

THE THOMAS H. BAYLY BUILDING AT THE UNIVERSITY OF VIRGINIA

HISTORIC STRUCTURE REPORT

NOVEMBER 8, 2013



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Architecture:

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	<u>Page</u>
TABLE OF CONTENTS	ii
EXECUTIVE SUMMARY.....	iv
PROJECT DATA.....	vi
PART 1.0 PHYSICAL DESCRIPTION, CONDITIONS ASSESSMENT, AND CHARACTER-DEFINING FEATURES	
1.1 Historical Background, Context, and Chronology of Development and Use	1
1.2 Physical Description and Conditions Assessment	23
1.2.1 Site	23
1.2.2 Architectural General Descriptions	30
1.2.3 Architectural Detailed Descriptions	36
1.2.4 Infrastructure	65
1.2.4.1 Structural Assessment.....	65
1.2.4.2 Mechanical, Plumbing, and Electrical Assessment	88
1.3 Character-Defining Features.....	110
1.3.1 Site	111
1.3.2 Architectural	131
PART 2.0 RECOMMENDATIONS FOR TREATMENT	
2.1 Treatment Philosophy.....	157
2.1.1 Site	157
2.1.2 Architectural	159
2.2 Requirements for Treatment.....	160
2.2.1 Use and Interpretation of the Resource	160
2.2.2 Code Review	161
2.3 Recommendations for Treatment.....	166
2.3.1 Site	166
2.3.1.1 Land Uses, Landscape Patterns, and Spatial Organization.....	166
2.3.1.2 Views and Visual Relationships	166
2.3.1.3 Topography and Drainage	166
2.3.1.4 Vegetation.....	166
2.3.1.5 Circulation	168
2.3.1.6 Landscape Structures	168
2.3.1.7 Furnishings and Objects	168
2.3.2 Architectural	169
2.3.2.1 Exterior.....	169
2.3.2.2 Interior.....	172

2.3.3	Infrastructure	173
2.3.3.1	Structural	173
2.3.3.2	Mechanical, Electrical, and Plumbing	175
2.3.3.3	Life Safety	178

PART 3.0 BIBLIOGRAPHY

PART 4.0 APPENDIXES

- A. Site and Architectural Drawings
- B. Structural Drawings
- C. Mechanical Charts
- D. List of Figures

EXECUTIVE SUMMARY

Designed in the Neoclassical style by Edmund S. Campbell and Robert E. Lee Taylor, the Thomas H. Bayly Building opened in the spring of 1935. Originally named the Virginia Art Museum, it was always intended to function as exhibition space for the University of Virginia's art collection. In 2012, the University received a major contribution of art from alumnus W. Heywood Fralin and his wife, Cynthia, and the name of the Bayly Museum was changed to The Fralin Museum of Art. The building itself is now referred to as the Thomas H. Bayly Building.

The University of Virginia intends to undertake the construction of an addition to the Thomas H. Bayly Building and to renovate the existing interior space. As part of this planned renovation/addition, the University commissioned the preparation of this Historic Structure Report (HSR) by John Milner Architects, Inc., with subconsultants Heritage Landscapes LLC, Landmark Facilities Group, Inc., and Robert Silman Associates.

The goal of this report is to provide the University of Virginia with informed preservation recommendations to enable appropriate treatments for repair and for future maintenance of the building. This report provides suggestions for specific actions that are intended to maintain the existing integrity and character of the historic building.

The following primary tasks were carried out in preparing the HSR:

1. Archival research to retrieve information related to the significance and developmental history of the building and site, in order to assist in identifying the character-defining features and evaluating their integrity.
2. Assessment of existing conditions to formulate the scope of required repair and preservation work. Architectural, structural, HVAC, plumbing, electrical, and safety investigations to retrieve and document physical evidence in order to assess existing conditions and formulate recommendations for the proposed preservation work.
3. Documentation of the structural, HVAC, electrical, and plumbing/fire protection components of the building to assess the capacity of those systems to accommodate the proposed renovation/addition.
4. Statement of recommended treatment philosophy.
5. Statement of recommended treatment of the property.

An assessment of the building's structural, mechanical, electrical, plumbing, and life-safety components was conducted to identify national and local code deficiencies of the building and to evaluate overall operational performance of the existing systems. The infrastructure and life-safety sections of the report are organized by building system, with operational problems and major code deficiencies identified for each. Code issues are presented based on current Commonwealth of Virginia requirements at the time of this report. Recommendations are intended to improve the facility's infrastructure conditions, energy performance, code compliance, and maintainability.

The focus of the cultural landscape component is documentation of the historical evolution of the site on the east and south sides of the Bayly Building, known respectively as the East Terraces and the South Garden. The historic chronology gathered here serves to guide the landscape treatment recommendations, a component of the HSR. Archival research was undertaken by John Milner Architects, Inc., and Heritage Landscapes LLC at the Albert and Shirley Small Special Collections Library, the Resource Center of Facilities Management at the University of Virginia, and the Office of the Architect for the University of Virginia. The research was of limited and targeted scope.

PROJECT DATA

RESOURCE: Thomas H. Bayly Building

The building currently houses The Fralin Museum of Art.

LOCATION: 155 Rugby Road
Charlottesville, VA 22904-4119
Latitude: 38.03809 N
Longitude: 78.5026694 W
(Located within the boundary of the University of Virginia)

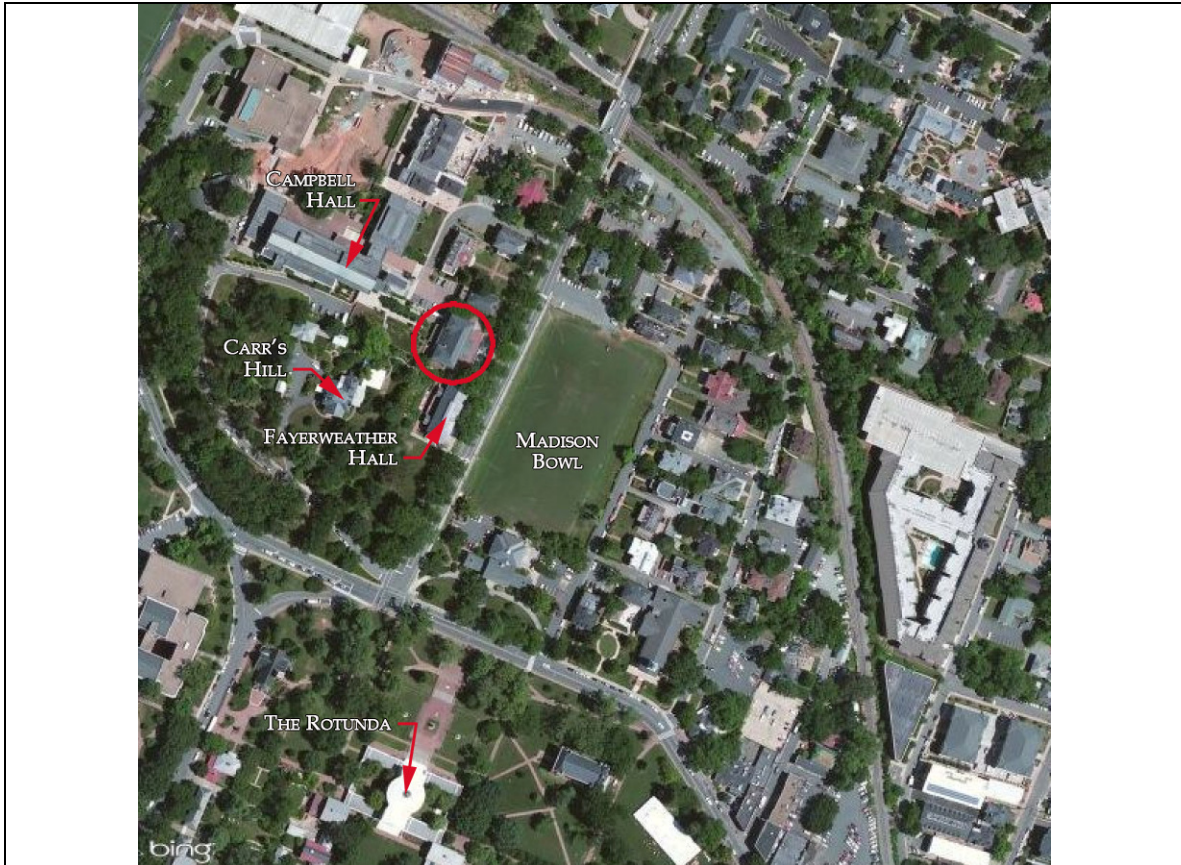
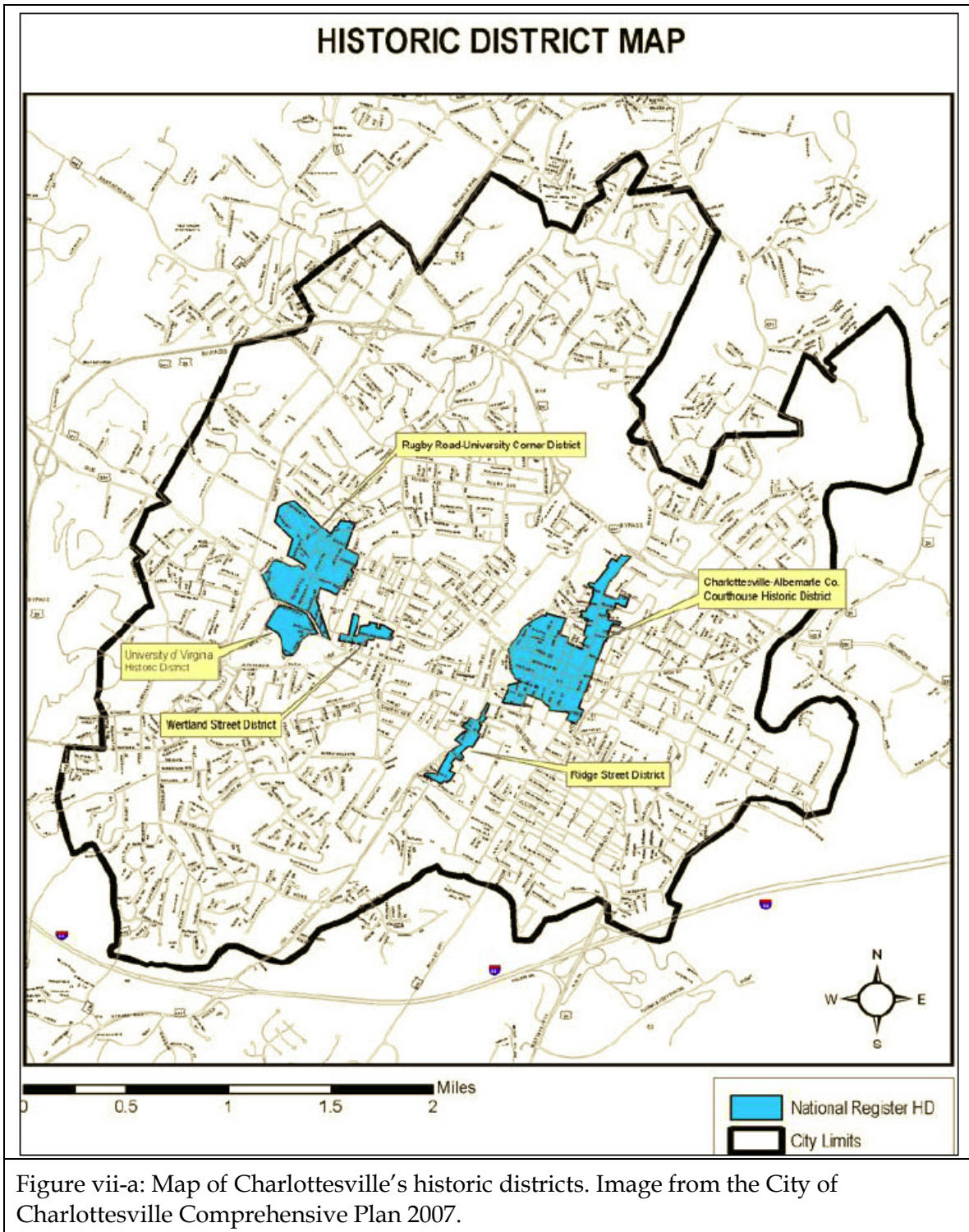


Figure vi-a: Aerial view of the University of Virginia. The Thomas H. Bayly Building is circled in red and landmarks are identified. Photograph from Bing Maps, © 2013 Nokia and © 2013 Microsoft Corporation.



NATIONAL REGISTER OF HISTORIC PLACES STATUS:

The city of Charlottesville has five historic districts listed on the National Register of Historic Places. The Thomas H. Bayly Building is located in the Rugby Road–University Corner Historic District and is considered to be one of the 209 contributing buildings within the district.

Historic District:	Rugby Road–University Corner Historic District
Item Number:	#84003523
Record Number:	#398173
Resource:	Thomas H. Bayly Building
Resource Status:	Contributing Building
Year Listed:	1984
Significance:	Neoclassical
Period of Significance:	1935

PRIOR STUDIES:

- University of Virginia Art Museum Master Planning. "Addition and Renovation Brochure." January 21, 2009.
- Archetal. "Bayly Scoping Study: Polishing a Gem/Preparing for the Future. Identifying a Scope of Work for a Renovation of the University of Virginia Art Museum/Thomas H. Bayly Building." June 11, 2008.
- Harlow, Wayne & Philen, Charlotte. "University of Virginia 0407 Bayly Museum Maintenance Survey." September 2007.
- Watson & Henry Associates. "Feasibility Report for Interior Environmental Improvements for The University of Virginia Art Museum Thomas H. Bayly Building." March 31, 2003.
- Brooks Engineering. "University of Virginia Bayly Art Museum Structural Inspection." March 30, 1999.
- Dagit Saylor Architects & Olin Partnership. "University of Virginia Carr's Hill Arts Precinct Master Plan." September 1998.
- Nancy L. Pressly & Associates. "Strategic Planning Discussion Paper for the Bayly Art Museum of the University of Virginia." January 16, 1997.
- Willis, Ken. "University of Virginia Facilities Management, Facility Audit of the Bayly Museum." February 19, 1997.
- Watson & Henry Associates. "Conservation Assessment Survey Report for Bayly Art Museum of the University of Virginia." July 13, 1995.
- Freudeheim, Thomas. "Report on the Bayly Art Museum." January 1987.
- "Report of the Bayly Museum Visiting Committee." December 1983.

RECOMMENDATIONS FOR FUTURE STUDY:

- An interior paint and finishes study is often recommended for historic buildings. Such a study can help establish a timeline of interior changes and provides information for possible restoration of period finishes. In the case of the Thomas H. Bayly Building, we do not feel it is warranted to study the entire interior; instead, we recommend detailed investigation of just the ceiling beams in the entry gallery. These beams have been the subject of much discussion, and based on archival research, it would be interesting to determine whether they were originally decoratively painted or treated in any other manner.

PART 1.0

THOMAS H. BAYLY BUILDING
PHYSICAL DESCRIPTION, CONDITIONS ASSESSMENT,
AND CHARACTER-DEFINING FEATURES



PART 1.0 PHYSICAL DESCRIPTION, CONDITIONS ASSESSMENT AND CHARACTER-DEFINING FEATURES

1.1 HISTORICAL BACKGROUND, CONTEXT, AND CHRONOLOGY OF DEVELOPMENT AND USE

1.1.1 HISTORICAL BACKGROUND

The Thomas H. Bayly Building is a twentieth-century adaptation of Neoclassicism, introduced by Jefferson, and is consistent in style, materials, and scale with other nineteenth- and early twentieth-century structures on campus. The two-story structure perches above Rugby Road and faces east. The rear of the building is nestled against a planted earth bank that climbs to a pedestrian commons/walk. To the south is Fayerweather Hall, containing offices and classrooms for the McIntire Department of Art. To the southwest, at the crest of the slope is Carr's Hill, the residence of the President of the University of Virginia. To the west is Leake Cottage, which houses the Office of Major Events, and Carr's Hill Administration. There is a steady volume of students that passes across the Bayly Terrace back and forth to Campbell Hall, the School of Architecture, located west of the Bayly Building.



Figure 1.1.1-1: Map of Carr Hill that shows the location of the Bayly Building and surrounding buildings. Web Map © 2013 by the Rector and Visitors of the University of Virginia.

In 1919, Judge John Barton Payne donated 50 paintings and \$100,000 to the Commonwealth of Virginia for a state museum.¹ The money was given on the condition that the state would raise another \$100,000. Virginia Governor John Garland Pollard worked to secure additional funding and commence the project.² In 1932, the Commonwealth of Virginia had an established Art Commission that consisted of the Governor, John Garland Pollard; Carl Melchers, a well-known and distinguished painter; Philip N. Stern, Architect and President of the Virginia chapter of the American Institute of Architects (A.I.A.); Wickham Taylor, Architect and AIA member; and Edmund S. Campbell, Professor of the McIntire School of Fine Arts at the University of Virginia. The Governor wanted to hold a national competition for the State Art Museum, the first in the United States, prior to securing the additional funding. The prize money and commission were meager and no travel fees were to be expensed.³ At the time, all national competitions had to be approved by the A.I.A. and there was great concern by Campbell and other Art Commission members that it would not be approved due to the existing terms. They did their best to convince the Governor to conduct a competition limited to architects of the state, which did not require A.I.A. approval, or appoint an architect outright and stand for criticism rather than conduct a competition under challenging conditions.⁴ In the end, the Art Commission prevailed; Governor Pollard consulted with Judge Payne on his preference of selecting an architect for the State Art Museum.⁵

It is clear from Professor Campbell's correspondences that Governor Pollard was in a rush to complete two art museums, the State Art Museum, in Richmond, and another at the University of Virginia. By 14 June 1933, Peebles & Ferguson Architects of Norfolk, Virginia were awarded the State Art Museum and the University of Virginia Art Museum was given to Edmund S. Campbell and Robert E. Lee Taylor.⁶ According to Dr. John L. Newcomb, the University President, Professor Campbell was to design the building and finishes while Taylor was responsible for the working drawings and specifications.⁷

Campbell visited several of the Museums of the country and consulted with their directors to inform himself of the most approved plans of a museum.⁸ The most influential of all was architect Fiske Kimball, who served as the director of the Philadelphia Museum of Art and was the former first chair and professor of the McIntire School of Fine Arts at the University of Virginia. Kimball travelled to Charlottesville on several occasions to give Campbell design reviews.

¹ Slipek Jr., Edwin. "The new VMFA will be nothing like your grandmother's art museum." *Style Weekly*, 31 March 2010. Web. 22 May 2013.

² Campbell, Edmund. Letter to Mr. Marcellus E. Wright. 10 March 1932. TS

³ Campbell, Edmund. Letter to Mr. Frederic C. Hiron. 12 March 1932. TS

⁴ Campbell, Edmund. Letter to Commonwealth of Virginia Art Commission. 10 March 1932. TS

⁵ Pollard Governor, Garland. Letter to Commonwealth of Virginia Art Commission. 15 March 1932. TS

⁶ Kimball, Fiske. Letter to Edmund S. Campbell. 14 June 1933. TS

⁷ Taylor, Lee. Letter to Edmund S. Campbell. 1 September 1933. TS

⁸ Pollard Governor, Garland. Letter dated 5 July 1933. TS

The drawings and the specifications for the art museum were completed by Lee Taylor Architects on 21 September 1933 and revised on 6 October 1933.⁹ At some point between October 1933 and April 1934 the art museum at the University of Virginia was referred as the Bayly Art Museum. The art museum was funded by a \$100,000 gift from Mrs. Evelyn Bayly Tiffany of Baltimore in honor of her father, Thomas H. Bayly, and supplemented by a Public Works Administration (W.P.A.) grant.¹⁰ However, it is unclear from the University records, when that bequeath was granted.

The location of the building inscription was originally to be a window lighting the Exhibition Lobby, but became a marble blind arch with a bronze lettered inscription. The Virginia Art Commission felt that the Latin inscription from Ovid was a most excellent selection as Plato's Symposium has a number of generalizations on the arts. The substance of the inscription over the entrance is, "Faithful devotion to the Fine Arts softens and refines the manners of man".¹¹ Campbell felt that expression was suitable for both Thomas H. Bayly's and Mrs. Tiffany's faith and love for the University, which must have been great if his daughter, in dying, who was only a passing visitor, could leave almost her entire large fortune to the University.¹²

On June 20, 1934, University President Newcomb appointed Campbell as curator of the Bayly Art Museum. Campbell's services began, without compensation, immediately upon the completion of the building.¹³ Campbell developed an outline of proposals for the operation of the Thomas H. Bayly Memorial Building as the University Museum of Fine Arts and presented it to John L. Newcomb, President of the University, on October 18, 1935. The suggestions of operating the building included the following:

- The Museum was to be referred to as the University of Virginia Museum of Fine Arts housed in the Thomas H. Bayly Memorial Building.
- The main purpose of the Museum was to house the works of art and other gifts according to the will of Mrs. Evelyn Bayly Tiffany. While the secondary purpose was to host temporary exhibits to enhance the artistic and cultural advancement in the fine arts of the students.
- Visitors were admitted to the Museum without charge six days a week from twelve, noon, until four-thirty in the afternoon. There were night hours when special exhibitions were shown.
- Temporary exhibitions were held on each of the lunar months with one month devoted to the following:
 - A Virginia artist
 - Works of local artists
 - Architectural student design work

⁹ Campbell, Edmund and R. E. Lee Taylor, Architects. Construction Drawings and Specifications. Art Museum, University of Virginia. 21 September 1933.

¹⁰ Campbell, Edmund. University of Virginia Memo. 17 May 1935. TS

¹¹ Campbell, Edmund. Letter to Dr. John L. Newcomb. 24 September 1934. TS

¹² Campbell, Edmund. Letter to Mr. Edgar I. Williams. 21 September 1934. TS

¹³ Newcomb, John. Letter to Edmund S. Campbell. 20 June 1934. TS

The University of Virginia's Museum of Fine Arts was opened from June 30 to July 13, 1935 to accommodate a travelling exhibition of the Grand Central Art Gallery of New York.¹⁴ However, the Museum officially opened its doors on Monday, November 4, 1935. The Thomas H. Bayly Memorial Building cost \$138,000 to construct.¹⁵

Chronology of Development and Use

Pre-1803

James Burnley farms an 80-acre plot, which encompasses the large hill now known as Carr's Hill and the future site of the Thomas H. Bayly Building on that hill.¹⁶

1803 – 1853

Brockenbrough's Hill, is named after Arthur S. Brockenbrough, university proctor and construction overseer, after he purchases a subdivided section of the farmstead from the descendants of James Burnley. The property located north of the Academical Village is sold several times but continues to be owned by people associated with the University.¹⁷

1854

Brockenbrough Hill is renamed as Carr's Hill when the property is sold to Mrs. Dabney S. Carr, who managed an off-campus dormitory located north of the Academical Village.¹⁸

1867

The Board of Visitors minutes of June 29, 1871, record that Carr's Hill was purchased by the University on July 1, 1867, "to prevent the occupation of the grounds by objectionable tenants."²⁰

1887 – 88

The 5-acre topographic depression, known as the Madison Bowl and the site of Madison Hall, is purchased with authorization from the YMCA for recreational space. This bowl forms a large open area with roadways and buildings developed on the surrounding slopes.²¹ This topographic configuration affords an open east frontage for the future Bayly site as slopes descend in that direction.

¹⁴ Campbell, Edmund. University of Virginia Memo. Undated. TS

¹⁵ "New Museum at Virginia University." New York Herald Tribune 3 Nov. 1935. Print.

¹⁶ Klosko, Margaret Gutman. *Carr's Hill: The President House at the University of Virginia, 1909 – 2009*. Charlottesville: University of Virginia Press, 2009.

¹⁷ Ibid.

¹⁸ Ibid.

²⁰ The Board of Visitors Minutes, University of Virginia, Charlottesville, June 29, 1871.

²¹ Office of the Architect. *Carr's Hill Landscape Report*. Charlottesville: University of Virginia, c. 2004. 2, 8.

1909

The architectural office of McKim, Mead & White completes Carr's Hill, the University president's home, named after the topographical feature and former owner.²² The development of this prominent building signals future expansion on the entire Carr's Hill area that eventually includes the future Bayly site, adjacent Fayerweather Hall, and Lambeth Residence, all downslope from the President's House [Figure 1.1.1-2].

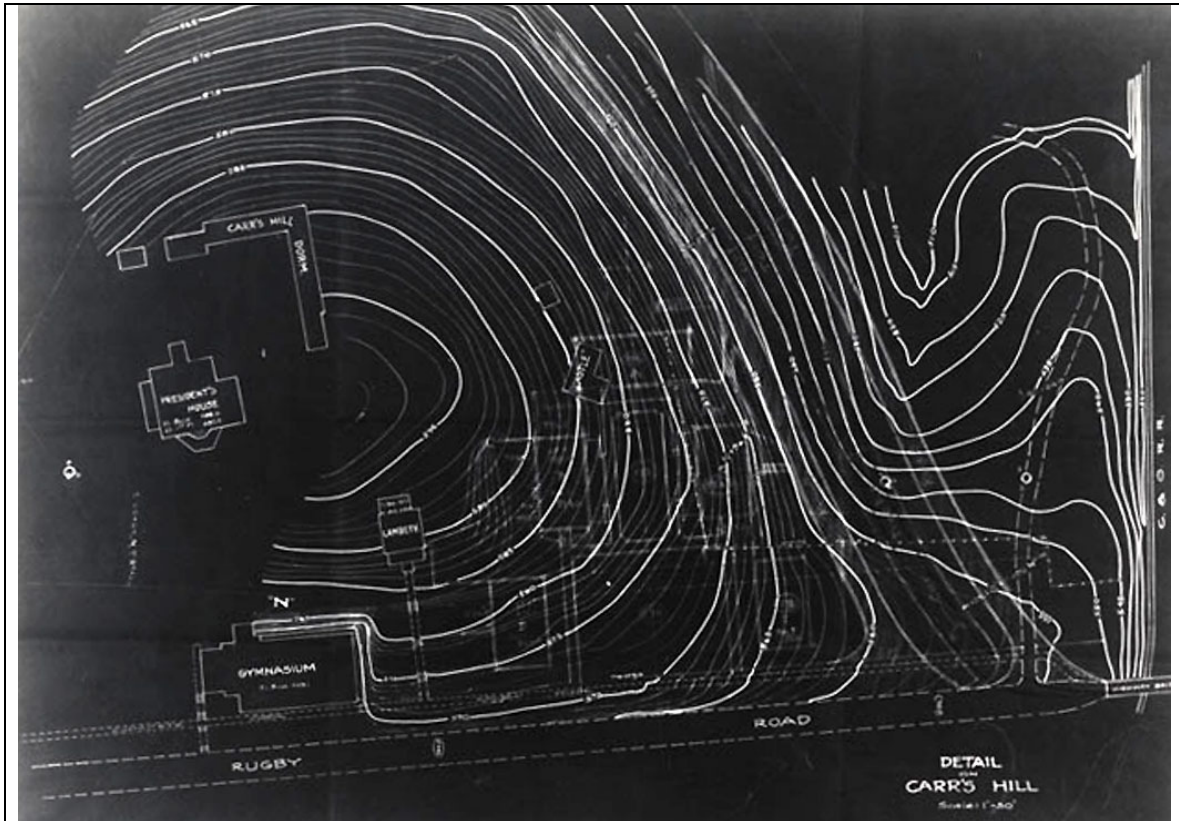


Figure 1.1.1-2: Topographical map of Carr's Hill with the pre-Bayly contours between the gymnasium (Fayerweather Hall) and Lambeth Residence, 1907 – 1915. University of Virginia, Special Collections Library. Print 07364.

1911

The Sigma Phi and Kappa Sigma fraternity houses were completed.²³

1922

The Chi Phi fraternity house was built.²⁴

²² Klosko, *Carr's Hill*.

²³ Office of the Architect, 100% Review Comments, Historic Structure Report Thomas H. Bayly Building at the University of Virginia, October 2013.

²⁴ Office of the Architect, 100% Review Comments, Historic Structure Report Thomas H. Bayly Building at the University of Virginia, October 2013.

1924

The use of Fayerweather Hall directly south of the Bayly site changes from a gymnasium to the McIntire Department of Art.²⁵ This change precipitates the creation of a fine-arts zone at the University that contributes to the siting of the Bayly Building as an art museum adjacent to Fayerweather Hall.

1933

Edmund S. Campbell, head of the University's architecture program, designs the Bayly Art Museum and associated grounds with the assistance of Robert E. Lee Taylor. Campbell presents the drawings to the University.²⁶ Construction begins in 1933. A New Deal Public Works Administration grant supplemented the bequest of Mrs. Evelyn May Bayly Tiffany to construct the museum as a memorial to her father Thomas H. Bayly.²⁷

The Bayly Building, intended as a museum of art, is sited directly north of Fayerweather Hall, the art school, and east of a professor's residence, the house of Dr. William A. Lambeth. The challenging site required planning for the steep slope and the adjacent existing buildings and related pathways located farther west on Carr's Hill. Construction of the Bayly Building required the removal of the Lambeth Residence.²⁸ [Figure 1.1.1-3].

The architectural design of the landscape of the Bayly Building includes the landscape features of an upper and lower terrace, a south garden extending from the upper terrace, a planting of ginkgo trees on the lower terrace, other planting bed designs, the use of brick for paved surfaces, retaining wall design, and selection and placement of capital fragments, urns, and planters on the upper terrace.²⁹

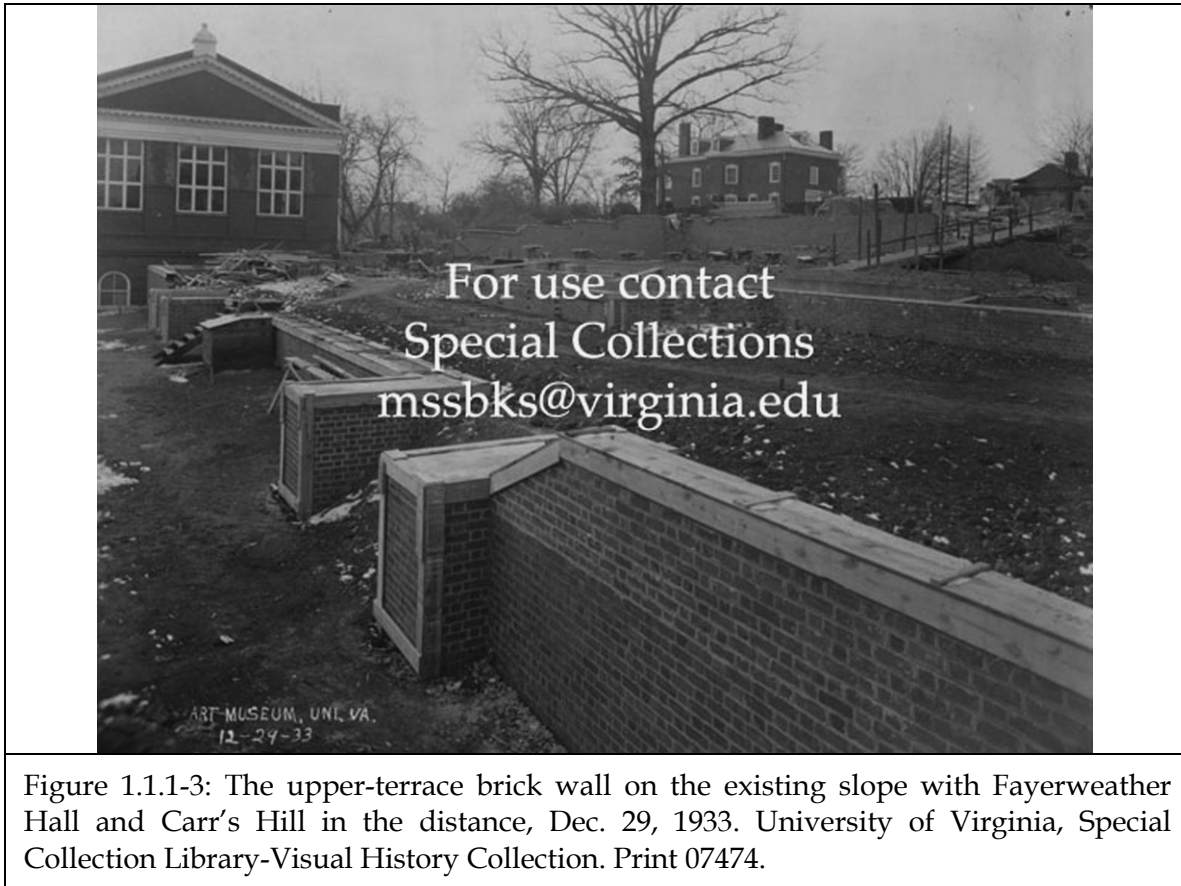
²⁵ Office of the Architect. *Carr's Hill Landscape Report*. 7.

²⁶ Office of the Architect. *Bayly Art Museum (University Art Museum)*.

²⁷ Wilson, Richard Guy, and Sarah Butler. *University of Virginia: The Campus Guide*. Princeton: Princeton Architectural Press, 1999. 121.

²⁸ Office of the Architect, *Carr's Hill Landscape Report*. 7.

²⁹ Office of the Architect. *Bayly Art Museum (University Art Museum)*.



1934

A series of aerial photographs captures the hillside setting, Madison Bowl recreational space, and street trees; to a degree the image also shows the stepped terracing of the Bayly landscape before the addition of plantings [Figures 1.1.1-4 and 1.1.1-5].



Figure 1.1.1-4: Oblique aerial view to the west of the Bayly site and the Madison Bowl, 1934, University of Virginia, Special Collections Library.

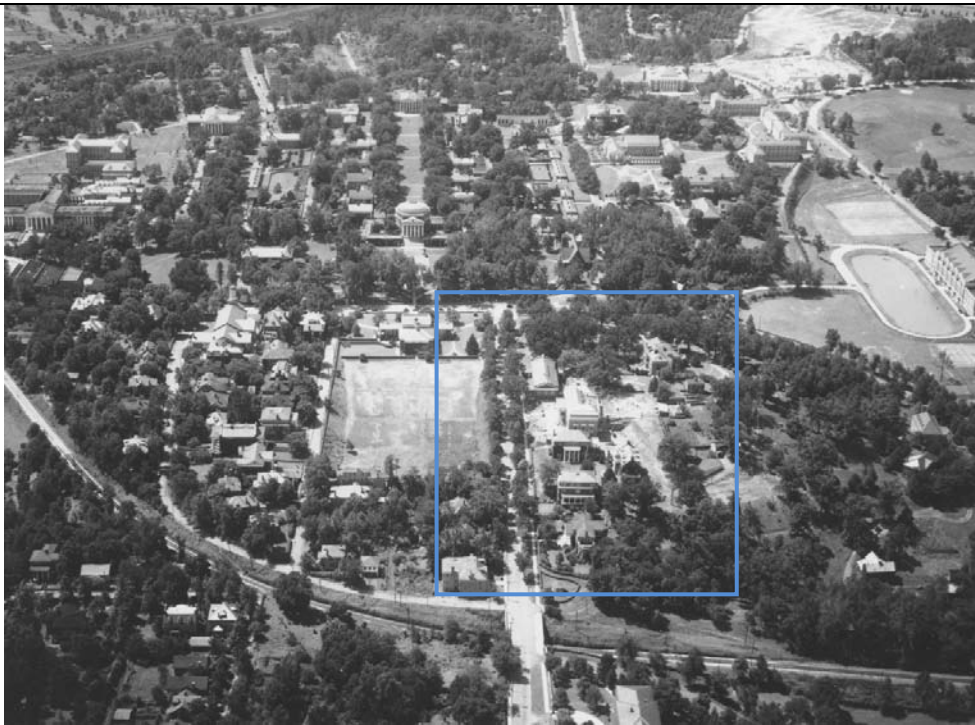


Figure 1.1.1-5: Oblique aerial view to the south. The Bayly site is located within the blue box, 1934, University of Virginia, Special Collections Library.

1935

Construction of the Bayly Building is completed. Photographs taken circa 1935 by Holsinger show the landscape of the East Terraces nearing completion, depicting newly planted small, ginkgo (*Ginkgo biloba*) trees with 1- to 2-inch diameter stems, single rows of boxwood (*Buxus sempervirens* and *B. sempervirens* "Suffruticosa") and juniper (*Juniperus communis*) shrubs along the base of the portico columns and lower-terrace wall. *Plan L-1*, c. 1935 *Landscape Plan*, illustrates the original build-out of the landscape at that date [Figures 1.1.1-6 and 1.1.1-7].



Figure 1.1.1-6: The in-process Bayly landscape construction shows newly installed trees, plantings, steps, and walls along the Rugby Road frontage in about 1935. University of Virginia, Special Collections Library, Hosinger Studio Collections.

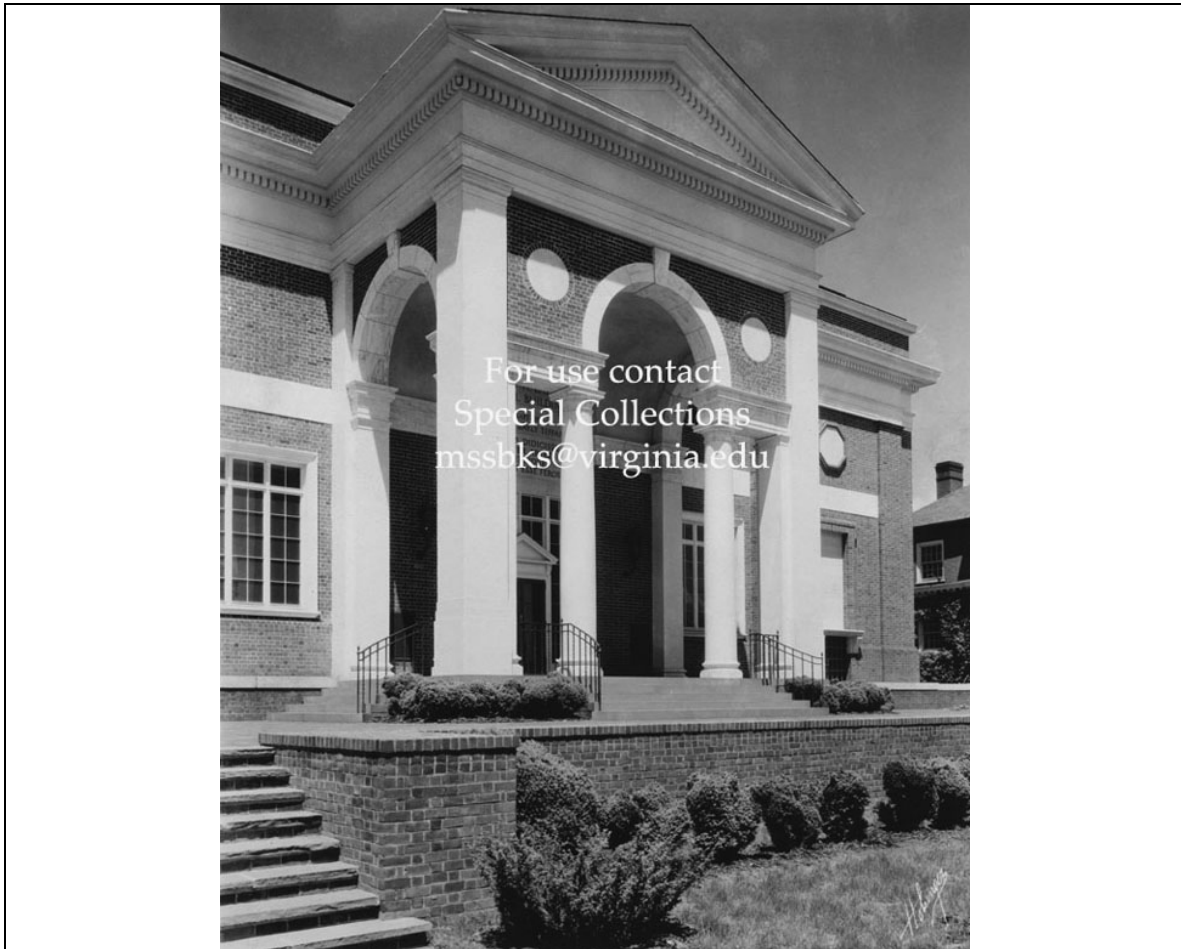


Figure 1.1.1-7: A planted single row of boxwoods and corner juniper are shown along the lower-terrace wall in this image circa 1935. University of Virginia, Special Collections Library-Visual History Collection. Print 09507.

c. 1938

The Bayly landscape is complete by this time. Photographs by Holsinger show the finished landscape of the East Terraces with features specified by the architects, including ornate urns on stair walls and simpler pots on the terrace. A double row of boxwood appears along the edge of the lower-terrace wall. Sculpture and architectural fragments and column capitals appear in the landscape, and two dark, sculptured figures are located on the shelves of the enclosed window to either side of the East facade.³⁰

³⁰ Photographs, c. 1938, Bayly Art Museum, University of Virginia; Special Collections Library, Holsinger Studio Collection, 1889 – 1939, MSS 9862, Negatives Y21950B, Y21950B1, and Y21950B2.

1939 through 1946

The museum closed for the duration of World War II.

c. 1945

Trees, shrubs, potted plants, and lawn reveal evidence of growth with managed care in images taken 10 years after construction. Photographs show a retaining wall between the north set of sidewalk steps and the northern property line [Figure 1.1.1-8]. Bright grout and young boxwoods lining the backside of the wall allude to new construction. New sculptures have replaced busts along the East facade of the building although a photograph indicates that at least one bust had been retained for an indefinite period of time below a blind window of the East facade [Figure 1.1.1-9]. Another photograph from same period shows a carved, decorative panel below a blind window of the East facade [Figure 1.1.1-10].



Figure 1.1.1-8: Apparent landscape modifications from 1935 to 1945 include a low brick wall and boxwood shrubs along the sidewalk to the right. University of Virginia, Special Collections Library-Visual History Collection. Print 07463.

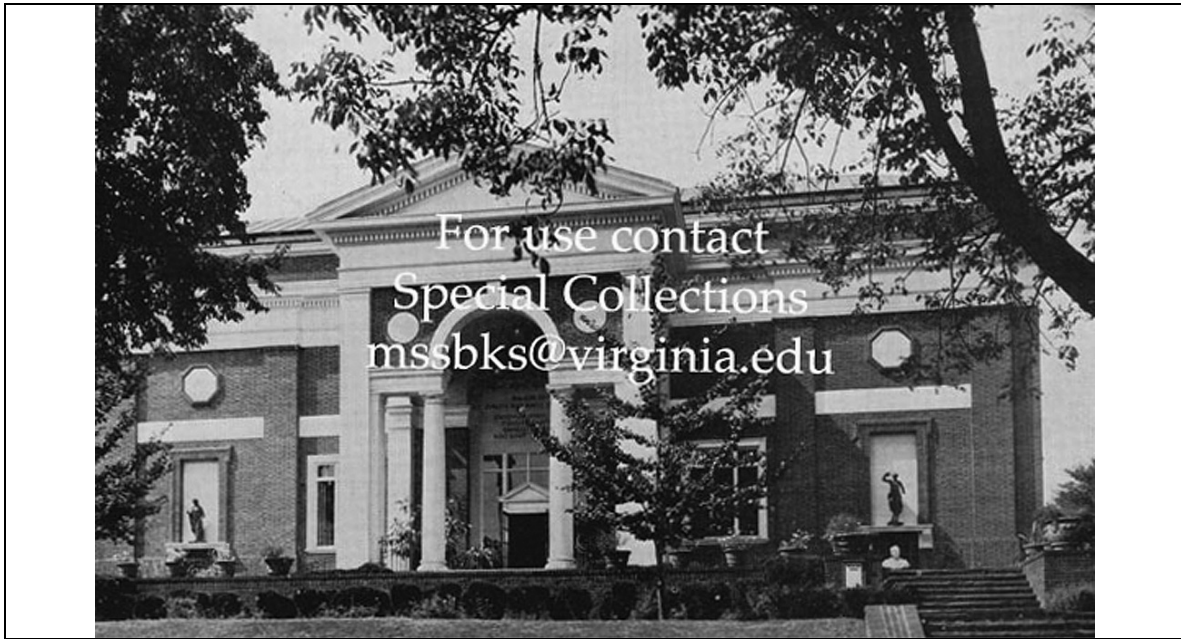


Figure 1.1.1-9: Statues replace busts in the blind windows of the east facade by the mid-1940s. A bust remains below a sculpture in this photograph. University of Virginia, Special Collections Library-Visual History Collection, prints 07493.



Figure 1.1.1-10: A boxwood shrub, deciduous shrub, and architectural fragments accent the island planting bed on the upper terrace by 1945. A carved, decorative panel is located below a statue in a blind window. University of Virginia, Special Collections Library-Visual History Collection, prints 07462.

1950

The Annex is added to the rear of the building [Figure 1.1.1-11] by this date, altering the landscape with added building mass, as captured in 1955 aerial photographs [Figure 1.1.1-12].³¹ Around this time, photographs also document that shrubs are removed from beds at the base of the portico columns and sculptures are removed from the enclosed blind windows of the East facade.³²

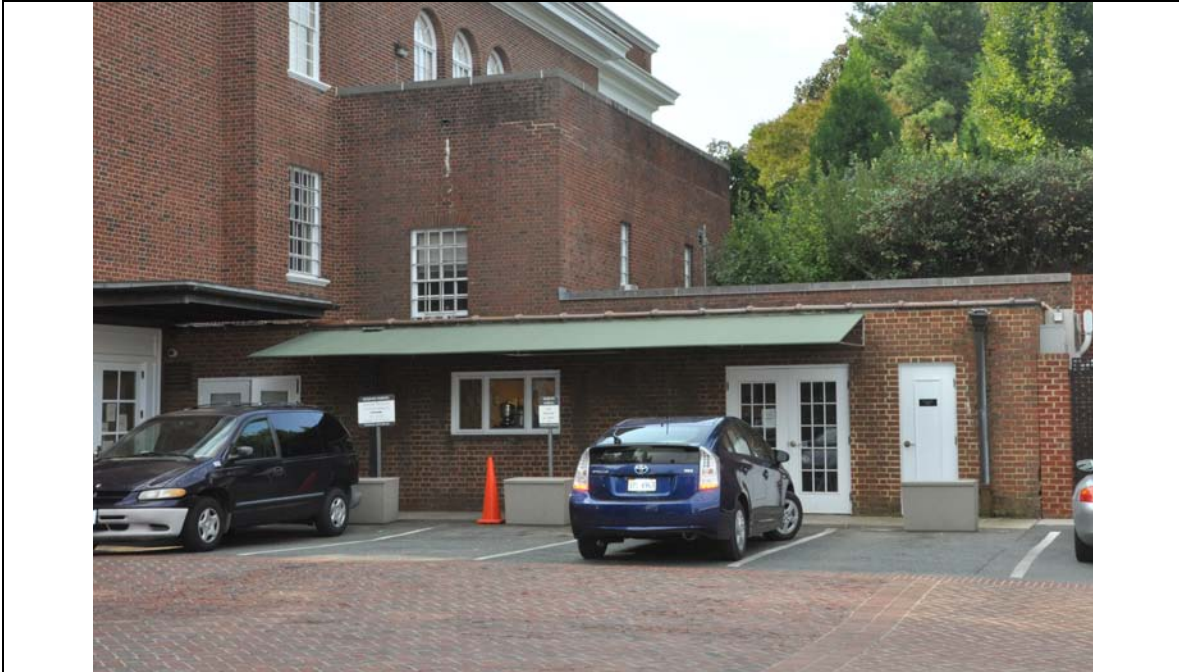


Figure 1.1.1-11: The Annex is constructed at the west side of the building by 1950. John Milner Architects, September 2012.

³¹ Office of the Architect. *Bayly Art Museum (University Art Museum)*.

³² Photograph, University of Virginia, Thomas H. Bayly Building, c. 1950, SCL, black/white, print 07465, neg. 4x5 967b.



Figure 1.1.1-12: This 1955 aerial photograph shows the Bayly landscape in context. The addition of the Annex has modified the overall site. University of Virginia, Office of the Architect.

1958

Stairs are added to the exterior of the Bayly Building.³³ The stair no longer exists, but it connected the West Terrace to an existing stair located at the southwest corner of the site.

1962

Due to academic space shortages, the entire building is used for art and architecture classrooms.³⁴

1965

A topographic map of Carr's Hill shows the straight retaining wall of the South Garden. A 14-inch tree is noted as positioned behind the west garden's west retaining wall, in line with the south edge of the building.³⁵ By this date a single-story southwest addition was constructed, filling in the inside corner between the main block and the west block of the Bayly Building.³⁶

³³ Office of the Architect. *Bayly Art Museum (University Art Museum)*.

³⁴ Wilson and Butler, *University of Virginia: The Campus Guide*. 122.

³⁵ Facilities Management Resource Center, 34947 Topographic Map Carrs Hill 03 1 1965.

³⁶ Office of the Architect. *Bayly Art Museum (University Art Museum)*.

1965

University Master Plan by Sasaki, Dawson & DeMay zones Carr's Hill as a fine-arts district centered around the Bayly Building and Fayerweather Hall, a former location of the School of Architecture.³⁷

1970

Campbell Hall, the School of Architecture, is completed, prompting the redevelopment of the Bayly Building parking court, provision of a circulation connector to Rugby Road, and the creation of the crepe myrtle allée along the north facade of the building in the 1980's.³⁸

1974

The Bayly Building reopens as an art museum after extensive interior renovations.³⁹

1977

Preliminary studies of a service drive and parking area northwest of the Bayly Building were prepared by Landscape Architecture Professor Meade Palmer as part of a larger plan for a Fine Arts Center. Palmer helped found the Department of Landscape Architecture after his arrival to the University in 1969.⁴⁰ The plans showed a parking court between the Bayly Building and two adjacent fraternity houses. A walk to Rugby Road, a walk with steps to the upper terrace of the Bayly Building, and a grouping of small trees along the North facade of the Bayly Building were depicted. The planning study showed a line of five trees between the north facade of the Bayly Building and an adjacent sidewalk. These trees provided a vertical mass to frame that facade of the building and a vegetation volume seen from the upper-terrace. The farthest east tree was most likely crepe myrtle (*Lagerstroemia indica*). This is not a symmetrical planting as there is no planting space to the north of the brick walk. Four large trees are shown on the grass terrace between steps along the East Terraces.⁴¹

The Bayly Building skylight was removed.⁴² The bottom side was painted over to protect the artwork. The glass was replaced with 2-inch Tectum roof tile on a bulb-tee frame and roofed with slate.⁴³ According to museum representatives, the skylight had a history of leaking.⁴⁴

³⁷ Office of the Architect. *Carr's Hill Landscape Report*. Charlottesville: University of Virginia, c. 2004. 2.

³⁸ Office of the Architect, 75% Review Comments, Historic Structure Report Thomas H. Bayly Building at the University of Virginia, February 2013.

³⁹ Wilson and Butler, *University of Virginia: The Campus Guide*. 122.

⁴⁰ "In Memoriam: Milton Meade Palmer," UVA Today, January 21, 2001.

⁴¹ Meade Palmer, Preliminary Study — Service Drive and Parking: Fine Arts Center, University of Virginia, Facilities (64248 1).

⁴² Facilities Management Resource Center, 60671Facilities Audit 02 19 1997.

⁴³ Facilities Management Resource Center, 29492 Skylight Renovation.

⁴⁴ Facilities Management Resource Center, 60860 Structural Inspection Study 03 30 1999.

1980

Parking-expansion plans by Meade Palmer showed existing and proposed vegetation in the northeast corner of the property [Figure 1.1.1-13]. An L-shaped boxwood massing in the northeast corner along the sidewalk is recommended to remain. Also near the sidewalk, a privet row between the north boundary of the Bayly site and the Chi Phi Fraternity House is recommended for removal. Privet (*Ligustrum spp.*) hedges lining the sides of the brick walk along the north side of the Bayly Building are identified for removal. An existing crepe myrtle on the north side of the Bayly Building close to the East facade is to remain and be joined by two additional crepe myrtle in a row. On the opposite side of the brick walk from the remaining crepe myrtle, a symmetrical planting of three crepe myrtles (*Lagerstroemia indica* "Flame") specified as "6'-8' BB" at "15' on center". The crepe myrtles are to be underplanted with 1,100 wintercreepers (*Euonymus fortunei* 'Coloratus') in 2½-inch pots. At this time, a large black locust (*Robinia pseudoacacia*), one sugar maple (*Acer saccharum*), and masses of forsythia (*Forsythia spp.*) and rhododendron (*Rhododendron spp.*) are located northwest of the Bayly Building.⁴⁵

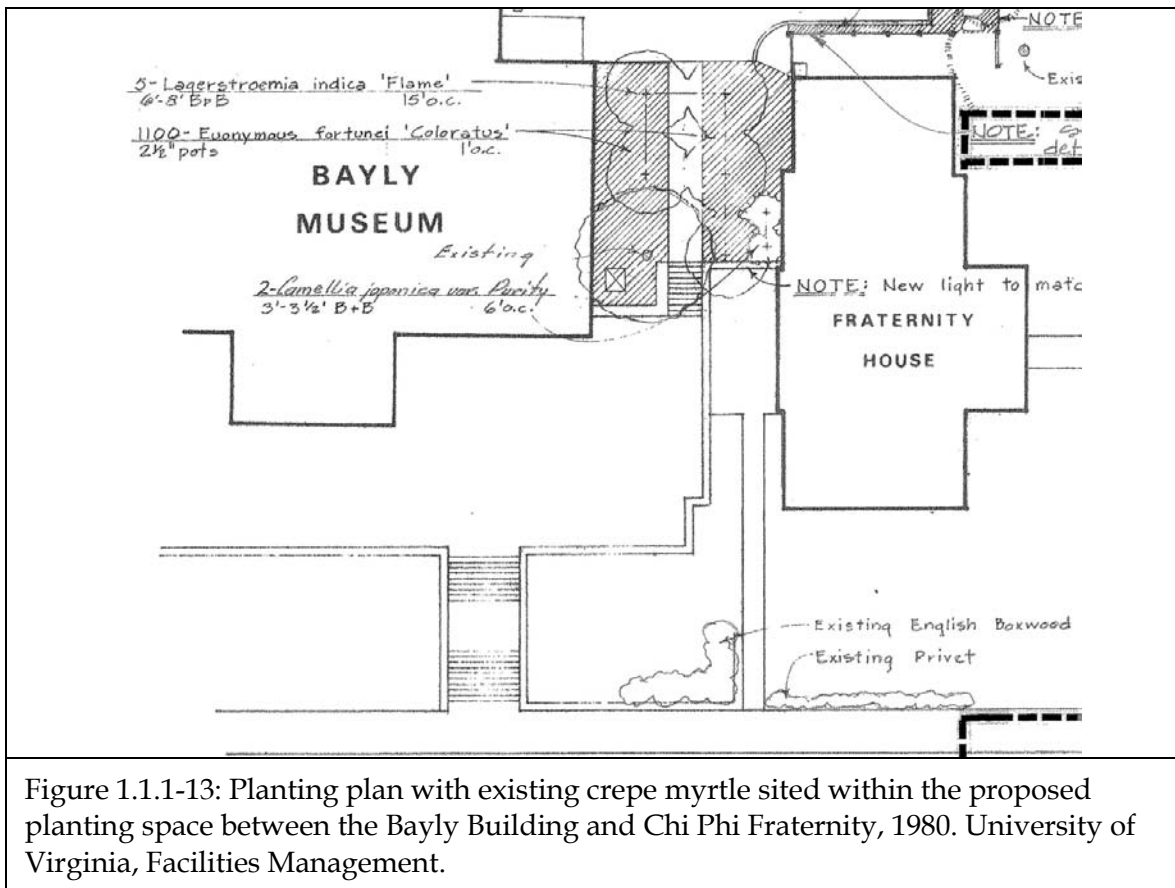


Figure 1.1.1-13: Planting plan with existing crepe myrtle sited within the proposed planting space between the Bayly Building and Chi Phi Fraternity, 1980. University of Virginia, Facilities Management.

⁴⁵ Meade Palmer, Existing Conditions and Demolition Plan (29469 1), and Planting Plan (77568 6), Bayly Museum Parking, Facilities Management Resource Center, 29469 Parking 06 01 1980.

1985

The ballasted EPDM roofs at the southwest addition and the Annex were replaced.⁴⁶

1986

An emergency telephone was installed between the sidewalk and Rugby Road, north of the north steps of the Bayly site.⁴⁷

A central air conditioning system was installed to serve the Gallery A on the first floor and the Galleries B, C, D, E, and F on the second floor. The laylight glass was replaced with acoustic tiles and covered with blown-in insulation at Galleries C, D, and E to accommodate the air conditioning system.⁴⁸

1995

Watson & Henry Associates prepared a conservation assessment survey report of the Bayly Building. The site, building envelope, environmental monitoring, mechanical systems and interior environmental control, security, fire detection and protection systems, use of spaces, and off-site storage were surveyed. The observations concluded that the building was in very good condition but had some key problems. Excessive moisture, embedded lintels, and cracked lintels were observed at exterior masonry. The exterior wall assembly limited the inherent thermal and moisture-transmission performance on interior environmental control and collections conservations. The existing mechanical equipment and controls were unable to provide proper relative humidity and dehumidification conducive to art-collection conservation. A hot-water system pipe, located in the Art Storage Room, was listed as a potential catastrophe. Operational security problems related to receptions and art-student access were identified. On-site space for collections essential to museum operations was deemed inadequate for Collections Storage and the off-site storage warehouse was deemed unsuitable.

The report recommended that the art museum develop a master plan to identify present and future space needs for museum functions and environmental control systems. An investigation and repair of the exterior masonry problems as well as an analysis of thermal and moisture of the building's wall assembly was encouraged. Enhance the interior environmental monitoring to yield information for mechanical system upgrade or replacement. Develop a strategy to upgrade the 1984 HVAC system, replace the original heating system, and add cooling and dehumidification. Finally, relocate the off-site storage to a more suitable facility.⁴⁹

The freight elevator, original to the building, was replaced with a 9,000 pound capacity hydraulic elevator.

⁴⁶ Facilities Management Resource Center, 101115 Maintenance Survey 2007 09 01.

⁴⁷ Facilities Management Resource Center, 29487 Emergency Telephone Bollard 04 29 1986.

⁴⁸ Facilities Management Resource Center, 29464 Air Conditioning 08 15 1986.

⁴⁹ Facilities Management Resource Center, 100595 Conservation Assessment Survey Report 1995 07 13.

1996

Bayly Annex is renovated.⁵⁰ New doors and windows were installed and the interior was refinished. New power panels were installed in a small mechanical room within the Annex.⁵¹ Unspecified “work completed” is noted for the gardens of the Bayly Building.⁵² Landscape Architect Nancy J. Brown of the Office of the Architect created planting plans, circa 1996, that indicated existing plant massing in the South Garden with boxwoods and a magnolia in the planting bed at the south side of the building [Figure 1.1.1-14]. Around this time, an Italian cypress in the southwest corner of the South Garden was replaced by a columnar Juniper and a mix of perennials, some of which are still extant.⁵³ These archived planting proposals may not have been implemented in full as several recommended plants are not extant in 2013.

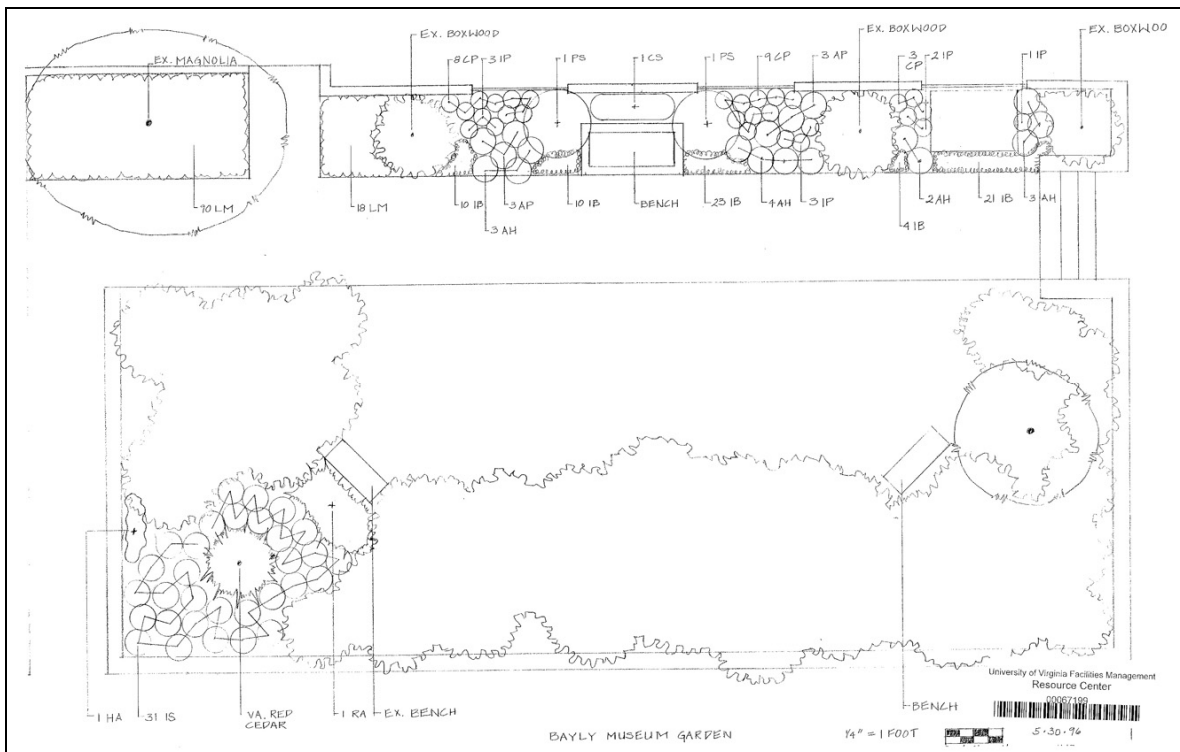


Figure 1.1.1-14: Planting plan for the South Garden, 1996, University of Virginia, Facilities Management.

⁵⁰ Office of the Architect. *Bayly Art Museum (University Art Museum)*.

⁵¹ Facilities Management Resource Center, 101115 Maintenance Survey 2007 09 01.

⁵² Office of the Architect. *Bayly Art Museum (University Art Museum)*.; Office of the Architect. *Carr's Hill Landscape Report*. 12.

⁵³ Nancy J. Brown, [Unlabeled planting plan for the South Garden], University of Virginia Facilities Management Resource Center, 67199, 1996 05 30.

1997

A Strategic Planning Discussion Paper was prepared by Nancy L. Pressly & Associates for the University in January. Apparently, the museum was searching for a new director and setting goals to secure additional resources; staff, art storage, and funding were of the highest priority. The overwhelming consensus of numerous consultants, studies, and programs was that the museum building was an asset for the University, but the building was too small for daily operations. The building had insufficient security for the slide library, located within the building, with 24-hour access. The off-site storage facility had climate control that was inadequate for preserving the permanent collection and securing loans from other museums. It was determined that establishing a program and securing an operating endowment would ensure success.⁵⁴

A facility audit was conducted on the Bayly Building one month after the Pressly & Associates Discussion Paper was issued. The inspection found the building to be in poor condition because the cost of general maintenance and system deficiencies weighed heavily against the current replacement value. The general maintenance deficiencies consisted of patching plaster walls and ceilings throughout the building, painting the interior walls and ceilings, painting the exterior of the building, and replacing broken door locks. The system deficiencies included the replacement of the cooling system in the north end of the building, replacement of the heating system throughout the building, replacement of the slate roof, and installation of a fire-alarm and fire-suppression system.⁵⁵

1999

A structural inspection was completed, by Brooks Engineering, on the Bayly Building to report any structural defects that might be an immediate or future safety hazard. The report found that poor drainage at the west side, or rear of the building, was the contributing factor to settlement cracks at the terrace walls and to water infiltration in the Annex and director's office. Two drains at the patio terrace flow into scuppers on either side where they flow onto the Annex roof at the north and the Art School Office and Mechanical Room roof at the south. The water coming from down the hill at the rear of the building paired with insufficient and unmaintained gutters and downspouts led to leaks. It was recommended that the rear of the building be regraded to allow for a retaining wall system or at least a swale with a drainage system, behind the building to separate the grade from the museum. It was also suggested that gutter guards be installed and piping repaired to allow for positive flow away from the roof without surface drainage. It was feared that ignoring the suggested repairs might lead to substantial hydrostatic loads placed on the walls and Annex roof.⁵⁶

The exterior trim was painted on the Baily Building.⁵⁷

⁵⁴ Facilities Management Resource Center, 10194 Strategic Planning Discussion Paper 1997 01 16.

⁵⁵ Facilities Management Resource Center, 60671 Facility Audit 02 19 1997.

⁵⁶ Facilities Management Resource Center, 60860 Structural Inspection Study 03 30 1999.

⁵⁷ Facilities Management Resource Center, 101115 Maintenance Survey 2007 09 01.

2000

Voorsanger & Associates Architects, P.C., conducted a feasibility study of three sites for an expanded art museum. The proposed facility would house additional gallery, administrative/education, support, service and reception, lobby, and bookstore spaces. Dedicated parking for 40 to 60 cars and a sculpture garden were to be integrated into the facility as well.⁵⁸

The standing-seam copper roof at the back of the building was replaced.⁵⁹

2001

A site analysis plan for Carr's Hill indicates that maintenance issues for the Bayly site include periodic mowing, irrigation of beds, replacement of missing plants, and removal of volunteer weeds in brickwork.⁶⁰

2002

The University of Virginia Art Museum was accredited by the American Association of Museums.⁶¹

2003

Watson & Henry Associates provided recommended strategies for improving the collections environment in the Octagonal Gallery, Iron Gate Gallery, and the Entrance Gallery of the Bayly Building.⁶²

Efforts to protect the galleries were taken. A modern vestibule, designed by Train and Partners, was built at the main entrance to shield interior spaces from dust and debris.⁶³ A new humidification system was installed and was keeping levels within an acceptable range (40% to 60%).⁶⁴

2007

A maintenance inspection was conducted and determined the overall shell of the building to be in good condition. Issues addressed in previous reports and building assessment continued to be areas of concern. Exposed pipes in the ceiling of the storage room presented the threat of leaks and prevented certain exhibitors from allowing their works to be displayed at the Bayly Building. It was suggested that a water sensor be installed along the exposed pipes to warn the staff in the case of a leak. Water penetrating the rear wall continued to be a problem, despite installing a storm drain, sealing the wall, re-roofing and installing new parapet wall caps. The first-floor

⁵⁸ Facilities Management Resource Center, 63310 Feasibility Study 04 29 2000.

⁵⁹ Facilities Management Resource Center, 76440 Repair Replace Copper Roof 08 15 1999.

⁶⁰ Facilities Management Resource Center, SA-3, Carr's Hill Area Site Analysis-Context (69139), 69137 Master Plan Area Site Analysis 05 2 2001.

⁶¹ Facilities Management Resource Center, 79864 Interior Environmental Improvement Feasibility Report 03 31 2003.

⁶² Facilities Management Resource Center, 79864 Interior Environmental Improvement Feasibility Report 03 31 2003.

⁶³ Facilities Management Resource Center, 84961 Entry Vestibule 08 20 2004.

⁶⁴ Facilities Management Resource Center, 101115 Maintenance Survey 2007 09 01.

bathrooms have not been updated but are functioning. The patio areas was found to be in fair condition, but bluestone treads and brick risers at the entry patio and stairs from Rugby Road and a the north side of the building were in need of re-pointing and resealing. Poor exterior lighting was listed as a security concern.⁶⁵

2008

A Scoping Study was prepared by ARCH ET AL to address deficiencies that affect the museum's ability to manage, conserve, display art and to administer its programs. Recommendations were based on the planned relocation of the museum to a new facility in five to seven years. Most of the suggested treatments represent the current configuration and look of the museum. Floating ceiling structures were to be installed in the Exhibition Lobby, Upper Stair Hall, Gallery F, and Gallery B to allow space for new air handling units/air distribution and a security desk with a small adjacent bookstore area located by the building entrance. The windows in Gallery A were advised to be closed over for additional wall space and UV light management. Glass-front display shelves were to be installed on all four walls of Gallery F. The basement was proposed to be new office space and a curatorial library. A new mechanical system and lighting fixtures were also suggested as a means to remove glass doors between gallery spaces and show art collections in a compelling way.⁶⁶

2010

A landscape survey records vegetation of the East Terraces.⁶⁷ Four 22-inch to 26-inch ash trees are located in the verge between Rugby Road and sidewalk. West of the sidewalk, a remnant boxwood hedge grows behind the corner of the brick wall at the northeast end of the site. Trees on the slope up to the lower terrace from the sidewalk, from north to south, include a 16-inch ginkgo, two 24-inch ginkgos between the double entry steps, and a 36-inch willow oak. The ground-plane areas near the northern ginkgo and the southern willow oak are identified as "bed" while the terrace between the dual flights of steps is identified as "lawn". Along the brick wall separating the upper and lower terraces, masses labeled "yew" ,but that may have been common juniper, remain at the north and south walls from the original planting. A linear mass of boxwood is shown along the wall between the double flights of steps. In the corner beds of the upper terrace, two or three crepe myrtles punctuate the corners of the beds that are filled with massed boxwood. The beds at the base of the portico columns and the two planting islands near the ends of the Bayly frontage contain massed boxwood.

An extensive renovation of the Bayly Building was completed following a design by ARCH ET AL. A majority of the recommended treatments in the 2008 Scoping Study were completed during this building renovation.⁶⁸

⁶⁵ Facilities Management Resource Center, 101115 Maintenance Survey 2007 09 01.

⁶⁶ Facilities Management Resource Center, 95465 Bayly Scoping Study 09 24 2008.

⁶⁷ Facilities Management Resource Center, 105605 Terrace Modifications Site Survey 2010 05 21.

⁶⁸ Facilities Management Resource Center, 106139 Improvements Project 2010 07 01.

2011

Landscape work at the East Terraces, as designed by AECOM, was carried out to draw attention to the museum building.⁶⁹ In particular, the redesign provided a rotating exhibition space for sculpture on the lower terrace. The former island planting areas of the upper terrace were paved with bluestone to accommodate large crowds that gather on Final Fridays for refreshments. The lawn of the lower terrace was removed and replaced with bluestone pavers, a stone bench, lighting, and a brick foundation wall to support the paved terrace. There was a narrow bed formed along the upper wall containing climbing hydrangea with Christmas ferns. The new paving was aligned to the brick pads between the dual sets of steps. In 2011, a large figural sculpture by Henry Moore was installed in the center of the newly paved lower terrace; however, the sculpture was replaced in 2013 by a Jean Arp sculpture.⁷⁰ As a deliberate component of the project, the paired ginkgo trees and former turf slope were removed and replaced with a mixture of deciduous and evergreen shrubs and ground covers, due to visual blockage of the Bayly building from the streetscape, the poor condition of the trees, and the unpleasant fruit drop on the lower terrace.⁷¹ *Plan L-2, 2012 Landscape Plan* shows the arrangement resulting from the 2011 landscape changes.

2012

The University of Virginia renamed its art museum "The Fralin Museum of Art" after Board of Visitors member and former rector W. Heywood Fralin and his wife, Cynthia, donated their collection of American art to the university.⁷²

Frederick Fisher & Partners was hired to develop a conceptual design for an addition on the west side of the Bayly Building.

⁶⁹ Office of the Architect, 75% Review Comments, Historic Structure Report Thomas H. Bayly Building at the University of Virginia, February 2013.

⁷⁰ The Henry Moore sculpture was replaced in 2013 by a Jean Arp sculpture.

⁷¹ AECOM, Layout and Materials Plan (111294 L 4), UVA Art Terrace Modifications Record Drawings, Facilities Management Resource Center, 111289 Bayly Museum Terrace Modifications 04 20 2011; Office of the Architect, 75% Review Comments, Historic Structure Report Thomas H. Bayly Building at the University of Virginia, February 2013.

⁷² Strong, Ted. "Couple to donate 40 artworks to UVa museum which will take their name." *Daily Progress* 21 May 2012: Web. 23 May 2013.

1.2 PHYSICAL DESCRIPTION AND CONDITIONS ASSESSMENT

1.2.1 SITE

The Bayly study site is divided into two landscape character areas: East Terraces and South Garden [Figure 1.2.1-1]. These areas exhibit differences in location, features, and character that establish a meaningful distinction between the two. The request in the scope of the HSR for a focus on the east and south sides results from the more highly altered landscapes of the west and north sides. Furthermore, an addition to the building is proposed for the west side. Most landscape features that contribute to the historic character of the Thomas H. Bayly Building are present on the east and south sides; however, important crepe myrtles on the north side are part of the visual context of the East Terraces.

The landscape of today is described in this illustrated narrative and Plan L-2, 2012 *Landscape Plan*. The narrative is organized by the key topics of accessibility, circulation, and other site comments. Detailed descriptions of other character-defining features of the Bayly landscape are included in the following chapter. Plan L-2 includes a list of existing vegetation, which is shown with a symbol key and full names in the Appendix: Vegetation Codes. Conditional assessment of existing vegetation and hardscape elements derives from fieldwork conducted by Heritage Landscapes between June and November 2012.

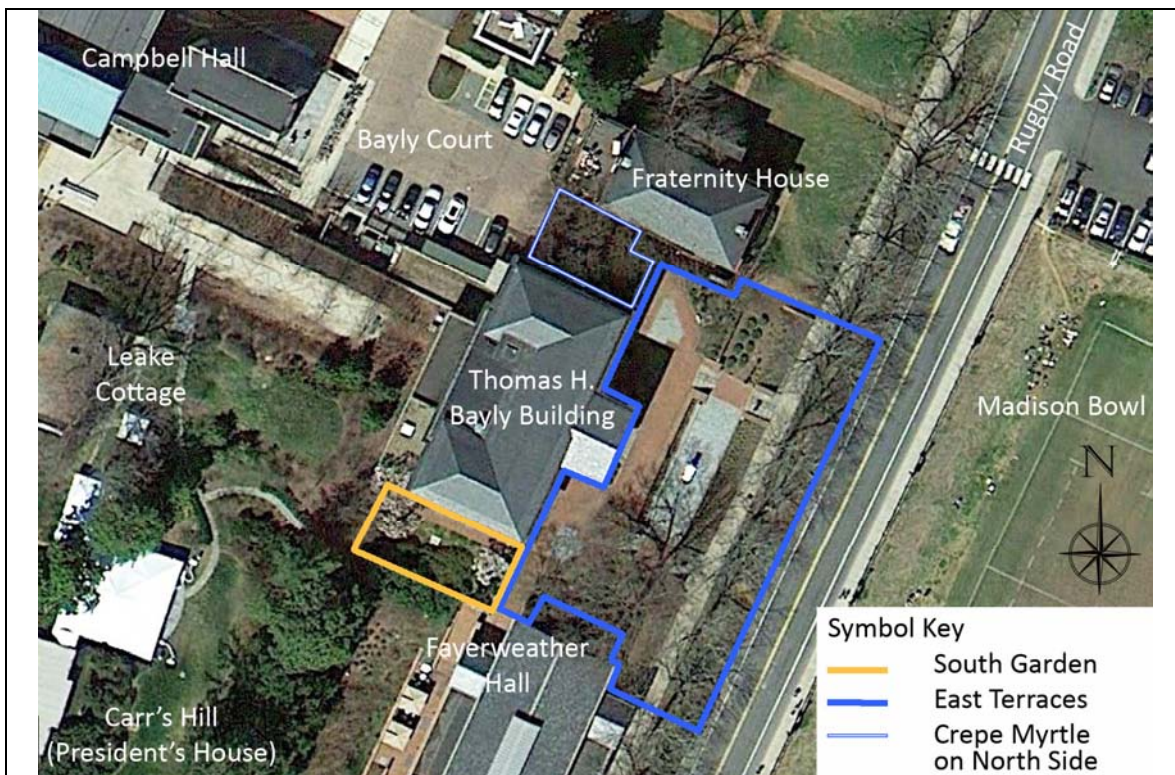


Figure 1.2.1-1 Site plan identifying South Garden and East Terraces, the two landscape character areas within the study area of The Thomas H. Bayly Building Historic Structure Report. Heritage Landscapes.

Accessibility

There is acceptable ease of access to and correspondingly good visual clearance for the grounds of the Bayly Building; however, universal accessibility is limited and variable within the site. This situation stems from the steeply sloping site of the Bayly Building, which is set above the street and sidewalk elevations and in close proximity to adjacent buildings and landscapes and the overall form of Carr's Hill. In the South Garden, a door on an extension of the South facade provides access to a brick paved surface. Access is open along the walkway, but steps to the east and west confine mobility within this garden space. In the East Terraces, steps at the Portico impede access to the front entryway of the building. Thus, the main entrance does not conform to universal accessibility standards. At grade, ADA access is provided on the parking level on the west side of the building. Once on the upper terrace, there is open access across the paved area; however, transitions between the upper terrace, lower terrace, and sidewalk are each intersected by steps that provide easier access up the steep slope to Rugby Road. Steps also provide transitions for the grades between the East Terraces and spaces to the north and south. The brick walk on the north side of the building requires eight steps to reach the upper terrace. Unlike other handrails at the steps on this site, the handrail at these north steps does not extend past the steps, although the potential for conforming modification exists. To the south, steps provide transitions between the levels of the East Terrace, the South Garden, and the doors of Fayerweather Hall. Within each contiguous horizontal surface area of the South Garden walkway, upper terrace, and lower terrace, the paving surfaces comply with accessibility standards for gradient and surface. Detailed code review has been done for accessibility according to the International Existing Building Code (IEBC 2009); for repair, alteration, addition, and change of occupancy for existing buildings; and for the ADA and ABBAG access laws, which are addressed in 2.2.2 Code Review, Part 2.0 Recommendations for Treatment [Figures 1.2.1-2 through 1.2.1-6].



Figure 1.2.1-2 Slopes and steps provide transition between grades in terraced levels between Rugby Road and the entrance of the Bayly Building. Photograph by Heritage Landscapes, November 2012.



Figure 1.2.1-3: The west steps provide access to the South Garden, to the door seen at the lower left, and into the front upper plaza of the Bayly Building. Photograph by Heritage Landscapes, June 2012.



Figure 1.2.1-4: Steps to main entry and brick paving at upper terrace with flush stone infill over former planting bed. Photograph by Heritage Landscapes, June 2012.



Figure 1.2.1-5: Lower terrace in context with paving, steps, vegetation, stone bench, and sculpture above the elevation of the Rugby Road sidewalk. Photograph by Heritage Landscapes, June 2012.



Figure 1.2.1-6: Brick steps and handrail between the East Terraces and the north side of the Bayly Building flanked by crepe myrtle trees. Photograph by Heritage Landscapes, June 2012.

Circulation

Site circulation can be characterized as a system of level terraces with adjoining steps that provide transitions between the various horizontal planes on the east and south sides of the building. Plan L-2 illustrates the dominant rectilinear pattern of the circulation system and the frequency of intervening steps. Steps and narrow walkways permit only pedestrian access. The primary approaches to the site occur from the east at Rugby Road to the lower and upper East Terraces. Desire-line, compacted earth paths extend down the groundcover—planted slope between the sidewalk and Rugby Road near both the north and south steps to the Bayly site. Access to the site from the north—south sidewalk along Rugby Road confronts the natural and constructed topography of Carr’s Hill. Sets of paired steps to the north and south provide transitions between the sidewalk and the lower and upper East Terraces.

Secondary access originates from the west along the north and south sides of the building. A walkway from the “Bayly Court”, a parking area between the Bayly Building and the Campbell Hall School of Architecture, passes along the north side of the building and connects to the East Terraces. A flight of steps runs from the lower level of the brick walk along the north facade to the upper terrace on the east side. To the southwest, a winding pathway of stone pavers connects Leake Cottage and Carr’s Hill, the President’s House, to the flight of steps at the west end of the South Garden.

Throughout the site, paved surfaces are intact and generally level, with few examples of irregular settling, spalling, or degradation of surfaces. Minor separation of dry-laid

bricks occurs at the top of the steps at the west end of the South Garden. These paving bricks are bounded by a continuous mortared brick frame and side walls. The upper-terrace corner planting beds include areas of decorative brick paving with curved copings. These platforms for sculptural elements portray some damage. Overall, the bed height has risen, with the coping edge partially buried by excessive fill and mulch. Individual bricks have separated from mortared joints and lie nearby. In these beds, the mounded soil and mulch covers specially formed curved bricks that match those on the building and appear to be original. The bed elevation drainage pattern promotes migration of soil and mulch onto the terrace paving, causing deposits that inhibit walking and degrade appearance. With this exception, the overall condition of paved surfaces is good.

A more variable condition of masonry steps is noted below in Site Comments, and the condition of brick masonry walls is documented in 1.2.3.1 Architectural Detailed Descriptions: Brick Masonry and 1.2.4.1 Structural Assessment: Site Walls [Figure 1.2.1-7].



Figure 1.2.1-7: Missing brick coping and mulch flow at the brick pads with architectural fragments on the upper terrace. Photograph by Heritage Landscapes, June 2012.

Site Comments

Additional site comments address steps at the Bayly site relating to access and circulation. Steps are constructed with bluestone flagstones or brick or bluestone pavers. The general condition is good, with the exception of the west steps at the South Garden. Generally, the steps of the newly relaid East Terraces are intact and in good condition. Steps that descend from the East Terraces to either the northern walkway or the South Garden are in similarly good condition. The South Garden brick steps exhibit variable condition with minor but widespread evidence of cracked mortar joints, uneven settling, growth of fungus and lichen, and visible water infiltration. Evidence of pointing repair is apparent in selected locations along these steps. The new mortar is bright and fails to visually blend. It may be Portland cement, at a higher compressive strength than the brick itself, and if so will cause degradation of the brick, which will fail earlier than the mortar. Records of recent repair of these west steps of the South Garden should be consulted to determine the nature of the mortar. Future repairs should be directed to blend visually with the mortar at a lower PSI than the brick as it should fail first and be repaired cyclically. Water infiltration from the upper elevations of Carr's Hill also affects the adjacent retaining wall [Figure 1.2.1-8].



Figure 1.2.1-8: Water infiltration is evident as well as a partial bright mortar repointing at the brick steps at the west end of the South Garden. Photograph by Heritage Landscapes, June 2012.

1.2.2 ARCHITECTURAL GENERAL DESCRIPTIONS

Exterior

With its primary facade fronting Rugby Road, the Bayly Building is an example of Neoclassical architecture, simplified in form and detail and incorporating elements borrowed from the Classical Revival, which remained popular up until 1940.

Neoclassical architecture is a form of Neo-Palladianism developed and promulgated by the founder of the University of Virginia and exhibited by numerous edifices preserved on the campus. A central core declared by a pedimented Portico with symmetrical wings executed in a classical order is typical of the style. Red brick, a material readily available in Virginia, was chosen for the primary masonry. White trim work and embellishments characterize the style. The main floor is elevated, and octagonal forms are used in plan and for decorative treatment.

Classical Revival elements incorporated into the Bayly's design but atypical of Jeffersonian buildings include pilastered bays, Palladian arches, shaped brickwork projecting at window openings, and blind windows.

The Bayly Building presents a rigorous symmetry, only modified by variations in grade and late additions. The main block is rectangular in plan, measuring 104 feet long by 50 feet deep. A 57-foot-long rear stair-hall enclosure projects 2 feet from the West elevation. An eastward-projecting Portico is balanced by a low central western wing, measuring 16 feet deep by 39 feet long and projecting into a hill at the rear of the building [*Figures 1.2.2-1 and 1.2.2-2*].

HISTORIC STRUCTURE REPORT
THOMAS H. BAYLY BUILDING at the UNIVERSITY OF VIRGINIA

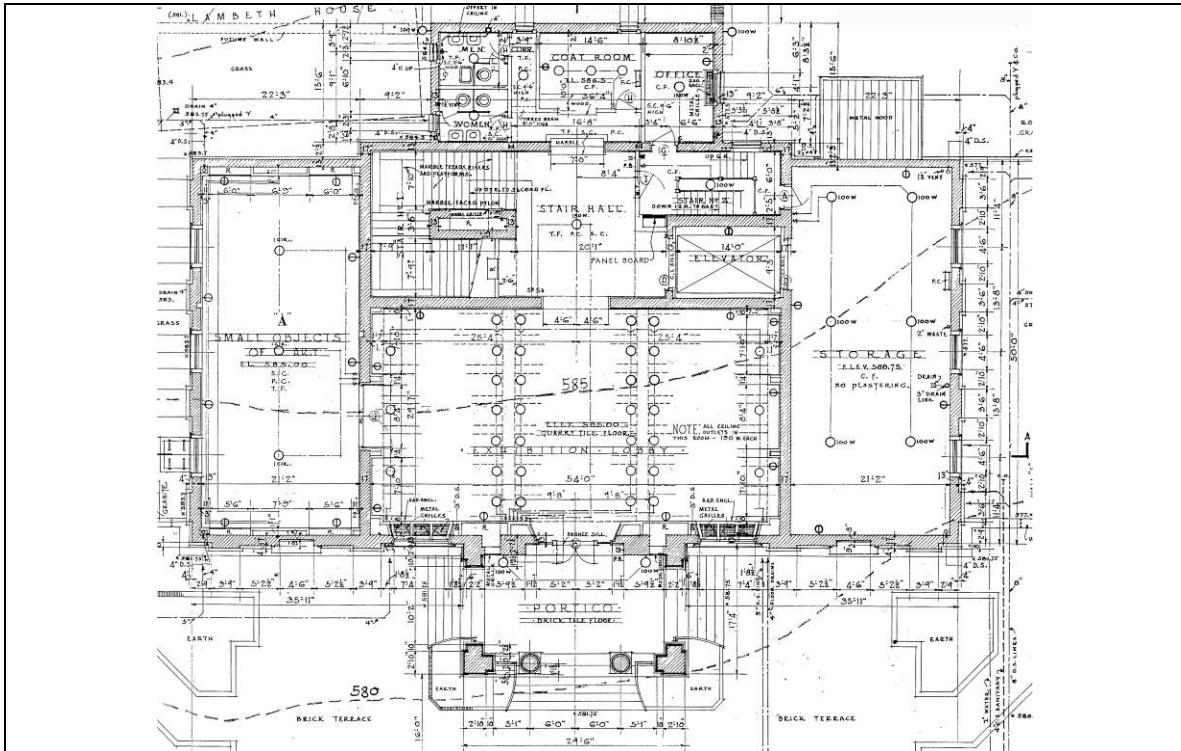


Figure 1.2.2-1: First-floor plan—partial construction drawing by Edmund S. Campbell and R. E. Lee Taylor Architects, September 1933.



Figure 1.2.2-2: East Elevation—partial construction drawing by Edmund S. Campbell and R. E. Lee Taylor Architects, September 1933.

A brick water table rises above a granite-capped brick plinth to support a five-bay-wide by three-bay-deep story-and-a-half brick *piano nobile*. Each windowed bay of the front and side elevations is framed by brick pilasters of the Tuscan order. A marble band course, broken by the pilasters, marks the upper-floor level. The upper portion of each bay is characterized by plain brick fields, some of which are decorated with octagonal, marble-faced medallions bordered with molded brickwork. A continuous entablature composed of a wood architrave, stucco frieze, and wood cornice is surmounted by a brick attic story. The hipped slate roof originally contained a continuous hipped skylight over its greater portion, but it is now monolithic, except for a copper roof over the Stair Hall at the rear elevation.

A projecting central Portico, executed in Palladio's Motive, marks the main entrance and is accessed by bluestone-paved stairs at three sides. Smooth, stuccoed brick corner piers support the Portico's major entablature, continuous with the main building, and a stucco pediment. Continuing onto the Portico, the building's broken band course becomes a minor broken entablature supported by single-story-high stuccoed Tuscan pilasters and columns framing full-height arched openings at the Portico's three sides. Marble archivolts spring from their entablatures, anchored by marble keystones at their apex. Brick spandrels are decorated with circular stucco medallions on the Portico front. A groin vault of stucco forms the Portico ceiling, suspended above a floor paved with hexagonal red brick.

At the main entrance, a pedimented, cast-iron doorway is set within a glazed-steel frame, which in turn is set within a marble-clad archway echoing the Portico openings. The archway is inscribed as follows:

THE
THOMAS H. BAYLY
MEMORIAL BUILDING

THE GIFT OF
EVELYN MAY BAYLY TIFFANY

INGENUAS DIDICISSE
FIDELITER ARTES
EMOLLIT MORES
NEC SINIT ESSE FEROS

At the rear, West facade, the architect relaxed the scheme in favor of plain brick walls rising two-and-a-half-stories from grade to entablature. These are executed in the same Flemish bond as is used on the primary facades. The architrave and frieze are discontinued where the central stair-hall enclosure projects; only the wood cornice remains continuous. A smaller, two-story central projection provides for a terrace at the upper-floor level and is cut for one story into a hill at its west and south sides. Three arched French doors open onto the terrace from the upper Stair Hall. A metal-clad canopy protects a pair of rear doors leading to the basement level at the north end of the West elevation.

Two later additions, though unobtrusive, encumber the symmetry of the composition. A single-story southwest addition was constructed in the early 1960s, filling in the inside corner between the main block and the west block. A single-story Annex was constructed by 1950, backing up against the north side of the terrace wing and an original east-west brick retaining wall, which runs westward for approximately 80 feet.

Interior

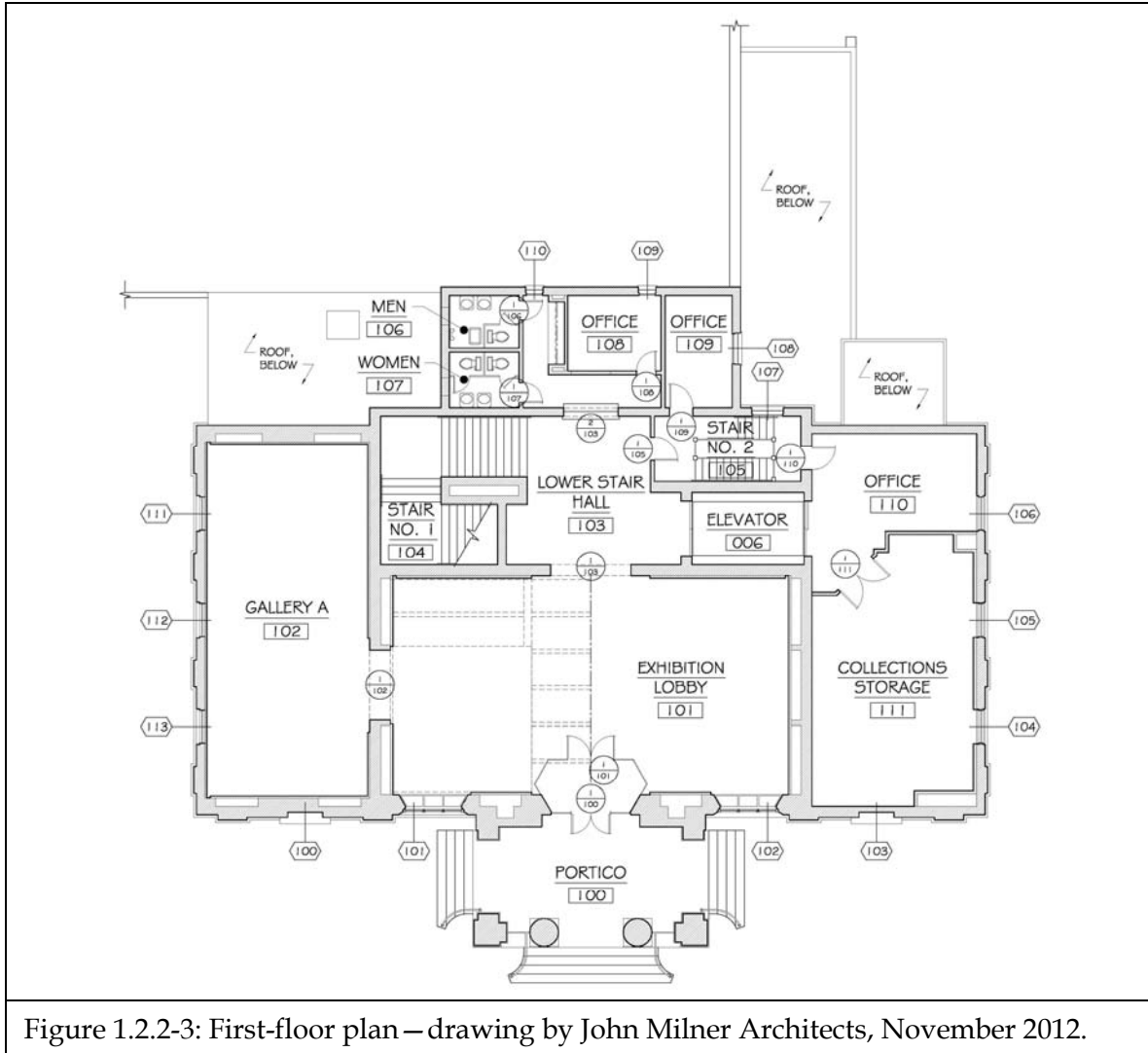


Figure 1.2.2-3: First-floor plan—drawing by John Milner Architects, November 2012.

The floor plan of the Bayly Building is laid out with its major exhibition and museum storage spaces forming a broad U, wrapping around the central rear-stair halls. On entering the building through a frameless glass vestibule, added in 2004, the visitor encounters a large exhibition lobby. Colorful, polished quarry-tile floors, illuminated by daylight projecting through the pedimented entrance door and two east-facing windows, and articulated, plain plaster ceiling beams provide visual relief to the plain plaster walls reserved for artwork. At the south side of the lobby, a broad, paneled archway with an elliptical head leads into an elongated south gallery (which due to its pine paneling became informally know as the Pine Gallery), its flat plaster ceiling eased

with a wood cornice. This space exceeds a two-square plan proportion by several feet. Its south-facing windows have been covered over in favor of artificial lighting. Directly ahead of the main entrance, through a wide, arched opening, the central Stair Hall provides for all vertical access within the building, including primary and secondary stairways and an elevator. Elliptically arched openings within the Stair Hall give way to the main stair and elevator and provide for a niche. This prominent opening, opposite to and on axis with the entrance, gives access to a raised floor level containing services, including public toilet rooms, within the single-story west block.

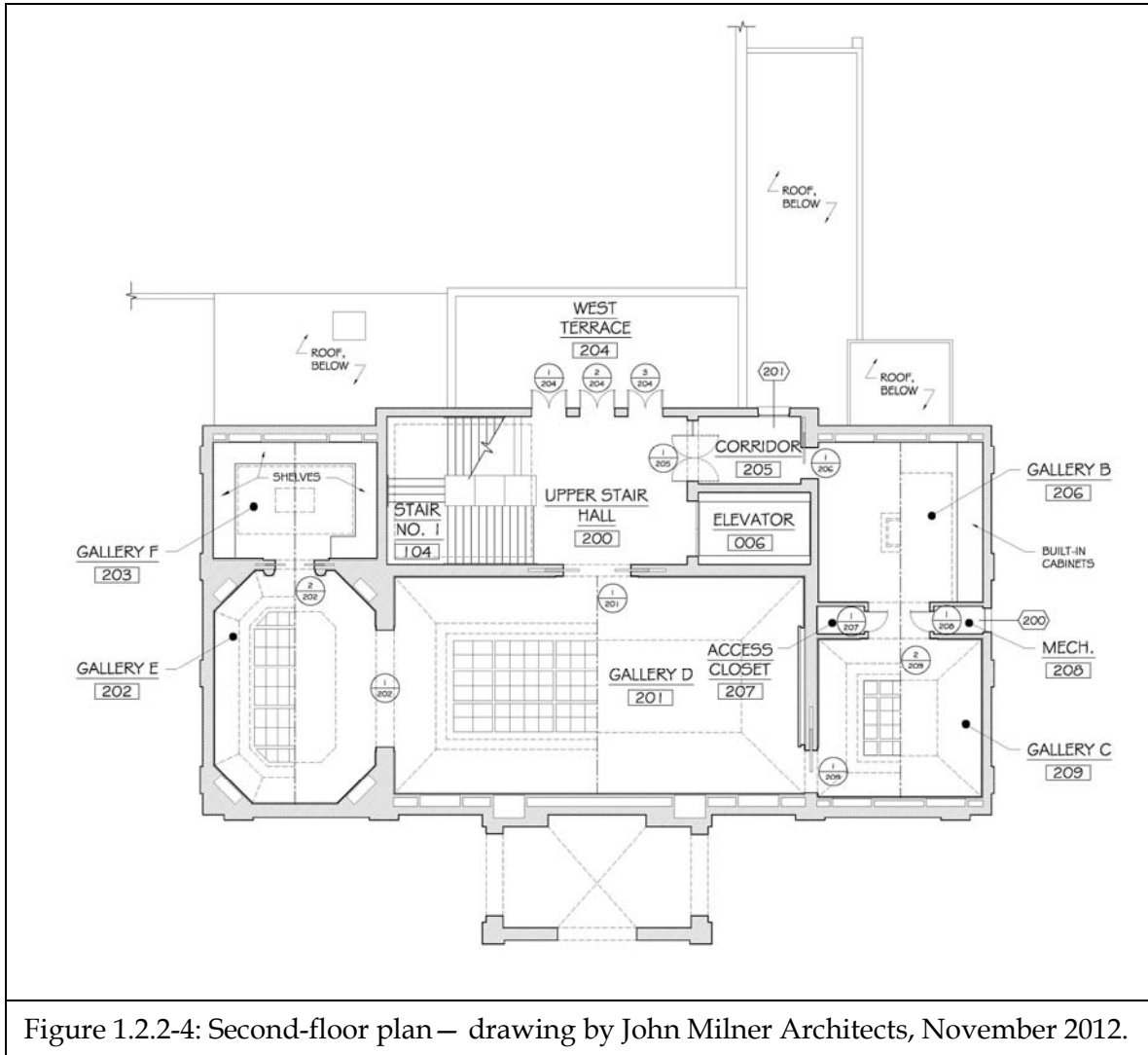


Figure 1.2.2-4: Second-floor plan — drawing by John Milner Architects, November 2012.

The gray marble-clad main stairway wraps around a stepped, marble-paneled wall capped with richly colored, variegated marble as it rises to the upper level. The upper Stair Hall is illuminated by a series of three arched multi-lite steel French doorways opening onto a west-facing terrace. The north side of the upper Stair Hall opens through frameless glass doors into a short, naturally lit corridor, essentially an anteroom to the northwest gallery (Gallery B). A rectangular cased opening containing wood-paneled pocket doors opens from the upper Stair Hall into an expansive East exhibit room

(Gallery D). Here, and in the two adjoining second-level galleries, a suspended plaster cove springs from a continuous wood picture-rail molding to light troughs contained within a molded plaster cornice framing expansive steel-framed skylights. The original effect of the varied but diffused daylight reflected off the highly polished, red tile floors could only have enhanced the museum experience. All original skylights in the five upper exhibit rooms have been covered over from above, subduing the gallery spaces with artificial light.

The south end of the Gallery D leads through a 15-foot-wide floor-to-ceiling wood-paneled opening into the upper-level south exhibit wing. This area is divided into an elongated octagonal southeast gallery (Gallery E) and a smaller rectangular southwest gallery (Gallery F). An opening containing wrought-iron pocket doors framed within an ornate antique Italian Baroque wood door surround separates the two spaces. Gallery F walls have been fitted with late floor-to-ceiling, frameless glass casework. The ceiling treatment in this room, originally similar to the other upper galleries, has been covered or replaced with a flat suspended ceiling inset with a much smaller, artificially lit single-pane skylight.

Returning to Gallery D, a 5½-foot-wide cased doorway with pocketed, wood-paneled doors leads from the northeast corner into the North exhibit wing. This area is composed of two galleries, square in plan, divided by an 8½-foot-wide by 5-foot-deep elliptically arched opening. Service closets and attic access are enclosed within the archway's plaster and wood-paneled side walls. Floor, wall, and ceiling treatments of the northeast gallery (Gallery C) match that of the Gallery D. The northwest gallery (Gallery B) has undergone similar ceiling modifications to that of the Gallery F. A wide light shelf has been added at three-quarter wall height and has been infilled below with full-height storage closets continuous along the north wall.

Nonpublic areas of the main building are located within the first and basement levels of the North wing, accessed by a fire-separated secondary stairway. Its first floor, set 2¼ feet above the main-floor level is used for Collections Storage and a partitioned office. The walk-out basement level contains an office, mechanical and elevator machine rooms, and access to utility trenches running below the perimeter of the main building. A northwest foyer provides entrance from the rear parking area and contains a toilet room for staff.

The single-story addition at the southwest corner of the building provides for an office and a mechanical room. This addition is only accessible from the exterior. The single-story, basement-level Annex addition, extending westward from the rear of the building, contains a maintenance office, break room and kitchen, and electrical rooms. This addition is also only accessible from the exterior. A screened area appended to the west end of the Annex houses transformers and a dumpster.

1.2.3 ARCHITECTURAL DETAILED DESCRIPTIONS

Exterior Vertical Envelope

Woodwork

In general, the exterior woodwork associated with window and door surrounds, the entablature, pediment, and cornice, is in good repair, well caulked and painted, with no visible signs of deterioration. Open joints between the window architraves and their brick backing, present throughout, should be sealed [Figure 1.2.3-1].

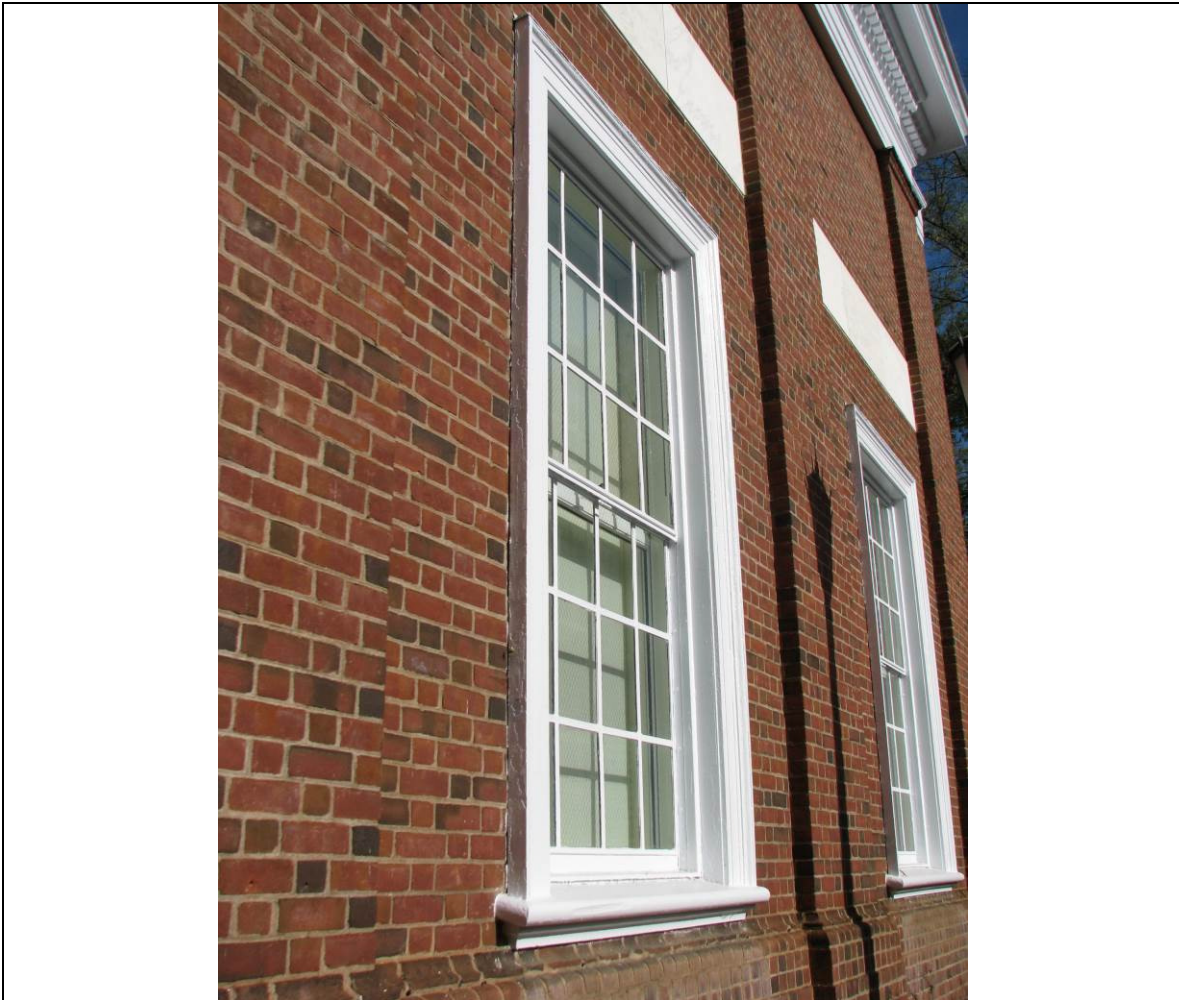


Figure 1.2.3-1: Open vertical joint, typical at windows. Photograph by John Milner Architects, November 2012.

Brick Masonry

The facades are primarily composed of Flemish-bond brick fields framed within brick pilasters. Grapevine-tooled mortar joints vary between $\frac{3}{8}$ -inch and $\frac{1}{2}$ -inch wide. Areas of light-colored staining, attributable to slough-off of weathered paint, are generally visible below the windows and at the base of the Portico. Molded brick pilaster capitals show degraded pointing and rough but intact head flashing. Atmospheric soiling is most prevalent at and below the water table and on the terraced west addition. Open

brick joints were noted on the interior side of the West Terrace parapet, attributable to water infiltrating the joints in the stone copings. The coping joints have been sloppily sealed with an inappropriately bright-colored sealant. Old repairs are visible on the exterior side of this parapet. Iron jacking of steel lintels has caused masonry cracks and spalling of jack arches over several basement-level windows and doors at the West and North facades. Abandoned open penetrations are visible at the northeast corner of the building. Areas of distressed brickwork were observed at stair cheek walls located directly south of the East facade [Figures 1.2.3-2 through 1.2.3-9].



Figure 1.2.3-2: Open joints at West Terrace parapet, below inappropriately sealed coping joint. Photograph by John Milner Architects, November 2012.



Figure 1.2.3-3: Stained brickwork, typical below windows. Photograph by John Milner Architects, November 2012.



Figure 1.2.3-4: Degraded pointing and rough flashing, typical at pilaster heads. Photograph by John Milner Architects, November 2012.



Figure 1.2.3-5: Distressed brickwork at window head, common at West and North facade basement openings. Photograph by John Milner Architects, November 2012.



Figure 1.2.3-6: Open joint below parapet coping at West Terrace. Photograph by John Milner Architects, November 2012.



Figure 1.2.3-7: Running crack at Annex door head. Photograph by John Milner Architects, November 2012.



Figure 1.2.3-8: Abandoned open penetrations at northeast corner. Photograph by John Milner Architects, November 2012.



Figure 1.2.3-9: Distressed brickwork at south landscape wall. Photograph by John Milner Architects, November 2012.

Granite Masonry

A plinth course of Mt. Airy Granite ashlars runs the length of the East (main) facade, continuing outward as a coping course on low, brick landscape walls. This stonework exhibits heavy atmospheric soiling. The narrow vertical and horizontal joints, generally $\frac{3}{16}$ -inch thick, have been smeared with an aged, hardened tenacious sealant [Figures 1.2.3-10 and 1.2.3-11].



Figure 1.2.3-10: Soiled granite course. Photograph by John Milner Architects, November 2012.



Figure 1.2.3-11: Failed sealant, typical at granite course. Photograph by John Milner Architects, November 2012.

Marble Masonry

Alabama cream white marble elements, present on all elevations, include a belt course of paneling at the second-floor level and round and octagonal panels set within the upper fields of brick. Marble brackets support projecting marble sills below two blind windows on the East facade. These openings were filled with marble panels as part of the original design. The panels, sills, and brackets were apparently cleaned with an aggressive chemical that degraded their surface polish. Soiling remains at the undersides of these sills [Figure 1.2.3-12].



Figure 1.2.3-12: Aggressively and incompletely cleaned marble window sill and bracket, typical at East facade. Photograph by John Milner Architects, November 2012.

Marble column bases, capitals, impostes, archivolt, and keystones embellish the Portico. Inscribed Botticino marble paneling surrounds the main entrance door. Soiling is generally present within the Portico [Figure 1.2.3-13].



Figure 1.2.3-13: Soiling of Portico marble elements, typical. Photograph by John Milner Architects, November 2012.

Stucco Work

Stuccoed brick columns and pilasters supporting the Portico appear to be in good repair. A stuccoed groin-vaulted ceiling, suspended within the Portico, exhibits several hairline cracks at its perimeter [*Figure 1.2.3-14*].



Figure 1.2.3-14: Hairline cracks at perimeter of Portico ceiling. Photograph by John Milner Architects, November 2012.

Pavement

A bluestone border and steps surround a field of hexagonal brick pavers on the Portico floor. The bluestone joints are well sealed. Iron stains are visible at anchor points of the wrought-iron railings. The wrought-iron railings are well set with no signs of deterioration. The brick paving is in excellent condition [Figure 1.2.3-15].



Figure 1.2.3-15: Iron stains at handrail anchor points. Photograph by John Milner Architects, November 2012.

Windows

A few cracked panes were identified for replacement within the well-maintained, single-paned steel window sashes [Figure 1.2.3-16].



Figure 1.2.3-16: Cracked window panes. Photograph by John Milner Architects, November 2012.

Exterior Doors

The main entrance door is a hollow-metal, glazed unit mounted within a cast-iron surround that in turn is set within a single-paned, glazed, pressed-steel frame. A frameless glass vestibule has been added at its interior side. The entrance assembly is in good condition. Three single-paned, glazed-steel French-door units opening onto the second-floor West Terrace show surface rust on the interior side of their bottom rails that has been caused by condensation. These doors are reported by museum staff to be difficult to operate. Steel doors at the west-side exterior basement entrance and at the Annex show similar issues [Figures 1.2.3-17 and 1.2.3-18].



Figure 1.2.3-17: Rusty bottom rail, typical at West Terrace doors. Photograph by John Milner Architects, November 2012.



Figure 1.2.3-18: Rusty bottom rail at Annex door. Photograph by John Milner Architects, November 2012.

Miscellaneous Exterior Elements

Cast-metal grilles located to the left and right of the East entrance are cracked at some of their fastening points and are fastened with inappropriate zinc-coated Phillips-head screws [Figure 1.2.3-19].

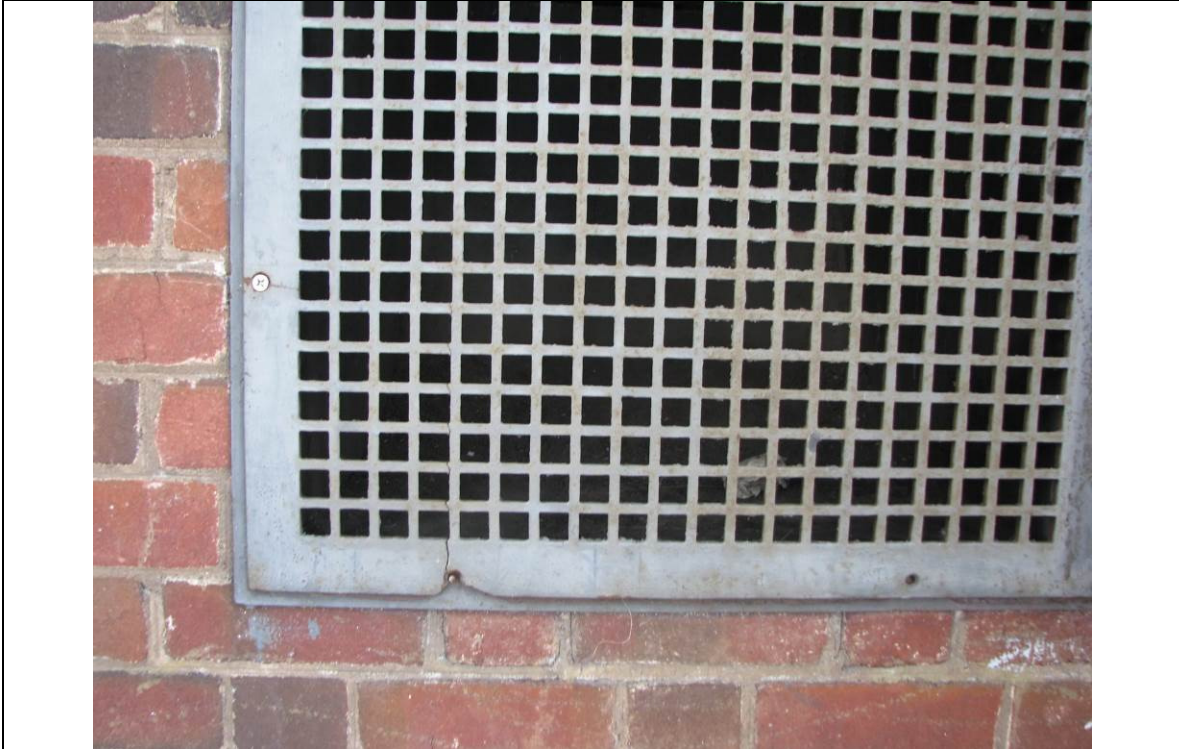


Figure 1.2.3-19: Damaged grille with inappropriate fasteners at East facade. Photograph by John Milner Architects, November 2012.

Exterior Horizontal Envelope

Main Roof

The main hipped roof and Portico roof are of slate construction with EPDM-lined gutters built into the upper cornice. The gray slates measure $\frac{1}{4}$ inch thick by 10 inches wide by $12\frac{1}{2}$ inches long, with a 7-inch exposure. A circa 1999 field-formed, standing-seam copper roof completes the West elevation, terminating with an EPDM-lined gutter built into the entablature cornice and running continuously around the building. The metal roofs and gutters appear to be in good condition. A sheet-metal ventilator shows a damaged rotating mechanism. The main slate roof exhibits undulations associated with its support structure that negatively affect its integrity and durability. It appears to be marginally serviceable. No leaks were visible or reported. The hips are of the mitered variety, and valleys are of the open type. The ridge is improperly installed, without a saddle, ridge strip, or metal cap, and is filled with failing sealant. Broken and displaced tiles were observed, especially at the hips. Multiple areas of replaced slate are visible [Figures 1.2.3-20 through 1.2.3-22].



Figure 1.2.3-20: Damaged ventilator. Undulating roof surface (typical) visible beyond. Photograph by John Milner Architects, November 2012.



Figure 1.2.3-21: Slates susceptible to breakage at roof undulations. Poorly matched patch in foreground. Photograph by John Milner Architects, November 2012.



Figure 1.2.3-22: Mitered hip joint and caulked open ridge. Photograph by John Milner Architects, November 2012.

West Terrace

The second-floor West Terrace is paved with masonry tiles laid directly over an EPDM membrane. Extensive biological growth is present within seams and at edges—an indication of ineffective drainage resulting in moisture retention. Both roof drains are missing their grates [Figures 1.2.3-23 and 1.2.3-24].



Figure 1.2.3-23: Unprotected terrace drain. Photograph by John Milner Architects, November 2012.



Figure 1.2.3-24: Biological growth at West Terrace pavement. Photograph by John Milner Architects, November 2012.

Southwest Addition Roof

A low-slope, ballasted, EPDM-membrane roof over the single-story southwest addition feels overly springy. Water stains are visible on the suspended ceiling below [Figure 1.2.3-25].



Figure 1.2.3-25: Water stains below southwest addition roof. Photograph by John Milner Architects, November 2012.

Annex Roof

The single-story west Annex is covered with a low-slope, ballasted EPDM roof. A terracotta-coped parapet borders its north and west sides, with a metal-capped parapet on its south side. The membrane is pulling away from its substrate along the south parapet; however, its attachment to the parapet remains tentatively secure. A hole is visible in the membrane. A few cracked copings show mortar repairs. Three terracotta units have been replaced with poor color matches [Figures 1.2.3-26 and 1.2.3-27].



Figure 1.2.3-26: Sprung membrane and inappropriate coping patch at roof of Annex. Photograph by John Milner Architects, November 2012.



Figure 1.2.3-27: Sealant and mortar repairs at Annex parapet copings. Photograph by John Milner Architects, November 2012.

West Canopy

A steel-framed, sheet-metal-clad canopy over the west basement door is roofed with flat-seam metal. A short portion of cladding is damaged at the fascia's lower edge. The underside of the canopy shows degraded paint. Its hung copper gutter is deformed on both sides [Figures 1.2.3-28 through 1.2.3-30].



Figure 1.2.3-28: Damaged metal fascia at West canopy. Photograph by John Milner Architects, November 2012.



Figure 1.2.3-29: Degraded paint at underside of West canopy. Photograph by John Milner Architects, November 2012.



Figure 1.2.3-30: Deformed gutter at West canopy. Photograph by John Milner Architects, November 2012.

Interior

Flooring

Flooring throughout the first- and second-level exhibit spaces consists of varied patterns of light and dark quarry tile, of square and hexagonal shapes. The quarry tile-wall base is concealed behind built-out walls within the first-floor exhibit rooms. The Stair Hall floors are characterized by fields of similar quarry tiles framed by Tennessee Tavnelle borders, a gray marble, and a Levanto wall base, a dark variegated marble. The corridor floor leading to the public restrooms is of hexagonal monotone quarry tile with a Tennessee Tavnelle marble wall base. Other floor finishes include ceramic tile in the public toilet rooms, slate tile in the southwest addition, and vinyl composition tile throughout the remainder of the nonpublic portions of the building, including the storage area, offices, basement, and the Annex. The flooring is in generally good condition. Areas of hairline cracking and minor disfigurement from hardware fasteners were noted in the marble borders within the Stair Hall. Corners of the Levanto marble wall base are broken out, at the bottom of the main stair and at a second-level doorway [Figures 1.2.3-31 through 1.2.3-33].

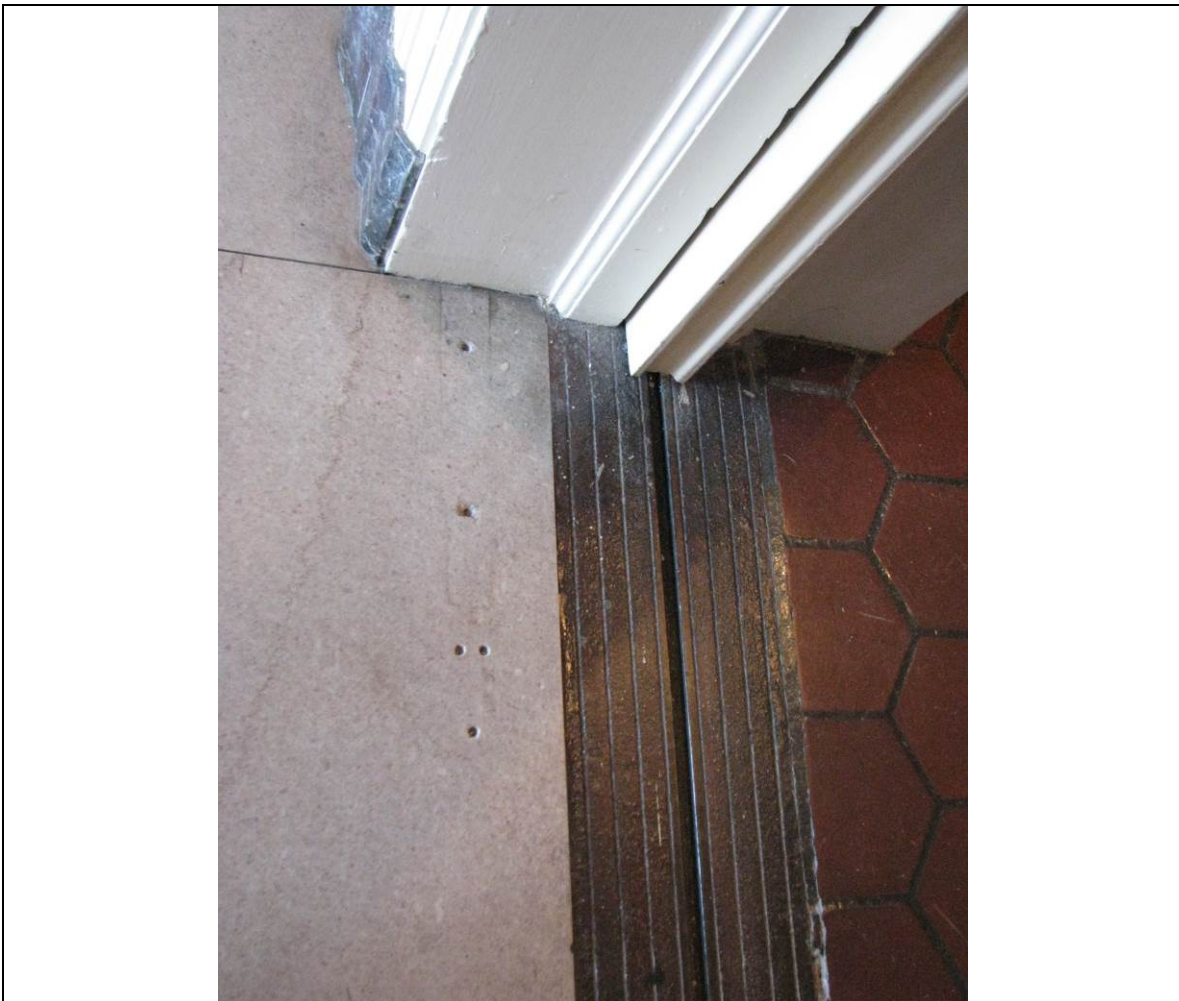


Figure 1.2.3-31: Hardware damage at Tennessee Tavnelle marble flooring. Photograph by John Milner Architects, November 2012.



Figure 1.2.3-32: Hairline cracks in Tennessee Tavarnelle marble border. Photograph by John Milner Architects, November 2012.



Figure 1.2.3-33: Broken Levanto marble wall base. Photograph by John Milner Architects, November 2012.

Main Stair

The main stairway is finished with Tennessee Tavarnelle marble treads, risers, and a landing set on a steel substair. The stairway wraps around a stepped, gray marble-paneled wall that becomes a guard wall at the upper level. This wall is finished with Levanto marble cap. Levanto stringer circumscribes the stairway, running continuously with the Stair Hall wall base. The center-wall capstones are chipped along the bottom edge in several places. Grout is missing from the majority of panel joints on the center wall. Slight movement was detected in one of the landing units [Figures 1.2.3-34 and 1.2.3-35].



Figure 1.2.3-34: Chipped Levanto capstone at stair wall. Photograph by John Milner Architects, November 2012.



Figure 1.2.3-35: Open grout joints in marble panels at stair. Photograph by John Milner Architects, November 2012.

Secondary Stair

A second stairway running from the Stair Hall to the basement level is constructed of gray marble treads set within a painted pressed-steel stair structure. Stained wood handrails and rectangular steel balusters are set between painted cast-iron newels. The handrail finish shows heavy wear. Metal components show marked and chipped paint [Figure 1.2.3-36].



Figure 1.2.3-36: Worn railings and newels at secondary staircase. Photograph by John Milner Architects, November 2012.

Interior Woodwork

Original exposed interior painted wood elements include baseboards, door surrounds, window sills, radiator enclosures, and wood mouldings at the spring line of the second-floor cove ceilings. Wood doors, wall cladding, and moldings are present in nonpublic areas. Late-addition painted-wood elements include built-in casework. An ornate antique Italian door surround embellishes the entrance into the second-floor southwest gallery. Painted wood elements are in good condition. Damage attributable to rubbing of door pulls was found at the southwest gallery door jambs [Figure 1.2.3-37].



Figure 1.2.3-37: Damaged jamb at doorway to second-floor southwest gallery. Photograph by John Milner Architects, November 2012.

Plaster Work

Within the public exhibition spaces, original plaster walls at the Exhibition Lobby and pine paneling at Gallery A, are concealed behind built-out gypsum board. The plastered ceilings in the Exhibition Lobby are partially obscured by dropped gypsum-board assemblies containing mechanical equipment. Otherwise, first-floor plaster ceilings and crown mouldings remain visible. The Stair Hall retains its plaster finishes, mouldings, and ceilings. Plaster coves and cornices remain exposed in the second-floor ceilings. Wall and ceiling finishes appear to be in excellent condition.

Interior Doors

Door openings into the second-floor galleries have wood-paneled pocket doors, except the one into the southwest gallery, which has been fitted with a wrought-iron pocket door. A frameless glass doorway separates the upper Stair Hall from a short corridor. The balance of interior doors include raised wood-paneled, stile-and-rail doors and hollow-metal, flush-panel doors. Except the pocket doors, most units show general wear and shoe markings but are still serviceable.

1.2.4 INFRASTRUCTURE

1.2.4.1 Structural Assessment

Background

The Thomas Bayly Building is located on Rugby Road in Charlottesville, Virginia, and currently serves as the University of Virginia Art Museum. The existing two-story building includes fully enclosed attic and basement spaces and is composed of load-bearing brick masonry walls on spread concrete foundations [Figure 1.2.4.1-1]. The floor and roof construction is steel framed with reinforced-concrete floor slabs spanning between these framing members at the first- and second-floor levels.



Figure 1.2.4.1-1: Thomas Bayly Building East (main) elevation. Photograph by Robert Silman Associates, November 2012.

Roof Framing

The upper roof is framed with steel roof trusses. These unique roof trusses appear to be principally composed of steel angles and of the Fink truss typology [Figure 1.2.4.1-2]. The trusses are often truncated and incorporate a sloping bottom chord to provide additional clearance between the truss and supported ceiling below [Figure 1.2.4.1-3]. These trusses span the width of the gallery space below and rest on steel-bearing plates anchored into the load-bearing masonry walls below with two $\frac{3}{4}$ -inch-diameter anchor bolts [Figure 1.2.4.1-4]. Typically, the truss components are joined at their panel points with $\frac{1}{4}$ -inch-thick gusset plates with riveted connections [Figure 1.2.4.1-3]. At the hips and valleys, steel beams bear on the exterior masonry walls [Figure 1.2.4.1-5]. At these locations, Robert Silman Associates (RSA) noted that the hollow brick was used with embedded

wood outriggers below to support the cantilevered eave.

To support the roofing system, steel purlins span between the trusses and bear on their panels' points. The purlins consist of American standard and wide-flange beam shapes. The original roof incorporated skylights that were let in between the trusses, supported by 4-inch channels. This glazing system has been removed as part of a previous construction effort and replaced in its entirety with Tectum (wood fibers set in a magnesium-based hydraulic cementitious mortar) roof panels spanning between new steel bulb-tees welded to the top of the original trusses and roofed with slate [Figure 1.2.4.1-6]. Although the skylights have been removed in their entirety, the original cinder-concrete roof slab at the base of the roof remains intact with the integral concrete encasement of the lowest purlin [Figure 1.2.4.1-7]. The existing steel-framed lay lights above the galleries are hung from the roof trusses with the use of ½-inch-diameter steel tie-rods. Although the lay lights remain in place, they have been covered with loose roof insulation.



Figure 1.2.4.1-2: Steel roof truss (modified Fink). *Note:* Tectum roof deck installed. Photograph by Robert Silman Associates, November 2012.



Figure 1.2.4.1-3: Typical riveted connections of roof truss. *Note:* Bottom chord panel members slope. Photograph by Robert Silman Associates, November 2012.



Figure 1.2.4.1-4: Bearing of roof truss on interior brick masonry wall. *Note:* Gusset plates and hung catwalk. Photograph by Robert Silman Associates, November 2012.



Figure 1.2.4.1-5: Bearing of steel hip rafter. *Note:* Use of hollow brick and wood outriggers to support eave. Photograph by Robert Silman Associates, November 2012.



Figure 1.2.4.1-6: Roof retrofit with Tectum roof panels. *Note:* Bulb-tee purlins welded to original truss and associated wide flange purlins. Photograph by Robert Silman Associates, November 2012.



Figure 1.2.4.1-7: Original perimeter cinder-concrete slab and concrete-encased steel beams remain. Photograph by Robert Silman Associates, November 2012.

The lower roofs over the Stair Hall, Portico, and original elevator are composed of concrete-encased steel beams over which a reinforced-concrete roof slab spans. Per the original documents, these one-way slabs were composed of 3½-inch-thick cinder concrete and reinforced with #3 bars set at 6 inches on center [Figure 1.2.4.1-8].



Figure 1.2.4.1-8: Reinforced cast-in-place concrete roof slab and supporting concrete-encased steel framing. *Note:* Presence of catwalk and insulation. Photograph by Robert Silman Associates, November 2012.

Overall, the roof framing is free of deterioration, and the original structural drawings appear to depict accurately the roof structural system. Per our review, it appears that the steel for the various truss elements was obtained from various manufacturers, including Pencoyd Iron Works (Pencoyd, PA) and Phoenix Iron Company (Phoenixville, PA). From our observations at the roof level, it appears that localized slate deterioration exists at the intersections of ridge lines and valleys [Figures 1.2.4.1-9 and 1.2.4.1-10].



Figure 1.2.4.1-9: Localized slate deterioration at apex of roof. Photograph by Robert Silman Associates, November 2012.



Figure 1.2.4.1-10: Localized slate deterioration at valley of roof. Photograph by Robert Silman Associates, November 2012.

Additionally, it appears that some relative displacement (unevenness) was observed in the slate roof at the areas of truss locations. This displacement appears to represent relative deflection between the roof truss and the Tectum panels and their supporting bulb-tees. Per our structural analysis of the roof system and the roof trusses, it appears that the Tectum panels and the bulb-tees added in the late 20th century have sufficient capacity (both strength and stiffness) to support the minimum roof live loads and snow loads and minimum deflection criteria as specified by the current code.

Per our analysis of the roof trusses, the results indicate a slight overstress in the truss members. Highest levels of stress were identified in the bottom chord. The combined bending and compression stresses in these members exceed the allowable working stress of 18,000 pounds per square inch (psi) for steel manufactured in 1933, principally due to the curvilinear (arched) profile of the bottom chord. This bottom-chord profile effectively creates a less-efficient truss geometry. For the applied gravity (dead + live) loads of the roof (15 pounds per square foot [psf] + 20 psf) and ceiling framing (10 psf), the analysis indicates the steel-truss members require a minimum yield strength of 34,000 psi. In 1933, minimum yield strength for A9 steel (buildings) set forth by American Society for Testing and Materials (ASTM) was 33,000 psi. This difference represents a 3% overstress and is within the limits of standard engineering practices.

In summary, the existing roofing displacement most likely is due to relative displacements between roof structural components and does not currently reflect a structural issue. However, if modifications to the roof or ceiling structure are anticipated as part of the upcoming Museum expansion project, it must be noted that the residual capacity of the structure is minimal and localized strengthening may be required for any new work.

Second-Floor Framing

The existing second-floor structure consists of a 4-inch, reinforced-concrete slab that spans between concrete-encased, wide-flange steel beams that are in turn supported by concrete-encased, wide-flange steel girders resting on the brick-masonry load-bearing walls below. Owing to the presence of architectural finishes, the existing second-floor framing could not be verified; however, because of the limited deterioration observed in the floor finishes and architectural ceiling above, it appears that the system is performing as originally designed. Though the concrete strength and yield strength of the installed concrete slabs and steel reinforcement, respectively, are unknown, historical texts of the period were researched for allowable values. Per our analysis of the steel framing and reinforced-concrete slabs, the existing structure has an available capacity of 100 psf, which is sufficient to serve as an art museum with an added allowance of 10 psf for mechanical systems. For this given live load and the estimated 50 psf dead load of the concrete slabs, the required yield strength of the steel framing is 25,000 psi, which is lower than the minimum specified yield strength of 33,000 psi.

The West Terrace currently exhibits localized deterioration along the parapet walls [Figure 1.2.4.1-11]. At the inside face of the parapets, the existing mortar joints below the stone copings have deteriorated and have resulted in open joints [Figure 1.2.4.1-12]. Additionally, the roof drainage at this location appears to exhibit minimal slope, and significant biological growth has formed as a result.



Figure 1.2.4.1-11: Parapet of West Terrace. *Note:* Biological growth, caulking of head joints, and loss of mortar at bed joints. Photograph by Robert Silman Associates, November 2012.



Figure 1.2.4.1-12: Parapet of West Terrace. *Note:* Biological growth, caulking of head joints, and loss of mortar at bed joints. Photograph by Robert Silman Associates, November 2012.

First-Floor Framing

Since the building contains a partial basement, the first-floor structure is a combination of a 6-inch reinforced-concrete slab on grade and a 4-inch reinforced-concrete floor slab spanning to a series of concrete-encased, wide-flange steel beams resting on concrete and brick masonry foundation walls. Owing to the presence of suspended ceilings, the existing structure was largely unexposed; however, localized ceiling panels were removed and ladders were provided to enable engineers' access to review the existing conditions. Per our localized probes, the existing framing observed appears to correlate to the original structural drawings [Figure 1.2.4.1-13]. Similar to the second-floor framing, limited deterioration was noted to floor finishes and architectural ceiling elements.

Per our analysis of the first-floor framing, the available live-load capacity is greater than 100 psf, which is suitable for assemblies and corridors/egress.



Figure 1.2.4.1-13: First-floor concrete-encased beam. Photograph by Robert Silman Associates, November 2012.

Where exposed, RSA noted two locations of existing cracks in the first-floor slab, including a hairline crack observed from the storage room to the east of the elevator shaft [Figure 1.2.4.1-14]. This crack spans continuously the length of the room (north to south). Since this crack appears in a north—south direction (parallel to the slab span) and the crack is not observed in the floor finish above, this small crack does not appear to be of structural concern.

Similarly, a small diagonal crack was observed in the first-floor slab above the northeast mechanical room at the southeast corner of the room [Figures 1.2.4.1-14 and 1.2.4.1-15]. This diagonal crack is approximately $\frac{1}{4}$ -inch wide and spans between the east and south bearing walls immediately above the access to perimeter trench. This crack appears to be a result of differential settlement between the exterior and interior bearing walls and does not appear to be a structural concern.



Figure 1.2.4.1-14: Crack in underside of first-floor slab and beam encasement in existing storage room adjacent to elevator. Photograph by Robert Silman Associates, November 2012.



Figure 1.2.4.1-15: Crack in underside of first-floor slab in northeast mechanical room above trench access hatch. Photograph by Robert Silman Associates, November 2012.

Exterior Conditions

Main Entrance Portico

The existing Portico above the main entrance is constructed of unreinforced brick-masonry pier and columns with stucco supported by concrete foundations [Figure 1.2.4.16]. The existing stucco Portico ceiling is supported by the concrete and steel roof framing with the use of hanger rods. RSA noted localized cracking in the ceiling at the apex of each arched opening and the bottom corners [Figures 1.2.4.1-17 and 1.2.4.1-18, respectively]. The cracking appears to correlate to localized differential movement and/or shrinkage.

These conditions do not appear to represent current life-safety concerns; however, it would be prudent to perform a closer inspection of these areas to ensure the stucco is soundly adhered.



Figure 1.2.4.1-16: Underside of stucco Portico along East elevation. Photograph by Robert Silman Associates, November 2012.



Figure 1.2.4.1-17: Localized cracking at top of hung stucco ceiling at east Portico. Photograph by Robert Silman Associates, November 2012.

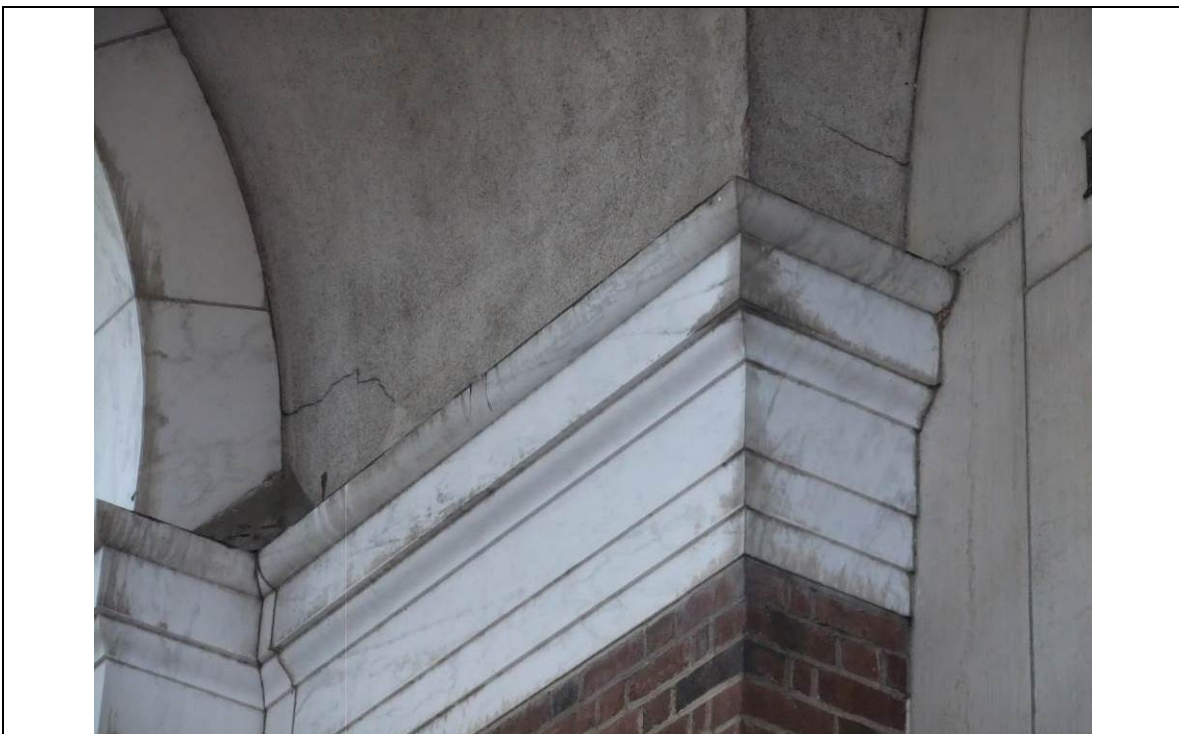


Figure 1.2.4.1-18: Localized cracking at base of hung stucco ceiling at east Portico. Photograph by Robert Silman Associates, November 2012.

Exterior Masonry Walls

Along the top of the masonry pilasters, several brick capitals were observed to exhibit localized brick displacement and open head joints [Figure 1.2.4.1-19]. This displacement is most likely due to moisture intrusion from the top of the brick pilaster and subsequent freeze-thaw cycles.

At approximately nine (9) locations, the existing masonry above and surrounding window openings exhibits localized deterioration ranging from spalling and cracked brick to diagonal cracking of mortar joints [Figures 1.2.4.1-20 through 1.2.4.1-22]. These conditions appear to be a result of corrosion of steel lintels and subsequent rust jacking, which exerts significant stress on the adjoining masonry. In one localized area, it appears that existing cracks were repointed, steel lintels removed, and infill brick masonry constructed [Figure 1.2.4.1-23].



Figure 1.2.4.1-19: Localized loose brick and open mortar joints at top of pilasters. Photograph by Robert Silman Associates, November 2012.



Figure 1.2.4.1-20: Deterioration of brick flat (jack) arch due to rust jacking of supporting steel lintels along North elevation. Photograph by Robert Silman Associates, November 2012.



Figure 1.2.4.1-21: Deterioration of brick flat (jack) arch due to rust jacking of steel lintels along West elevation. Photograph by Robert Silman Associates, November 2012.



Figure 1.2.4.1-22: Horizontal cracking of brick masonry above wall penetrations (along single-story addition at northwest corner) due to rust jacking of steel lintels. Photograph by Robert Silman Associates, November 2012.

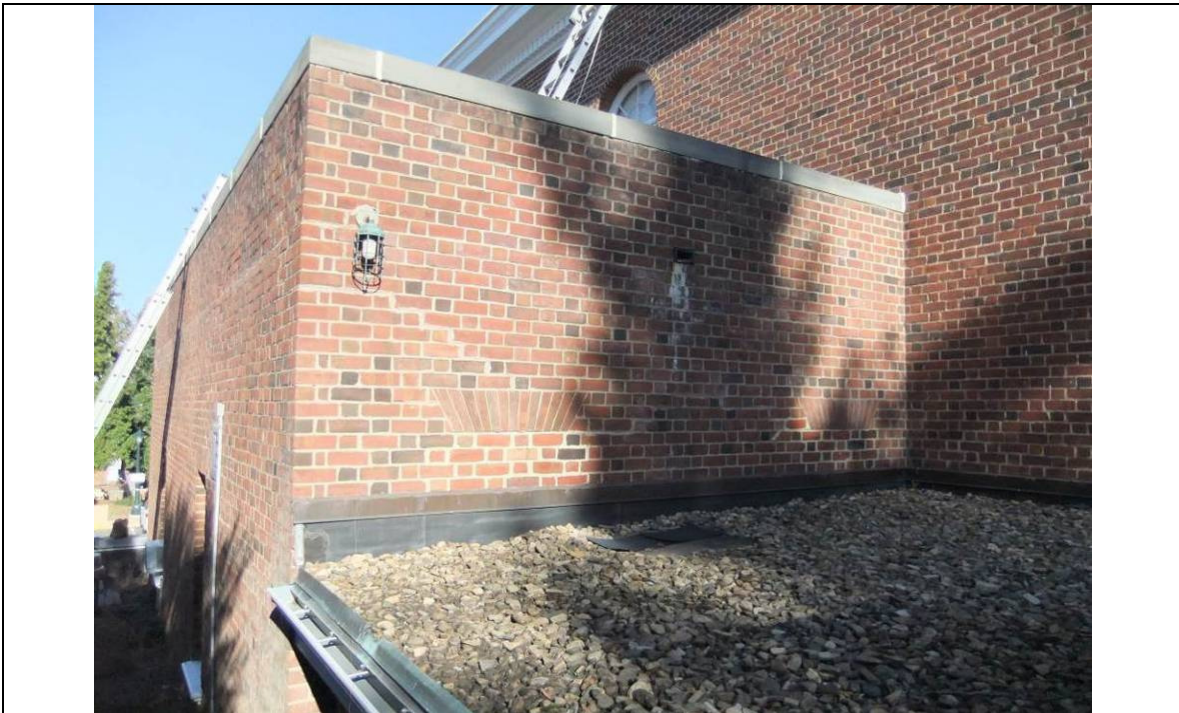


Figure 1.2.4.1-23: Infilled masonry openings and previously repaired diagonal and horizontal cracking. Photograph by Robert Silman Associates, November 2012.

Site Walls

The site walls to the east of the building exhibit several areas of deterioration. These masonry site walls were observed to contain diagonal stepped cracks, masonry displacement, open mortar joints, biological growth, efflorescence, and previous repairs. Causes of this deterioration include tree-root encroachment [Figures 1.2.4.1-24, 1.2.4.1-25, and 1.2.4.1-32], relative movement/settlement [Figure 1.2.4.1-26], and retaining-wall displacement [Figures 1.2.4.1-27 through 1.2.4.1-29]. Additionally, several cracks in the sidewalk were observed and appear to be principally due to the growth of trees [Figure 1.2.4.1-30] and to underground utilities [Figure 1.2.4.1-31].



Figure 1.2.4.1-24: Existing brick-masonry retaining wall at northwest corner of site exhibiting localized vertical cracking due to proximity of tree-root and underlying root-system encroachment. Photograph by Robert Silman Associates, November 2012.



Figure 1.2.4.1-25: Existing brick-masonry retaining wall at northwest corner of site exhibiting localized vertical cracking due to proximity of tree-root and underlying root-system encroachment. Photograph by Robert Silman Associates, November 2012.



Figure 1.2.4.1-26: Localized brick-masonry vertical cracking at retaining wall along northern boundary of site. Photograph by Robert Silman Associates, November 2012.



Figure 1.2.4.1-27: Localized brick-masonry vertical cracking at the retaining wall perpendicular to Rugby Road on the north side of the site. Photograph by Robert Silman Associates, November 2012.



Figure 1.2.4.1-28: Brick-masonry cracking and displacement of pier abutment due to retaining-wall movement. Photograph by Robert Silman Associates, November 2012.



Figure 1.2.4.1-29: Horizontal cracking and displacement of brick at pier abutment due to retaining wall movement. Photograph by Robert Silman Associates, November 2012.



Figure 1.2.4.1-30: Cracking and heaving of concrete sidewalk slab due to tree-root encroachment. Photograph by Robert Silman Associates, November 2012.



Figure 1.2.4.1-31: Vertical cracking in brick-masonry site wall locally at existing sanitary and water lines. Photograph by Robert Silman Associates, November 2012.



Figure 1.2.4.1-32: Biological growth and efflorescence in brick-masonry retaining wall. Photograph by Robert Silman Associates, November 2012.

1.2.4.2 Mechanical, Plumbing, and Electrical Assessment

Mechanical System

The Thomas H. Bayly Building is equipped with a climate-control system capable of providing heating, cooling, humidification, and dehumidification for the museum galleries and Collections Storage area.

Building Characteristics Related to Climate Control

The Bayly Building consists of a two-story main building with a single-story addition at the southwest corner and a single-story Annex to the rear. The exterior walls of the main building are built from brick, with thicknesses ranging from 13 to 17 inches. The windows are generally single glazed with a storm window. One notable exception is a set of exterior doors on the second floor that consists of steel frames with a layer of single glass.

Comments on the building related to climate control are as follows:

1. The building's exterior walls have adequate thermal and moisture transmission characteristics to maintain stable climate control without risk of condensation.
2. The single-glazed doors with steel framing on the second floor do not have adequate thermal resistance for the humidified building. As a result, condensation and rust are evident on the door surfaces [Figure 1.2.4.2-1].
3. The ceiling of the second floor is heavily insulated with blown-in insulation in the attic. However, there are several large openings between the attic and the second floor where conditioned air can leak into the attic. The main concern is that humidified air from the galleries would come in contact with cold surfaces in the attic and condense. Fortunately, there is enough ventilation in the attic that allows dry outside air to mix with the inside air and prevent the dew point of the attic air from reaching a level where condensation occurs.



Figure 1.2.4.2-1: Single-glazed door on second floor with condensation. Photograph by T. Newbold, December 2012.

Mechanical Equipment

The main building is served by six air handlers, several radiators, and several window air conditioners. The Annex to the rear is served by a split, direct expansion heat-pump system.

Chilled water for cooling and hot water for heating are provided by the campus district system. The chilled-water and hot-water piping enters the building through the foundation wall in the single-story southwest mechanical room and is distributed throughout the building through tunnels in the perimeter below the first floor of the main building.

Radiators

Portions of the building, including the private offices, the lower entry lobby, and the center stair, are heated with cast-iron radiators that receive hot water from the campus hot-water system. These radiators date back to the original heating system for the building. The entire building was originally heated with radiators, many of which were concealed in cavities in the walls. The cavities had grilles near the floor below the radiator and grilles high on the wall above the radiator so air would circulate past the radiator by convection. When the climate-control system was added in the 1970s, many of the radiators in the galleries were taken out of service. It is likely that most of the radiators were simply abandoned in place because many of the grilles remain in the walls [Figure 1.2.4.2-2].



Figure 1.2.4.2-2: Radiator grille in first-floor Stair Hall. Photograph by T. Newbold, December 2012.

Air Handlers

Most of the building is now served by air-handling systems capable of heating and cooling. There are a total of seven (7) air-handling systems for the building, including the Annex. The first air handler was installed in about 1978, and subsequent air handlers were added in 2009.

AHU-1

Air handler AHU-1 is composed of a finned-tube, chilled-water cooling coil, a fan to move air through the coil, filters, and a cabinet to house these components [Figure 1.2.4.2-3]. After leaving the air handler, the supply duct splits into six branches to feed the various galleries in the museum. Each branch duct has a finned-tube, hot-water reheat coil and an electric steam humidifier. The air handler, reheat coils, and humidifiers are located in a mechanical room in the single-story addition to the southwest. After leaving the mechanical room, the supply ducts for each zone rise vertically behind the west wall of Gallery A (southwest corner of the building) to serve the various zones. Ductwork for several second-floor zones passes through the attic. The reheat/humidification zones for AHU-1 are as follows:

1. Zone A: second-floor Main Stair Hall. The supply air is distributed by sidewall grilles located in a soffit that appears to have been added as part of the work in 1996.
2. Zone B: second-floor Gallery C. The supply air for this gallery is distributed by ceiling diffusers.

3. Zone C: first-floor Gallery A. The supply air for the gallery is distributed by sidewall grilles.
4. Zone D: second-floor Gallery D.
5. Zone E: second-floor Gallery F. The supply air for this gallery is distributed by ceiling diffusers.
6. Zone F: second-floor Gallery E.

Outside air is drawn in from a roof ventilator above the mechanical room.

The air handler is equipped with a 30% efficient pre-filter and a 65% efficient final filter. There is no gas-phase filtration.



Figure 1.2.4.2-3: Air handler AHU-1. Photograph by T. Newbold, December 2012.

The design information for the equipment related to AHU-1 is as follows:

AHU-1	MFR/Model	Carrier
	Airflow	6595 CFM
	CHW Flow Rate	59 GPM
	Total Cooling Capacity	354.9 MBH
RH-1A	Airflow	1400 CFM
	HW Flow Rate	2.3 GPM
	Heating Capacity	22.9 MBH
RH-1B	Airflow	950 CFM
	HW Flow Rate	1.6 GPM
	Heating Capacity	13.8 MBH
RH-1C	Airflow	775 CFM
	HW Flow Rate	1.3 GPM
	Heating Capacity	9.5 MBH
RH-1D	Airflow	2040 CFM
	HW Flow Rate	3.4 GPM
	Heating Capacity	10.9 MBH
RH-1E	Airflow	900 CFM
	HW Flow Rate	1.5 GPM
	Heating Capacity	10.3 MBH
RH-1F	Airflow	530 CFM
	HW Flow Rate	0.9 GPM
	Heating Capacity	5.2 MBH
H-1-A	MFR/Model	Carnes
	Power Input	6.9 kW
	Steam Output	20 lbs. per hour
H-1-B	MFR/Model	Carnes
	Power Input	6.9 kW
	Steam Output	20 lbs. per hour
H-1-C	MFR/Model	Carnes
	Power Input	3.4 kW
	Steam Output	10 lbs. per hour
H-1-D	MFR/Model	Carnes
	Power Input	10.3 kW
	Steam Output	30 lbs. per hour
H-1-E	MFR/Model	Carnes
	Power Input	6.9 kW
	Steam Output	20 lbs. per hour
H-1-F	MFR/Model	Carnes
	Power Input	3.4 kW
	Steam Output	10 lbs. per hour

Comments on AHU-1:

1. The carrier air handler and reheats were installed in 1986. The humidifiers were added in 2009.
2. The air handler is in fair condition. The cooling coils inside the air handler are showing some signs of age-related deterioration.
3. At 26 years old, AHU-1 is past the end of its projected useful life (coils have a 20-year projected life and fans have a 25-year projected life).
4. The ductwork in the mechanical room has been cut and patched numerous times over the years, and some of the repairs are poorly done.
5. The insulation on the ductwork in the attic has been damaged from people climbing over it [*Figure 1.2.4.2-4*].
6. There is abandoned ductwork in the attic that was left behind when the system was overhauled in 2009.
7. When the humidifiers were installed, a short section of branch ductwork was replaced with stainless steel at each dispersion tube to deal with moisture buildup downstream of the humidifiers. There is no data on the distance required downstream of the humidifiers for the steam and air to properly mix, but typically several feet are required.
8. The level of air filtration is not adequate for the long-term preservation of collections in a museum.

Using data provided by the Facilities Department, temperature and relative humidity were charted for two representative galleries for the months of December, March, July, and October (see Appendix C). The purpose of the charts was to determine how the climate-control system performs in different seasons of the year.

Generally, the temperatures were quite stable in both galleries for each season, with fluctuations around 1°F. The one interesting anomaly was in July for Gallery 201 (Gallery D), where the temperature was regularly fluctuating as much as 5°F over a 24-hour period.

Relative humidity fluctuated both seasonally and hourly. In the summer, relative humidity stayed in a range of about 55% to 65% with occasional spikes as high as 75%. In the winter, relative humidity stayed in a range of about 45% to 53%. During the spring and fall, the relative humidity had larger fluctuations owing to the changing weather conditions that caused the system to shift from humidification to dehumidification.



Figure 1.2.4.2-4: Damaged insulation on ductwork in attic. Photograph by T. Newbold, December 2012.

AHU-2

Air handler AHU-2 serves the basement offices. It is composed of a finned-tube, chilled-water cooling coil; a finned-tube, hot-water heating coil; a fan to move air through the coil; filters; and a cabinet to house these components. There is an electric steam humidifier that serves the air handler. The air handler and humidifier are located in a mechanical room in the basement. The supply and return ducts pass above the suspended ceiling of the offices to feed grilles in the ceiling. Outside air is drawn in through a louver on the northeast side of the building (louver shared with AHU-3).

The air handler is equipped with a 30% particulate air filter and no gas-phase filtration.

The design information for the equipment related to AHU-2 is as follows:

AHU-2	MFR/Model	Carrier
	Airflow	1000 CFM
	Fan Static Pressure	1.18 in WC
	CHW Flow Rate	7.1 GPM
	Total Cooling Capacity	42.6 MBH
	Sensible Cooling Capacity	27.3 MBH
	HW Flow Rate	3.3 GPM
	Total Heating Capacity	48.7 MBH
H-2	MFR/Model	Carnes
	Power Input	1.7 kW
	Steam Output	5 lbs. per hour

Comments on AHU-2:

1. AHU-2 was installed in 2009.
2. AHU-2 appears to be in good condition.
3. The level of air filtration is below what is recommended for office occupancy and well below what is recommended for a museum space.
4. The outside air-intake louver is located only a few feet above grade and is easily accessible to the public.

AHU-3

Air handler AHU-3 serves the Collections Storage room. It is composed of a finned-tube, chilled-water cooling coil; a finned-tube, hot-water heating coil; a fan to move air through the coil; filters; and a cabinet to house these components. There is an electric steam humidifier that serves the air handler. The air handler and humidifier are located in a mechanical room in the basement. The supply and return ducts rise vertically to the mezzanine level. Supply air is distributed from ceiling diffusers, and there is a sidewall return air grille. Outside air is drawn in through a louver on the northeast side of the building (louver shared with AHU-2).

The air handler is equipped with a 30% particulate air filter and no gas-phase filtration.

The design information for the equipment related to AHU-3 is as follows:

AHU-3	MFR/Model	Enviro-Tec
	Airflow	1200 CFM
	Fan Static Pressure	1.65 in WC
	CHW Flow Rate	9.1 GPM
	Total Cooling Capacity	54.8 MBH
	Sensible Cooling Capacity	35.1 MBH
	HW Flow Rate	3.7 GPM
	Total Heating Capacity	53.3 MBH
H-3	MFR/Model	Carnes
	Power Input	3.4 kW
	Steam Output	10 lbs. per hour

Comments on AHU-3:

1. The air handler was installed in 2009.
2. It appears to be in good condition.
3. The level of air filtration is not adequate for storage of collections.
4. There is an outside air connection for AHU-3. Since the Collections Storage room is only occupied by museum staff for brief periods, outside air may not be required.
5. The outside air-intake louver is located only a few feet above grade and is easily accessible to the public.

Using data provided by the Facilities Department, temperature and relative humidity were charted for Collections Storage for the months of December, March, July, and October (see Appendix C). The purpose of the charts was to determine how the climate-control system performs in different seasons of the year.

Temperatures in July and October were quite stable, with fluctuations around 1°F. Temperatures in December fluctuated regularly, as much as 4°F over a 24-hour period. Temperatures in early March were still fluctuating but stabilized toward the end of the month, probably as the system made the transition to the cooling mode.

Relative humidity stayed in a fairly consistent range around 50% throughout the year but still fluctuated hourly. There were numerous short-term swings of 10% relative humidity throughout the months of December, March, and October, but conditions were actually more stable in July.

AHU-4 and 5

Air handlers AHU-4 and AHU-5 work together to serve the entry gallery. Each is composed of a finned-tube, chilled-water cooling coil; a finned-tube, hot-water heating coil; a fan to move air through the coil; filters; and a cabinet to house these components. There is a common electric steam humidifier that serves both air handlers. The air handlers are located in an enclosure suspended from the ceiling of the entry gallery [Figure 1.2.4.2-5]. The humidifier is located in a mechanical room in the basement. Air is distributed to the entry gallery through sidewall grilles in the suspended enclosure. Outside air is drawn in through a louver adjacent to the main entrance to the building.



Figure 1.2.4.2-5: Enclosure concealing AHU-4 (typical for AHU-5). Photograph by T. Newbold, December 2012.

The air handlers are equipped with 30% particulate air filters and no gas-phase filtration.

The design information for the equipment related to AHU-4 and 5 is as follows:

AHU-4 Typical For AHU-5	MFR/Model	
	Airflow	1600 CFM
	Fan Static Pressure	1.25 in WC
	CHW Flow Rate	10.7 GPM
	Total Cooling Capacity	64.3 MBH
	Sensible Cooling Capacity	44.0 MBH
	HW Flow Rate	4.5 GPM
	Total Heating Capacity	66.0 MBH
H-4/5	MFR/Model	Carnes
	Power Input	10.3 kW
	Steam Output	30 lbs. per hour

Comments on AHU-4/5:

1. The air handlers were installed in 2009.
2. They appear to be in good condition.
3. The level of air filtration is not adequate for the long-term preservation of museum collections.

Using data provided by the Facilities Department, temperature and relative humidity were charted for the Exhibition Lobby for the months of December, March, July, and October (see Appendix C). The purpose of the charts was to determine how the climate-control system performs in different seasons of the year.

Generally, the temperatures were quite stable for each season, with fluctuations around 1°F. December was slightly more variable than the other months, with swings as great as 3°F.

Relative humidity stayed in a fairly consistent range around 50% throughout the year but still fluctuated hourly. There were numerous short-term swings of 10% relative humidity throughout the month of March, but during the other months, most fluctuations were in the 5% range.

AHU-6

Air handler AHU-6 serves the Gallery B on the second floor. It is composed of a finned-tube, chilled-water cooling coil; a finned-tube, hot-water heating coil; a fan to move air through the coil; filters; and a cabinet to house these components. There is an electric steam humidifier that serves the air handler. The air handler is located in a closet adjacent to the gallery [Figure 1.2.4.2-6], and the humidifier is located in the office adjacent to Collections Storage. Outside air is drawn in through a louver on the northeast side of the building.

The air handler is equipped with a 30% particulate air filter and no gas-phase filtration.

The design information for the equipment related to AHU-6 is as follows:

AHU-6	MFR/Model	
	Airflow	1200 CFM
	Fan Static Pressure	1.37 in WC
	CHW Flow Rate	8.0 GPM
	Total Cooling Capacity	43.3 MBH
	Sensible Cooling Capacity	32.2 MBH
	HW Flow Rate	4 GPM
	Total Heating Capacity	57.7 MBH
H-6	MFR/Model	Carnes
	Power Input	6.9 kW
	Steam Output	20 lbs. per hour

Comments on AHU-6:

1. The air handler was installed in 2009.
2. The air handler appears to be in good condition.
3. The level of air filtration is not adequate for the long-term preservation of museum collections.
4. There is not adequate clearance around the air handler for proper service access
5. The air handler is located above Collections Storage, and the piping for the air handler runs above the ceiling of Collections Storage. A leak from the unit or piping poses a risk of water damage to the collections located below.
6. There is no safety system to alert the staff if there is a leak in the unit on the second floor.
7. The humidifier display screen showed the humidifier to be in a faulty condition and not operating. It was reported that this humidifier has been troublesome.

Using data provided by the Facilities Department, temperature and relative humidity were charted for Gallery B for the months of December, March, July, and October (see Appendix C). The purpose of the charts was to determine how the climate-control system performs in different seasons of the year.

Generally, the temperatures were quite stable for each season, with fluctuations around 1°F.

Relative humidity fluctuated both seasonally and hourly. In the summer, relative humidity stayed in a range of about 52% to 65% with occasional spikes as high as 75% and short-term swings as high as 15% to 20%. In the winter, relative humidity stayed in a range of about 37% to 53% with short-term swings as high as 10% to 15%.



Figure 1.2.4.2-6: Air handler AHU-6 in second-floor closet. Photograph by T. Newbold, December 2012.

ACU-1

Air handler ACU-1 serves the Annex. It is configured as a heat pump composed of a finned-tube refrigerant coil, an auxiliary electric heating coil, a fan to move air through the coil, filters, and a cabinet to house these components. There is an exterior air-cooled heat-pump unit that serves the air handler. The air handler is located in a closet in the maintenance office in the Annex. The heat-pump condensing unit is located on the roof above.

The air handler is equipped with a 30% particulate air filter and no gas-phase filtration.

The design information for the equipment related to ACU-1 is as follows:

ACU-1	MFR/Model	Bryant/FB4ANF036
	Airflow	
	Fan Static Pressure	
	Nominal Cooling Capacity	36 MBH
	Sensible Cooling Capacity	
ACC-1	Total Heating Capacity	
	MFR/Model	Bryant
	Power Input	

Comments on ACU-1:

1. ACU-1 appears to be in good condition.
2. There does not appear to be any outside air provided for the Annex Meeting Room.

Automatic Controls

Air handlers AHU-1 through 6 are all tied to a Johnson Controls building management system (BMS) that was updated most recently in 2009 when the air handlers were added. The BMS controls the functions of the climate-control system and provides alarms when equipment either fails or does not maintain proper climatic conditions.

The automatic controls are in good condition. The performance of the systems was not evaluated.

Abandoned Mechanical Systems

There are several systems or portions of systems that date back to earlier periods in the building's history.

Attic Heating System

There is an abandoned skylight heating system in the attic [Figure 1.2.4.2-7]. At one time, there were skylights in the roof that required heating. When the skylights were removed and insulation was added to the second-floor ceiling, heat was no longer required in the attic. The skylight heating coils consisting of five parallel steel pipes are still in place. This system is shown on the original design drawings from 1933.



Figure 1.2.4.2-7: Abandoned skylight heating system in attic. Photograph by T. Newbold, December 2012.

Building Ventilation System

There are remnants of an abandoned ventilation system in the attic. There is an abandoned exhaust fan in the attic [Figure 1.2.4.2-8]. In reviewing the original design drawings from 1933, the exhaust fan drew air from the second-floor galleries and discharged the air through a large roof exhaust ventilator. The exhaust ventilator still remains but is now only open to the attic, acting as a passive ventilator [Figure 1.2.4.2-9]. Other roof ventilators shown on the 1933 drawings have been removed.



Figure 1.2.4.2-8: Abandoned exhaust fans in attic. Photograph by T. Newbold, December 2012.



Figure 1.2.4.2-9: One remaining attic ventilator. Photograph by T. Newbold, December 2012.

Plumbing System

The Bayly Building is served by a campus domestic water service and sanitary sewer service. Plumbing in the building is fairly limited.

There is a handicapped-accessible restroom located on the basement level. This restroom contains a toilet and a lavatory.

The Annex Maintenance Office contains a janitor's sink and a small electric tank-type water heater mounted on a shelf. The water heater serves the janitor's sink and a kitchen sink in the Annex Meeting Room

The Annex Meeting Room contains a two-bay kitchen sink that drains into an ejector tank. The ejector tank pumps the waste water from the sink to a drain in the Maintenance Office.

There is a public men's restroom and a public women's restroom located on the first floor of the main building. The men's room contains a urinal, a toilet, and a lavatory. The women's room contains two toilets and a lavatory [Figure 1.2.4.2-10]. The domestic water heater for the lavatories is a small tank-type heater located above the ceiling.

Comments on the plumbing systems are as follows:

1. The public-restroom fixtures are an older style and not very water efficient.
2. The hot- and cold-water piping is exposed in the public restrooms on the first floor and in the Annex.



Figure 1.2.4.2-10: Typical lavatories in public restroom. Photograph by T. Newbold, December 2012.

Electrical System

Power Distribution

The electrical service enters the building through the Annex, fed by transformers mounted on pads to the west of the Annex.

The lower level of the Annex contains a distribution board that feeds several buildings, including the Bayly Building. The distribution board is 208/120 volts, three-phase, four-wire rated for 1,200 amps and has a 1,200-amp main breaker. The main distribution board feeds two distribution boards, labeled as DP-1 and DP-2, and the elevator for the Bayly Building [Figure 1.2.4.2-11].



Figure 1.2.4.2-11: Main distribution panel in Annex. Photograph by T. Newbold, December 2012.

Panel DP-1 is located in the Annex: it is a 208/120-volt, three-phase, four-wire 600A panel with a 600A main breaker. Panel DP-1 serves panel board C and panel board D [Figure 1.2.4.2-12].

Panel DP-2 is a 208/120-volt, three-phase, four-wire 400A panel with no main breaker. Panel DP-2 serves panel board A, panel board H, and the Annex panel board [Figure 1.2.4.2-12].



Figure 1.2.4.2-12: Distribution panels DP-1 and DP-2 in Annex elevator Modulation Error Ratio. Photograph by T. Newbold, December 2012.

Panel board “Annex” is a 208/120-volt, three-phase, four-wire panel board rated for 225 amps.

Panel board A is a two-section panel located in the mezzanine office adjacent to the Collections Storage room. Section 1 has 42 positions and section 2 has 30 positions. Each is rated for 208/120-volt, three-phase, four-wire 225A. Panel C serves gallery lighting on the mezzanine level, lighting on the first floor, the lobby air handlers (AHU-4/5), and some window air conditioners.

Panel board H is a one-section panel located in the Annex mechanical room. It has 42 positions and is rated for 208/120-volt, three-phase, four-wire 125A. Panel H serves AHU-1 and the six associated zone humidifiers.

Panel board C is a two-section panel located on the second floor in the closet where the ladder to the attic is also located. Section 1 has 42 positions and section 2 has 30 positions. Each is rated for 208/120-volt, three-phase, four-wire 225A. Panel C serves gallery lighting on the second floor, attic lights, and the print gallery AHU (AHU-6).

Panel board D is a one-section panel located in the basement office adjacent to the mechanical room. It has 42 positions and is rated for 208/120-volt, three-phase, four-wire 225A. Panel D serves AHU-2, AHU-3, H2, H-3, H4/5, basement lights, and office receptacles.

Exit/Emergency Lighting

Exit and emergency lighting is provided by wall-mounted combination exit-light/emergency-light units with integral battery packs. There are remnants of what appears to be a now-defunct battery backup system for emergency lights.

Comment on the electrical equipment is as follows:

1. All of the electrical equipment appears to be in good condition.

Fire Safety

The building is protected by a Siemens addressable fire-alarm system. It is monitored by a central station [Figure 1.2.4.2-13]. Smoke detectors are located throughout the galleries and offices. Smoke detectors are also installed on the air handlers. There are pull stations located at major points of egress, and horn/strobes are distributed throughout the building in accordance with Americans with Disabilities Act (ADA) requirements.

There are no fixed fire-suppression systems in the building.

Comments on the fire-safety systems are as follows:

1. There is no fire detection in the attic.
2. The fire-detection system is modern, code compliant, and in good condition.



Figure 1.2.4.2-13: Fire-alarm control panel adjacent to lower-level entrance. Photograph by T. Newbold, December 2012.

1.3 CHARACTER-DEFINING FEATURES

To aid in the process of planning for the preservation, treatment, potential reuse of, and additions to the Bayly Building, a general summary of the character-defining features is provided below, including descriptions of extant site, exterior, and interior elements that contribute to the architectural and visual character of the property. Missing or obstructed features that would be considered character-defining are also described where archival or physical evidence indicates they were once present.

The combination of character-defining features contributes to the historic character of the Thomas H. Bayly Building site. These features exhibit varying degrees of integrity, historic importance, and preservation priority. Additional discussion of integrity and identification of treatment priorities are provided in 2.0 Recommendations for Treatment. For the overall building surrounds, most of these contributing features are present on the east and south sides. These areas retain high to moderate levels of integrity to the original, as-built 1930s landscape. The north and west sides of the building have lower levels of integrity; however, certain features of the north side, such as the 1980s-era crepe myrtle (*Lagerstromia indica*), are visible from the east side and relate to the character of the study site.

The overall variable nature of the Bayly Building site's historic integrity results from multiple episodes of intentional change in response to functional needs and site context. Summarized from the site chronology in 1.1.1 Historical Background, the history of the Bayly Building spans over 200 documented years. Since the 1803 sale of a hill farm by James Burnley to Arthur Brockenbrough, to the 1867 sale of a dormitory by Mrs. Dabney Carr to the University, the site of the Bayly Museum has been a feature in the landscape of the developing University. In 1933, Edmund S. Campbell designed the Bayly Art Museum and associated grounds with the assistance of Robert E. Lee Taylor. Construction of the building was completed in 1935 with finalization of the landscape by 1938. In 1950, the Annex was added to the rear of the building. In the early 1960s, a single-story southwest addition was constructed, filling in the inside corner between the main block and the west block. In 1970, Campbell Hall, the School of Architecture, was completed to the west of the site, prompting noted landscape architect and professor Meade Palmer to plan the redevelopment of the Bayly Building parking court, provide a circulation connector to Rugby Road, and create a crepe myrtle allée along the North facade of the building in the 1980s. The renovation of the Bayly Annex in 1996 was accompanied by new planting plans for the South Garden by landscape architect Nancy J. Brown of the University of Virginia Office of the Architect. In 2010, extensive renovation of the Bayly Building was completed and followed by the redesign of the East Terraces in 2011. The retention of the historic spatial organization of the landscape was intentionally respected by its designer, University of Virginia landscape architect graduate Rachel Lloyd of AECOM. With a stabilized landscape and many of the historic features intact, the Bayly Building became the vessel of The Fralin Museum of Art in 2012.

1.3.1 SITE

Character-defining features of the Bayly site include the extant landscape features that define its original historic style and composition. Plans L-1, *c. 1935 Landscape Plan*, and L-2, *2012 Landscape Plan*, depict the final build-out and the current configuration of the Bayly landscape in full color at a scale of 1 inch equals 20 feet. The plans cover the project area of the East Terraces and South Garden with additional context north to Chi Phi Fraternity, east to Rugby Road, south to Fayerweather Hall, and west to the Bayly Building Extension and parking lot.

The Bayly landscape can be understood and articulated by itemizing the character-defining features of the site. These features encompass the physical components that together make up the historic character of the place. These include

- Land uses, landscape patterns, and spatial organization
- Views and visual relationships
- Topography and drainage
- Vegetation
- Circulation
- Landscape structures
- Furnishings and objects

Other landscape character-defining features not present or relevant for discussion in this HSR include water features (absent), buildings (absent aside from the Bayly Building, itself the primary topic of this report), and archaeological resources (potentially as related to original construction which caused extensive site disturbance).

The historic significance of existing landscape features varies across the site. Some features, such as the empty concrete sculpture pad in the South Garden, are recent additions and detract from the historic character of the site. Other features confer historic importance to the Bayly site. These high-priority, character-defining features should be retained, preserved, and improved when degraded. Examples of these features include: the enclosed space and views within the South Garden; crepe myrtles (*Ligustrum vulgare*) along the north facade; original boxwood (*Buxus sempervirens*) and azalea (*Rhododendron* species) shrub masses in the South Garden; other remaining historic trees such as the rows of white ash (*Fraxinus americana*) along Rugby Road; symmetrical steps flanking the East Terraces; historic brick paving; historic coping bricks on raised pads of the planting spaces of the East Terraces; historic brick walls and coping; and, architectural fragments on display that were part of the original design. Altogether, the landscape character-defining features of the Bayly site are described and evaluated in order to understand the property's evolution in relation to the integrity of the Bayly landscape today.

Land Uses, Landscape Patterns, and Spatial Organization

The three-dimensional spatial configuration created by both cultural and natural aspects of the site and the uses of the property that organize the landscape as defined by topography, vegetation, circulation, and built elements, in combination, create the

overall pattern of the Bayly landscape. The building and grounds are sited on the east slope of Carr's Hill. The terracing of the site modifies the surrounding terrain to create functional pedestrian zones on the east and south sides of the building. The upper terrace appears as a masonry plinth that supports the Bayly Building. The largely vegetated lower terrace and slope are the foundation for the masonry plinth and the iconic building. Two staircases provide a transition to the terraced frontage. Use of this classical approach to site planning is parallel to regional examples, to including the U.S. Capitol grounds in Washington, D.C. Despite the redesign of the East Terraces in 2011, the tiered landscape with vegetated and masonry terraces retains the historic spatial pattern within the landscape of Carr's Hill [*Figures 1.3.1-1 through 1.3.1-3*]. The retention of the historic spatial organization of the landscape was intentionally respected by its designer, University of Virginia landscape architect graduate, Rachel Lloyd, of AECOM.⁶⁸

Today, as in the 1930s, upper and lower terraces of the East Terraces and the South Garden are used by students and the visiting public to rest, study, sketch, and otherwise enjoy the setting and artwork within the shady and quiet corners of the Bayly landscape. Benches are provided for these uses. The expansion of pavement on the lower terrace and the installation of a linear bench and central sculpture expand this original use. The site also serves as a passageway from the sidewalk on Rugby Road to the academic and administrative buildings on Carr's Hill to the west. As in the past, the walks on the north and south sides of the building function as pedestrian corridors as shown on Plans L-1 and L-2.

⁶⁸ Ford, Jane, "Henry Moore Sculpture Grades Renovated U.Va. Art Museum Terrace," *UNIVERSITY OF VIRGINIA Today*, Feb. 22, 2011.



Figure 1.3.1-1: Detail view of the prominent sitting and use of terraces to shape the Bayly landscape visible in this oblique aerial view to the south late in the original construction, 1934. University of Virginia, Special Collections Library.



Figure 1.3.1-2: The completed landscape of the East Terraces portraying brick and stone steps, brick walls, ground-cover slopes, young ginkgo trees, and boxwood shrubs from Rugby Road, c. 1938. University of Virginia, Special Collections Library, Holsinger Studio Collections.



Figure 1.3.1-3: Current East Terraces landscape view across Rugby Road looking west depicts the East Terraces and also shows the groundcover slopes below the sidewalk. Photograph by Heritage Landscapes, July 2012.

Views and Visual Relationships

There are broad views to the Bayly site from across the Madison Bowl, offering a panorama of Bayly and the adjacent buildings along Rugby Road that shows the slopes and terraces that form a plinth for the Bayly Building. Internal site views are framed by vegetation, walls, and building massing as characteristically defined visual spaces within the site. The elevated and recessed site placement of the Bayly Building creates a unique spatial ensemble when viewed from the surrounding areas. The open space of the Madison Bowl offers sweeping view, with the historic row of ash trees punctuating the view and seasonally limiting visibility when leaves are on the trees. From both the upper and lower terraces of the Bayly landscape panoramic views across Rugby Road and the Madison Bowl to the surrounding 19th- and early-20th-twentieth century campus neighborhood are available. Views over ground plane and rooflines reveal the hills of the surrounding landscape in the distance. Closer to the building, internal views are framed by the Bayly Building structure on the inside and low masonry walls, trees, and shrubs on the outside. These internal views are instrumental in shaping site separation and a secluded atmosphere for the upper terrace and within the South Garden [Figures 1.3.1-4 and 1.3.1-5].



Figure 1.3.1-4: Panoramic view across the Madison Bowl to the elevated Bayly site on Carr's Hill with adjacent structures. Photograph by Heritage Landscapes, November 2012.



Figure 1.3.1-5: Broad views from the upper terrace look over the Madison Bowl to surrounding hillsides in the distance. Photograph by Heritage Landscapes, July 2012.

Topography and Drainage

The Bayly Building is located off of Rugby Road on the gentle east slope of Carr's Hill, a large topographic feature directly across University Avenue to the north of Jefferson's Academical Village. The Bayly site ranges in elevation from around 570 to 580 feet above sea level. Terraced into the hillside, the site marks a point between the concave prominence of Carr's Hill and the convex form of the Madison Bowl. Terracing of the hillside increases level spaces on the site while resulting in steep transitions between terraces. Changes in grade at these locations are bridged by masonry walls of variable heights, steps, and steep vegetated slopes. Surface drainage on site appears to be directed to storm sewers on Rugby Road. Small drain inlets and pipes convey storm water collected from terrace pavements. In planted spaces, gentle rains are intercepted by trees and shrubs or infiltrate beds to a degree, although grades of beds may limit infiltration. Heavy rains cause erosion on mulch-covered planting beds. The topographic and drainage features of the 1930s persist with minor changes in form from the as-built topography.

Vegetation

The overall pattern of planted areas and individual plants or groupings contribute to the historic character of the Bayly landscape [Figures 1.3.1-6 through 1.3.1-8]. The original 1933 construction documents show the overall pattern of planted areas.⁶⁹ Planting beds are indicated as “earth” or “grass,” although these beds were intended to be planted with trees, shrubs, and ground covers after construction of the hardscape elements of the site. Paired rectilinear beds are constructed in the north and south corners of the upper plaza. The pair of planting-bed islands in the paving of the upper terrace are marked “earth.” Except for these planter islands, the remaining non-hardscape areas of the East Terraces are identified as grass. The entire South Garden is identified as grass on either side of a brick walk running from east to west parallel to the building. A comparison of Plans L-1 and L-2 reveals that these patterns generally remain today with the exceptions of the island planting beds on the upper terrace and the grass of the lower terrace. These have been replaced with stone pavers that preserve the grade and configuration while changing the material. The ginkgo trees of the lower terrace have been removed. Despite these changes, views from the street and surrounding area generally exhibit continuity with the historic view patterns.

Specific plants and groupings consist of remaining historic materials or plants replaced in kind as they were historically. These original and authentically replaced plantings contribute to the character of the Bayly landscape.

East Terraces

- White ash (*Fraxinus americana*)—row in lawn along Rugby Road; noted as contributing landscape feature in the *Carr’s Hill Cultural Landscape Report-Revised*⁷⁰
- Boxwood (*Buxus sempervirens* ‘Green Beauty’)—in corner planters of the upper terrace
- Crepe myrtle (*Lagerstroemia indica*)—in corner planters and between the building and the northwest steps
- Periwinkle (*Vinca minor*)—as a ground cover

South Garden:

- Star magnolia (*Magnolia stellata*)—at the east wall
- Saucer magnolia (*Magnolia xsoulangiana*)—at the west wall
- Boxwood (*Buxus sempervirens*)—at the east and west walls
- Azalea (*Rhododendron* species)—along the south wall
- English ivy (*Hedera helix*)—as a ground cover
- Mixed-species lawn

Notable changes in vegetation have occurred in the Bayly landscape. Near the lower terrace, ground covers like English ivy (*Hedera helix*) and periwinkle (*Vinca minor*) have

⁶⁹ Campbell, Edmund and R. E. Lee Taylor, Architects. Basement Plan: Details, Drawing No.1, Art Museum, University of Virginia. Sept. 21, 1933.

⁷⁰ Office of the Architect, Carr’s Hill Cultural Landscape Report [Survey]- Revised, University of Virginia, 2006.

replaced turf-covered slopes between the sidewalk and Rugby Road. Ground covers and shrubs have replaced turf and ginkgo (*Ginkgo biloba*) trees on the slope of the lower terrace. Currently, Otto Luyken cherry laurel (*Prunus laurocerasus* "Otto Luyken") and oakleaf hydrangea (*Hydrangea quercifolia*) underplanted with daffodil (*Narcissus* species) are present on the east and west sections of the lower terrace slope. Historically in this location, a row of common juniper (*Juniperus communis*) with a single row of boxwood (*Buxus sempervirens*) lined the base of the upper-terrace wall. A cluster of three junipers marked the ends of the steps near the row of shrubs. Today a solid massing of dwarf sweetbox (*Sarcococca humifusa humilis*) fills the center section of the lower terrace. These shrubs replaced the turf slope. The paved lower terrace contains a narrow planting bed with climbing hydrangea (*Hydrangea anomala*) underplanted with Christmas fern (*Polystichum acrostichoides*). These plants have superseded the historic double row of boxwood consisting of *Buxus sempervirens* along the base of the upper-terrace wall and a row of the smaller English boxwood (*Buxus sempervirens* "Suffruticosa") closer to the lawn [Figures 1.3.1-2 and 1.3.1-6]. The row of four ginkgo trees specified by the original architects for the lower terrace no longer exists. A 37-inch-diameter willow oak (*Quercus phellos*) is noted in the position of the southernmost ginkgo after 1955. The remaining ginkgo trees were removed in 2011 with the redesign of the East Terraces. Ginkgo seedlings, the offspring of the historic trees, are present amidst the shrubs and ground covers on the terrace slopes. At the upper terrace, changes in vegetation include the replacement of crepe myrtle (*Lagerstroemia indica*) in corner planting beds with serviceberry (*Amelanchier* species), the loss of some ground covers in the beds at the base of the Portico columns, the removal of the island planting beds, and the loss of seasonal plantings in ornamental planters.

Changes to vegetation in the South Garden include the loss of overall garden form, the presence of large original plantings now 60-plus years old, and the removal of the simple linear boxwood row in the planter at the South facade of the Bayly Building [Figures 1.3.1-4 and 1.3.1-5]. The growth of boxwood and azalea (*Rhododendron* species) along the garden walls has reduced the turf area, altering the arching shape of the historic planting and obscuring the architectural fragments and wall-mounted sculpture-hanging along the base of the south wall. Arborvitae (*Thuja* species) has filled a gap caused by the attrition of earlier shrub massings. Star magnolia (*Magnolia stellata*) and saucer magnolia (*Magnolia x soulangiana*) trees at the east and west walls, respectively, appear to be original plantings of these species. It is unknown if the current plantings of rose (*Rosa* species), peony (*Paeonia* species), and daylily (*Hemerocallis* species) have historic precedent in the South Garden. The current framing vegetation of cherry laurel (*Prunus laurocerasus*) outside of the south wall and crepe myrtle (*Lagerstroemia indica*) beyond the west wall have some historic precedent as a mass of vegetation was located beyond the west garden wall. The planting bed along the north side of the garden has been modified by the removal and addition of plants and by the addition of utilities and a bench. While two boxwoods remain in historic locations, two have been removed. In their place, several herbaceous perennials have been installed, including anemone (*Anemone* species), threadleaf coreopsis (*Coreopsis verticillata*), white gaura (*Gaura lindheimeri*), rosemary (*Rosemarinus officinalis*), and foam flower (*Tiarella* sp.), among others. While the historic bed may have contained flowering herbaceous plants beneath the boxwood shrubs, the species mixture is unclear. Instead of flowering

herbaceous plants, it is also possible that a low ground cover that thrived in this sunny, southern exposure may have been used here historically. In summary, the vegetation of the Bayly site exhibits aspects of both continuity and change in specific locations in relation to the as-built historic character of the landscape.



Figure 1.3.1-6: Finished plantings of the upper terrace with boxwood rows, common juniper at steps, and potted plants, c. 1938. University of Virginia, Special Collections Library, Holsinger Studio Collections.



Figure 1.3.1-7: English ivy, turf, and rows of white ash between the sidewalk and Rugby Road. Photograph by Heritage Landscapes, November 2012.



Figure 1.3.1-8: A large willow oak between massings of oakleaf hydrangea and Otto Luyken cherry laurel. Photograph by Heritage Landscapes, November 2012.



Figure 1.3.1-9: Ginkgos on the lawn of the lower terrace with rows of boxwood and common juniper, 1947. University of Virginia, Special Collections Library, Philip S. Hench Walter Reed Yellow Fever On-line Collection.



Figure 1.3.1-10: Dwarf sweetbox on a steep slope and climbing hydrangea behind the bench at the redesigned lower terrace. Photograph by Heritage Landscapes, June 2012.



Figure 1.3.1-11: Crepe myrtle and serviceberry trees over boxwood shrubs and architectural fragments in the northeast planting bed. Photograph by Heritage Landscapes, June 2012.



Figure 1.3.1-12: Star magnolia tree and boxwood shrub of the South Garden willow extend toward the southeast planting bed. Photograph by Heritage Landscapes, June 2012.



Figure 1.3.1-13: A boxwood shrub, bench, and herbaceous plants fill the bed between the walk and the South facade of the building. Photograph by Heritage Landscapes, June 2012.



Figure 1.3.1-14: Original boxwoods, bench, turf with sculpture pad, and wall-mounted sculpture of the South Garden. Photograph by Heritage Landscapes, June 2012.

Circulation

Character-defining circulation features at the Bayly site include the walks, paved terrace plazas, and the details that constitute circulation character like materials, alignment, width, surface and edge treatment, and grading. Section 1.2.1 Site describes several aspects of existing site circulation, such as accessibility, primary and secondary approaches, paving condition, and site comments on steps.

Walkway and terrace surfaces consist of herringbone red-brick paving with limited areas of bluestone and turf [*Figures 1.2.1-3 through 1.2.1-7, 1.3.1-10 through 1.3.1-13 and 1.3.1-15*]. Brick-paved pads with raised, decorative borders are set within planting beds in the northeast and southwest corners of the upper terrace. Capitals and other architectural fragments rest on these pads. Within the South Garden, a brick walk lies at the same grade as a small open expanse of turf with benches.

Stone predominates on the lower terrace and smaller spaces of the upper terrace. On the lower terrace, bluestone paving replaced lawn with the 2011 redesign. On the upper terrace, former planting-bed islands in the expansive brick surface are now filled with bluestone pavers. A mortared brick border frames the stone infill of these islands. On both terraces, the staked bond pavers are flush with the existing brick band to provide positive drainage and a continuous cross slope. All stone pavers are quartz-based Pennsylvania bluestone with sawn edges and thermal finishing. Pavers of the lower terrace measure 12-by-12 inches and pavers of the upper-terrace islands measure 6-by-6 inches.

Stair treads are typically bluestone flagstone except at the transition from the East Terraces to the north brick walk and at the western end of the South Garden. While the original construction documents called for cement steps with a wrought-iron rail to climb the grade at the western end of the South Garden, these steps appear to have been built of brick as they remain today.



Figure 1.3.1-15: Brick-framed bluestone pavers fill the original island planting beds in the brick surface of the upper terrace. Note the recent bright mortar repair. Photograph by Heritage Landscapes, June 2012.

Landscape Structures

Landscape structures are nonhabitable constructed features, such as walls. The Bayly Building, discussed in detail throughout this HSR, is also a character-defining feature within the landscape owing to its prominence, placement, and relationship to adjacent landscape elements. This description focuses on site walls that are landscape structures. As with the exterior of the building, site walls are primarily composed of variably red Flemish-bond bricks. Instances of running bond exist. Contrasting lighter-colored mortar joints vary between $\frac{3}{8}$ -inch and $\frac{1}{2}$ -inch wide. Some brick walls and end columns have degraded pointing and loose bricks. Drainage at the water table results in staining along the west steps and retaining walls of the South Garden.

Campbell and Taylor's 1933 construction documents show a range of specificity for landscape features. Detailed drawings are included for hardscape elements like special exterior copings [Figures 1.3.1-16 and 1.3.1-17]. These stylistic details contribute to the unique character of the Bayly landscape. Differences between the construction documents and the as-built condition of selected walls are evident. The original construction drawings show a sloping, serpentine retaining wall in the South Garden along the south boundary of the site. A straight rather than serpentine wall was constructed. Instead of a sloping top of wall that gradually dropped 6 feet in elevation, the straight wall descends in four segments of 18-inch-high steps.

The walls at the steps of the East Terraces also indicate differences between the original construction documents and the as-built condition. The capstones of cheek walls are originally specified as granite but are constructed in brick. In addition, walls of the East Terraces indicate postconstruction modification. The as-built steps at the sidewalk include a small, curving retaining wall on the outside-edge wall, as depicted on Plan L-1 [Figure 1.3.1-2]. This design provides a decorative framing element at the sidewalk level and facilitates entry and egress at the corners of the steps. Low and long retaining walls were later added to the curved wall and extended to the north and south boundaries of the property along the sidewalk [Figure 1.3.1-18]. The original construction documents and postconstruction photographs do not show these walls extending from the curved wall to the south, although the straight retaining wall between the steps and the north edge of the property was photographed in the 1940s [Figures 1.1.1-3 and 1.1.1-6].

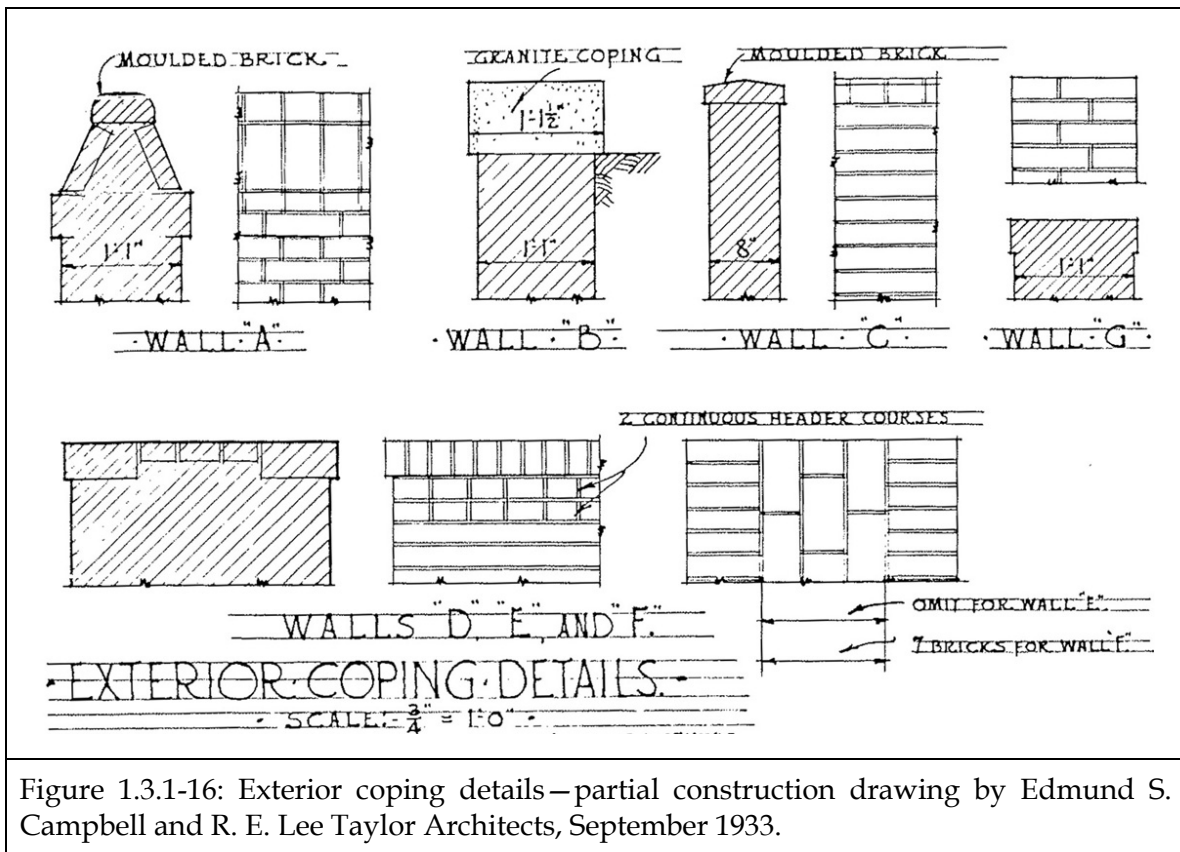


Figure 1.3.1-16: Exterior coping details—partial construction drawing by Edmund S. Campbell and R. E. Lee Taylor Architects, September 1933.



Figure 1.3.1-17: Molded brick coping on the southeastern parapet wall of the upper terrace and custom curved end wall. Photograph by Heritage Landscapes, July 2012.

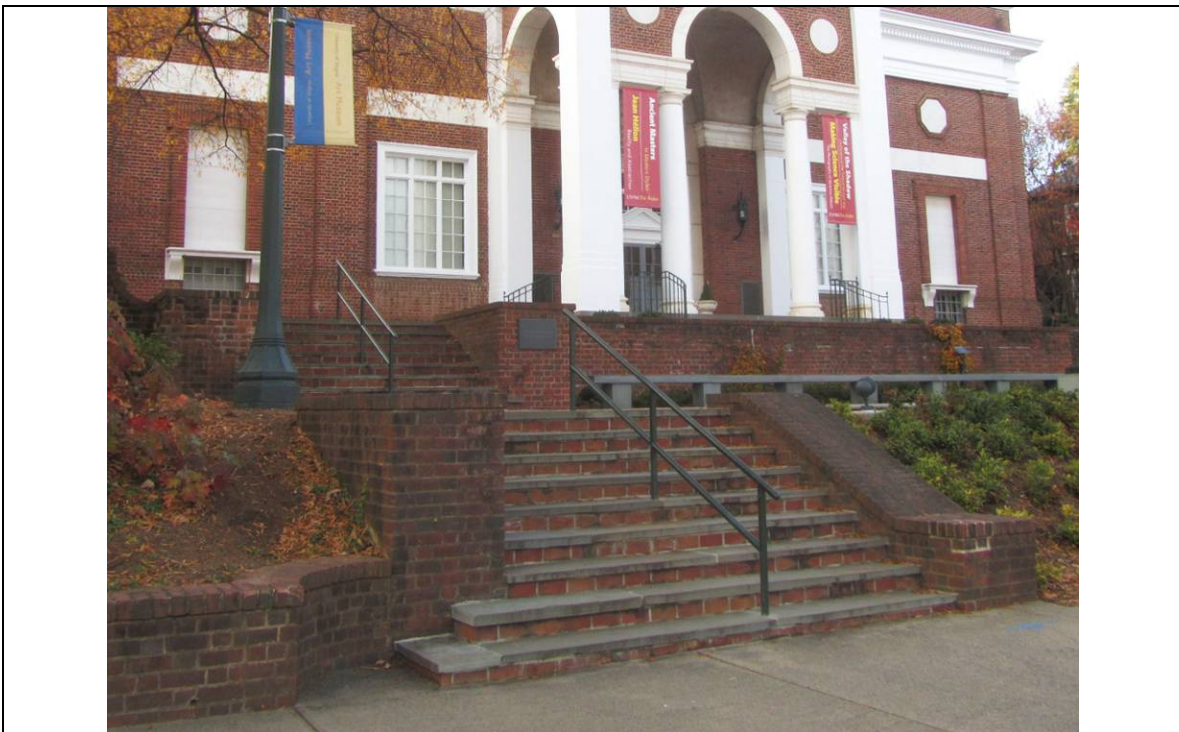


Figure 1.3.1-18: Circular segment of the low retaining wall, high wall extension, and angled-step cheek walls at the south steps to the lower terrace. Photograph by Heritage Landscapes, November 2012.

Furnishings and Objects

Character-defining site furnishings, such as benches, are small-scale elements in the landscape, while sculptures and planters are examples of landscape objects. A pair of benches appear to be part of the original configuration of the South Garden as shown on Plan L-1. Today, two concrete benches are placed haphazardly in the South Garden, although historically, their symmetrical positioning reinforced the overall spatial organization of the designed garden, as shown on Plan L-2. The size of the seat and legs of the easternmost bench do not match and may be altered from the historic bench [Figure 1.3.1-19].

Modern benches are also present in the landscape today. A wood bench dating to the 1980s or 1990s is located on a brick pad near the center of the planting bed at the South facade of the building [Figure 1.3.1-13]. At the Eastern Terraces, construction drawings for the 2011 redesign indicate the placement of the continuous granite bench along the lower-terrace retaining wall at the upper-terrace junction. The drawings also specify teak benches to be placed on the brick paving outside of the corner planters of the upper terrace.⁷¹ The teak benches are not evident in the existing landscape. The linear bench present today is fabricated of dimensional bluestone.

Landscape objects like planters, architectural fragments, and other works of art contribute to the historic character of the Bayly landscape. Photographs by Holsinger show the completed landscape of the East Terraces with features specified by the architects, including ornate urns on stair walls and simpler pots on the terrace with ferns, herbaceous plants, and other plants with dramatic foliage like rubber plants (*Ficus elastica*) [Figures 1.3.1-2 and 1.3.1-6]. Plants in ceramic planters would have been removed in the winter months. These planters and urns are not present in the landscape today but were in use through the 1940s [Figure 1.3.1-20]. Construction documents from the 2011 redesign of the East Terraces identify four 24-inch-diameter stone urns to be placed in historically indicated locations on the east ends of the cheek walls of the upper set of steps between the upper and lower terraces.⁷² These have not been installed.

Historic photographs and written descriptions also record the architects' desire to place sculptures and architectural fragments in the landscape of the East Terraces and South Garden. Today, this tradition is continued with the placement of noteworthy sculpture in the center of the redesigned lower terrace. In 2013, Jean Arp's *Oriforme* (modeled 1962/fabricated 1977) replaced Henry Moore's *Seated Woman* (1958-1959). Brick pads in the corners of the upper-terrace continue to showcase ornate capitals, column bases, and other architectural fragments that remain today [Figure 1.3.1-21]. Smaller artifacts were once placed near the island planting beds of the upper-terrace that are now filled with stone pavers rather than objects and plantings. Similar fragments are found amid the historic shrub masses of the South Garden. Their original positions are not known,

⁷¹ AECOM, Layout and Materials Plan (111294 L 4), UNIVERSITY OF VIRGINIA Art Terrace Modifications Record Drawings, Facilities Management Resource Center, 111289 Bayly Museum Terrace Modifications 04 20 2011.

⁷² AECOM, Layout and Materials Plan (111294 L 4), UNIVERSITY OF VIRGINIA Art Terrace Modifications Record Drawings, Facilities Management Resource Center, 111289 Bayly Museum Terrace Modifications 04 20 2011.

although their present positions do not appear to be historic. Sculptures on the walls of the site are also character-defining furnishings. In the South Garden, positioning of art on the south wall and the placement of a capital and wall-mounted art at the bottom of the west steps may have historic precedent even if the artwork has changed over time. A pad for a missing sculpture is located in the center of the South Garden lawn. This pad was installed in the 1990s and does not reflect original placement for sculpture in this garden setting. The blind windows and lower window grills on the East facade of the building are the historic locations for marble busts and other carved architectural fragments. Historic photographs from the 1940s reveal the replacement of these with figural sculptures of a dark material that contrasts with the lighter stone panel. These are no longer present.



Figure 1.3.1-19: Concrete seat and legs of a bench in a nonhistoric position within the South Garden. Photograph by Heritage Landscapes, November 2012.



Figure 1.3.1-20: Potted plants at the base of the Portico columns and along the East facade of the building, c. 1940. University of Virginia, Special Collections Library.



Figure 1.3.1-21: Capital, base, and other architectural fragments on raised brick pad in the northeast planting bed. Note corner brick missing on pad. Photograph by Heritage Landscapes, November 2012.



Figure 1.3.2-2: Villa Corsini. Photograph from www.villacorsini.com, © Villa Corsini srl



Figure 1.3.2-3: Blind window at East facade. Photograph by John Milner Architects, November 2012.

Ordering Features

All ordering elements and embellishments are composed on the brick, contrasted by their white or off-white coloration. Tuscan-order brick pilasters frame each bay of the front and side facades. A broken band course expresses the upper-floor level. A wood-and-stucco entablature circumvents the building, allowing for an attic story above. The central Portico—with all its marble and stucco components executed in a variation of Palladio's Motive, its stone stairs, wrought-iron rails, and hexagonal brick pavement—defines the entrance. Decorative elements include hexagonal and circular marble medallions framed in molded brick and blind marble-paneled windows with molded, crosstetted brick architraves set over projecting marble sills and consoles. The blind windows are further expressed with “panels” (an original window is substituted for the north panel) below their sills, protected behind wrought-iron grilles [*Figures 1.3.2-4 through 1.3.2-6*].

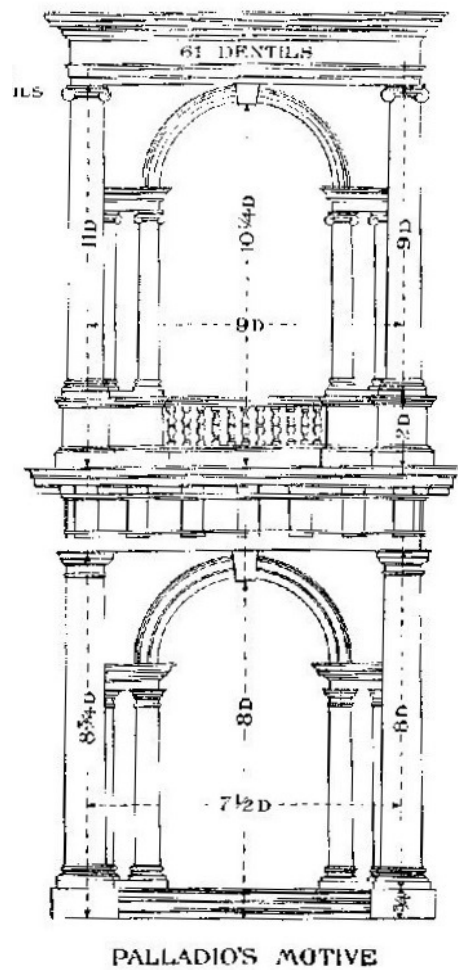


Figure 1.3.2-4: Palladio's Motive, from *The American Vignola* by William R. Ware (Scranton, PA: International Textbook Co., 1903), plate III.



Figure 1.3.2-5: Portico. Photograph by John Milner Architects, September 2012.



Figure 1.3.2-6: Vaulted ceiling of Portico. Photograph by John Milner Architects, November 2012.

Fenestration

The delineation of the necessary fenestration further defines the building's character, as detailed on the front facade with small panes, paired vertically, and grouped within mullions and transoms at the main door and windows. The pedimented door surround emulates the composition of the Portico. Double-hung windows on the side elevations are set directly on the water table. Twelve-over-twelve windows light the main floor of the South facade; eight-over-eight-over-panel windows light the raised floor level of the North facade (all of these units have, of late, been covered over on their interior sides). Basement windows, including that substituted for the north blind-window panel on the East facade, are square, composed of three groups of panes, two panes wide by four panes high. Gauged jack arches decorate the basement window heads in addition to similar and double-hung window heads on the rear facades [Figures 1.3.2-7 through 1.3.2-9].



Figure 1.3.2-7: East fenestration. Photograph by John Milner Architects, November 2012.



Figure 1.3.2-8: South fenestration. Photograph by John Milner Architects, November 2012.



Figure 1.3.2-9: North fenestration. Photograph by John Milner Architects, November 2012.

Light Fixtures

The existing exterior light fixtures appear to be original to the building. Through Campbell's correspondences, we know that there a limited number of fixtures fabricated for the Bayly Building, including two wrought iron light fixtures for the front [Figure 1.3.2-10].⁷⁵

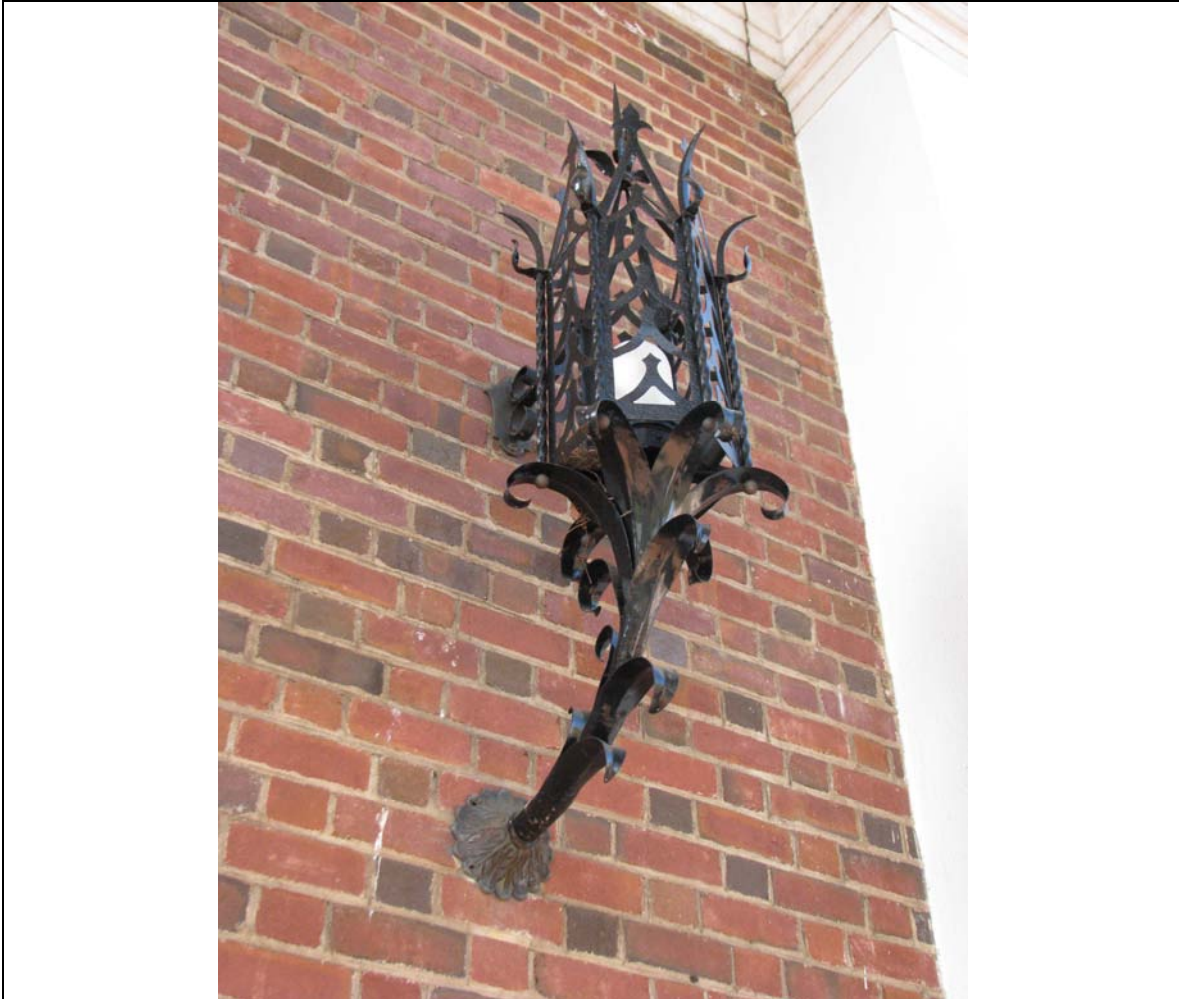


Figure 1.3.2-10: Wrought iron exterior light fixture at East facade. Photograph by John Milner Architects, November 2012.

Roof

The hipped main roof, of low profile as seen from street level, completes the building's composition. An understated wood cornice provides a transition to the gray slate roof, set flush with the building's masonry. A continuous hipped skylight, removed in 1977, both stylistically and functionally determined the character of the building's upper interior.

⁷⁵ Campbell, Edmund. Letter to Mr. Carpenter of Cassidy Company, Inc. 21 April 1934. TS

Interior

Interior character-defining features of the Bayly Building include all elements affecting the character and relationships of its public spaces, as intended by its designer, in addition to those defining its style and composition.

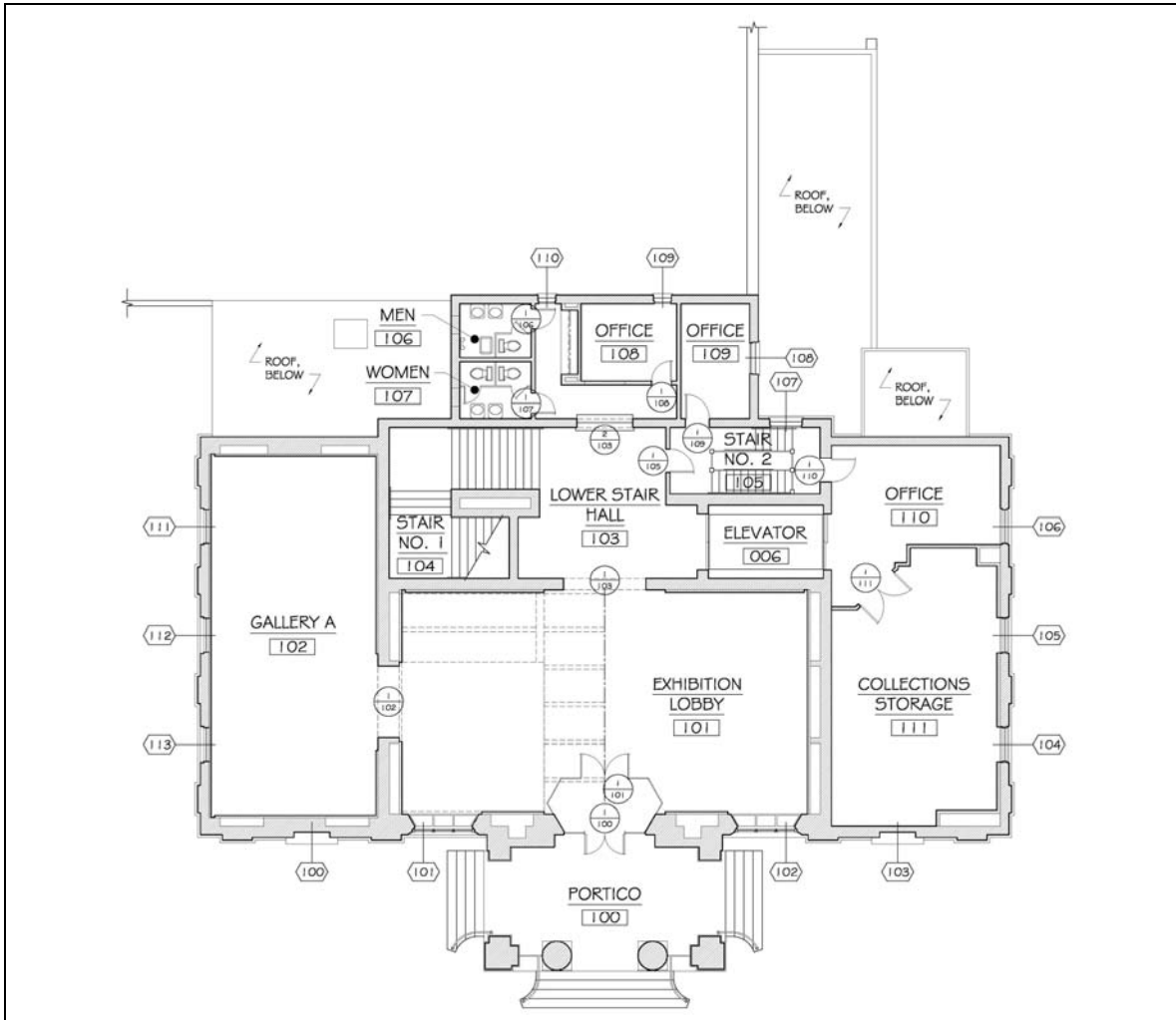


Figure 1.3.2-11: First-floor plan – drawing by John Milner Architects, November 2012.

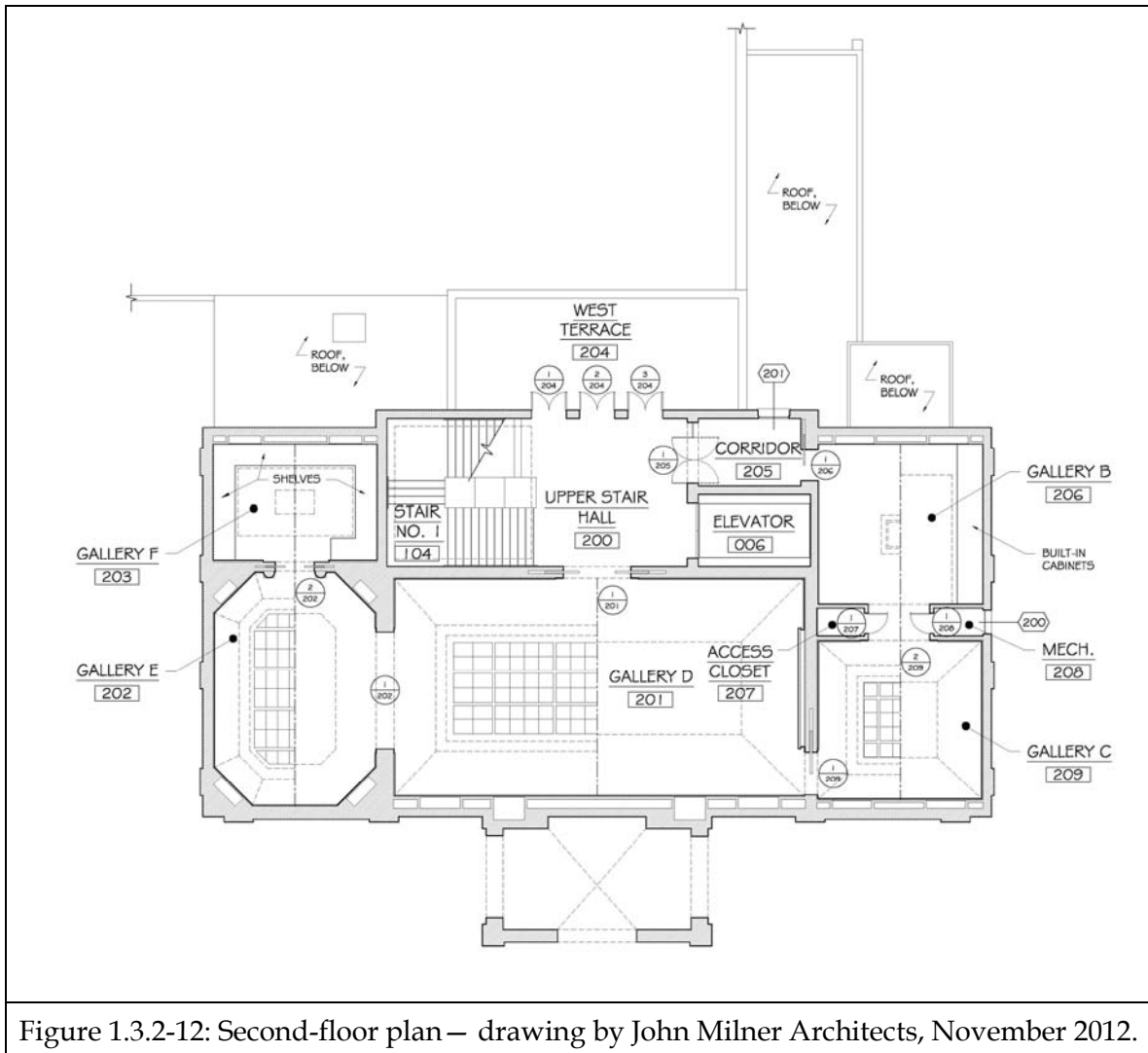


Figure 1.3.2-12: Second-floor plan— drawing by John Milner Architects, November 2012.

Spatial Symmetry

Typical of Neoclassical buildings, the symmetry of the major spaces as they relate to each other and their service areas is of primary importance. On both major floor levels, expansive central exhibit halls set the order for viewing the museum's collection. Galleries within the flanking south and north wings are accessed through these spaces. The Stair Hall, containing all vertical circulation, is central, on axis with the main entrance, and leads directly to and from the central exhibit halls. Public services, including toilet rooms and a coat room (lately appropriated as an office), are centrally accessed from the rear of the Stair Hall. At the upper Stair Hall, a west terrace balances the East exhibit hall [Figures 1.3.2-11 and 1.3.2-12].

Floor, Wall, and Ceiling Finishes

Earth-colored, polished quarry-tile floors of varied patterning set the tone for the ground plane in the public spaces. Gray marble is introduced to this palette for floor borders within the Stair Hall and cladding of the main stairway; a treatment used to unite the whole stair and define the circulation⁷⁶. The Stair Hall is also differentiated by the use of richly colored, dark variegated marble for door plinths, wall base, stair stringers, and center stair-wall and guard-wall capstones.

Plaster walls provide the original backdrop for hung artwork. The building specification and a number of correspondences during the construction of the museum allow that the plaster walls, in the galleries, were to be cloth covered⁷⁷. After numerous building renovations, it is clear that any cloth fabric lined walls no longer remain. The 1971 Art Museum Renovation drawings instruct that cloth surface panels be removed from Exhibition Lobby and plaster walls restored.⁷⁸ The demolition notes for the 2010 building improvement project state that the fabric wall covering be removed from Gallery E.⁷⁹

Gallery A is wood-lined with vertical beaded board which hits against a beveled base and cornice fascia.⁸⁰ New furred-out walls were constructed during the 2010 building improvement project, leaving only 18-inches of the original beaded board exposed at the doorway [Figure 1.3.2-20]⁸¹.

Ceiling treatments vary in their expression of the character of the differing spaces. Unique to the Exhibition Lobby, the building's structure is articulated with square-edged, plaster-clad ceiling beams (false beams are interspersed). Historic documentation clearly indicates that Campbell wanted painted beams in the Exhibition Lobby. In a series of letters sent to museum directors and sculptors, seeking advice for a color of the Exhibition Lobby, he states, "the floor is 6" variegated buff color hexagonal tile and the beam ceiling is to be painted, early Italian geometric style. The room is side lighted, from one side, especially for sculpture. The plaster is slightly modulated, being finished by hand with rubber gloves."⁸² It is possible that the desired look was another influence of Villa Corsini. Be that as it may, it is unknown if the beams were ever painted.

⁷⁶ Campbell, Edmund. Letter to Lee Taylor. Dec. 21, 1933. TS

⁷⁷ Edmund S. Campbell Papers. Special Collections Library, University of Virginia.

⁷⁸ Pellicia, C. Schematic of First Floor, Drawing 2, Art Museum, UVA, Renovation, June 1971.

⁷⁹ Stokoe, James and Arch Et Al. Demolition Plans, Sheet A-1.0, Bayly Improvement Project, University of Virginia, July 1, 2010.

⁸⁰ Campbell, Edmund. "Re: Revisions of Museum." Letter.

⁸¹ Stokoe, James and Arch Et Al. First Floor Partition Plan, Sheet A-1.2, Bayly Improvement Project, University of Virginia, July 1, 2010.

⁸² Edmund S. Campbell Papers. Special Collections Library, University of Virginia. 16 August 1934. TS

A suspended, flat plaster ceiling with wood cornice covers the Gallery A to the south of the Exhibition Lobby. Within the upper-level exhibition areas, suspended plaster coves spring from continuous wood moldings to light troughs contained within molded plaster cornices framing expansive steel-framed skylights. These skylights originally defined the ambience of the upper galleries. Constantly changing, diffused daylight added a dynamic to the museum experience. Artworks appeared different depending on the time of day and their orientation to the light; hence, even a static exhibit never appeared the same. Though the glass panes were infilled with ceiling panels and no longer capable of transmitting natural light (the exterior skylights were removed from the roof), the skylights could potentially be adapted for reuse as artificial light sources [Figures 1.3.2-13 through 1.3.2-19].



Figure 1.3.2-13: Exhibition Lobby. Photograph by John Milner Architects, November 2012.



Figure 1.3.2-14: Gallery A with entrance to Stair Hall beyond. Photograph by John Milner Architects, November 2012.



Figure 1.3.2-15: Lower Stair Hall. Photograph by John Milner Architects, November 2012.



Figure 1.3.2-16: Upper Stair Hall, as viewed from main stairway. Photograph by John Milner Architects, November 2012.

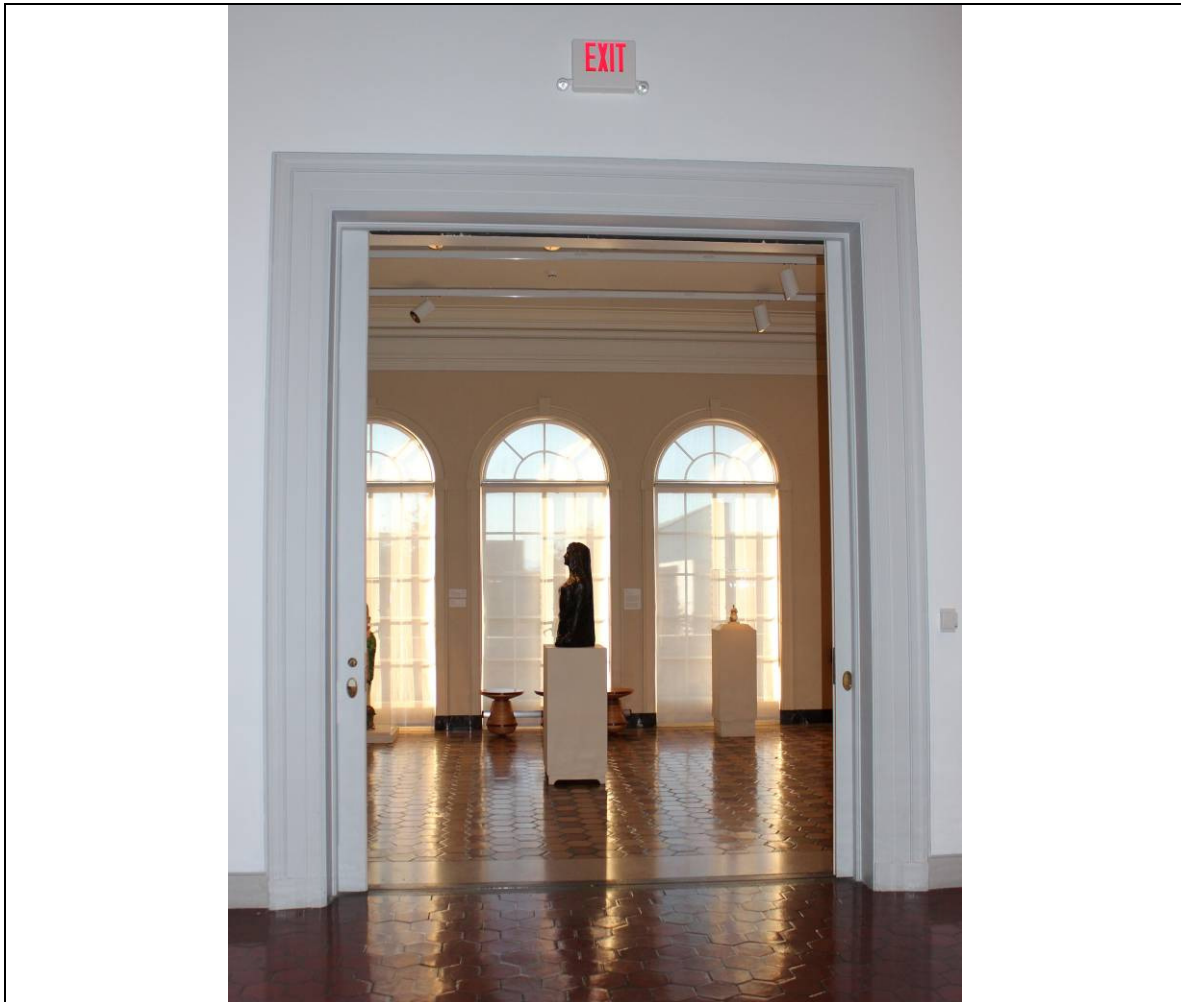


Figure 1.3.2-17: Upper Stair Hall, as viewed from Gallery D. Photograph by John Milner Architects, November 2012.



Figure 1.3.2-18: Gallery D, as seen from Gallery E. Photograph by John Milner Architects, November 2012.

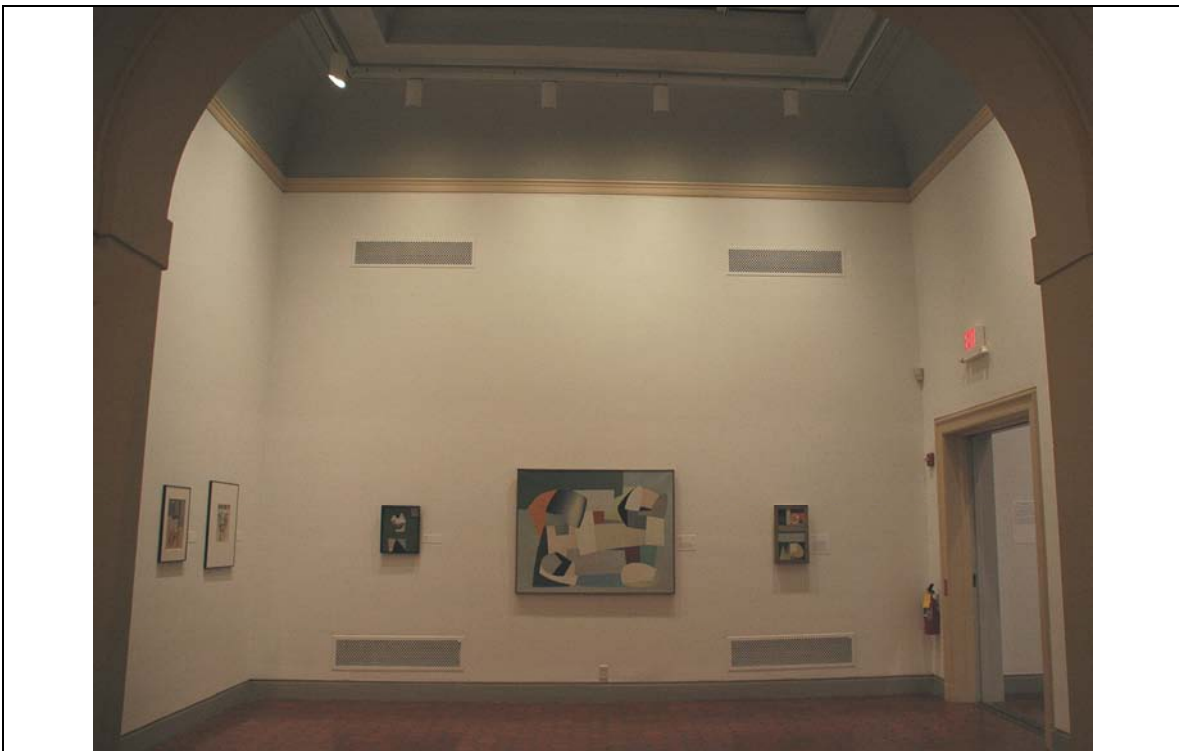


Figure 1.3.2-19: Gallery C, viewed from Gallery B. Photograph by John Milner Architects, November 2012.

Interior Openings

First-floor interior openings are characterized by elliptical arch heads with plastered inset panels. Opening arches associated with the Lower Stair Hall spring from a continuous plaster molding. Paneled-wood radiator enclosures are set within paneled-plaster window jambs and heads, contributing to the overall window composition. Major openings into the upper-level galleries are rectangular, encased in painted wood architraves set on wood-plinth blocks (marble on the Stair Hall side) at the height of the square-edged wall base. Jambs are paneled. Character-defining doors are stile and rail, paneled, and pocketed. Minor openings between the smaller south- and north-wing galleries are an exception. An elliptically arched opening divides the Gallery B and Gallery C. Banded and molded wood architraves are set on similarly molded plinths. Paneled and decoratively gridded wood doors are set within the sides of the deep opening. Imposts express the door heads and the spring line of the paneled plaster arch. A doorway between the Gallery F and Gallery E, designed to be similar to the other rectangular openings and expressed as such on its west side, exhibits an early addition of an ornate antique Italian Baroque wood door surround. Although uncharacteristic of the Bayly Building's order and composition, this unique element warrants special consideration owing to the history of its acquisition and installation. Also unique to this opening is a pair of wrought-iron pocketed gates, constructed as shown in the original drawings [*Figures 1.3.2-20 through 1.3.2-24*].

All of the galleries were designed with closeable doors, except for the opening between Galleries D and E.⁸³ As mentioned, previously, Campbell consulted with Fiske Kimball on the design of the art museum. Kimball stressed the importance of having doors to every gallery so temporary exhibitions could be installed without disturbing the circulation of the permanent collection.⁸⁴ All of the original doors still exist within their openings except for a pair of swinging doors between Gallery A and the Exhibition Hall that were removed during the 1971 building renovation.⁸⁵

⁸³ Campbell, Edmund and R. E. Lee Taylor, Architects. Basement Plan: Details, Drawing No.1, Art Museum, University of Virginia. Sept. 21, 1933.

⁸⁴ Kimball, Fiske. Letter to Edmund Campbell. June 14, 1933. TS

⁸⁵ Pellicia, C. Schematic of First Floor, Drawing 2, Art Museum, UVA, Renovation, June 1971.

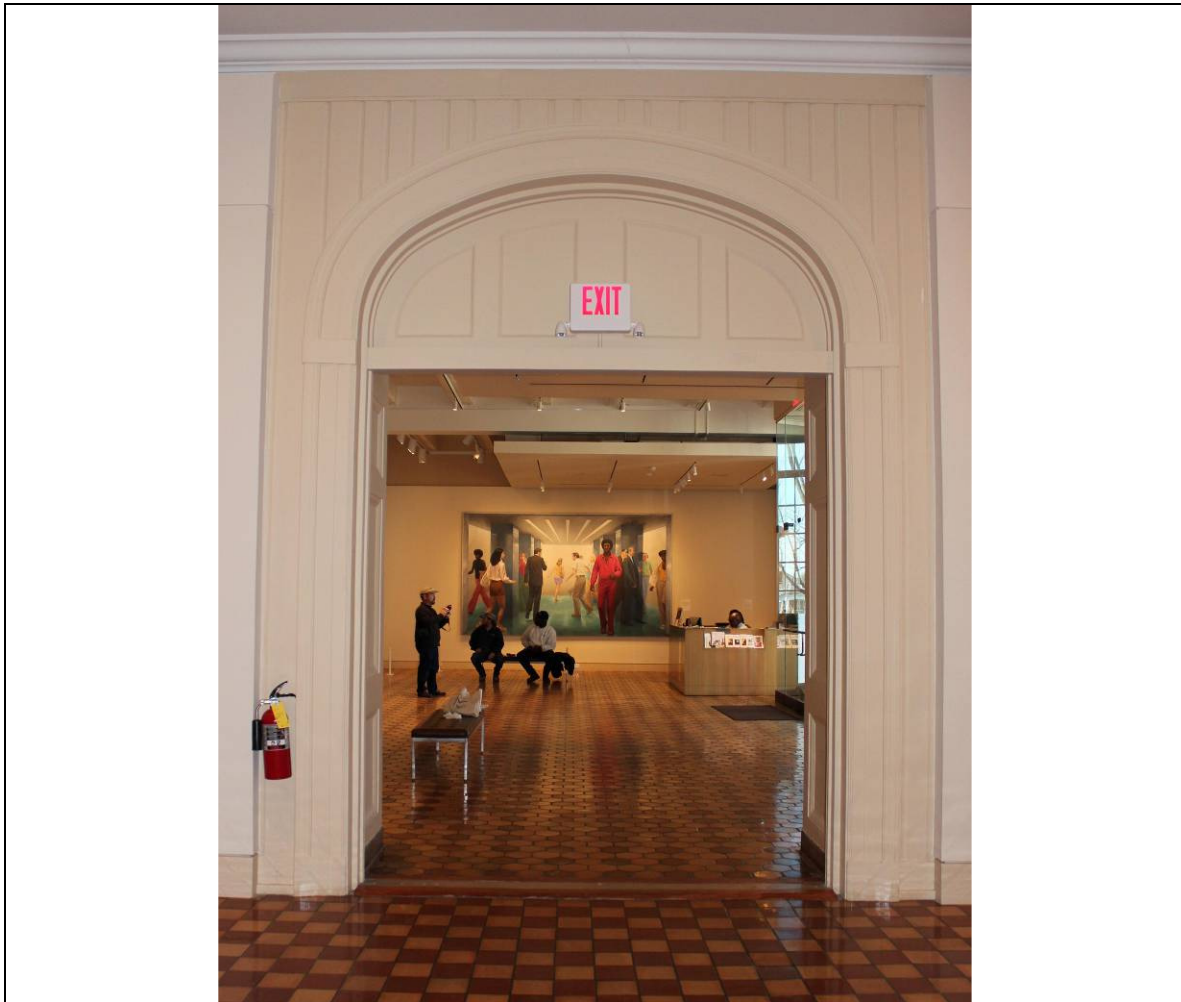


Figure 1.3.2-20: Gallery A door, as viewed from interior of gallery. Photograph by John Milner Architects, November 2012.



Figure 1.3.2-21: Doorway into Gallery F. Photograph by John Milner Architects, November 2012.



Figure 1.3.2-22: Gallery F door, as viewed from interior of gallery. Photograph by John Milner Architects, November 2012.

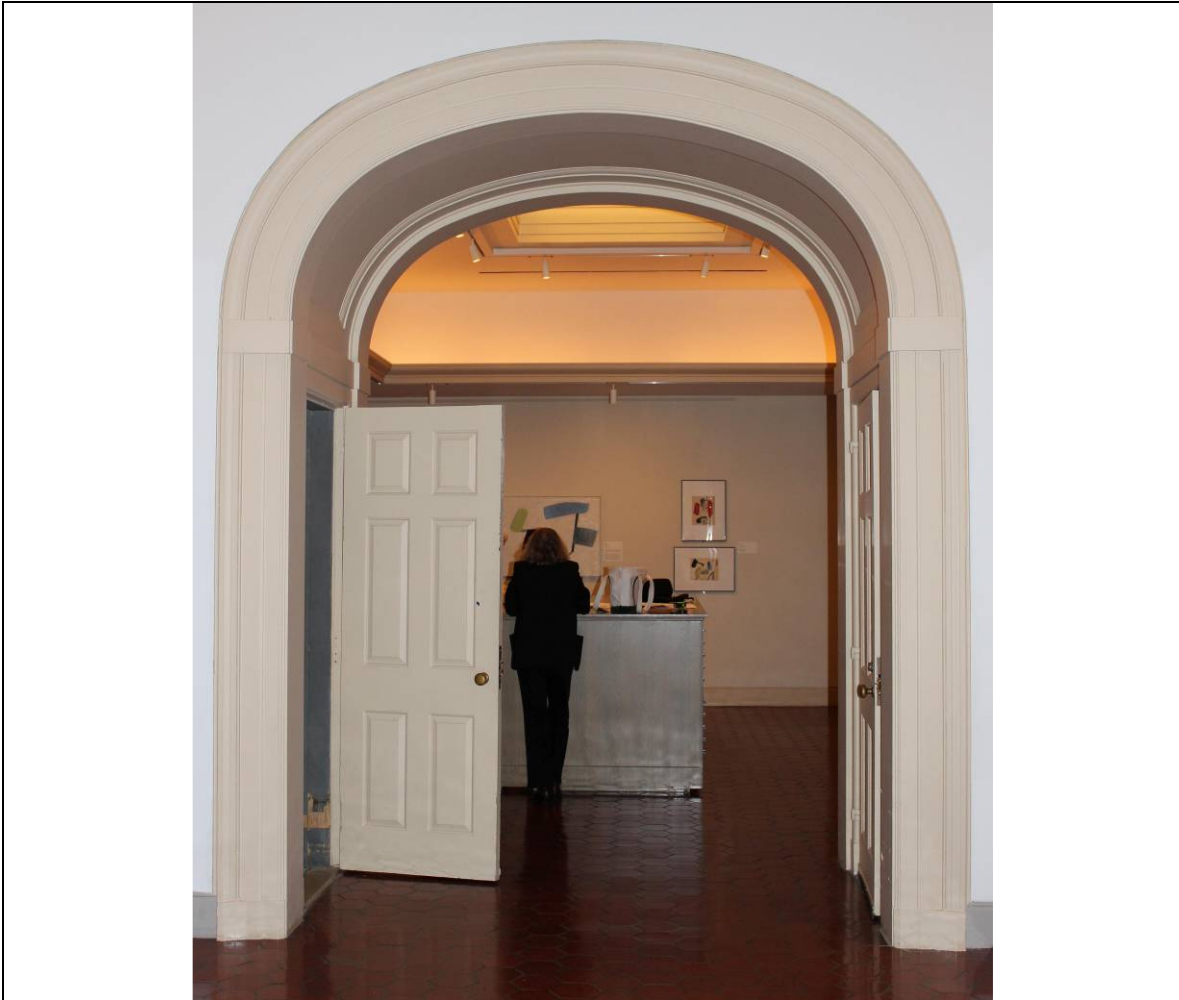


Figure 1.3.2-23: Opening between Gallery C and the Gallery B, viewed from Gallery C.
Photograph by John Milner Architects, November 2012.



Figure 1.3.2-24: Decorative grille work in door within arched opening between Gallery B and Gallery C, looking south. Photograph by John Milner Architects, November 2012.

Light Fixtures

The interior light for Gallery A and the Stair Halls was to be indirect lighting thrown up on the ceiling from a standard bowl-shaped fixture, modern in design with classic influence.⁸⁶ Historic documentation shows that four reflection chandeliers were fabricated and installed in the Bayly Building.⁸⁷ Over the years, those fixtures have been removed and at least one of the fixtures from Gallery A has been stored for possible reuse, in the future.⁸⁸

⁸⁶ Campbell, Edmund. Letter to Mr. Chester Snyder. 4 June 1934. TS

⁸⁷ Campbell, Edmund. Letter to Mr. Carpenter of Cassidy Company, Inc. 21 April 1934. TS

⁸⁸ Office of the Architect, 75% Review Comments, Historic Structure Report Thomas H. Bayly Building at the University of Virginia, February 2013.

The Exhibition Hall and the second-floor galleries were designed to have overhead lighting.⁸⁹ A trough was designed in the plaster cove to receive frosted lamps.⁹⁰ The overhead lighting has been altered over the years with new tracks and more energy-efficient lamps.

Miscellaneous Non-Character-Defining Elements

Late additions to the building's public interior, considered non-character-defining although well executed and relatively unobtrusive, include the frameless glass vestibule and the glass partition and doorway in the Upper Stair Hall. Non-character-defining features of greater obtrusiveness include late assemblies housing air-distribution systems, suspended from the Exhibition Lobby and Stair Hall ceilings [Figures 1.3.2-25 and 1.3.2-26].



Figure 1.3.2-25: Non-character-defining air-distribution system suspended beneath Exhibition Lobby ceiling. Photograph by John Milner Architects, November 2012.

⁸⁹ Campbell, Edmund. Letter to Mr. Carpenter of Cassidy Company, Inc. 21 April 1934. TS

⁹⁰ Carr, Paul. Letter to Edmund Campbell. 8 August 1936. TS



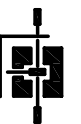
Figure 1.3.2-26: Non-character-defining air-distribution system suspended beneath Upper Stair Hall ceiling. Photograph by John Milner Architects, November 2012.

Non-Public Interior Elements

Except for the features associated with the original building envelope, namely, the interior window treatments, the building fabric of the non-public areas is considered to be non-character-defining.

PART 2.0

THOMAS H. BAYLY BUILDING
RECOMMENDATIONS FOR TREATMENT



PART 2.0 RECOMMENDATIONS FOR TREATMENT

2.1 TREATMENT PHILOSOPHY

2.1.1 SITE

In terms of the overall Bayly site, recommendations for treatment relate to the integrity of the landscape. Landscape integrity is defined as “the authenticity of a property’s historic identity, evinced by the survival of physical characteristics that existed during the property’s historic or prehistoric period.”¹ An evaluation of landscape integrity assesses the degree to which the landscape in its existing condition evokes the character and qualities of the original historic landscape (the Bayly landscape is complete the late 1930s). The National Register ascribes seven aspects of integrity to historic properties: location, design, setting, materials, workmanship, feeling, and association.² The level of integrity for each of these aspects is addressed in relation to the existing Bayly cultural landscape. A ranking of high, moderate, or low historical integrity is noted for the existing landscape. The assigned ranking is based on the analysis provided and is designed to reflect the level of continuity and change by judging the factors that affect an aspect of integrity. Rankings create generalized assessments of the integrity of the landscape.

Integrity of historic character is conferred by the historic features of the property as well as by the overall context. Development and alteration on and around the north and west sides have diminished the integrity of this half of the site. In addition, the west side of the site, facing the School of Architecture, is planned for an expansion. The landscape pertaining to the East and South building facades contains intact landscape features and is the focus of this report. The treatment recommendations provided address the east and south sides of the Bayly Building that are to remain basically intact as the building extension is constructed.

While the landscape retains a high to moderate level of integrity to the original 1930s as-built condition, it has undergone several episodes of intentional change in response to functional needs and site context. Comparison of the historic, as-built landscape of the Bayly Building and the existing landscape indicates that it is largely authentic, but has targeted nonhistoric changes to beds, paving surfaces, plantings, and specific missing original features, predominantly plantings, that can be recaptured over time. The condition of several features, such as historic brick walls and steps, also requires intervention.

¹ Charles A. Birnbaum, with Christine Capella Peters, *Secretary of the Interior’s Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes* (Washington, DC: U.S. Department of the Interior, 1996); Robert R. Page, Cathy A. Gilbert, and Susan A. Dolan, *A Guide to Cultural Landscape Reports: Contents, Process, and Techniques* (Washington, DC: U.S. Department of the Interior, 1998).

² National Register of Historic Places, *National Register Bulletin 16A: How to Complete the National Register Registration Form* (Washington, DC: U.S. Department of the Interior, 1995), pp. 44–45.

Overall integrity within the Bayly landscape is moderate to high, with some areas requiring preservation intervention to recapture missing detail and refine landscape features. Following the aspects of integrity identified by the National Register, the Bayly landscape exhibits the following levels:

- Location..... High
- Design Moderate
- Setting..... High
- Materials Moderate
- Workmanship..... High
- Feeling Moderate
- Association High

The integrity of the Bayly landscape is generally high, with selected areas of moderate ranking due to changes over time and the redesign that has altered aspects of the East Terraces. A range of preservation interventions can be recommended to maintain the integrity, safeguard the historic character, and enhance the authenticity of the site into the future.

Consideration of treatment recommendations for the Bayly landscape is informed by federal guidance for landscape preservation. National Park Service standards and guidelines establish options for the overall treatment of a historic property such as the Thomas H. Bayly Building. For cultural landscapes, the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes (Guidelines)*, *A Guide to Cultural Landscape Reports: Contents, Process, and Techniques*, and *National Park Service Director's Order #28: Cultural Resource Management* identify and define preservation treatments that can be applied to any historic property.³ The baseline intent for any treatment alternative is to identify and respect remaining historic landscape character and features. The alternatives address the four U.S. Secretary of the Interior treatments for historic properties, which are succinctly stated as

- *Preservation*: stabilize, repair, and steward applying this least intensive level of interventions
- *Restoration*: accurately return the character and features to their historic time
- *Rehabilitation*: respect historical character and features remaining while suiting current uses and stewardship needs
- *Reconstruction*: authentically rebuild missing features based on documentation.

The preservation philosophy that introduces this chapter articulates the desired, overall interest of preserving rather than precisely restoring to the details of an earlier time or inventively rehabilitating the property. A preservation approach that accepts the as-is landscape aligns with recommendations for property overall.

³ Birnbaum, with Peters, *Standards for the Treatment of Historic Properties*; National Park Service, *NPS-28: Cultural Resource Management Guideline*; Page, Gilbert, and Dolan, *Guide to Cultural Landscape Reports*.

2.1.2 ARCHITECTURAL

The *Secretary of the Interior's Standards for the Treatment of Historic Properties* provides four distinct but interrelated approaches to the treatment of historic properties: preservation, rehabilitation, restoration, and reconstruction. Our interpretation of the Thomas H. Bayly Building is that the work falls under the category of "preservation." "Preservation," as defined by the Secretary of the Interior, is "the act or process of applying measures necessary to sustain the existing form, integrity, and materials of an historic property."⁴ The intent is to protect and stabilize the property and focus upon the ongoing maintenance of repair of the historic features.

As mentioned in Part 1.0, the Bayly Building is listed in the National Register of Historic Places as a contributing historical asset within the Rugby Road–University Corner Historic District. As such, all repairs, alterations, improvements, and additions should be conducted in accordance with *The Secretary of the Interior's Standards for Treatment of Historic Buildings*.

All historical fabric and restored elements in areas of primary historical significance should be maintained in their present state. Important spaces and spatial relationships should also be preserved. Installations of mechanical, electrical, and plumbing systems, partitioning, and barrier-free access elements should result in little or no visible impact through careful coordination of new work with existing architectural features and finishes. Likewise, all character-defining features, as described in Section 1.3.2, should be preserved.

Historically significant and character-defining materials, features, and finishes should be conserved where possible, repaired where required, and replaced in kind only as a last resort. Treatment should use the best practice, as generally accepted among preservation-design professionals, in order to do no harm to important fabrics. Ideally, all treatments should be reversible. The end goal is to provide for continuity of the historical aspects and character-defining features of the building, allowing for future changes in use and interpretation. Recommended treatments of historically significant and character-defining materials can be found in Section 2.3.2.

Alterations and new construction needed to meet accessibility requirements should be designed to minimize material loss and visual change to the historic building. Portions of the building that are determined to have minimal architectural or historical importance and that contain no significant architectural details may be altered as required to provide for current or planned use.

⁴ Birnbaum, with Peters, *Standards for the Treatment of Historic Properties*.

2.2 REQUIREMENTS FOR TREATMENT

2.2.1 USE AND INTERPRETATION OF THE RESOURCE

Since its inception in 1935, the Thomas H. Bayly Building has been used as a museum and associated support space. There was, however, a brief period during the early 1960s through 1972 when it was used as academic space and housed the art and architecture classrooms. Without considering future uses of the building other than as a museum, there are few alternatives to consider for establishing a treatment for the preservation and restoration of the building. Outlined below are code requirements and options for treatment for the architectural features and infrastructure of the building. As suggested in the Treatment Philosophy, all repairs, alterations, improvements, and additions should be planned, designed, and executed in compliance with *The Secretary of the Interior's Standards for Treatment of Historic Buildings*.

2.2.2 CODE REVIEW

This section provides an overview of the major code issues that may affect the future use and function of the Thomas H. Bayly Building. Each of the codes listed below has been adopted by the Commonwealth of Virginia as of March 1, 2012. The codes acknowledge that there are challenges in meeting all the requirements in historic buildings without damaging or losing significant historical fabric. In most cases, alternative methods of compliance or variances can be reviewed and agreed on by the code enforcement officer/agency. The following is a summary of the most significant code elements associated with the existing use of the Thomas H. Bayly Building and the current conditions of the building that relate to those provisions. See Section 2.3.3.3 for Life Safety guidelines and building compliance.

APPLICABLE BUILDING AND LIFE SAFETY CODES

- International Building Code (IBC 2012), for construction and building.
- International Existing Building Code (IEBC 2012), for repair, alteration, addition, and change of occupancy for existing buildings.
- International Fire Code (IFC 2012), for fire-protection systems and occupant safety in new and existing buildings.
- Americans with Disabilities Act of 1990 (ADA, Title III).

EXISTING BUILDING DATA

- Use and Occupancy Classification: Assembly Group A-3 (Museum)
- Construction Type: Type III B
- Stories: Three (3) (includes Basement)
- Stairs: Two (2) existing stairs
- Historic Status: Contributing Building within a Historic District

IBC and IEBC

The IEBC 2012 governs the repair, alteration, addition, or change of occupancy of an existing building. Alteration-Level I administers the removal and replacement of existing materials and elements with new materials and elements that serve the same purpose and is outlined in Chapter 7 of the IEBC. Because the Thomas H. Bayly Building is listed on the National Register as a contributing building within a historic district, Chapter 12 of the IEBC, Historic Buildings, relates to the above provisions. However, all new work must apply to the guidelines of the IBC 2012.

Chapter 12: Historic Buildings

- **Section 1202 Repairs:** “Repairs to any portion of an historic building or structure shall be permitted with original or like materials and original method of construction.”
 - **Replacement:** “Replacement of existing or missing features using original materials shall be permitted. Partial replacement for repairs that match the original in configuration, height, and size shall be permitted.”
- **Section 1203 Fire Safety:** “Every historic building that does not conform to the construction requirements specified in this code for the occupancy or use and that constitutes a distinct fire hazard . . . shall be provided with an approved automatic fire-extinguishing system as determined appropriate by the code official. However, an automatic fire-extinguishing system shall not be used to substitute for . . . the required number of exits.”
 - **Means of egress:** “Existing door openings and corridor and stairway widths less than those specified elsewhere in this code may be approved, provided that, in the opinion of the code official, there is sufficient width and height for a person to pass through the opening or traverse the means of egress. . . . [T]he front or main exit doors need not swing in the direction of the path of exit travel, provided that other approved means of egress having sufficient capacity to serve the total occupant load are provided.”

Condition: The main entrance doors to the building swing out, as do the exit doors in the basement level and the doors of the Annex and late 1960 additions. The doors at the glass entrance vestibule are capable of swinging in either direction.
 - **Interior finishes:** “The existing finishes of walls and ceilings shall be accepted when it is demonstrated that they are the historic finishes.”

Condition: Alterations and upgrades were made to the gallery spaces in 2010. These changes include the furring out of the existing interior gallery walls with homosote to allow for ease of display of the artwork, as well as installation of built-in shelving in Galleries B and F.
 - **Stairway enclosure:** “In buildings of three stories or less, exit enclosure construction shall limit the spread of smoke by the use of tight-fitting doors and solid elements. Such elements are not required to have a fire-resistance rating.”

Condition: The existing grand stair (Stair No. 1) is not enclosed and cannot be enclosed without significantly altering the architectural features and fabric of the building. The existing stair (Stair No. 2) linking the basement and first-floor levels is enclosed but does not exit directly to the exterior of the building.

- **One-hour fire-resistant assemblies:** “1-hour rated construction . . . need not be provided . . . , where the existing wall and ceiling finish is lath and plaster.”

Condition: The original finish material of the interior walls is lath and plaster.

- **Stairway railings:** “Grand stairways shall be accepted without complying with the handrail and guard requirements. Existing handrails and guards at all stairs shall be permitted to remain.”

Condition: The existing handrails of the grand and secondary stairs (Stairs No. 1 and 2) would not meet code per the 2012 IBC, but are exempt from complying to those requirements because they are original to the historic building.

- **Exit signs:** “Where exit sign or egress path marking location would damage the historic character of the building, alternative exit signs are permitted.”

Condition: The building has clearly marked exit signs, alarms, and lighting to comply with fire safety.

- **Automatic fire-extinguishing systems:** “Every historic building that cannot be made to conform to the construction requirements specified in the International Building Code for the occupancy or use and that constitutes a distinct fire hazard shall be deemed to be in compliance if provided with an approved automatic fire-extinguishing system.”

Exception: “When the code official approves an alternative life-safety system.”

Condition: The building does not have a sprinkler system installed; however, there are fire extinguishers situated at appropriate locations.

- **Section 1204 Alterations:**

- **Accessibility requirements:** “The provisions of Sections 705, 806 and 906, as applicable, shall apply to facilities designated as historic structures that undergo alterations. . . . Where compliance with the requirements for accessible routes, entrances or toilet rooms would threaten or destroy the historic significance of the building, . . . the alternative requirements of Sections 1204.1.1 through 1204.1.4 shall be permitted.”

- **Site arrival points:** “At least one main entrance shall be accessible.”

Condition: The main entrance is not accessible.

- **Multilevel buildings and facilities:** “An accessible route from an accessible entrance to public spaces on the level of the accessible entrance shall be provided.”

Condition: The elevator provides access from the accessible basement-level entrance to the first- and second-floor galleries. The basement level only has public space at the entrance foyer.

- **Entrances:** “At least one main entrance shall be accessible.”

Exceptions:

1. If a main entrance cannot be made accessible, an accessible nonpublic entrance that is unlocked while the building is occupied shall be provided; or
2. If a main entrance cannot be made accessible, a locked accessible entrance with a notification system or remote monitoring shall be provided.

Condition: The main entrance is not accessible, but there is a buzzer at the basement level to allow for handicapped access.

- **Toilet and bathing facilities:** “Where toilet rooms are provided, at least one accessible family or assisted-use toilet room complying with Section 1109.2.1 of the International Building Code shall be provided.”

Condition: There is a handicapped-accessible restroom on the basement-floor level.

ACCESSIBILITY

The Americans with Disabilities Act (ADA) establishes design requirements for the construction or alterations of facilities. These requirements are known as the Americans with Disabilities Act Accessibility Guidelines (ADAAG) and are enforced by the Department of Justice. In general, historic structures are expected to comply with the accessibility guidelines when the building is altered, except where the required work would threaten or destroy the historical significance of the building. The minimum ADAAG requirements for historic buildings coincide with those referenced in Chapter 12 of the IEBC and are outlined below in Checklist “J” from the Department of Justice website.

Checklist J: Accessible Buildings – Historic Preservation

- **Site Accessible Route:** “At least one accessible route . . . must be provided from a site access point to an accessible entrance.”

Condition: There is an accessible entrance at the basement-floor level.

- **Ramps:** “A ramp with a slope no steeper than 1:6 may be used as part of an accessible route . . . but the run must not exceed two feet.”

Condition: There are no ramps in the building.

- **Entrances:** “At least one accessible entrance . . . which is used by the public must be provided. If no public entrance can be made accessible, then access may be provided at any entrance which is open (unlocked) when directional signage is provided at the primary public entrance. The alternative accessible entrance must have a notification system. . . . Accessible routes from an accessible entrance to all publicly used spaces must be provided at least on the accessible entrance level.”

Condition: The main entrance is not accessible, but there is a buzzer at the basement level to allow for handicapped access.

- **Toilet Rooms:** “If toilets are provided, then at least one toilet facility . . . must be provided on an accessible route.”

Condition: There is a handicapped-accessible restroom on the basement-floor level.

- **Displays:** “Displaces and written information should be located so as to be seen by a seated person.”

Condition: The artwork and description cards can be viewed by a seated person.

2.3 RECOMMENDATIONS FOR TREATMENT

Before any repairs or new work occurs, the following in-depth studies and documentation are recommended:

Mortar sampling and analysis

- The repointing of the masonry may necessitate full analysis of the existing mortar composition in order to properly match the formula, color, and texture.

2.3.1 SITE

2.3.1.1 Land Uses, Landscape Patterns, and Spatial Organization

- Preserve historic land uses, landscape patterns, and spatial organization. No specific treatment action recommended.
- Retain aged historic planting while partially restoring historic garden form to South Garden in order to recapture historic landscape pattern.

2.3.1.2 Views and Visual Relationships

- Preserve historic views and visual relationships. No specific treatment action recommended.
- Restore designed garden form to South Garden to recapture historic visual space to the degree possible while mature plantings are retained.

2.3.1.3 Topography and Drainage

- Remove and replace 2 inches to 6 inches of excess mulch and soil at planting beds of the upper terrace to reduce flow of surface rainwater and mulch flotsam onto upper terrace paving. Excavate and reset plants, if necessary.
- Install removable, biodegradable water bars with soil staples on the planted slope below the lower terrace to secure soil, plants, and mulch during rain events. Remove when plants have sufficient growth to stabilize soil and intercept rainwater.
- Regrade slope of bed west of southwest retaining wall at steps of South Garden to reduce storm-water infiltration and resulting deterioration of brick masonry.
- [Alternative: Install drain to capture and divert water at slope of bed west of southwest retaining wall at steps of South Garden.]

2.3.1.4 Vegetation

East Terraces

- Monitor and continue to inoculate white ash (*Fraxinus americana*) for emerald ash borer every two years along entire streetscape of Rugby Road. If more than 50% of entire row is compromised, replace ash with a variety of deciduous tree species with a complementary form and relative growth rate for parallel character as trees mature.

- Remove willow oak (*Quercus phellos*) at south end of lower terrace in the future when tree reaches a failing condition; replace with historic ginkgo (*Ginkgo biloba*), replant ginkgo pair to match on north end of lower terrace. Select male ginkgo to prevent maintenance needs and noxious fruit near the public terrace. Consider views from the street and uses of the area before tree replanting as evolution marks the Bayly landscape and replacing these trees may not suit future uses.
- Plan three common junipers (*Juniperus communis*) or similar evergreen shrubs for accents at the base of the southern cheek wall of the south upper terrace steps and at the base of the northern cheek wall of the north upper terrace steps.
- Establish periwinkle (*Vinca minor*) as a ground cover over the bare mulch of the northeast corner of the lower terrace.
- Perform soil tests and apply necessary soil additives to chlorosis (yellowing and leaf dieback) observed on dwarf sweetbox (*Sarcococca humifusa humilis*) mass planting on lower terrace slope. If soil amendments do not remedy the chlorosis and dieback, exposure to sunlight may be responsible; consider replacement with another species with a lower requirement for shade, such as *Sarcococca hookeriana* var. *dignya*, dwarf English boxwood (*Buxus sempervirens* "Suffruticosa"), or another plant that will cover the slope effectively, aid in preventing erosion, and retain a low profile.
- Plant one crepe myrtle (*Lagerstroemia indica*) in the southeast corner of the south planting bed of the upper terrace to match north planting bed.
- Consider placement of seasonal plantings in ornamental pots at base of portico columns and along the East facade of the building; remove during winter months.
- Perform soil tests and apply necessary soil additives at crepe myrtle planting along the north facade of the building.

South Garden:

- Preserve historic plant material; selectively and carefully prune original boxwood (*Buxus sempervirens*) and azalea (*Rhododendron* species) shrub masses to more closely align with historic shrub massing shapes; infill with additional shrubs of the same species if necessary.
- Expand turf panel in South Garden in tandem with reshaping of shrub massings.
- Replant two boxwoods to match the two remaining boxwoods in the planting bed along the North facade of the building.
- Establish a viable mixture of herbaceous perennial ground covers that will thrive in a sunny, southern exposure between the boxwoods in the planting bed along the North facade of the building. Alternatively, return this bed to the historic planting seen on L-1.

2.3.1.5 Circulation

- Test select areas of brick paving in order to determine an effective method of cleaning using the gentlest means possible for removal of atmospheric soiling. Water/detergent cleaning is preferred. Clean select areas of brick paving.
- Remove loose mortar from raised coping bricks of pads in the corner planting beds of the upper terrace; repoint coping bed joint. Use appropriate color and compressive strength of mortar for repairs.
- Remove and reset loose bricks in landing pad at top of west steps of South Garden. Use appropriate color and compressive strength of mortar for repairs. Review water infiltration and determine appropriate course to lessen hydrostatic pressure behind step structure. One approach may be to provide planned locations of weep holes for release of water so that water does not move through random mortar joints.

2.3.1.6 Landscape Structures

- Test select areas of brickwork in order to determine an effective method of cleaning using the gentlest means possible for removal of vegetation and atmospheric soiling. Light-pressure powerwash may be effective. Water with detergent cleaning is preferred. Clean select areas of brickwork.
- Repoint open brick joints of the East Terraces and South Garden walls, to match existing mortar composition, texture, color, and tooling.
- Remove loose mortar and all sealant from deteriorated East Terraces coping joints; reseal and repoint coping bed joint.
- Repair miscellaneous cracked and distressed brickwork at west steps of South Garden.

2.3.1.7 Furnishings and Objects

- Install four ornate urns in historic locations on cheek walls of steps between the upper and lower terraces of the East Terraces.
- Consider installation of sculptures or busts in enclosed window niches of the East facade of the Bayly Building.
- Remove unused nonoriginal sculpture pad in South Garden.
- Remove and reset concrete benches in historic locations in South Garden.

2.3.2 ARCHITECTURAL

2.3.2.1 Exterior

Brick Masonry:

- Test select areas of brickwork in order to determine an effective method of cleaning using the gentlest means possible for removal of paint stains and atmospheric soiling. Water and detergent cleaning is preferred. Clean select areas of brickwork. [assume water and detergent cleaning of 500 square feet (SF)]
- [Alternative: do not clean brickwork.]
- Repoint open brick joints at West Terrace parapet to match existing mortar composition, texture, color, and tooling. [34 linear feet (LF) of joint]
- Remove loose mortar and all sealant from West Terrace parapet coping joints; reseal joints. [34 LF of joint]
- Repoint West Terrace parapet coping bed joint. [135 LF of joint]
- Replace steel lintels over select windows and doors according to structural requirements. Refer to Section 2.3.3.1.
- Rebuild window/door head masonry associated with above-mentioned lintel replacement, in kind. Match existing jack arch configurations. [assume 7 SF of brickwork each]
- Repair miscellaneous cracked and distressed brickwork as recommended in Section 2.3.3.1.

Granite Masonry:

- Remove old sealant. Rake and repoint masonry joints with mortar to match color, texture, and strength of existing pointing. [30 LF of joint]
- Remove soiling with a commercial masonry cleaner formulated specifically for granite, as part of a comprehensive masonry-cleaning project. [140 SF]
- [Alternative: do not clean granite masonry.]

Marble Masonry:

- As part of a comprehensive masonry-cleaning project, selectively clean marble elements using the gentlest means possible. Acidic cleaners and abrasive methods should be avoided. [500 SF]
- [Alternative: Do not clean marble elements.]
- No work is recommended for previously cleaned elements.

Stucco Work:

- Clean vaulted portico ceiling [600 SF]. Caulk hairline cracks.
- [Alternative: No work at portico ceiling.]
- [Alternative: Rake and stucco repair hairline cracks. Clean, prepare, and paint stucco ceiling.]

Portico Paving, Steps, and Railings:

- No recommended work.
- [Alternative: remove iron stains from bluestone paving and steps.]

Windows:

- Seal vertical joints between woodwork and masonry. [160 LF]
- [Alternative: no work at perimeter of windows.]
- Replace cracked, single-glazed panes in kind. [3 each]
- [Alternative: Allow cracked window panes to remain in place.]

Exterior Doors:

- Replace West Terrace doors with hot rolled-steel section units to match existing units, except glazing to be insulated. [three pairs of French units]
- [Alternative: Refurbish existing terrace doors and make fully operable.]
- [Alternative: Treat terrace door bottom rails with rust inhibitive paint.]
- Replace basement-level and Annex doors with hollow-metal, flush-panel insulated units. Match glazing pattern. [three pairs of glazed French units; one single unglazed unit]
- [Alternative: Treat areas of minor rust damage with rust inhibitor, and then clean and repaint.]

Grille Work:

- Replace fasteners with slot-headed screws of a metal compatible with the grille material. [32 fasteners]

Slate Roofs:

- Maintain slate roof in its current state. Reseal ridge. Patch missing and broken slate tiles.]
- No work at gutters.
- [Alternative: Reinforce roof framing according to Section 2.3.3.1.]
- [Alternative: Install new decking according to Section 2.3.3.1.] [100%—557 squares]
- [Alternative: Install a 4-foot width of ice and water shield at all eaves, ridges, and hips.] [2,300 LF]
- [Alternative: Install new open-valley slate roofing over 30# felt to match existing.] [100%—557 squares]
- [Alternative: Fabricate and install new ridge (saddle, strip, cap, or roll)]. [130 LF]
- [Alternative: Install new 20-ounce copper flashings at ridge, hips, and valleys.] [330 LF]

Metal Roof (excluding canopy):

- No work at gutters.
- Replace or repair sheet metal ventilator according to Section 2.3.3.2.
- [Alternative: No work to ventilator, if acceptable for mechanical requirements.]

West Terrace Paved Roof:

- Remove all pavement, membranes, and base flashing down to concrete decking.
- Install a new EPDM membrane 20-year roof system and associated flashings. [524 SF]
- [Alternative: Do not replace terrace membrane and paving. Apply biocide to existing terrace.]
- Install new roof drains. Tie into existing drain pipes. [two each]

- [Alternative: Reuse existing drains; install new grates by drain manufacturer.]
- Install new concrete pavers manufactured for use as roof ballast, with grooved backs for four-way drainage. [524 SF]
- [Alternative: Retain pavement over existing roof membrane.]

Southwest Addition Low-Slope Roof:

- Remove all membrane and associated flashings down to concrete decking.
- Install a new 20-year, ballasted EPDM membrane roof system and associated flashings. [490 SF]
- [Alternative: Retain existing roof system. Continue to maintain and conduct spot repairs.]

Annex Low-Slope Roof:

- Remove all membrane and associated flashings down to concrete decking.
- Install a new 20-year, ballasted EPDM membrane roof system and associated flashings. [656 SF]
- [Alternative: Retain existing roof system. Continue to maintain and conduct spot repairs.]

Canopy:

- Paint steel framing and exposed wood decking on canopy underside. [140 SF]
- [Alternative: No work at canopy underside.]
- Straighten bent gutters. [two each, 11 LF each]
- Hammer out damaged sheet-metal cladding. [1 LF]

2.3.2.2 Interior

Flooring:

- Replace damaged marble base units in kind. [one each door plinth block; one unit wall base]
- Epoxypatch border units marred by hardware attachment. Match color of existing marble. [four each]
- [Alternative: No work to damaged floor elements.]

Marble-Clad Main Stair:

- Secure loose landing unit. [single unit]
- Rake joints in marble stair landing and paneling, and regrout. [160 LF of joint]
- [Alternative: No work to marble stair elements.]
- No recommended work at chipped capstones.

Secondary Stair:

- Strip and refinish wood handrails. [30 LF]
- Clean and repaint metal stair components, including risers, stringers, newels, and balusters. [one run of twelve risers; one run of six risers]
- [Alternative: No cosmetic work to secondary stair wood and metal components.]
- Replace worn nonslip tread strips. [18 each]

Wood Finishes:

- Dutchman-repair northwest gallery door jambs and paint to match. [two each, 6 square inches each]
- [Alternative: Sand damaged areas smooth and touch up paint.]

Wall and Ceiling Finishes:

- Replace suspended acoustical ceiling in its entirety in southwest addition. [236 SF]
- The original ceiling skylights (lay lights) in Galleries C, D, and E are unique architectural features to the Bayly Building. Recreating the ceiling skylight at the second-floor galleries would not require restoring the building's exterior skylight. However, if museum wanted to restore the exterior look of the Bayly Building to Campbell's 1933 design, localized strengthening of the roof truss would be required, see Section 1.2.4.1 Structural Assessment. Modern skylights are more energy efficient, which causes snow loads not to melt as quickly as they did on skylights built in the twenty-century.

Interior Doors:

- Repaint painted wood and metal doors 100%. [27 leaves]
- [Alternative: No cosmetic work to interior doors.]

2.3.3 INFRASTRUCTURE

2.3.3.1 Structural

Building Structure

Overall, the existing building structure is in sound condition with limited deterioration, as previously summarized in the 1.2 Physical Description and Conditions Assessment portion of this report. Similarly, per our structural analyses, the existing building structure has sufficient capacity to serve as an art museum. While the floors exhibit capacities greater than 100 pounds per square foot (psf), the roof structure is an efficiently designed roof system. It does not have a reserve capacity over the code-mandated minimum snow and live loads. Thus, if the existing structure is anticipated to receive alterations as part of the upcoming expansion project, RSA recommends that the existing roof structure be analyzed for the specific loading conditions and sympathetic localized reinforcements to the roof structure be completed as necessary.

In summary, RSA recommends the following repair strategies be incorporated into the upcoming expansion project:

- The majority of the existing slate roof is relatively modern, having been installed in the latter half of the previous century; hence, the slate material should be serviceable for at least another 50 years. RSA recommends that the existing slate roof be sounded and loose tiles be reset to match existing components.
- The existing roof structure is efficiently designed and has the available capacity to accommodate the minimum code live and snow loads. If additional load is to be placed on the roof truss, including the supported hung ceiling, RSA recommends performing a localized probe investigation to remove roofing and roof-deck components to confirm the existing conditions.
- The coping units around the parapet of the accessible roof at the west elevation of the second floor are exhibiting open bedding joints and sealed head joints. RSA recommends repointing the bed joints with a compatible cementitious mortar. During the course of this work, it may be prudent to locally remove one coping unit to confirm whether steel anchors are installed and whether they have corroded. Similarly, RSA recommends removing the existing caulk from the head joints and repointing with a cementitious mortar or installing lead caps over the mortar joints. Furthermore, RSA recommends performing an investigation to review the roof drainage.
- Existing localized cracks were observed in the first-floor concrete slab. These cracks are fairly small and represent no current structural concern. RSA recommends monitoring these cracks and/or infilling the cracks with a cementitious concrete repair mortar or grout.
- Existing masonry conditions around exterior window and door openings are currently in a state of deterioration, principally due to the corrosion of steel lintels. RSA recommends removing the existing corroding steel lintels and replacing them with stainless steel for maximum durability. For lesser durability, galvanized lintels may be installed. Masonry repairs, including brick replacement and resetting, will be required to perform the lintel installation. RSA recommends that the surrounding masonry be repointed in a compatible mortar.

Site Structures

Unlike the building structure, the site structures around the Bayly Art Museum exhibit significant deterioration. Several vertical cracks in the masonry and masonry displacement were observed. RSA recommends that localized masonry repairs to the site structures be performed. Masonry-repair scope shall most likely include localized brick-masonry removals and reconstruction at all vertical and diagonal cracks and areas of masonry displacement. Rebuilding efforts shall retoothe the new masonry into existing masonry and may require localized reinforcement. Tree removal or alterations to the root ball may be required to eliminate further disturbance to the walls.

As part of the repair design, RSA recommends performing localized probes and test pits to confirm the construction of the retaining walls and their associated footings. The original architectural plans do not adequately show the wall construction; therefore, the retaining walls could be unreinforced on conventional wall footings that relying on gravity load only, rather than designed as cantilevered retaining walls resting on foundations designed to restrain overturning and sliding. RSA recommends performing limited structural analyses and soil investigation to verify that the existing masonry walls are sufficient to retain the current soil pressures and surcharge loadings.

2.3.3.2 Mechanical, Electrical, and Plumbing

Building Envelope

Generally, the masonry walls of the building envelope have adequate thermal and vapor transmission characteristics to support winter humidification levels required for an art museum. The windows are a thermal weakness, particularly the steel doors opening onto the second-floor balcony, where condensation could form during cold weather. In fact, there was condensation on the steel doors during our inspection in January. The second-floor ceiling is heavily insulated, but there are numerous penetrations between the second-floor and attic, which allow humidified air to escape into the attic. Since the roof is not insulated, there is a risk of condensation forming on the underside of the roof. We recommend the following improvements:

- Seal off any openings between second-floor and the attic to prevent air leakage into the attic.
- Replace the single glazed exterior doors on the second-floor with new doors that have better insulating value.
- Add an additional layer of glazing on any windows in humidified areas of the building. This could be accomplished either by changing the window or adding an interior storm window.

Mechanical

The mechanical systems serving the building are not ideal for an art museum. Generally, the monitoring data show they can maintain fairly even temperatures in the various spaces, but relative humidity can vary widely, often with wide swings over a short duration. The level of air filtration is less than what is recommended for long-term preservation of collections. **For museum spaces, air filters having a minimum efficiency reporting value (MERV) of at least 14 is recommended (roughly 95% efficiency). Unfortunately, it is often impractical to retrofit existing air handlers with new filtration due to the space limitations and extra fan horsepower that is required to overcome the pressure drop from additional air filtration.** Our mechanical system recommendations include

- AHU-1, serving exhibit galleries, has reached the end of its useful life and its replacement should be included in a long-range improvement plan for the building. The new air handler should have improved particulate air filtration and consider having gas-phase air filtration on the outside air intake.
 - Immediate Measures: Monitoring data for this area show wide swings in relative humidity. Investigate the automatic controls to determine if the relative humidity fluctuations can be reduced by adding additional sensors or tuning the control loops.
 - Long-Term Plan: AHU-1 has reached the end of its useful life, and its replacement should be included in a long-range improvement plan for the building. The new air handler should have improved particulate air filtration, and having gas-phase air filtration on the outside air intake should be considered.

- AHU-3, serving Collections Storage, should have improved particulate air filtration and consider having gas-phase air filtration for the long-term preservation of the collections. Monitoring data for this area show wide swings in relative humidity. Since the space is closed off and has a dedicated humidifier, it should be able to be maintained with a more stable environment, and the cause for the swings should be investigated and corrected.
 - Immediate Measures: Monitoring data for this area show wide swings in relative humidity. Since the space is closed off and has a dedicated humidifier, it should be able to be maintained with a more stable environment, and the cause for the swings should be investigated and corrected.
 - Long-Term Plan: AHU-3 should have improved particulate air filtration, and having gas-phase air filtration for the long-term preservation of the collections should be considered. This improvement would have to be part of a long-term plan because there is not enough room in the basement mechanical room for additional filter racks.
- AHU-4 and 5, serving the lobby, should be relocated to a more suitable location. They are suspended from the ceiling of the lobby in enclosures to conceal them. The units do not have adequate filtration for a museum environment, are difficult to service properly, and pose the risk of water damage to collections if there is a leak in the piping or coils.
 - Long-Term Plan: AHU-4 and 5 should be relocated to a more suitable location and modified to include improved air filtration. They are suspended from the ceiling of the lobby in enclosures to conceal them. The units do not have adequate filtration for a museum environment, are difficult to service properly, and pose the risk of water damage to collections if there is a leak in the piping or coils.
- AHU-6, serving the Gallery B, should be relocated to a more suitable location. It is in a poor location where it is difficult to service, and a water leak could threaten the Collections Storage below. It may be possible to build a new mechanical room in the attic to house this unit.
 - Interim Measures: Monitoring data for this area show wide swings in relative humidity. Since AHU-6 is surrounded by areas served by AHU-1, it is likely that the relative humidity fluctuations in this area are heavily influenced by what happens with AHU-1. However, the control system should be checked to make sure the two systems are not fighting each other for control.
 - Long-Term Plan: AHU-6 should be relocated to a more suitable location. It is in a poor location where it is difficult to service, and a water leak could threaten Collections Storage below. It may be possible to build a new mechanical room in the attic to house this unit. This new space should include protection against damage from leaks and include enough room for a larger air-filter section.
- The attic has one passive air vent through the roof. We recommend installing an attic ventilation system that would reduce heat buildup in the summer.
- Humidifier H-6 was displaying an error message and needs to be serviced.

Electrical

The electrical systems all appear to be modern and code compliant, and have adequate capacity for the building. For energy efficiency, the museum may want to investigate alternative lighting to reduce or eliminate the incandescent lighting in the galleries.

Plumbing

The plumbing systems serving the building appear to be in good condition, although dated. As part of a long-range building improvement plan, we recommend replacing the existing plumbing fixtures with new water-saving fixtures.

Fire Safety

The building is protected by a modern, addressable fire-alarm system. There are detection and annunciation devices throughout the building, except in the attic. We recommend adding heat detectors in the attic.

2.3.3.3 Life Safety

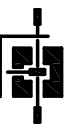
Like the IBC and IEBC, the International Fire Code (IFC 2012) governs the health, safety, and welfare of the public. Chapter 11 of the IFC deals with “Construction Requirements for Existing Buildings” for buildings constructed before the creation of the fire code. The Thomas H. Bayly Building complies with the life-safety codes in the following areas:

- Smoke detectors are located in the galleries and offices as well as on the air handlers.
- Manual fire-alarm boxes are placed at appropriate locations.
- Emergency horn/strobe lighting is located throughout the building.
- Exits are clearly marked with appropriate signage.
- Exit doors swing out in the direction of travel.
- Fire extinguishers are placed in conspicuous locations.
- The elevator serves the needs of emergency personnel for firefighting or rescue purposes.

No further recommendations are given as the building components are up to date and code compliant, and appear to be in good condition.

PART 3.0

THOMAS H. BAYLY BUILDING
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4.0 BIBLIOGRAPHY

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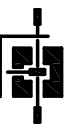
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PART 4.0

THOMAS H. BAYLY BUILDING
APPENDIXES



APPENDIX A. – SITE AND ARCHITECTURAL DRAWINGS

VEGETATION CODE LIST

Existing and historic vegetation key for the Thomas H. Bayly Building. Plant codes correspond to landscape plans included in this HSR: L-1, *c.1935 Landscape Plan* and L-2, *2012 Landscape Plan*. Existing vegetation was inventoried by Heritage Landscapes in November 2012.

Trees

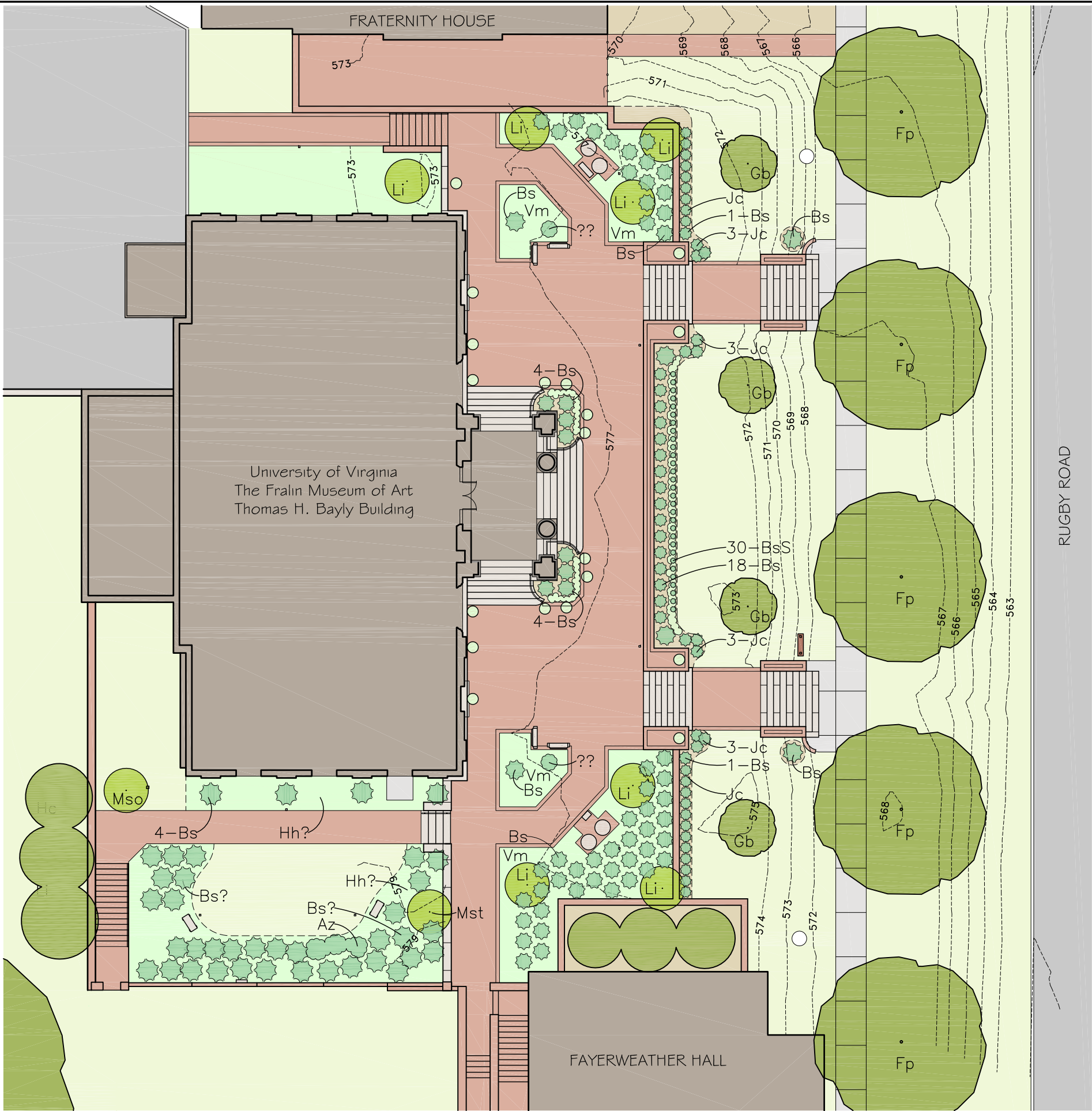
Am	serviceberry	<i>Amelanchier</i> species
Fp	white ash	<i>Fraxinus pennsylvanica</i>
Gb	ginkgo	<i>Ginkgo biloba</i>
Li	crepe myrtle	<i>Lagerstroemia indica</i>
Mg	southern magnolia	<i>Magnolia grandiflora</i>
Mso	saucer magnolia	<i>Magnolia xsoulangiana</i>
Mst	star magnolia	<i>Magnolia stellata</i>
Qph	willow oak	<i>Quercus phellos</i>
Pst	white pine	<i>Pinus strobus</i>
Ts	arborvitae	<i>Thuja</i> species

Shrubs, vines

Aj	gold dust plant	<i>Aucuba japonica</i> “Variegata”
Az	azalea	<i>Rhododendron</i> species
Bs	boxwood	<i>Buxus sempervirens</i>
BsS	English boxwood	<i>Buxus sempervirens</i> “Suffruticosa”
Cj	Japanese camellia	<i>Camellia japonica</i>
Ha	climbing hydrangea	<i>Hydrangea anomala</i>
Hq	oakleaf hydrangea	<i>Hydrangea quercifolia</i>
Jc	common juniper	<i>Juniperus communis</i>
Pl	cherry laurel	<i>Prunus laurocerasus</i>
PO	Otto Luyken cherry laurel	<i>Prunus laurocerasus</i> “Otto Luyken”
Ro	rosemary	<i>Rosemarinus officinalis</i>
Rs	rose	<i>Rosa</i> species
Sh	dwarf sweetbox	<i>Sarcococca humifusa humilis</i>

Ground covers, herbaceous perennials, bulbs

As	anemone	<i>Anemone</i> species
Cv	threadleaf coreopsis	<i>Coreopsis verticillata</i>
Ef	wintercreeper	<i>Euonymus fortunei</i>
Gl	white gaura	<i>Gaura lindheimeri</i>
Hc	coral bells	<i>Heuchera</i> cultivar
Hh	English ivy	<i>Hedera helix</i>
Hs	daylily	<i>Hemerocallis</i> species
Ns	narcissus	<i>Narcissus</i> species
Pa	Christmas fern	<i>Polystichum acrostichoides</i>
Ps	peony	<i>Paeonia</i> species
Vm	common myrtle	<i>Vinca minor</i>



Plant List	
Az	Rhododendron species
Bs	Buxus sempervirens
BsS	Buxus sempervirens 'Suffruticosa'
Fp	Fraxinus pennsylvanica
Gb	Ginkgo biloba
Hh	Hedera helix
Jc	Juniperus communis
Li	Lagerstroemia indica
Mso	Magnolia soulangiana
Mst	Magnolia stellata
Qph	Quercus phellos
Vm	Vinca minor

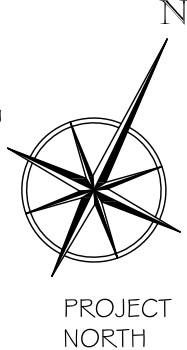
Herbaceous plants

Seasonal plantings in containers

SYMBOL KEY

- Deciduous Tree
- Ornamental Tree
- Evergreen Shrub
- Deciduous Shrub
- Perennials/Annuals/Groundcover
- Planted Container
- Turf
- Bed
- Steps
- Asphalt
- Brick
- Concrete
- Stone
- Brick Wall
- Catch Basin
- Wood Fence
- 1 Foot Contour
- Utility Access
- Sign
- Bench
- Sculptural Elements
- Building

SOURCES
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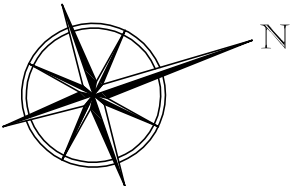


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Historic Structure Report
Thomas H. Bayly Building
The University of Virginia, Charlottesville, Virginia

c1935 Landscape Plan

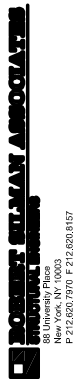
L-1




BASEMENT FLOOR PLAN
 SCALE: 1/16" = 1'-0"



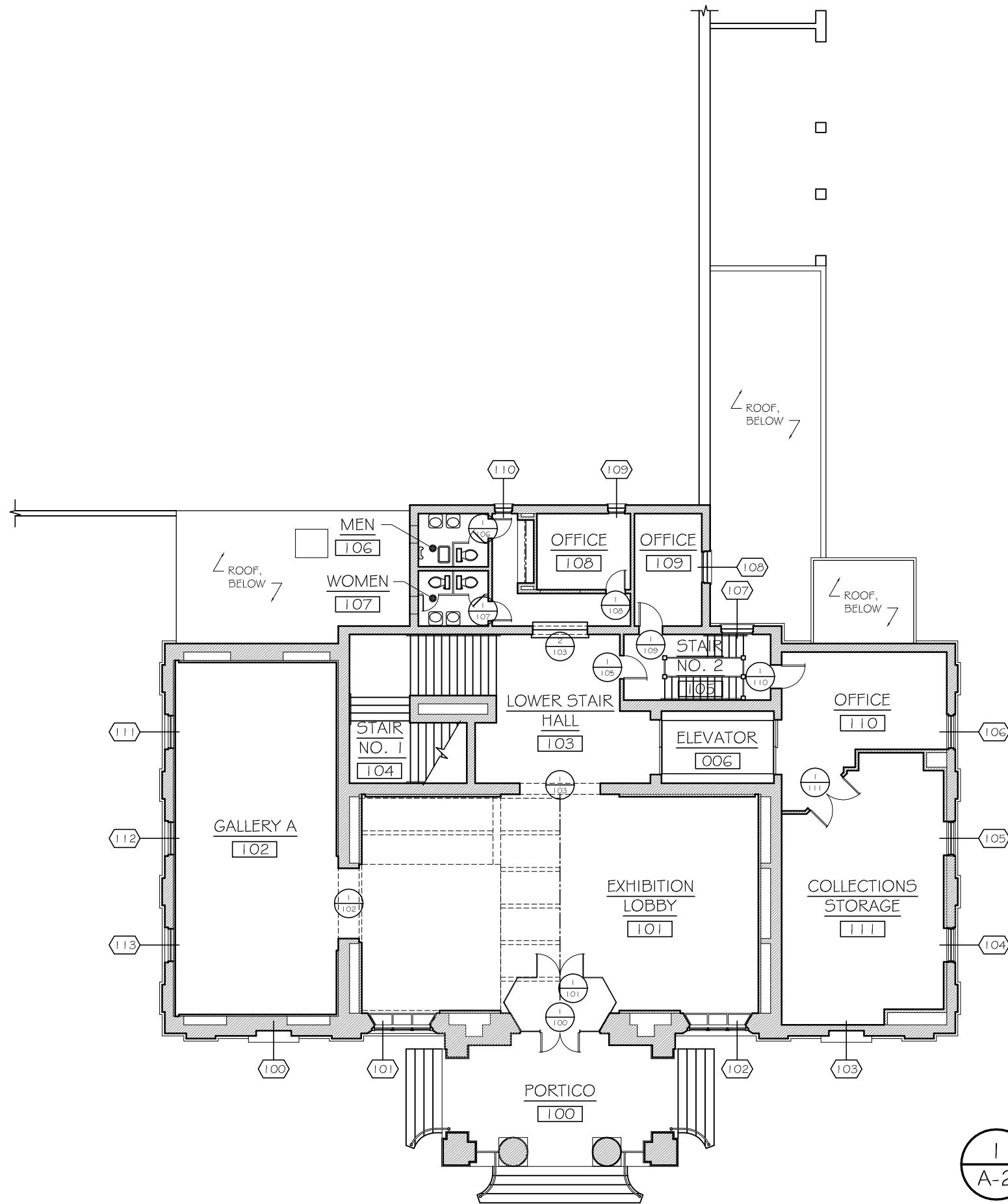
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BASEMENT
FLOOR
PLAN

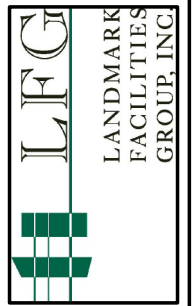
A-1



1
A-2

FIRST FLOOR PLAN

SCALE: 1/16" = 1'-0"

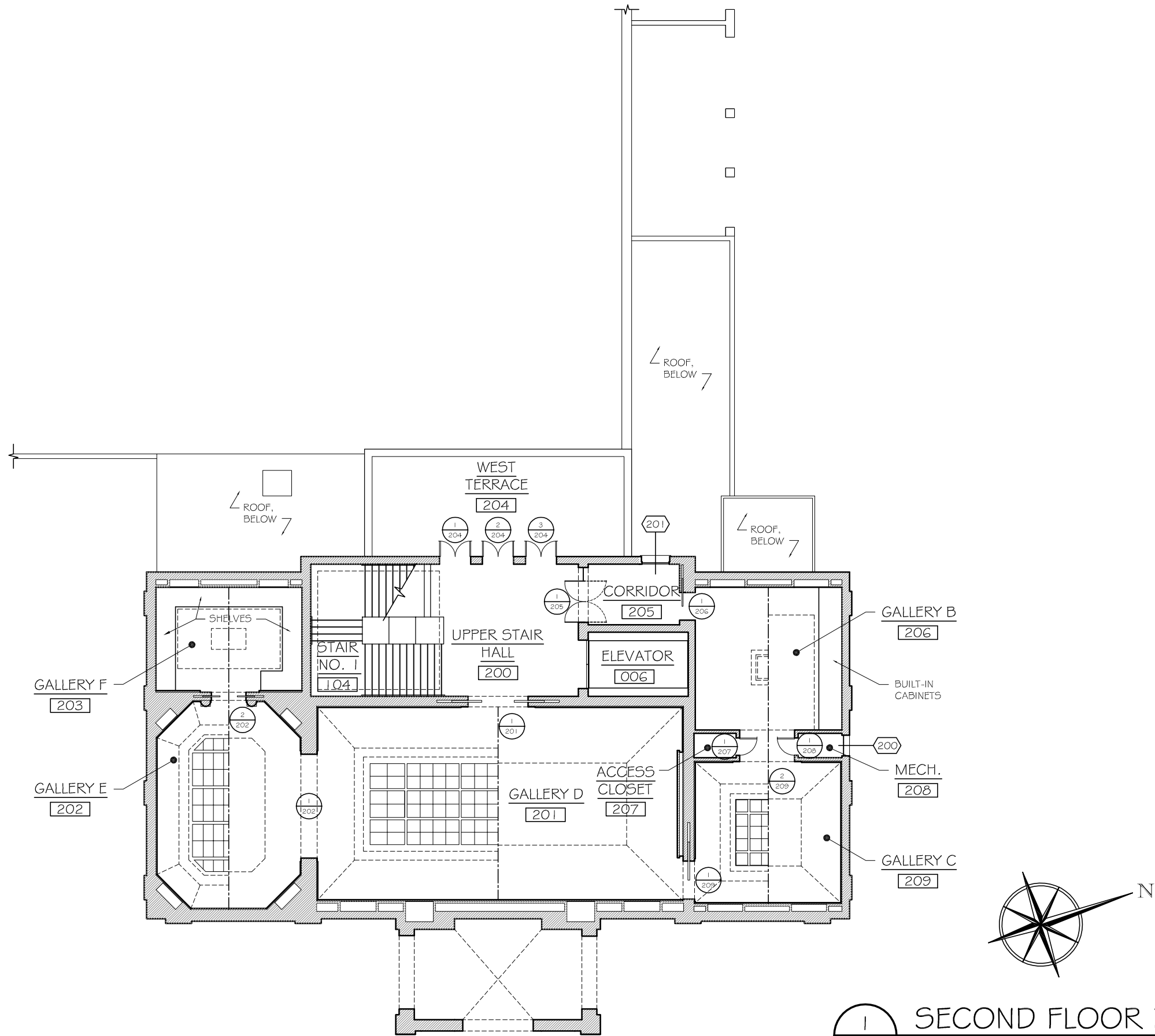


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Historic Structure Report
Thomas H. Bayly Building
 The University of Virginia, Charlottesville, Virginia

FIRST
FLOOR
PLAN

A-2



1
A-3 SECOND FLOOR PLAN
SCALE: 1/16" = 1'-0"

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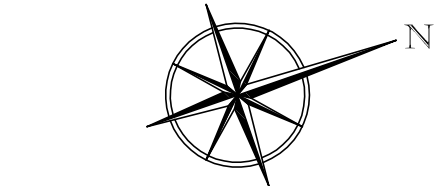
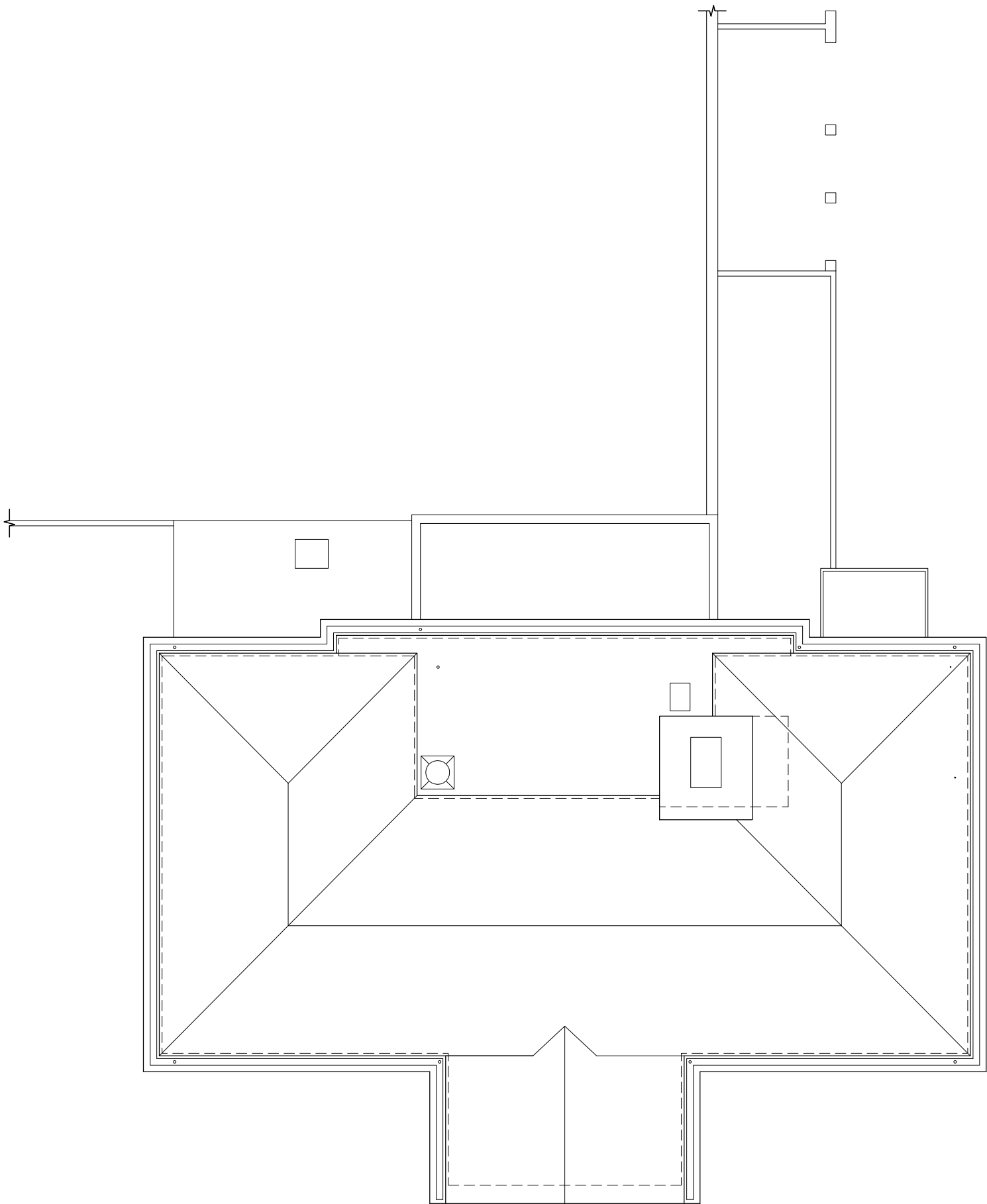


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SECOND
FLOOR
PLAN

A-3

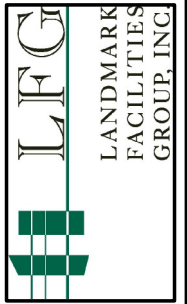


I
A-4

ROOF PLAN

SCALE: 1/16" = 1'-0"

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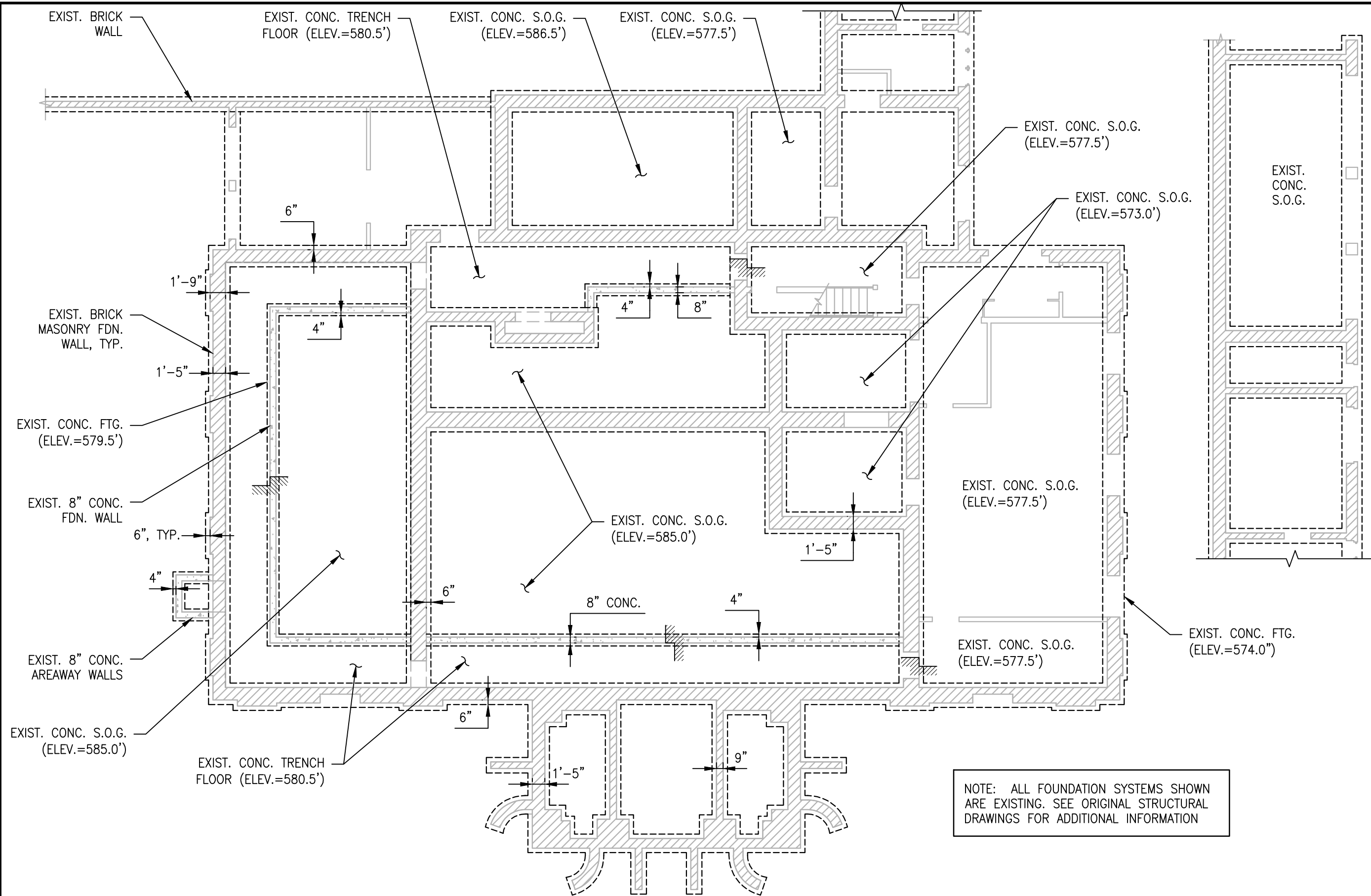
Thomas H. Bayly Building

The University of Virginia, Charlottesville, Virginia

ROOF
PLAN

A-4

APPENDIX B. - STRUCTURAL DRAWINGS



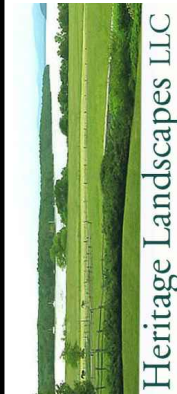
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S-0

FOUNDATION PLAN

SCALE: 3/32" = 1'-0"

NORTH

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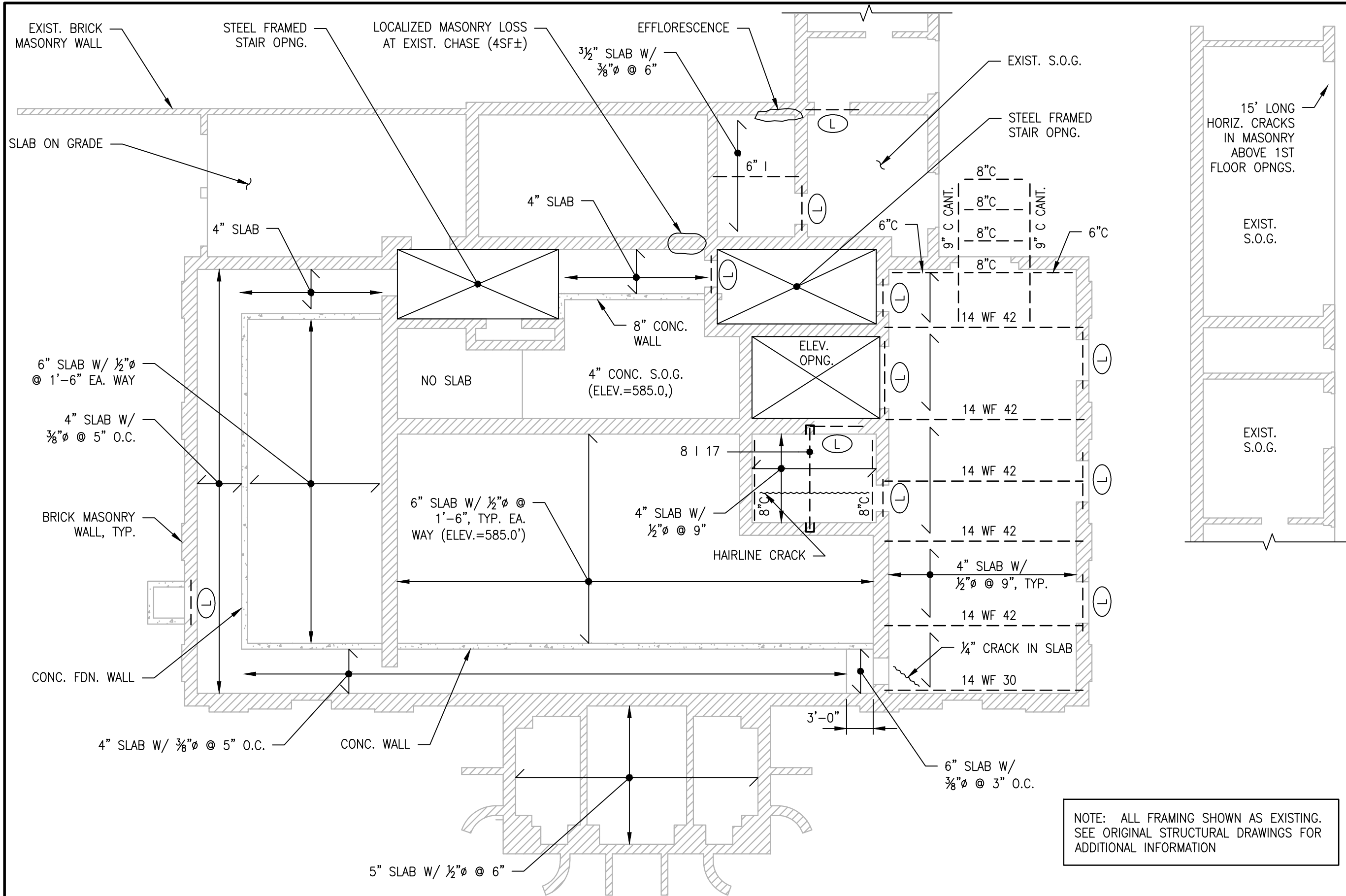
Historic Structure Report

Thomas H. Bayly Building

The University of Virginia, Charlottesville, Virginia

FOUNDATION
PLAN

S-0



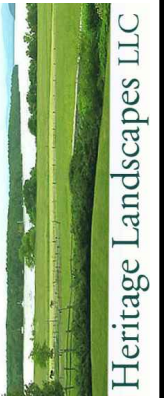
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S-1

FIRST FLOOR FRAMING ON BASEMENT PLAN

SCALE: 3/32" = 1'-0"



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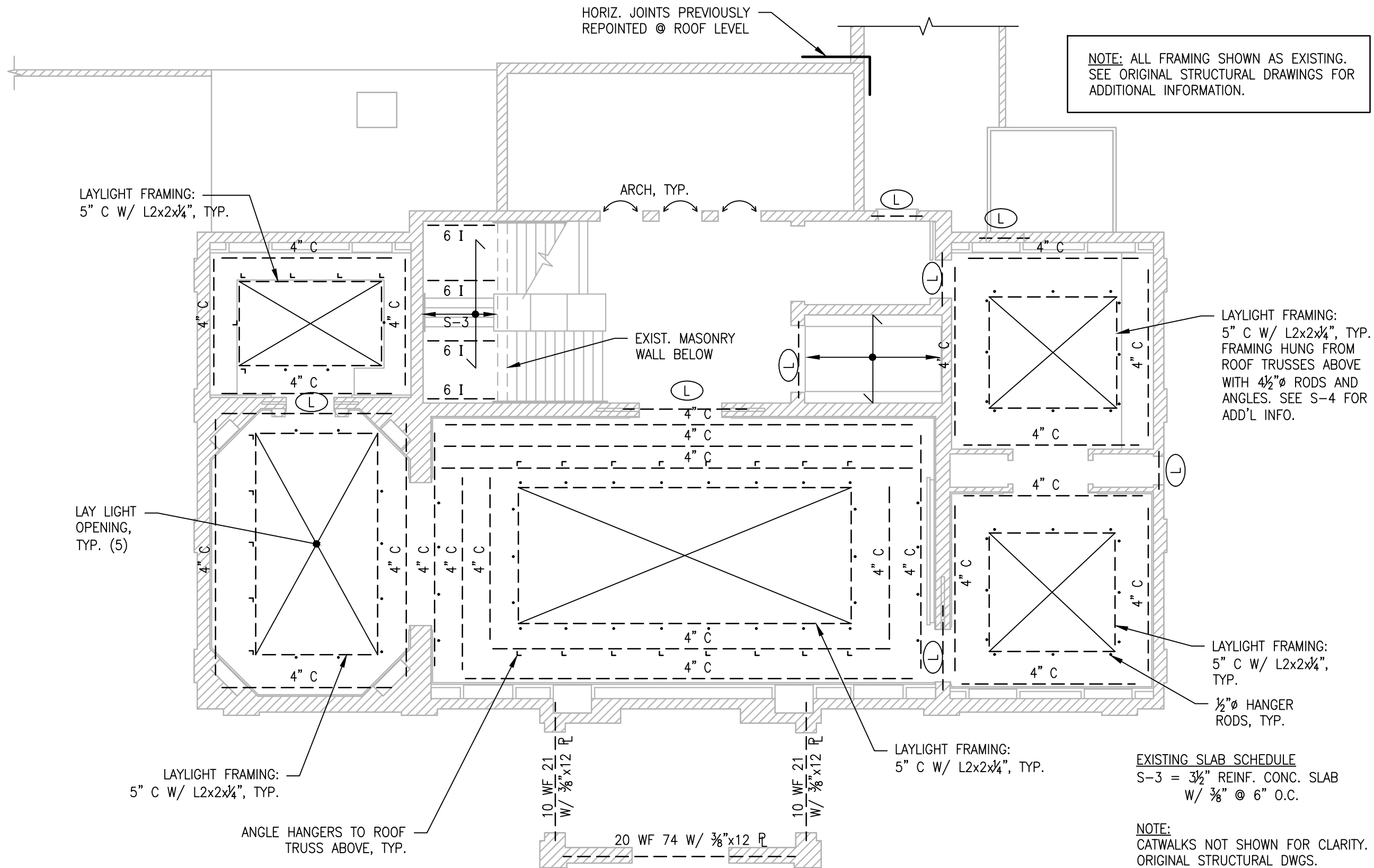
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Thomas H. Bayly Building
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FIRST FLOOR
FRAMING
PLAN

S-1



1
S-3

ATTIC FRAMING ON SECOND FLOOR PLAN

SCALE: 3/32" = 1'-0"

NORTH

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The University of Virginia, Charlottesville, Virginia

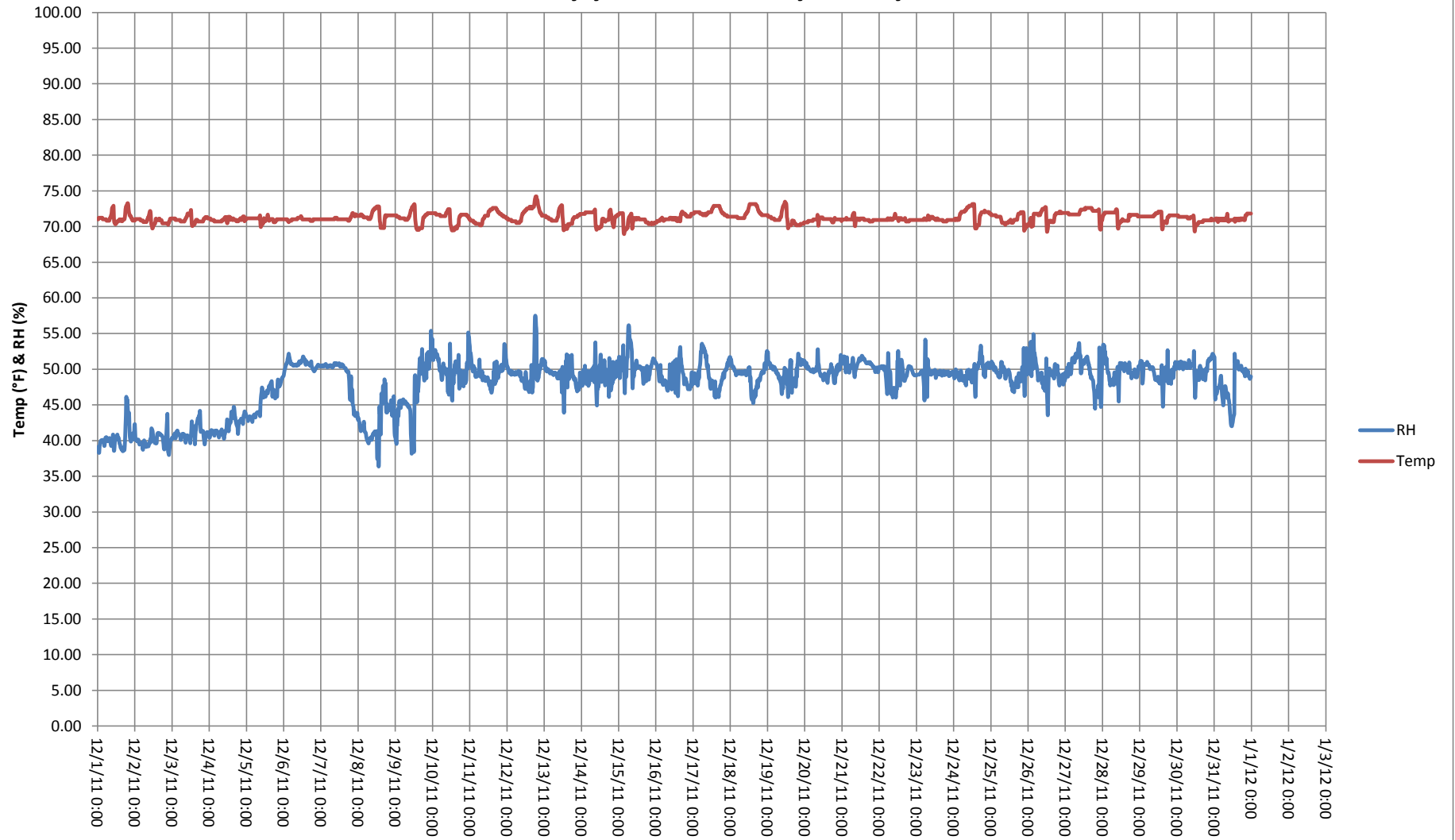
SUSPENDED
CEILING FRMG
PLAN

S-3

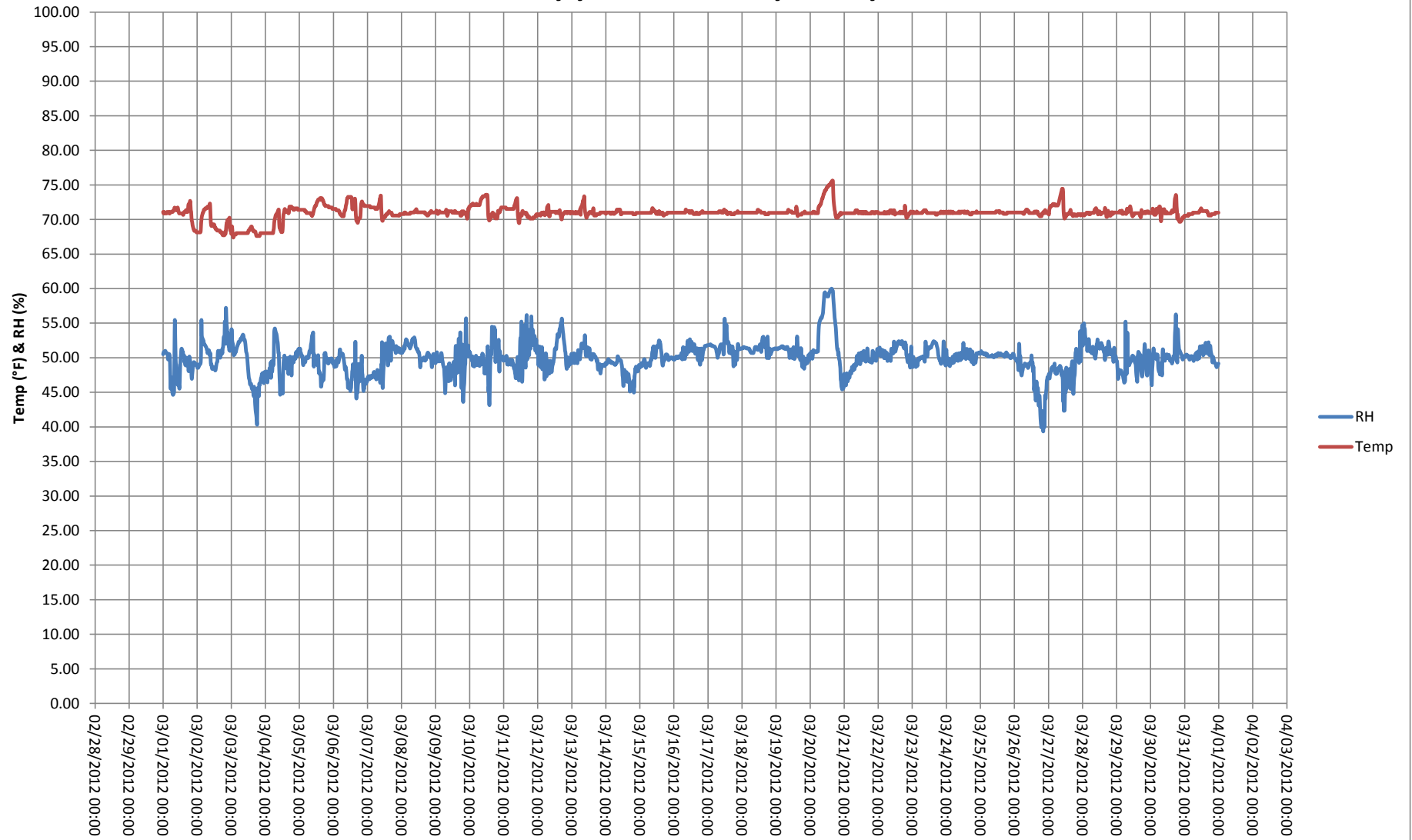
APPENDIX C. - MECHANICAL CHARTS

Using data provided by the Facilities Department, temperature and relative humidity were charted for Collections Storage for the months of December, March, July, and October. The purpose of the charts was to determine how the climate control system performs in different seasons of the year.

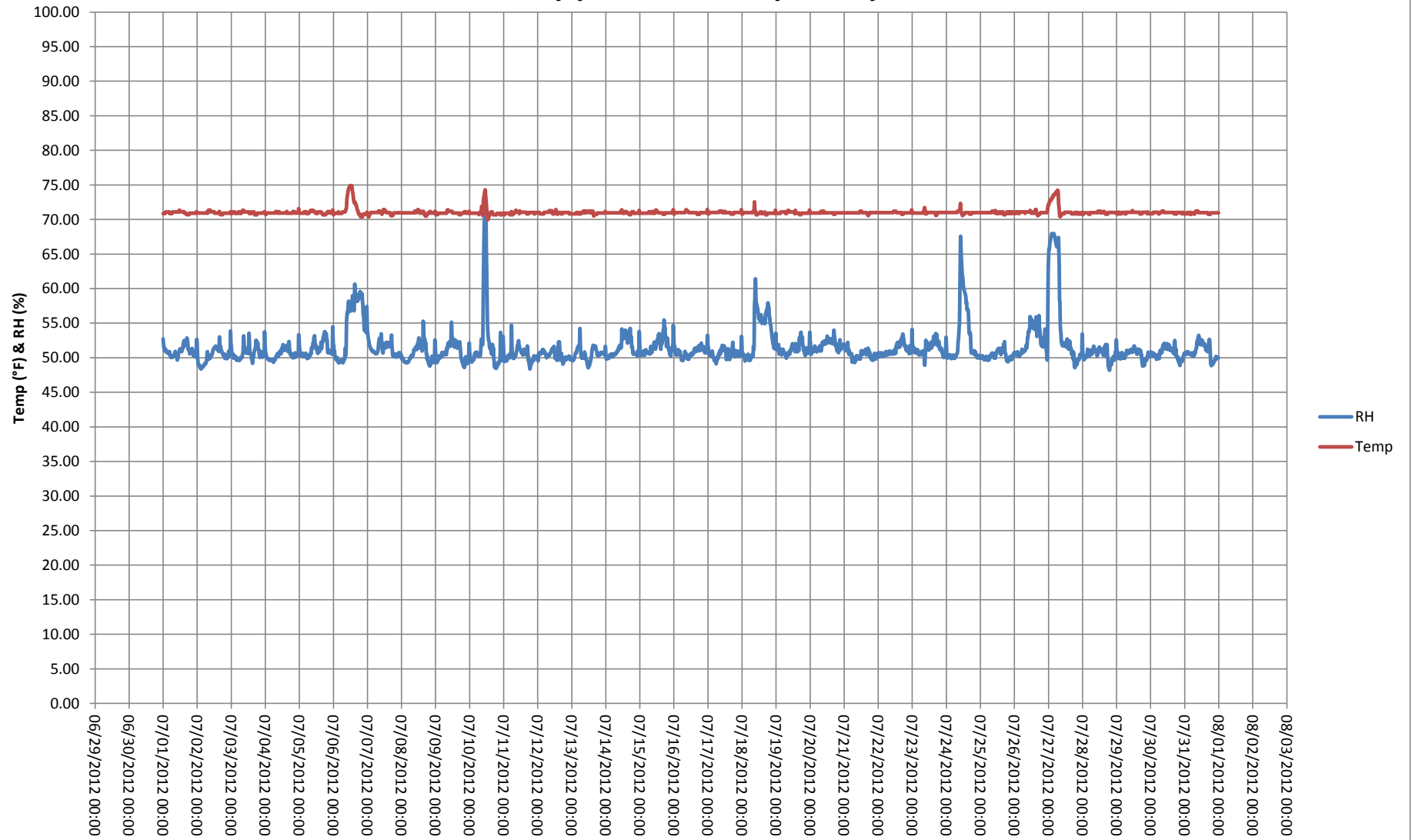
Bayly Museum Lobby Gallery



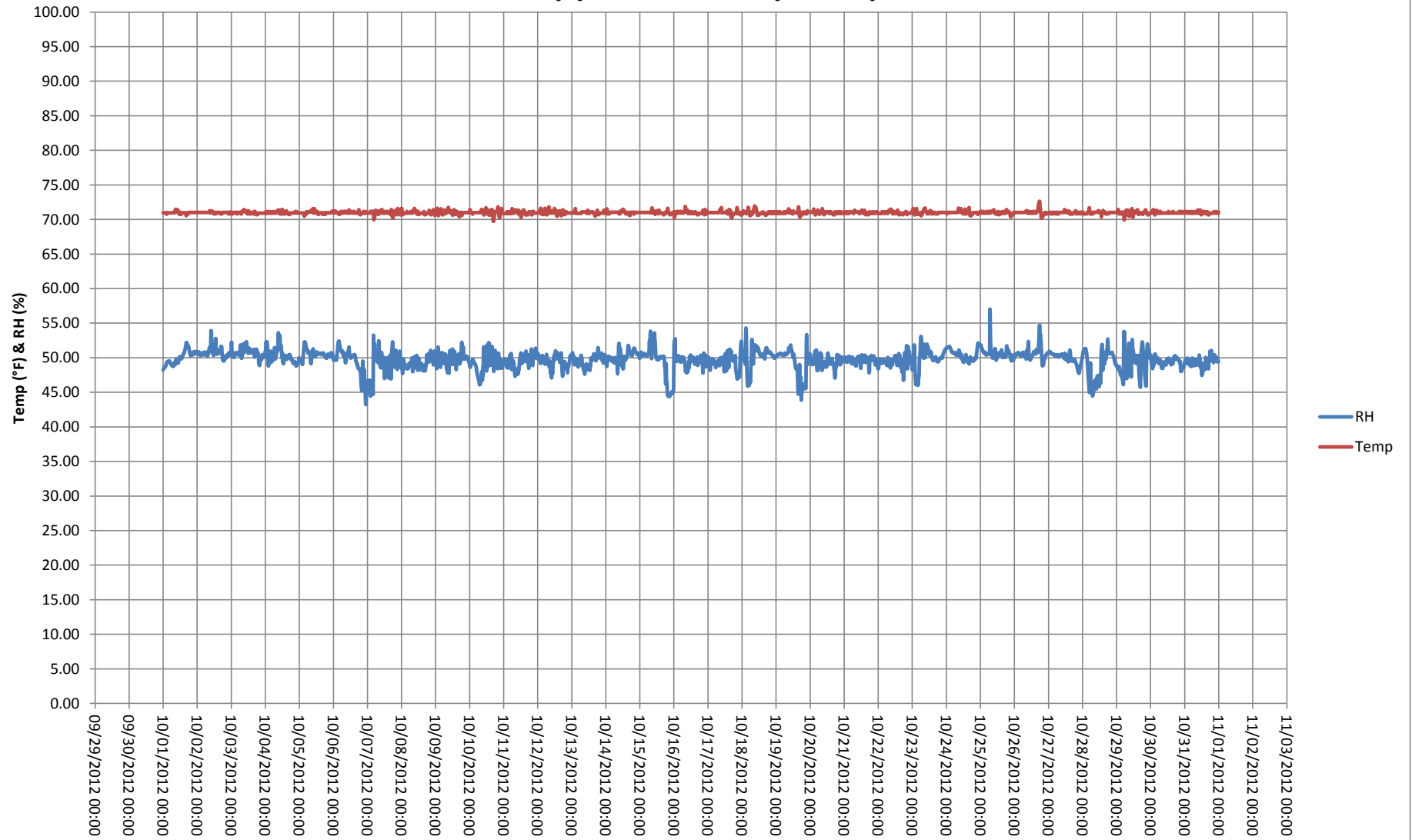
Bayly Museum Lobby Gallery



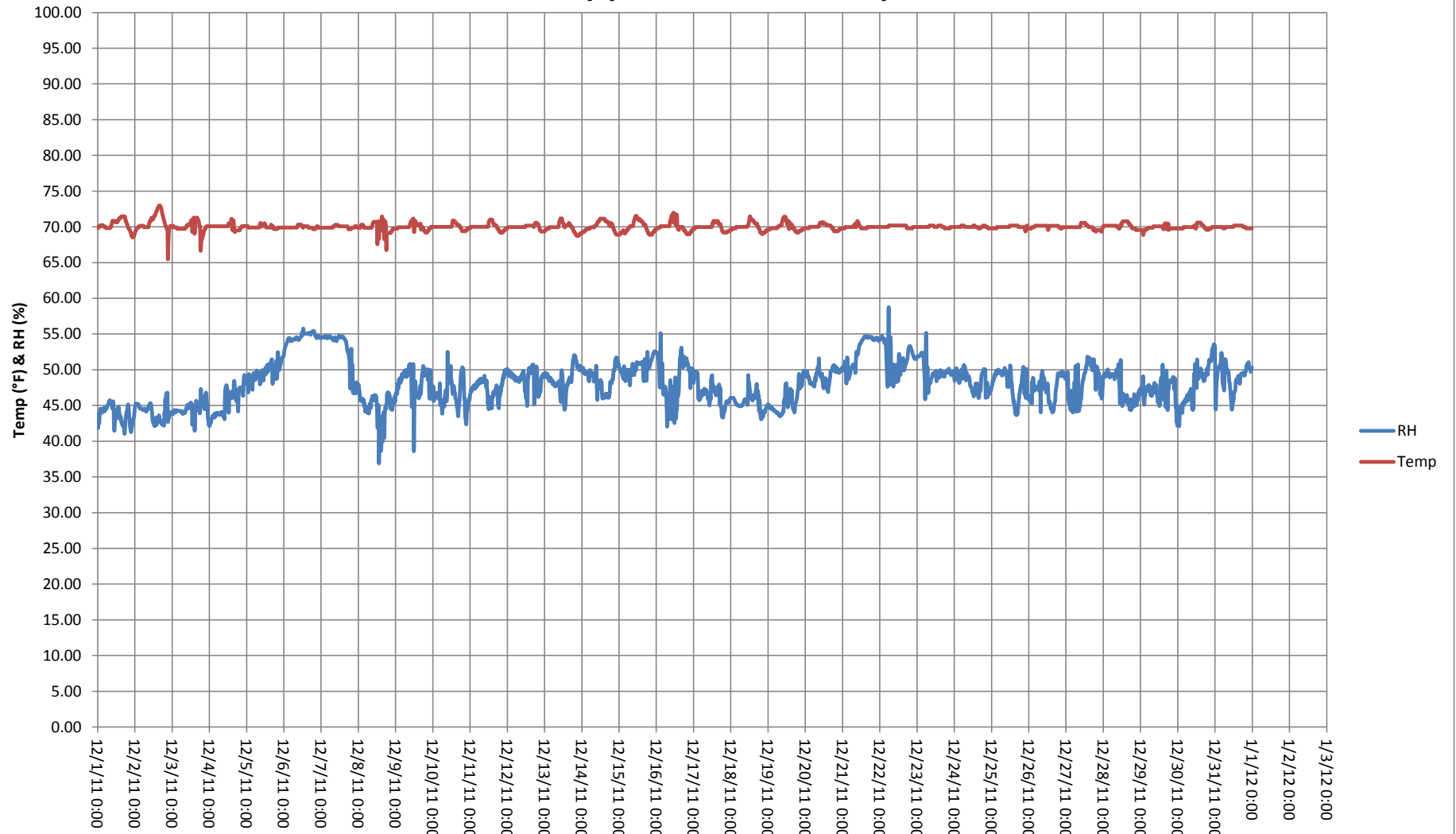
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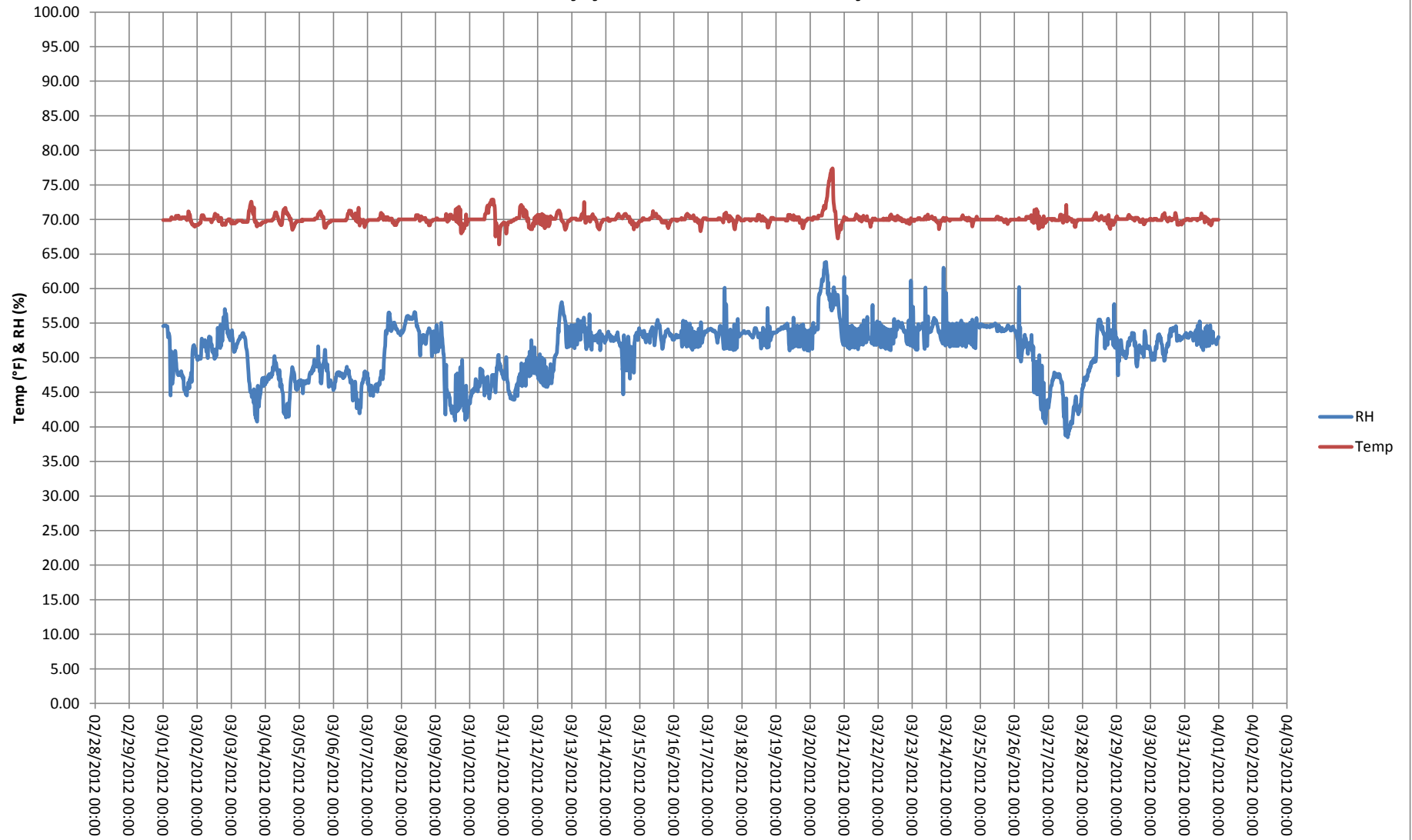
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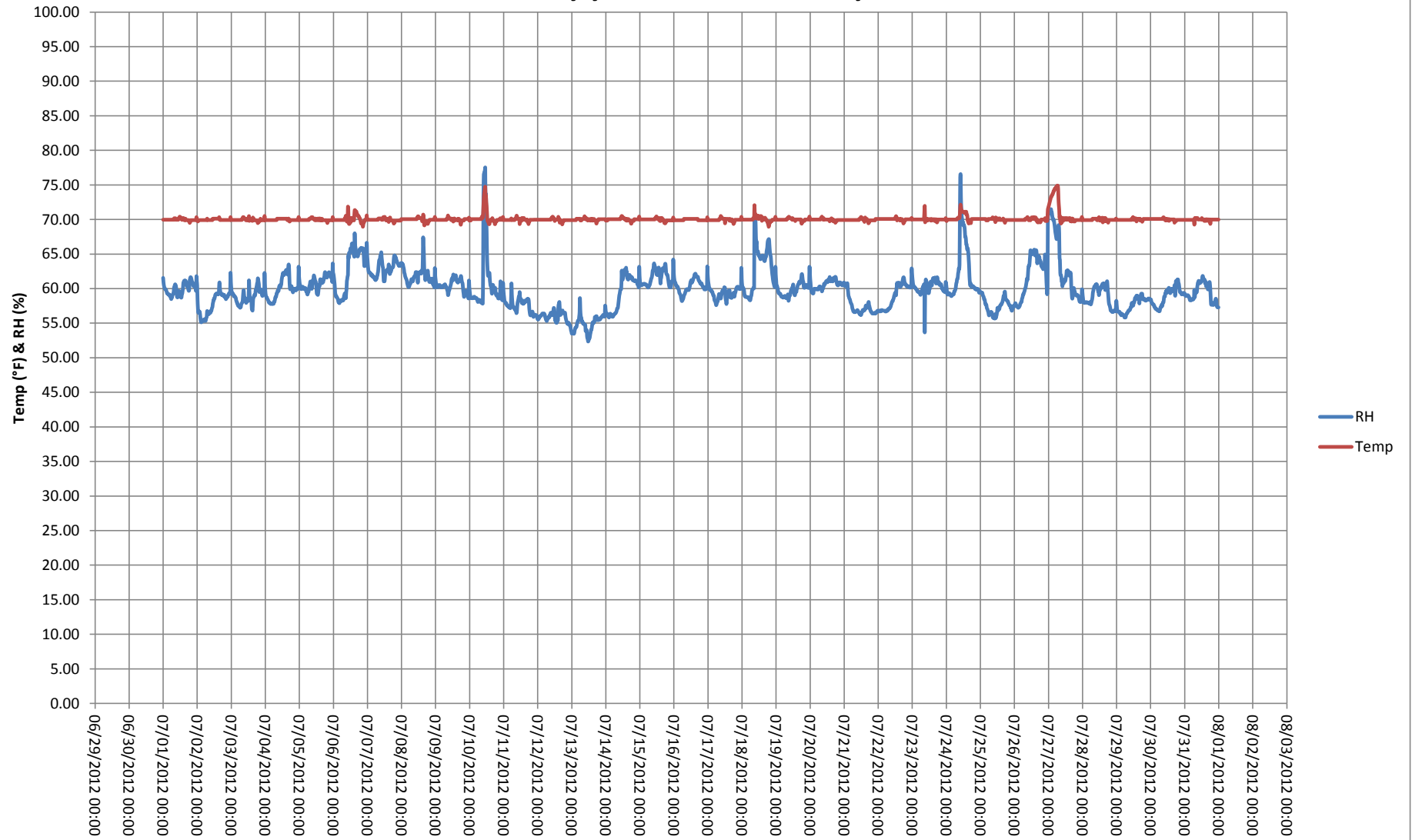
Bayly Museum 102 Gallery



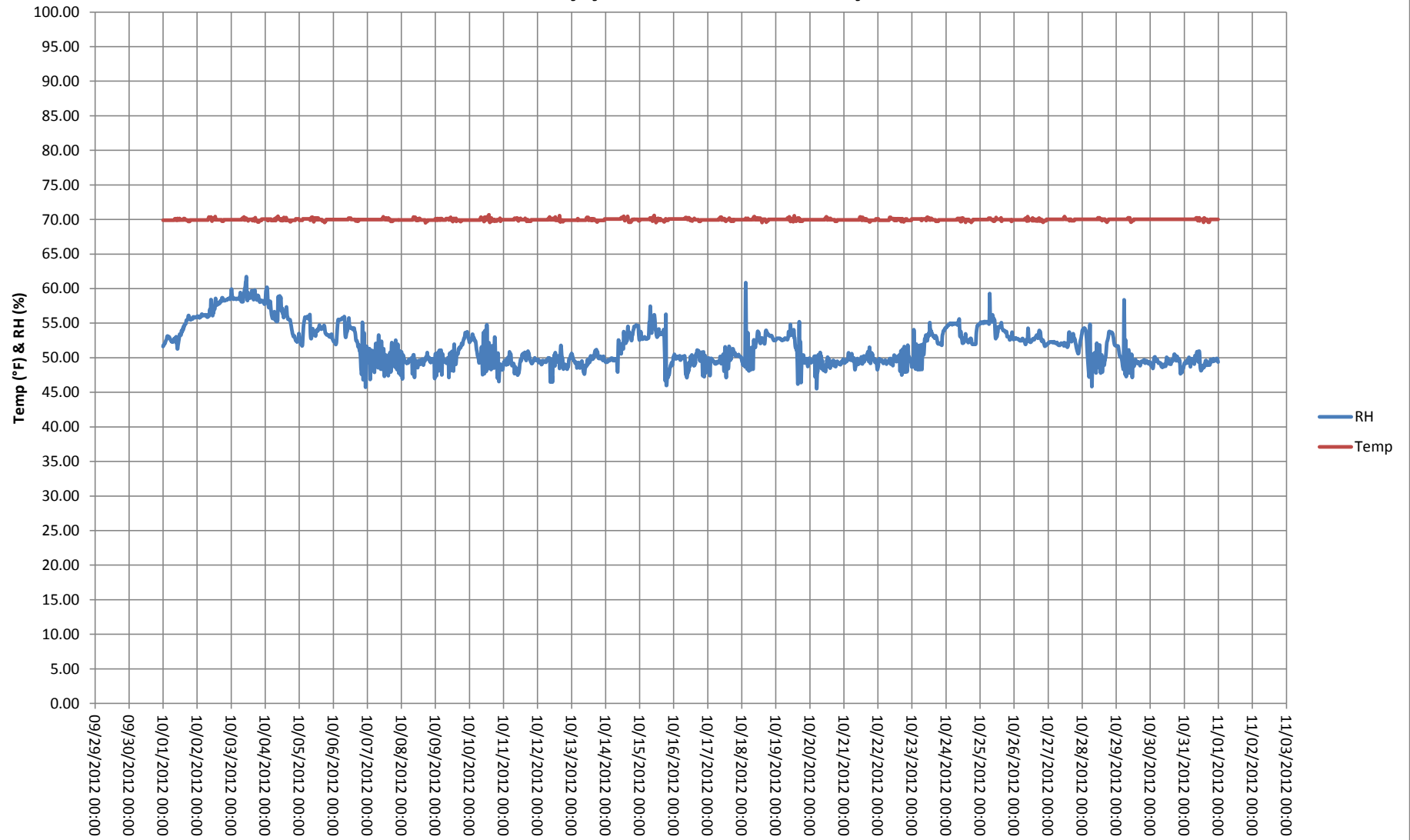
Bayly Museum 102 Gallery



Bayly Museum 102 Gallery



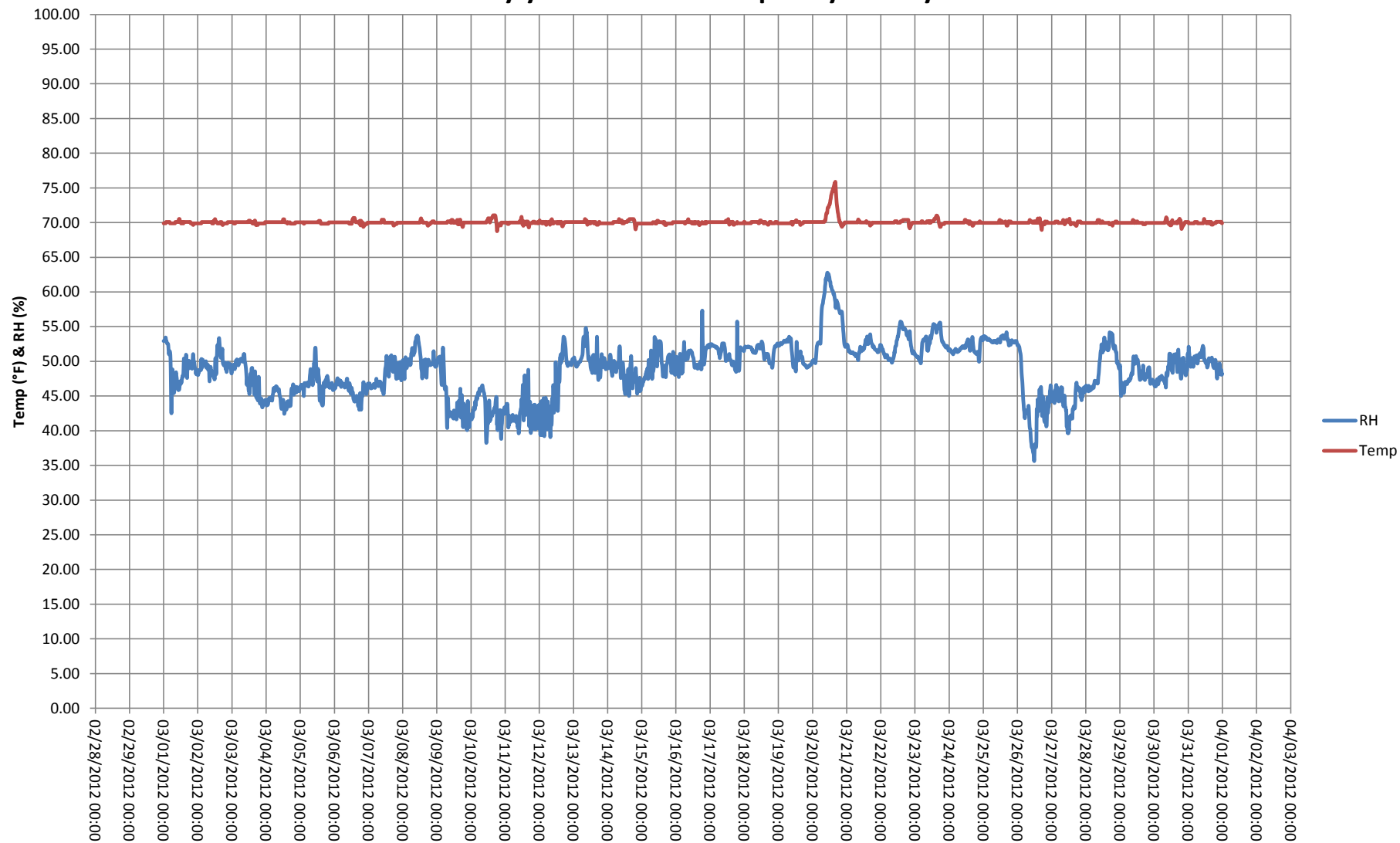
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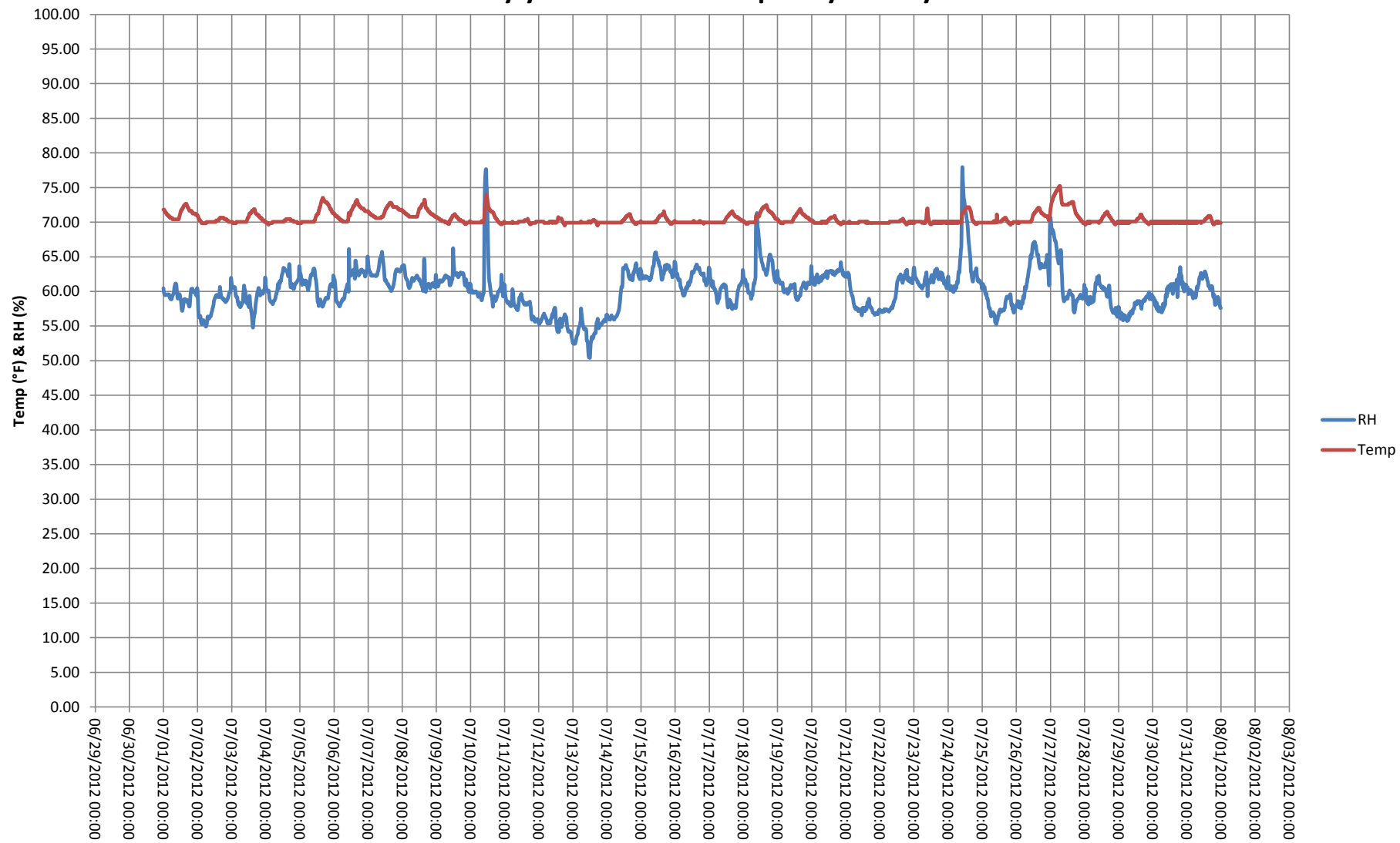
Bayly Museum Contemporary Gallery



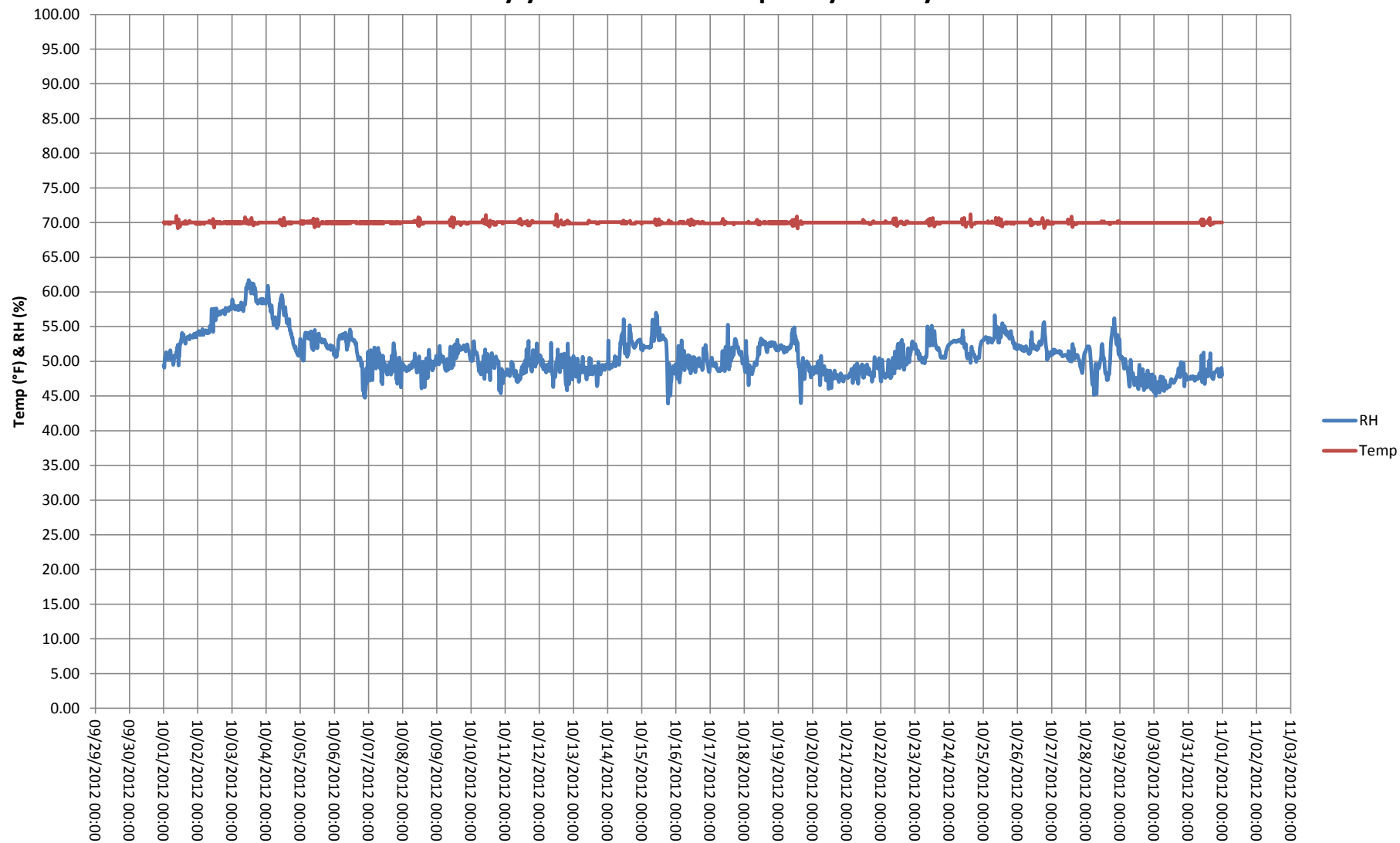
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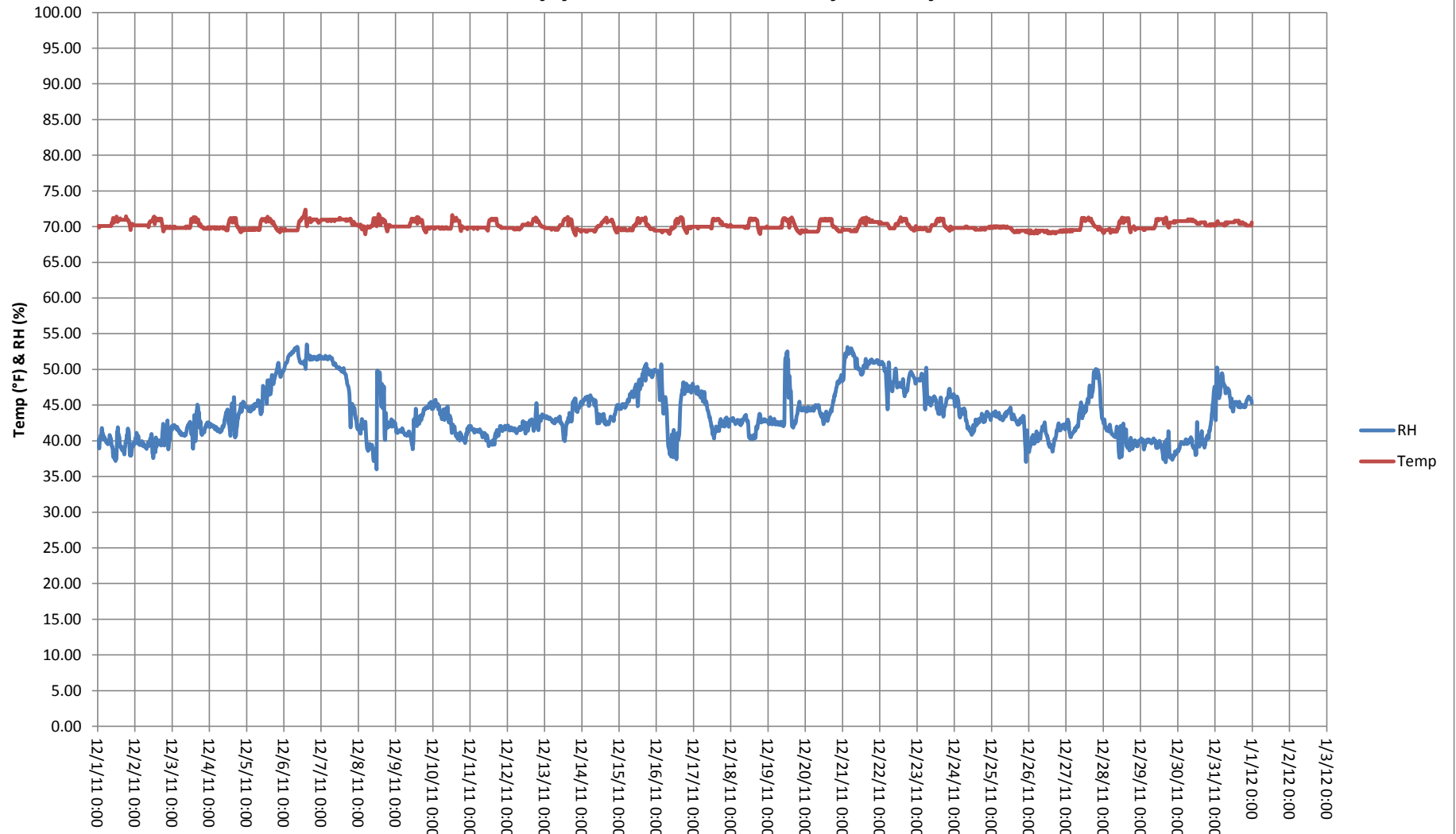
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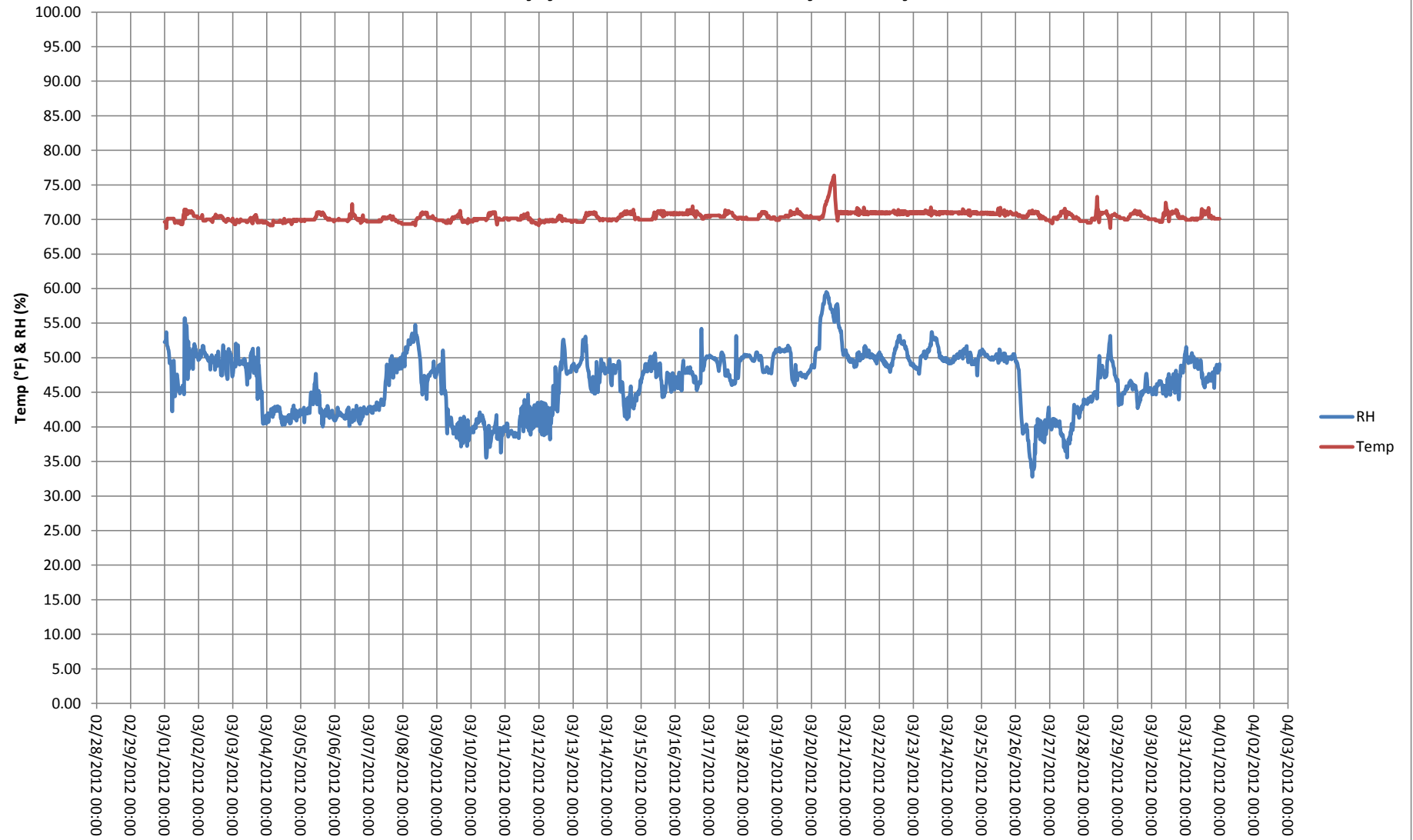
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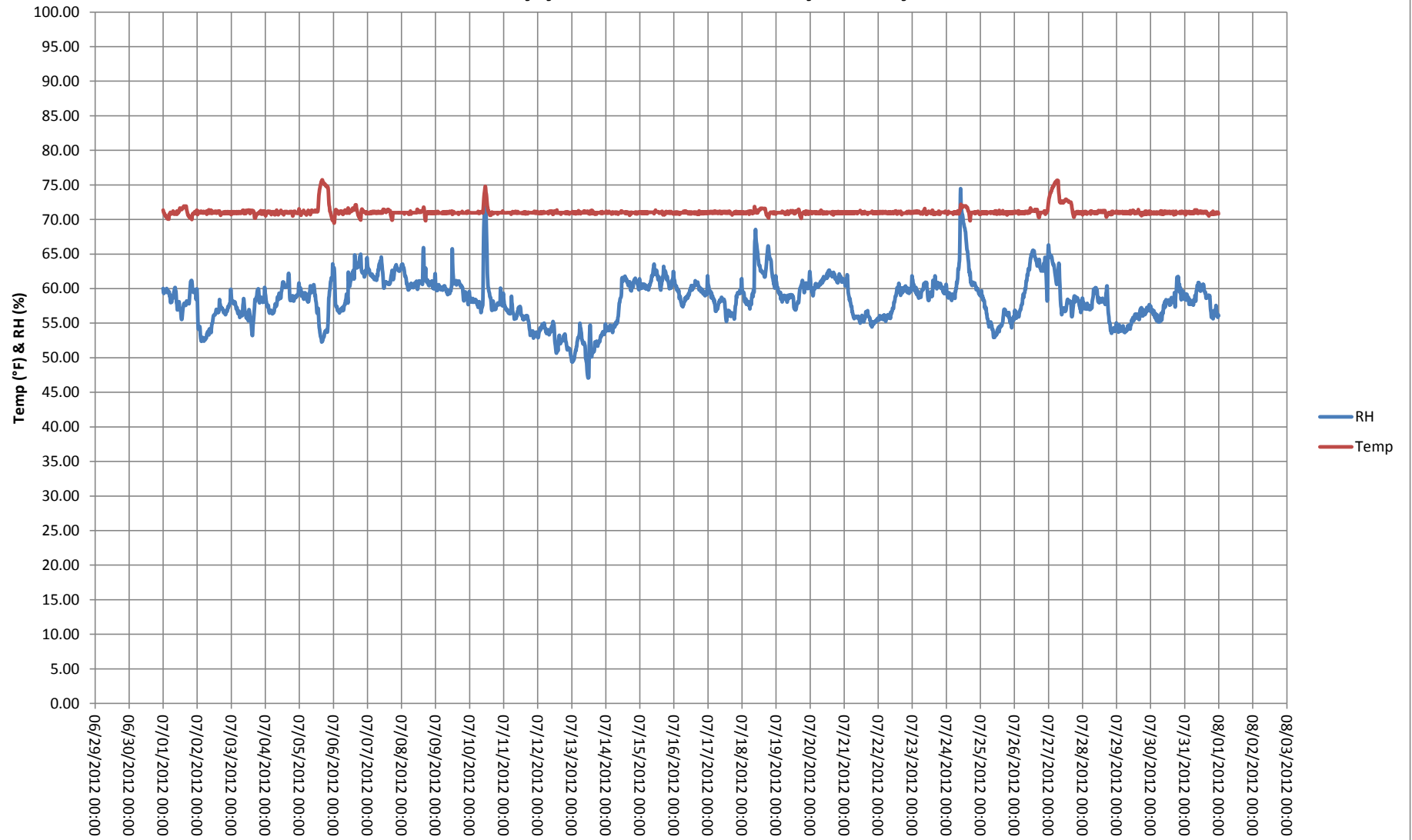
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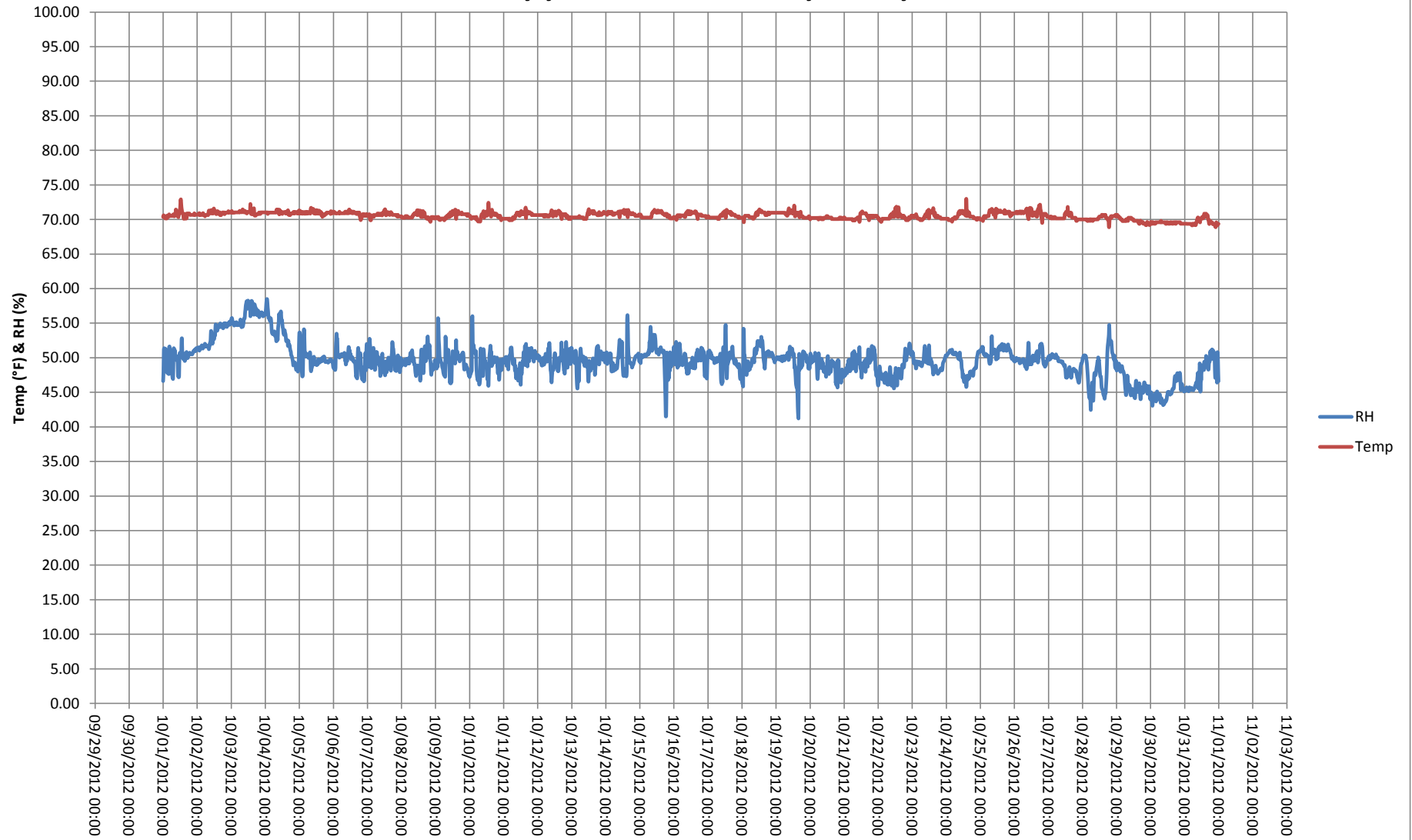
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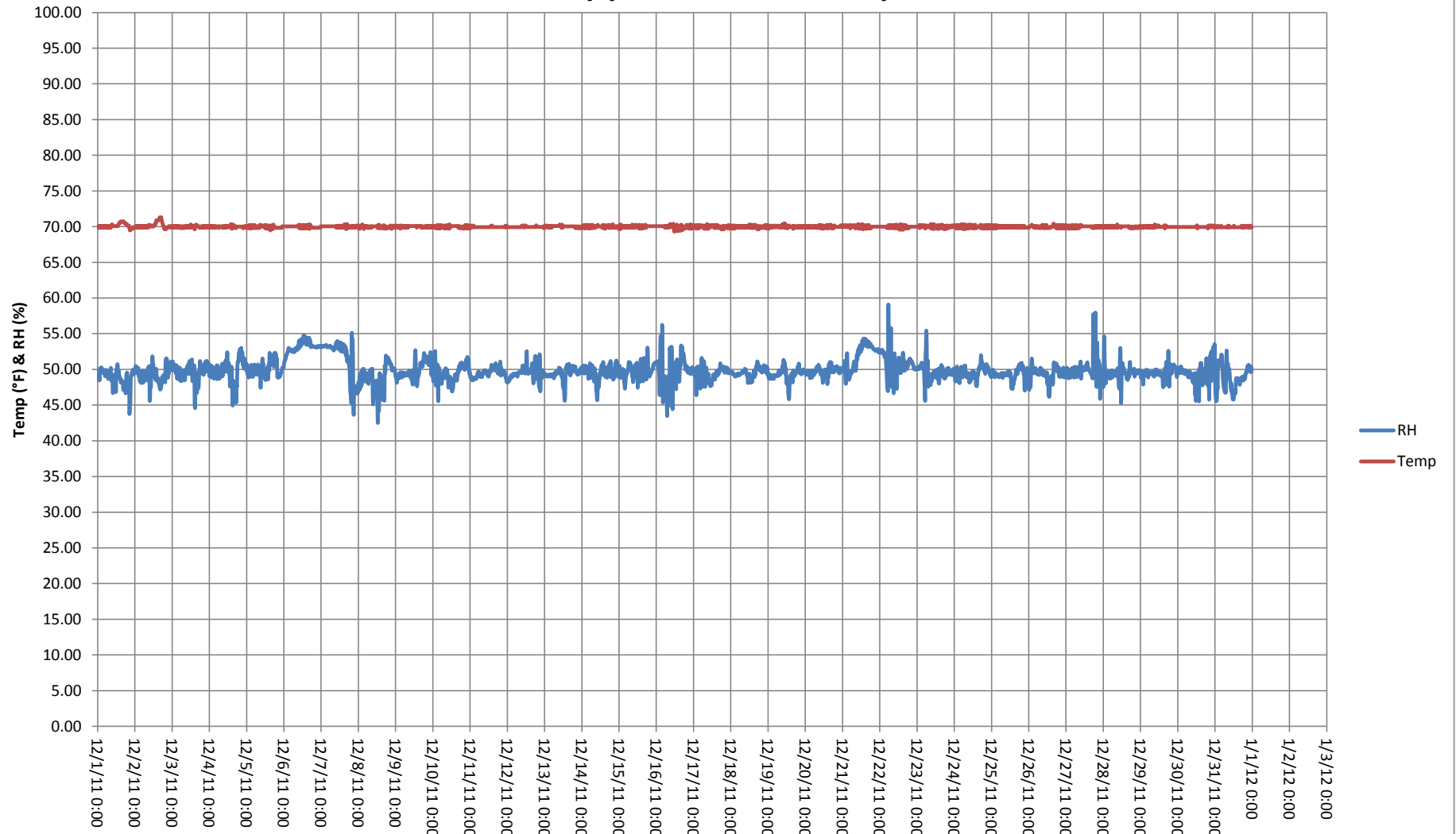
Bayly Museum Print Study Gallery



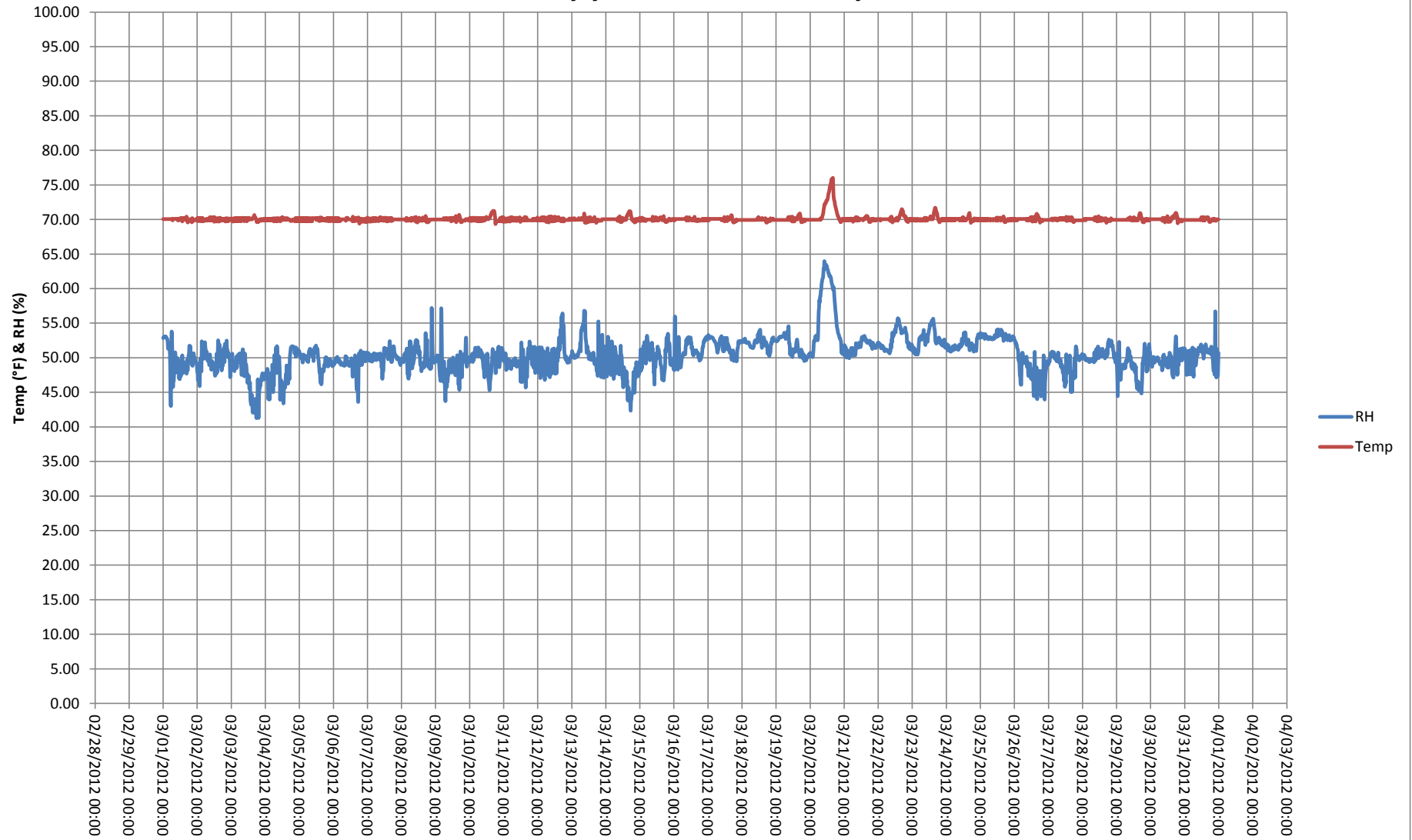
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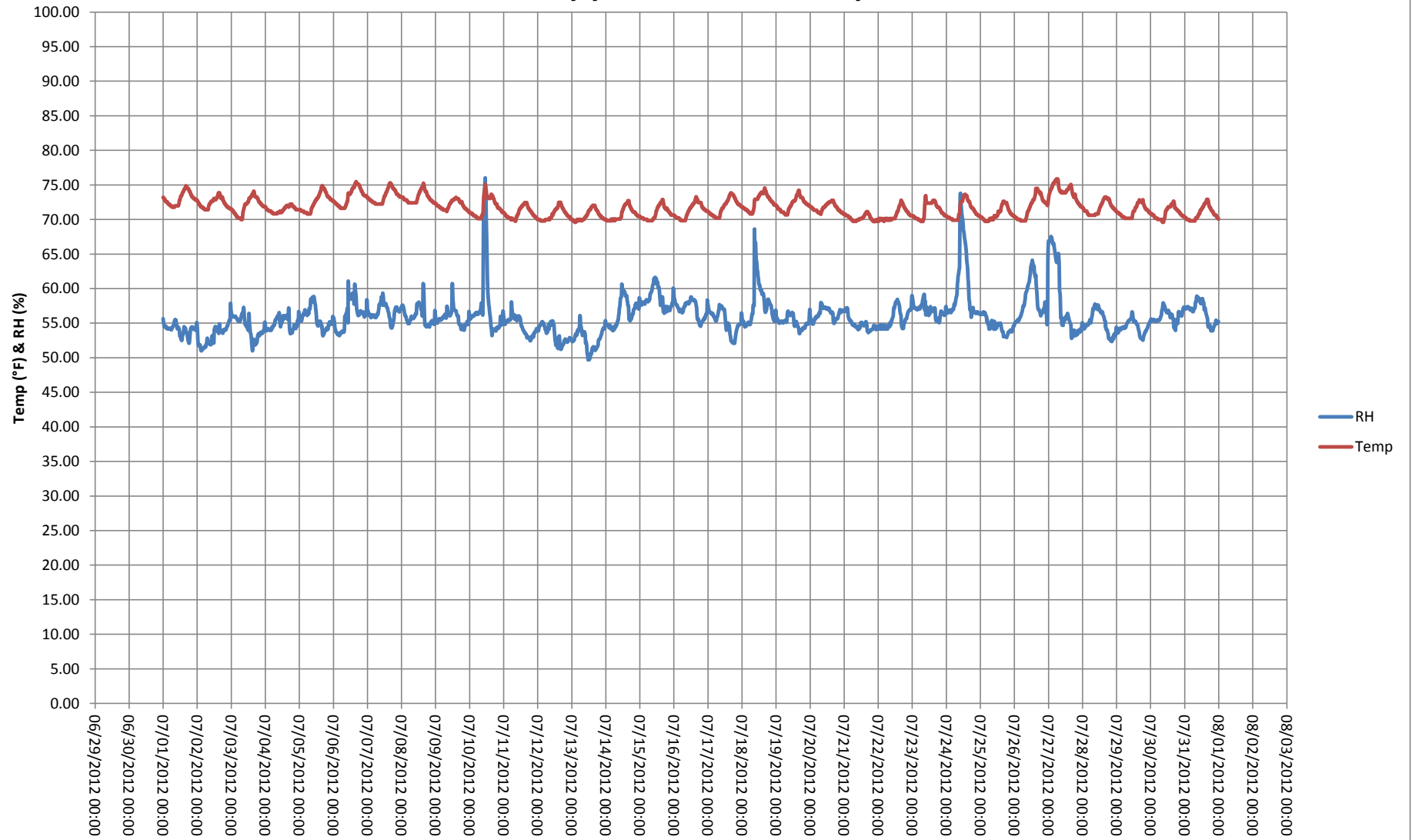
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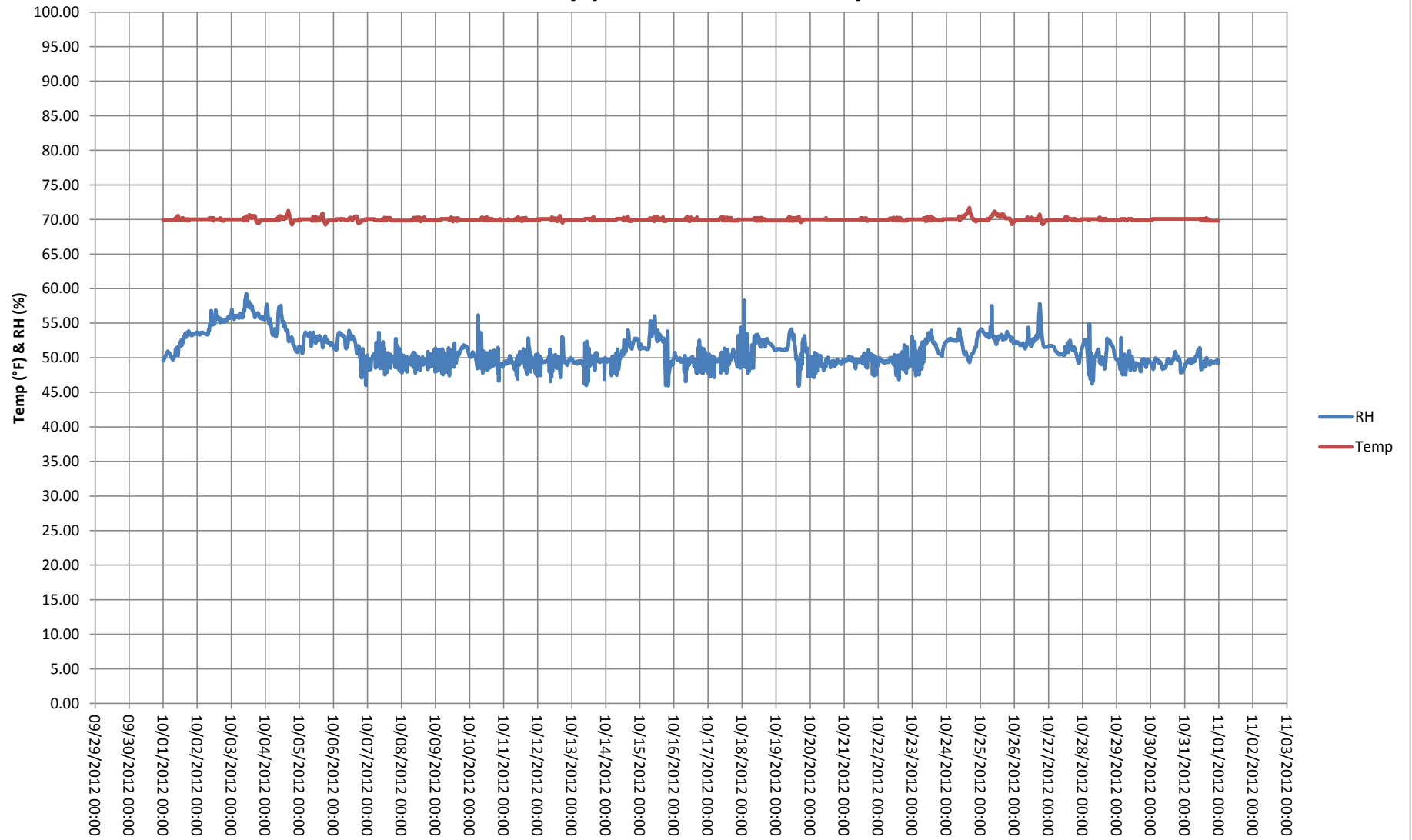
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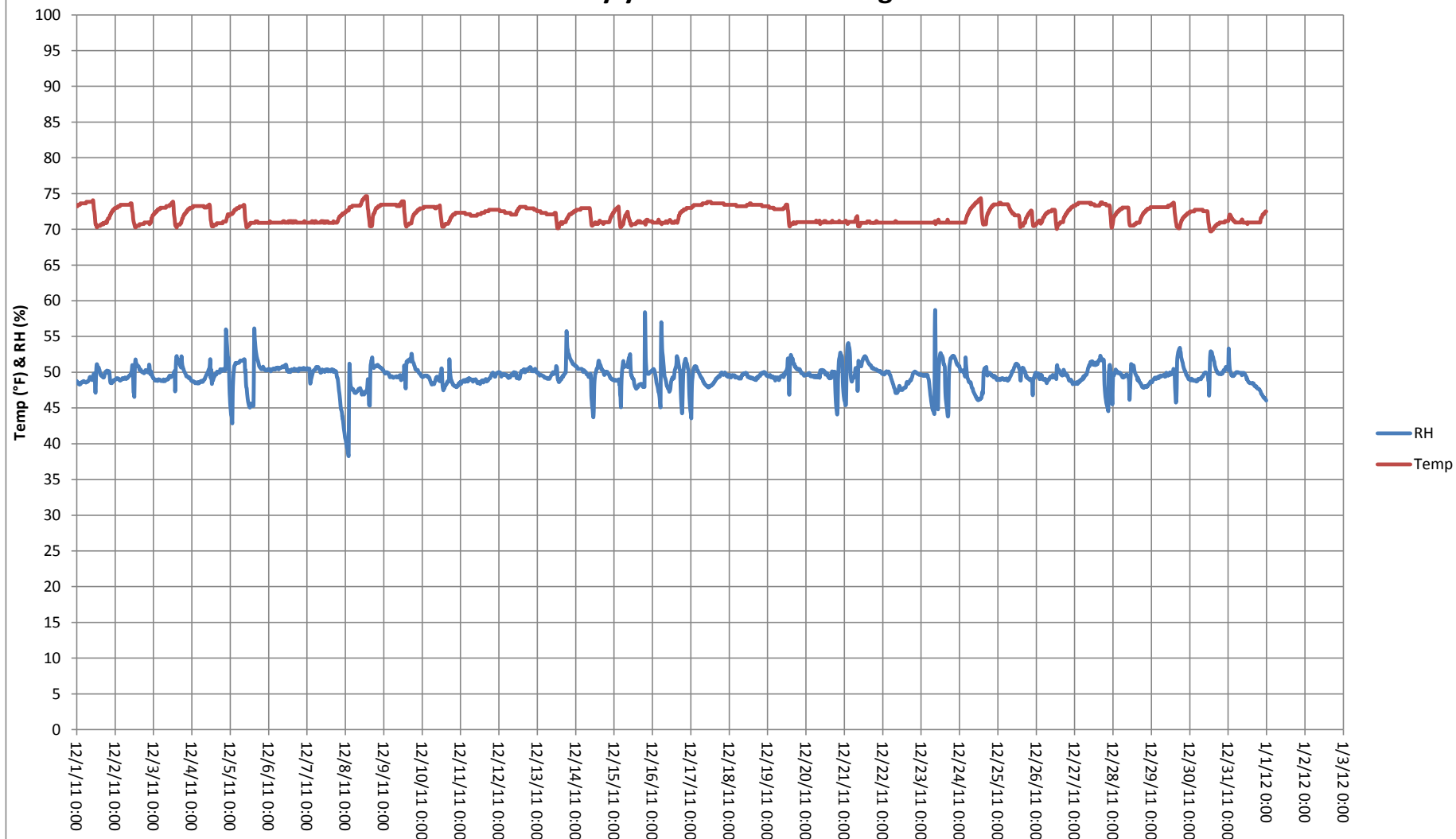
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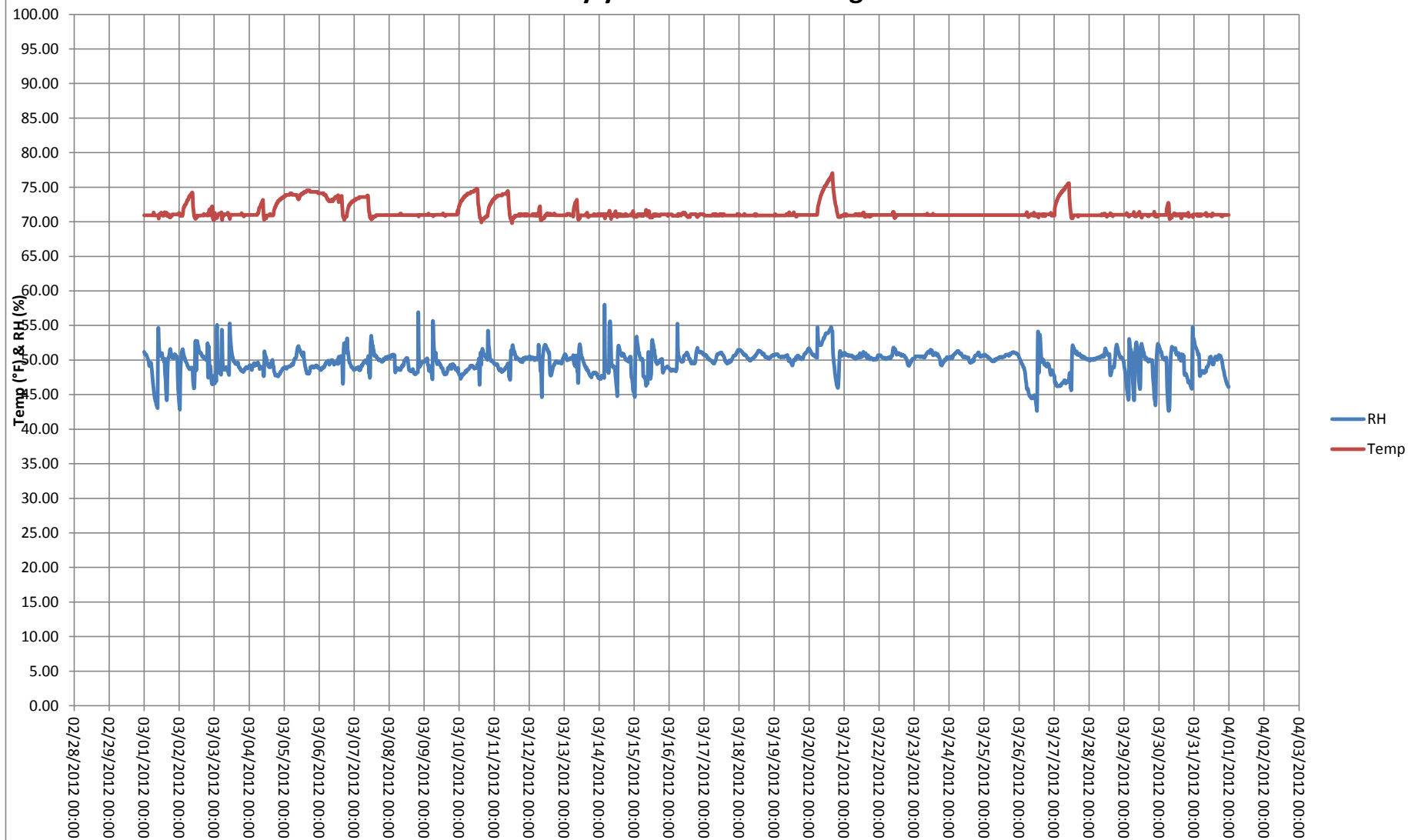
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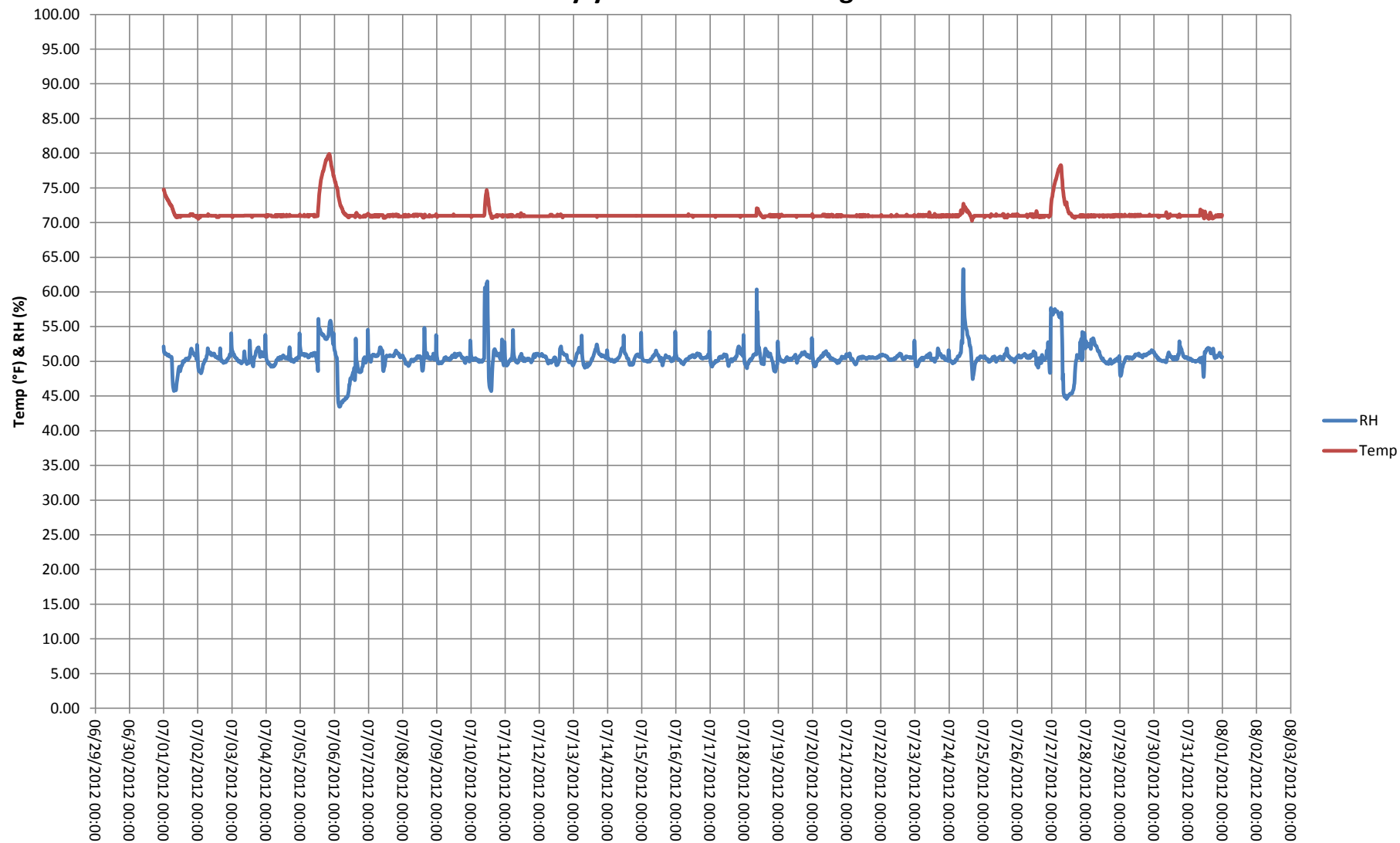
Bayly Museum Art Storage



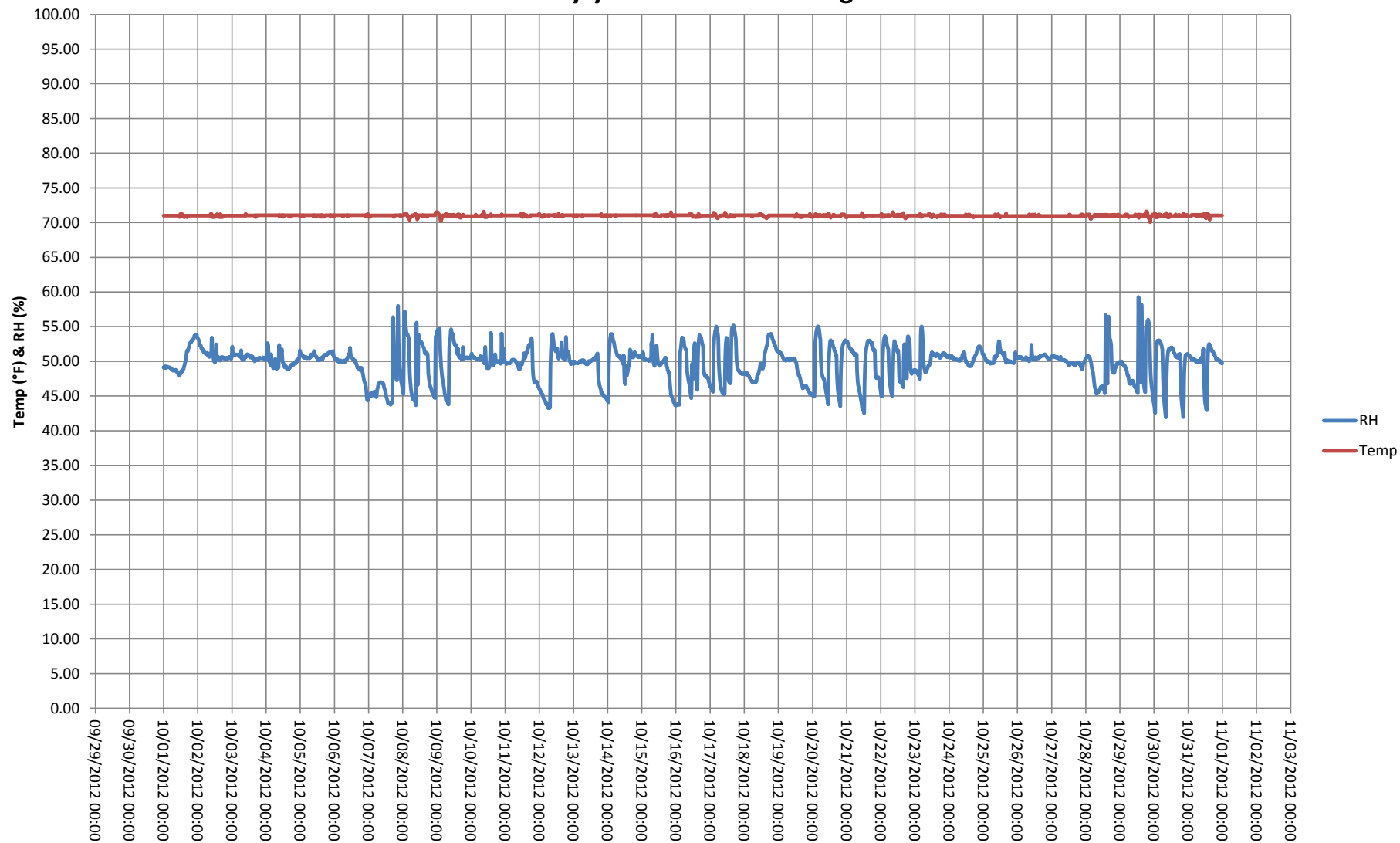
Bayly Museum Art Storage



Bayly Museum Art Storage



Bayly Museum Art Storage



APPENDIX D. - LIST OF FIGURES

SUMMARY FIGURES

<u>Page</u>	<u>Figure</u>	<u>Caption</u>
vi	vi-a	Aerial view of the University of Virginia. The Thomas H. Bayly Building is circled in red and landmarks are identified. Photograph from Bing Maps, © 2013 Nokia and © 2013 Microsoft Corporation.
vii	vii-a	Map of Charlottesville's Historic Districts. Image from the City of Charlottesville Comprehensive Plan 2007.

DOCUMENT FIGURES

<u>Page</u>	<u>Figure</u>	<u>Caption</u>
1	1.1.1-1	Map of Carr Hill that shows the location of the Bayly Building and surrounding buildings. Web Map © 2013 by the Rector and Visitors of the University of Virginia.
5	1.1.1-2	Topographical map of Carr's Hill with the pre-Bayly contours between the gymnasium (Fayerweather Hall) and Lambeth Residence, 1907–1915. University of Virginia, Special Collections Library. Print 07364.
7	1.1.1-3	The upper-terrace brick wall on the existing slope with Fayerweather Hall and Carr's Hill in the distance, Dec. 29, 1933. University of Virginia, Special Collection Library-Visual History Collection. Print 07474.
8	1.1.1-4	Oblique aerial view to the west of the Bayly site and the Madison Bowl, 1934, University of Virginia, Special Collections Library.
8	1.1.1-5	Oblique aerial view to the south. The Bayly site is located within the blue box, 1934, University of Virginia, Special Collections Library.
9	1.1.1-6	The in-process Bayly landscape construction shows newly installed trees, plantings, steps, and walls along the Rugby Road frontage in about 1935. University of Virginia, Special Collections Library, Hosinger Studio Collections.

DOCUMENT FIGURES

<u>Page</u>	<u>Figure</u>	<u>Caption</u>
10	1.1.1-7	A planted single row of boxwoods and corner juniper are shown along the lower-terrace wall in this image circa 1935. University of Virginia, Special Collections Library-Visual History Collection. Print 09507.
11	1.1.1-8	Apparent landscape modifications from 1935 to 1945 include a low brick wall and boxwood shrubs along the sidewalk to the right. University of Virginia, Special Collections Library-Visual History Collection. Print 07463.
12	1.1.1-9	Statues replace busts in the blind windows of the east facade by the mid-1940s. A bust remains below a sculpture in this photograph. University of Virginia, Special Collections Library-Visual History Collection, prints 07493.
12	1.1.1-10	A boxwood shrub, deciduous shrub, and architectural fragments accent the island planting bed on the upper terrace by 1945. University of Virginia, Special Collections Library-Visual History Collection. Print 07462.
13	1.1.1-11	The Annex is constructed at the west side of the building by 1950. John Milner Architects, September 2012
14	1.1.1-12	This 1955 aerial photograph shows the Bayly landscape in context. The addition of the Annex has modified the overall site. University of Virginia, Office of the Architect.
16	1.1.1-13	Planting plan with existing crepe myrtle sited within the proposed planting space between the Bayly Building and Chi Phi Fraternity, 1980. University of Virginia, Facilities Management.
18	1.1.1-14	Planting plan for the South Garden, 1996, University of Virginia, Facilities Management.
23	1.2.1-1	Site plan identifying South Garden and East Terraces, the two landscape character areas within the study area of The Thomas H. Bayly Building Historic Structure Report. Heritage Landscapes.
25	1.2.1-2	Slopes and steps transition grades in terraced levels between Rugby Road and the entrance of the Bayly Building. Photograph by Heritage Landscapes, November 2012.

DOCUMENT FIGURES

<u>Page</u>	<u>Figure</u>	<u>Caption</u>
25	1.2.1-3	The west steps provide access to the South Garden, the door seen at the lower left and into front upper plaza of the Bayly Building. Photograph by Heritage Landscapes, June 2012.
26	1.2.1-4	Steps to main entry and brick paving at upper terrace with flush stone in-fill over former planting bed. Photograph by Heritage Landscapes, June 2012.
26	1.2.1-5	Lower terrace in context with paving, steps, vegetation, stone bench, and sculpture above the elevation of the Rugby Road sidewalk. Photograph by Heritage Landscapes, June 2012.
27	1.2.1-6	Brick steps and handrail between the East Terraces and the north side of the Bayly Building flanked by crepe myrtle trees. Photograph by Heritage Landscapes, June 2012.
28	1.2.1-7	Missing brick coping and mulch flow at the brick pads with architectural fragments on the upper terrace. Photograph by Heritage Landscapes, June 2012.
29	1.2.1-8	Water infiltration is evident as well as a partial bright mortar repointing at the brick steps at the west end of the South Garden. Photograph by Heritage Landscapes, June 2012.
31	1.2.2-1	First-floor plan—partial construction drawing by Edmund S. Campbell and R. E. Lee Taylor Architects, September 1933.
31	1.2.2-2	East Elevations—partial construction drawing by Edmund S. Campbell and R. E. Lee Taylor Architects, September 1933.
33	1.2.2-3	First-floor plan—drawing by John Milner Architects, November 2012.
34	1.2.2-4	Second-floor plan—drawing by John Milner Architects, November 2012.
36	1.2.3-1	Open vertical joint, typical at windows. Photograph by John Milner Architects, November 2012.
37	1.2.3-2	Open joints at West Terrace parapet, below inappropriately sealed coping joint. Photograph by John Milner Architects, November 2012.

DOCUMENT FIGURES

<u>Page</u>	<u>Figure</u>	<u>Caption</u>
38	1.2.3-3	Stained brickwork, typical below windows. Photograph by John Milner Architects, November 2012.
38	1.2.3-4	Degraded pointing and rough flashing, typical at pilaster heads. Photograph by John Milner Architects, November 2012.
39	1.2.3-5	Distressed brickwork at window head, common at West and North facade basement openings. Photograph by John Milner Architects, November 2012.
39	1.2.3-6	Open joint below parapet coping at West Terrace. Photograph by John Milner Architects, November 2012.
40	1.2.3-7	Running crack at Annex door head. Photograph by John Milner Architects, November 2012.
40	1.2.3-8	Abandoned open penetrations at Northeast corner. Photograph by John Milner Architects, November 2012.
41	1.2.3-9	Distressed brickwork at south landscape wall. Photograph by John Milner Architects, November 2012.
42	1.2.3-10	Soiled granite course. Photograph by John Milner Architects, November 2012.
43	1.2.3-11	Failed sealant, typical at granite course. Photograph by John Milner Architects, November 2012.
44	1.2.3-12	Aggressively and incompletely cleaned marble window sill and bracket, typical at East facade. Photograph by John Milner Architects, November 2012.
45	1.2.3-13	Soiling of portico marble elements, typical. Photograph by John Milner Architects, November 2012.
46	1.2.3-14	Hairline cracks at perimeter of portico ceiling. Photograph by John Milner Architects, November 2012.
47	1.2.3-15	Iron stains at handrail anchor points. Photograph by John Milner Architects, November 2012.
48	1.2.3-16	Cracked window panes. Photograph by John Milner Architects, November 2012.

DOCUMENT FIGURES

<u>Page</u>	<u>Figure</u>	<u>Caption</u>
49	1.2.3-17	Rusted bottom rail, typical at West Terrace doors. Photograph by John Milner Architects, November 2012.
49	1.2.3-18	Rusted bottom rail at Annex door. Photograph by John Milner Architects, November 2012.
50	1.2.3-19	Damaged grille with inappropriate fasteners at East facade. Photograph by John Milner Architects, November 2012.
51	1.2.3-20	Damaged ventilator. Undulating roof surface (typical) visible beyond. Photograph by John Milner Architects, November 2012.
51	1.2.3-21	Slates susceptible to breakage at roof undulations. Poorly matched patch in foreground. Photograph by John Milner Architects, November 2012
52	1.2.3-22	Mitered hip joint and caulked open ridge. Photograph by John Milner Architects, November 2012.
53	1.2.3-23	Unprotected terrace drain. Photograph by John Milner Architects, November 2012.
54	1.2.3-24	Biological growth at West Terrace pavement. Photograph by John Milner Architects, November 2012.
55	1.2.3-25	Water stains below southwest addition roof. Photograph by John Milner Architects, November 2012.
56	1.2.3-26	Sprung membrane and inappropriate coping patch at roof of Annex. Photograph by John Milner Architects, November 2012.
56	1.2.3-27	Sealant and mortar repairs at Annex parapet copings. Photograph by John Milner Architects, November 2012.
57	1.2.3-28	Damaged metal fascia at West canopy. Photograph by John Milner Architects, November 2012.
58	1.2.3-29	Degraded paint at underside of West canopy. Photograph by John Milner Architects, November 2012.
58	1.2.3-30	Deformed gutter at West canopy. Photograph by John Milner Architects, November 2012.

DOCUMENT FIGURES

<u>Page</u>	<u>Figure</u>	<u>Caption</u>
59	1.2.3-31	Hardware damage at Tennessee Tavarnelle marble flooring. Photograph by John Milner Architects, November 2012.
60	1.2.3-32	Hairline cracks in Tennessee Tavarnelle marble border. Photograph by John Milner Architects, November 2012.
60	1.2.3-33	Broken Levanto marble wall base. Photograph by John Milner Architects, November 2012.
61	1.2.3-34	Chipped Levanto capstone at stair wall. Photograph by John Milner Architects, November 2012.
62	1.2.3-35	Open grout joints in marble panels at stair. Photograph by John Milner Architects, November 2012.
63	1.2.3-36	Worn railings and newels at secondary staircase. Photograph by John Milner Architects, November 2012.
64	1.2.3-37	Damaged jamb at doorway to second-floor southwest gallery. Photograph by John Milner Architects, November 2012.
65	1.2.4.1-1	Thomas Bayly Building East (Main) Elevation. Photo by Robert Silman Associates, November 2012.
66	1.2.4.1-2	Steel roof truss (modified Fink). <i>Note:</i> Tectum roof deck installed. Photo by Robert Silman Associates, November 2012.
67	1.2.4.1-3	Typical riveted connections of roof truss. <i>Note:</i> Bottom chord panel members slope. Photo by Robert Silman Associates, November 2012.
67	1.2.4.1-4	Bearing of roof truss on interior brick masonry wall. <i>Note:</i> Gusset plates and hung catwalk. Photo by Robert Silman Associates, November 2012.
68	1.2.4.1-5	Bearing of steel hip rafter. <i>Note:</i> Use of hollow brick and wood outriggers to support eave. Photo by Robert Silman Associates, November 2012.
68	1.2.4.1-6	Roof retrofit with Tectum roof panels. <i>Note:</i> Bulb-tee purlins welded to original truss and associated wide flange purlins. Photo by Robert Silman Associates, November 2012.

DOCUMENT FIGURES

<u>Page</u>	<u>Figure</u>	<u>Caption</u>
69	1.2.4.1-7	Original perimeter cinder-concrete slab and concrete-encased steel beams remain. Photo by Robert Silman Associates, November 2012.
70	1.2.4.1-8	Reinforced cast-in-place concrete roof slab and supporting concrete-encased steel framing. <i>Note:</i> Presence of catwalk and insulation. Photo by Robert Silman Associates, November 2012.
71	1.2.4.1-9	Localized slate deterioration at apex of roof. Photo by Robert Silman Associates, November 2012.
71	1.2.4.1-10	Localized slate deterioration at valley of roof. Photo by Robert Silman Associates, November 2012.
73	1.2.4.1-11	Parapet of West Terrace. <i>Note:</i> Biological growth, caulking of head joints, and loss of mortar at bed joints. Photo by Robert Silman Associates, November 2012.
74	1.2.4.1-12	Parapet of West Terrace. <i>Note:</i> Biological growth, caulking of head joints, and loss of mortar at bed joints. Photo by Robert Silman Associates, November 2012.
75	1.2.4.1-13	First-floor concrete-encased beam. Photo by Robert Silman Associates, November 2012.
76	1.2.4.1-14	Crack in underside of first-floor slab and beam encasement in existing storage room adjacent to elevator. Photo by Robert Silman Associates, November 2012.
76	1.2.4.1-15	Crack in underside of first-floor slab in northeast mechanical room above trench access hatch. Photo by Robert Silman Associates, November 2012.
77	1.2.4.1-16	Underside of stucco portico along East elevation. Photo by Robert Silman Associates, November 2012.
78	1.2.4.1-17	Localized cracking at top of hung stucco ceiling at east portico. Photo by Robert Silman Associates, November 2012.
78	1.2.4.1-18	Localized cracking at base of hung stucco ceiling at east portico. Photo by Robert Silman Associates, November 2012.
79	1.2.4.1-19	Localized loose brick and open mortar joints at top of pilasters. Photo by Robert Silman Associates, November 2012.

DOCUMENT FIGURES

<u>Page</u>	<u>Figure</u>	<u>Caption</u>
80	1.2.4.1-20	Deterioration of brick flat (jack) arch due to rust jacking of supporting steel lintels along North elevation. Photo by Robert Silman Associates, November 2012.
80	1.2.4.1-21	Deterioration of brick flat (jack) arch due to rust jacking of steel lintels along West elevation. Photo by Robert Silman Associates, November 2012.
81	1.2.4.1-22	Horizontal cracking of brick masonry above wall penetrations (along single-story addition at northwest corner) due to rust jacking of steel lintels. Photo by Robert Silman Associates, November 2012.
81	1.2.4.1-23	Infilled masonry openings and previously repaired diagonal and horizontal cracking. Photo by Robert Silman Associates, November 2012.
82	1.2.4.1-24	Existing brick-masonry retaining wall at northwest corner of site exhibiting localized vertical cracking due to proximity of tree-root and underlying root-system encroachment. Photo by Robert Silman Associates, November 2012.
83	1.2.4.1-25	Existing brick-masonry retaining wall at northwest corner of site exhibiting localized vertical cracking due to proximity of tree-root and underlying root-system encroachment. Photo by Robert Silman Associates, November 2012.
84	1.2.4.1-26	Localized brick-masonry vertical cracking at retaining wall along northern boundary of site. Photo by Robert Silman Associates, November 2012.
85	1.2.4.1-27	Localized brick-masonry vertical cracking at retaining wall along Rugby Road (eastern boundary of site). Photo by Robert Silman Associates, November 2012.
85	1.2.4.1-28	Brick-masonry cracking and displacement of pier abutment due to retaining-wall movement. Photo by Robert Silman Associates, November 2012.
86	1.2.4.1-29	Horizontal cracking and displacement of brick at pier abutment due to retaining wall movement. Photo by Robert Silman Associates, November 2012.

DOCUMENT FIGURES

<u>Page</u>	<u>Figure</u>	<u>Caption</u>
86	1.2.4.1-30	Cracking and heaving of concrete sidewalk slab due to tree-root encroachment. Photo by Robert Silman Associates, November 2012.
87	1.2.4.1-31	Vertical cracking in brick-masonry site wall locally at existing sanitary and water lines. Photo by Robert Silman Associates, November 2012.
87	1.2.4.1-32	Biological growth and efflorescence in brick-masonry retaining wall. Photo by Robert Silman Associates, November 2012.
89	1.2.4.2-1	Single-glazed door on second floor with condensation. Photograph by T. Newbold, December 2012.
90	1.2.4.2-2	Radiator grille in first-floor Stair Hall. Photograph by T. Newbold, December 2012.
91	1.2.4.2-3	Air handler AHU-1. Photograph by T. Newbold, December 2012.
94	1.2.4.2-4	Damaged insulation on ductwork in attic. Photograph by T. Newbold, December 2012.
97	1.2.4.2-5	Enclosure concealing AHU-4 (typical for AHU-5). Photograph by T. Newbold, December 2012.
100	1.2.4.2-6	Air handler AHU-6 in second-floor closet. Photograph by T. Newbold, December 2012.
102	1.2.4.2-7	Abandoned skylight heating system in attic. Photograph by T. Newbold, December 2012.
103	1.2.4.2-8	Abandoned exhaust fans in attic. Photograph by T. Newbold, December 2012.
103	1.2.4.2-9	One remaining attic ventilator. Photograph by T. Newbold, December 2012.
105	1.2.4.2-10	Typical lavatories in public restroom. Photograph by T. Newbold, December 2012.

DOCUMENT FIGURES

<u>Page</u>	<u>Figure</u>	<u>Caption</u>
106	1.2.4.2-11	Main distribution panel in Annex. Photograph by T. Newbold, December 2012.
107	1.2.4.2-12	Distribution panels DP-1 and DP-2 in Annex elevator Modulation Error Ratio. Photograph by T. Newbold, December 2012.
109	1.2.4.2-13	Fire-alarm control panel adjacent to lower-level entrance. Photograph by T. Newbold, December 2012.
113	1.3.1-1	Detail view of the prominent seating and use of terraces to shape the Bayly landscape visible in this oblique aerial view to the south late in the original construction, 1934. University of Virginia, Special Collections Library.
113	1.3.1-2	The completed landscape of the East Terraces portraying brick and stone steps, brick walls, ground-cover slopes, young ginkgo trees, and boxwood shrubs from Rugby Road, c. 1938. University of Virginia, Special Collections Library, Holsinger Studio Collections.
114	1.3.1-3	Current East Terraces landscape view across Rugby Road looking west depicts the East Terraces and also shows the groundcover slopes below the sidewalk. Photograph by Heritage Landscapes, July 2012.
115	1.3.1-4	Panoramic view across the Madison Bowl to the elevated Bayly site on Carr's Hill with adjacent structures. Photograph by Heritage Landscapes, November 2012.
115	1.3.1-5	Broad views outward from the upper terrace look over the Madison Bowl to Forest Hills in the distance. Photograph by Heritage Landscapes, July 2012.
119	1.3.1-6	Finished plantings of the upper terrace with boxwood rows, common juniper at steps, and potted plants, c. 1938. University of Virginia, Special Collections Library, Holsinger Studio Collections.
120	1.3.1-7	English ivy, turf, and rows of white ash between the sidewalk and Rugby Road. Photograph by Heritage Landscapes, November 2012.

DOCUMENT FIGURES

<u>Page</u>	<u>Figure</u>	<u>Caption</u>
120	1.3.1-8	A large willow oak between massings of oakleaf hydrangea and Otto Luyken cherry laurel. Photograph by Heritage Landscapes, November 2012.
121	1.3.1-9	Ginkgos on the lawn of the lower terrace with rows of boxwood and common juniper, 1947. University of Virginia, Special Collections Library, Philip S. Hench Walter Reed Yellow Fever On-line Collection.
121	1.3.1-10	Dwarf sweetbox on a steep slope and climbing hydrangea behind the bench at the redesigned lower terrace. Photograph by Heritage Landscapes, June 2012.
122	1.3.1-11	Crepe myrtle and serviceberry trees over boxwood shrubs and architectural fragments in the northeast planting bed. Photograph by Heritage Landscapes, June 2012.
122	1.3.1-12	Star magnolia tree and boxwood shrub of the South Garden willow extend toward the southeast planting bed. Photograph by Heritage Landscapes, June 2012.
123	1.3.1-13	A boxwood shrub, bench, and herbaceous plants fill the bed between the walk and the South facade of the building. Photograph by Heritage Landscapes, June 2012.
123	1.3.1-14	Original boxwoods, bench, turf with sculpture pad, and wall-mounted sculpture of the South Garden. Photograph by Heritage Landscapes, June 2012.
125	1.3.1-15	Brick-framed bluestone pavers fill the original island planting beds in the brick surface of the upper terrace. Note the recent bright mortar repair. Photograph by Heritage Landscapes, June 2012.
126	1.3.1-16	Exterior coping details—partial construction drawing by Edmund S. Campbell and R. E. Lee Taylor Architects, September 1933.
127	1.3.1-17	Molded brick coping on the southeastern parapet wall of the upper terrace and custom curved end wall. Photograph by Heritage Landscapes, July 2012.

DOCUMENT FIGURES

<u>Page</u>	<u>Figure</u>	<u>Caption</u>
127	1.3.1-18	Circular segment of the low retaining wall, high wall extension, and angled-step cheek walls at the south steps to the lower terrace. Photograph by Heritage Landscapes, November 2012.
129	1.3.1-19	Concrete seat and legs of a bench in a nonhistoric position within the South Garden. Photograph by Heritage Landscapes, November 2012.
130	1.3.1-20	Potted plants at the base of the Portico columns and along the East facade of the building, c. 1940. University of Virginia, Special Collections Library.
130	1.3.1-21	Capital, base, and other architectural fragments on raised brick pad in the northeast planting bed. Note corner brick missing on pad. Photograph by Heritage Landscapes, November 2012.
131	1.3.2-1	East Elevation—Partial construction drawing by Edmund S. Campbell and R. E. Lee Taylor Architects, September 1933.
132	1.3.2-2	Villa Corsini. Photograph from www.villacorsini.com , © Villa Corsini srl
133	1.3.2-3	Blind window at East facade. Photograph by John Milner Architects, November 2012.
134	1.3.2-4	Palladio's Motive, from <i>The American Vignola</i> by William R. Ware (Scranton, PA: International Textbook Co., 1903), plate III.
135	1.3.2-5	Portico. Photograph by John Milner Architects, September 2012.
136	1.3.2-6	Vaulted ceiling of Portico. Photograph by John Milner Architects, November 2012.
137	1.3.2-7	East fenestration. Photograph by John Milner Architects, November 2012.
138	1.3.2-8	South fenestration. Photograph by John Milner Architects, November 2012.
139	1.3.2-9	North fenestration. Photograph by John Milner Architects, November 2012.
140	1.3.2-10	Wrought iron exterior light fixture at East facade. Photograph by John Milner Architects, November 2012.

DOCUMENT FIGURES

<u>Page</u>	<u>Figure</u>	<u>Caption</u>
141	1.3.2-11	First-floor plan— drawing by John Milner Architects, November 2012.
142	1.3.2-12	Second-floor plan— drawing by John Milner Architects, November 2012.
144	1.3.2-13	Exhibition Lobby. Photograph by John Milner Architects, November 2012.
145	1.3.2-14	Gallery A with entrance to Stair Hall beyond. Photograph by John Milner Architects, November 2012.
145	1.3.2-15	Lower Stair Hall. Photograph by John Milner Architects, November 2012.
146	1.3.2-16	Upper Stair Hall, as viewed from main stairway. Photograph by John Milner Architects, November 2012.
147	1.3.2-17	Upper Stair Hall, as viewed from Gallery D. Photograph by John Milner Architects, November 2012.
148	1.3.2-18	Gallery D, as seen from Gallery E. Photograph by John Milner Architects, November 2012.
148	1.3.2-19	Gallery C, viewed from Gallery B. Photograph by John Milner Architects, November 2012.
150	1.3.2-20	Gallery A door, as viewed from interior of gallery. Photograph by John Milner Architects, November 2012.
151	1.3.2-21	Doorway into Gallery F. Photograph by John Milner Architects, November 2012.
152	1.3.2-22	Gallery F door, as viewed from interior of gallery. Photograph by John Milner Architects, November 2012.
153	1.3.2-23	Opening between Gallery C and the Gallery B, viewed from Gallery C. Photograph by John Milner Architects, November 2012.
154	1.3.2-24	Decorative grille work in door within arched opening between Gallery B and Gallery C, looking south. Photograph by John Milner Architects, November 2012.

DOCUMENT FIGURES

<u>Page</u>	<u>Figure</u>	<u>Caption</u>
155	1.3.2-25	Non-character-defining air-distribution system suspended beneath Exhibition Lobby ceiling. Photograph by John Milner Architects, November 2012.
156	1.3.2-26	Non-character-defining air-distribution system suspended beneath Upper Stair Hall ceiling. Photograph by John Milner Architects, November 2012.

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