three-phase, four-wire main distribution switchboard, located in the basement mechanical room beneath the north portico stair. The main distribution switchboard contains an owner's meter, which is monitored remotely by the University of Virginia Facilities Management Metering Operations. The main distribution switchboard energizes several panelboards throughout the building, including the elevators, emergency-lighting inverter, and site power connections. The Rotunda power-distribution system contains panelboards on each level that separates load to meet LEED requirements. Additionally, the panelboards are located within back-of-house spaces to reduce visibility to the general public, provide access to maintenance personnel only, and reduce potential safety issues.

Wiring and Receptacles

The branch circuits serving receptacles and MEP loads are installed in conduit with compression-type fittings.

The quantity of receptacles throughout the facility meets the programming needs of the spaces. The North Lawn is equipped with exterior in-grade boxes, containing power and information technology (IT) building connections, for special events and media support. The Rotunda contains two company switches in the north areaways and one company switch in the south storage room on the first floor for additional power requirements during events.

Lighting Fixtures and Controls

The lighting in the building is a mixture of modern downlights, linear pendant-mounted fixtures, surface-mounted utility-lighting fixtures, surface-mounted sconces, and historic chandeliers fitted with LED lamps. Emergency/egress lighting fixtures and exit signs, identified with a red dot on the lens, are energized by a building emergency-lighting inverter via local emergency panelboards. The exit signs are located appropriately to be visible in the paths of egress. The lighting fixtures are controlled with a building-wide digital lighting-control system. The Lutron lighting-control system consists of EcoSystem Energi Savr Nodes; localized fixture dimming was provided, with digital links and local GRAFIK Eye (for classroom spaces only) with occupancy sensors. The Lutron system infrastructure was designed and installed to integrate with the future campus-wide Lutron Quantum project.

The Dome room is equipped with a theatrical lighting-control system manufactured by ETC and connected to color-changing LED lighting fixtures that highlight the dome for performances or events. The theatrical lighting-control system allows third-party vendors to plug in their lighting-control equipment for easy transformation of the space for each occasion with minimal revisions to the existing building. The connections are located in the north portico.

Fire-Alarm System

An addressable fire-alarm system with voice evacuation and a wireless transceiver was provided. The system consists of a control panel, battery cabinet, annunciator panel, printer, and all necessary peripheral devices, including pull-stations, smoke detectors, and heat detectors in back-of-house spaces. Beam smoke detectors, flow switches, tamper switches, speaker/strobes, duct smoke detectors, and magnetic door-release devices were also provided. The fire-alarm control panel is located in mechanical room M005, and the fire-alarm annunciator panel is located within the northeast vestibule C140 on the first floor. The beam smoke detectors protecting the Dome Room are located in upper gallery C501.

Data System

Conduits and outlets for data were provided throughout the building as part of the 2016 restoration project. Wiring and devices were provided by the University.

Audiovisual System

Audiovisual (AV) systems were provided to serve the classrooms, multipurpose room, oval rooms, and Dome Room. Three mobile carts were provided to support AV devices and monitors. The carts were designed to accommodate large-format monitor screens that could be rotated to fit into the building's small elevator.

Security System

A modest security system was provided. Several cameras were located in key areas to monitor and record activity.

Elevators

The 1970s-era round-cab three-stop elevator located in the southeast corner of the Rotunda was replaced with a slightly larger square-cab four-stop hydraulic elevator in the same location. The elevator shaft was extended down to serve the subbasement.

A separate two-stop hydraulic elevator and a shaft were constructed to the east of the building from grade to basement area. It serves as a service entrance for the building.

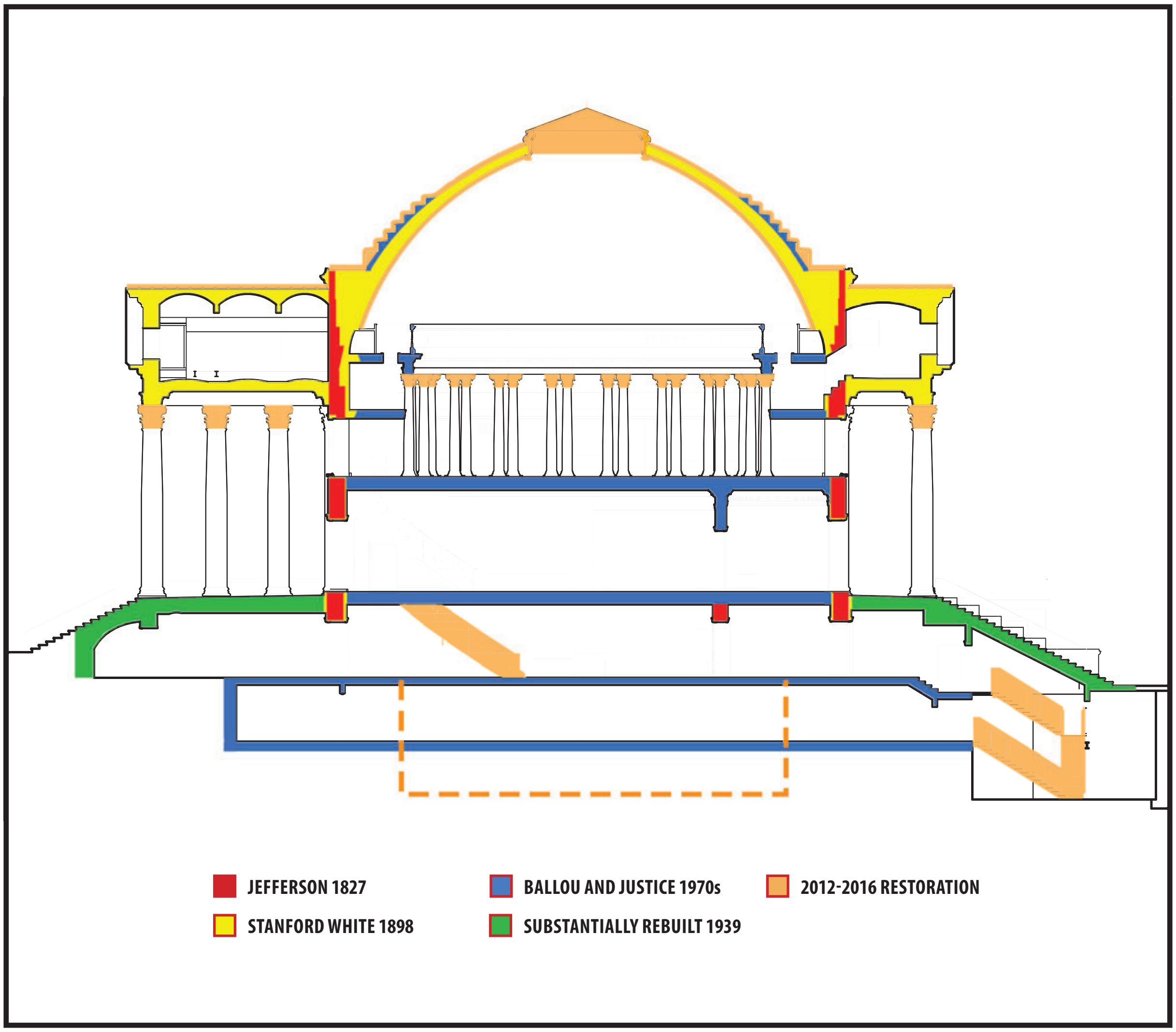
The restored Rotunda, from the south, 2016.

The Rotunda under construction, June 2016. In this view from the north, the 1890s capitals have been removed and sit in the foreground. Note the exposed buttresses beneath the north stairs.

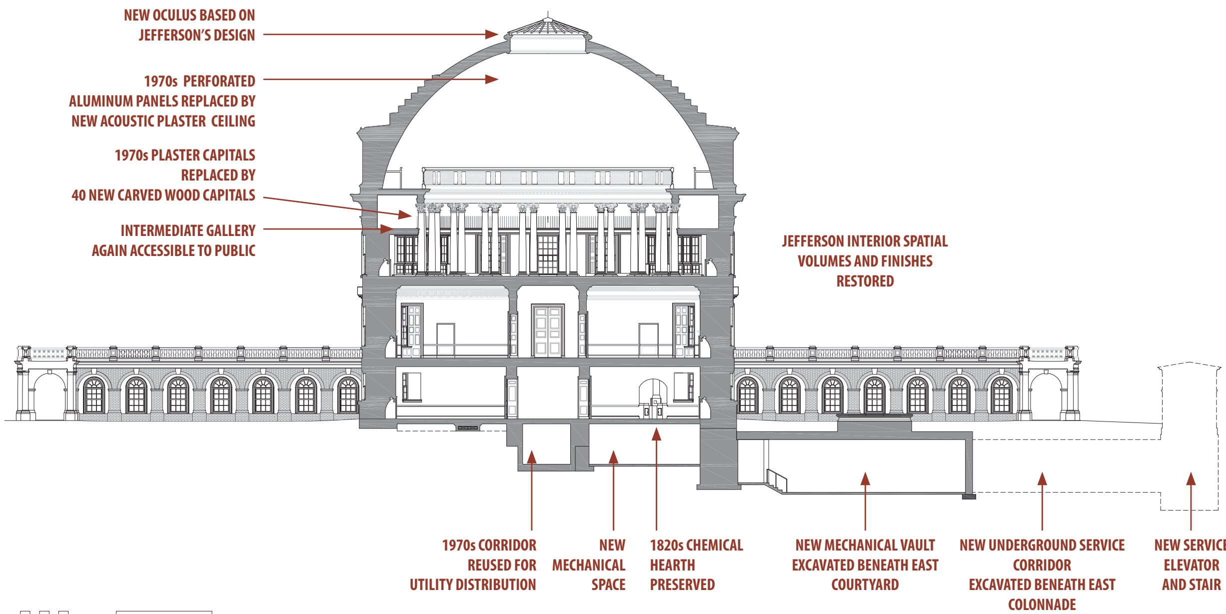
The Rotunda: (left) during construction, showing the excavation and underpinning for the mechanical vault below the east courtyard; (right), view of the completed restoration and renovation, 2016.

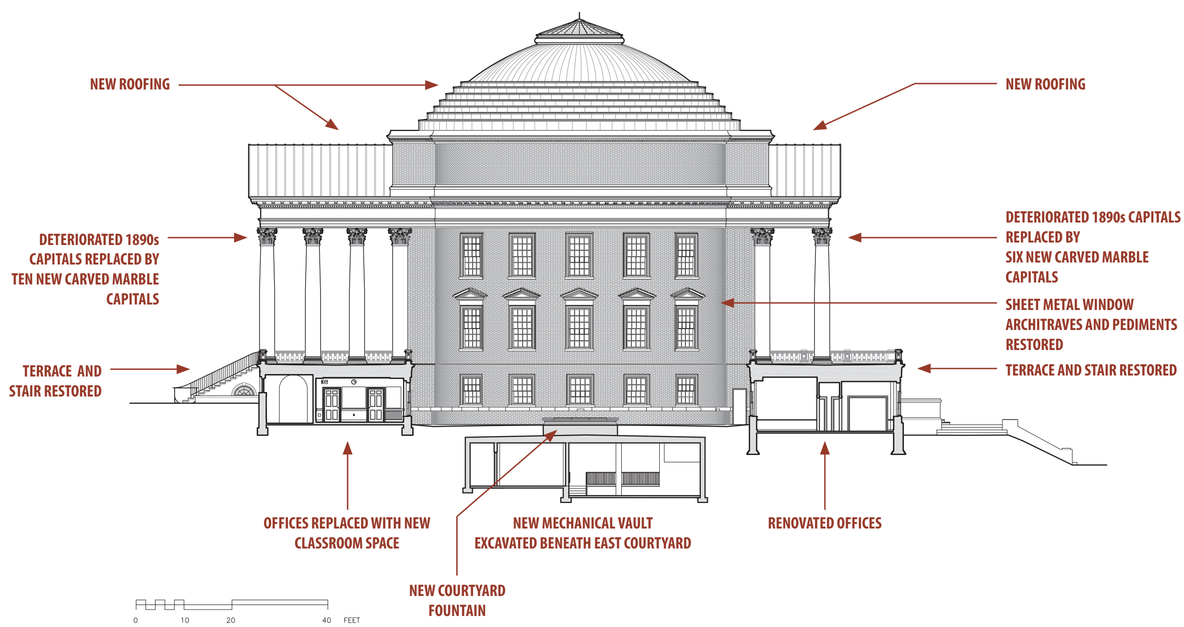
Lower east oval room after restoration, looking north, 2016. Note the exposed chemical hearth at the north end of the room.

The Dome Room after restoration, looking east from the middle gallery, 2016.

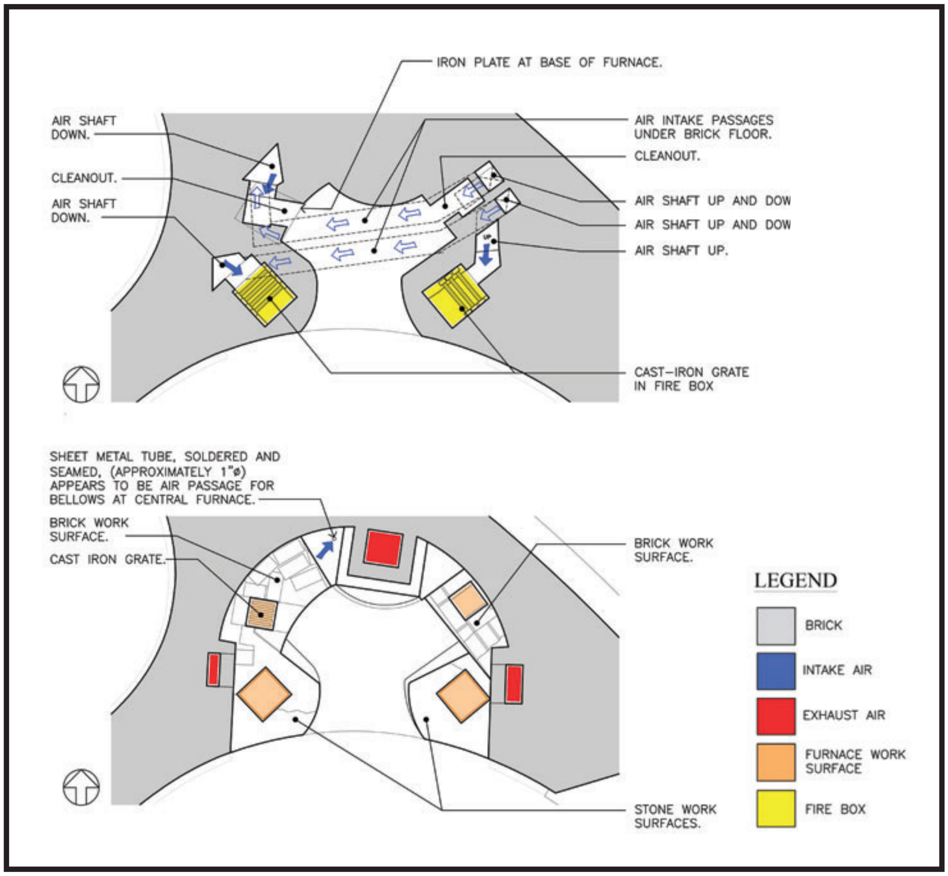


The periods of construction of the Rotunda structure, superimposed on the building section, facing west. Drawing by John G. Waite Associates, Architects, 2022.

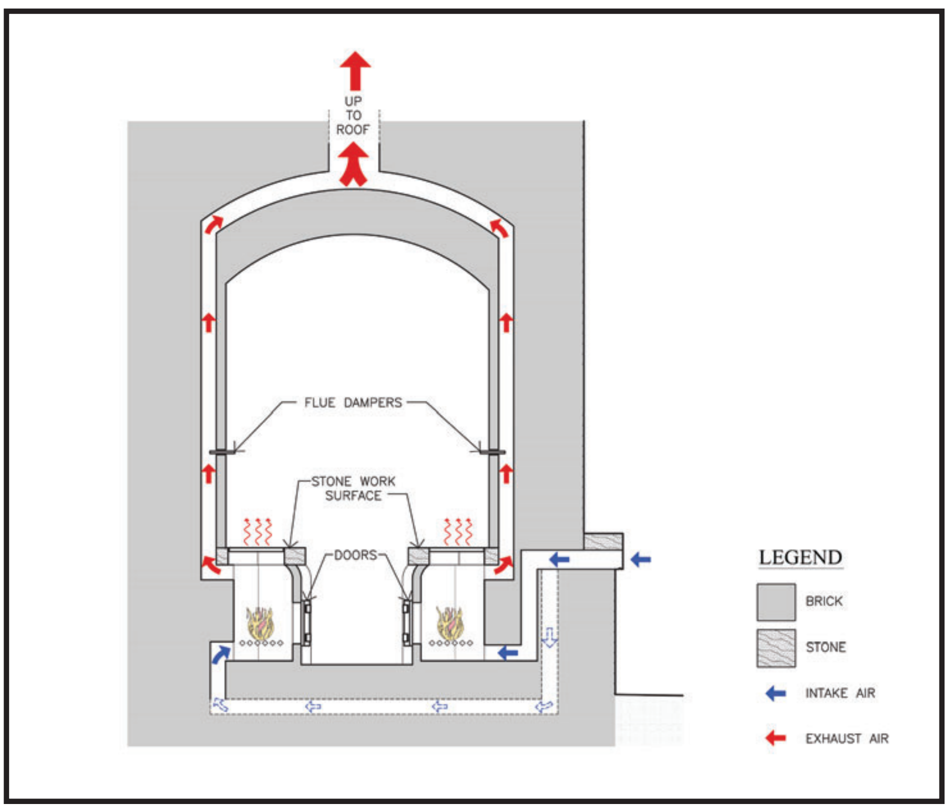




The 2012-2016 restoration and rehabilitation of the Rotunda.



Chemical hearth lower plan (upper left) and counter plan (left). Drawings by John G. Waite Associates, Architects, 2017.



Section at front furnace of the chemical hearth, looking north. Drawing by John G. Waite Associates, Architects, 2017.

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The Willard House and Clock Museum, p. 338

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