



DC STATE HISTORIC PRESERVATION OFFICE  
**DETERMINATION OF ELIGIBILITY FORM**

**PROPERTY INFORMATION**

Property Name(s): National Air and Space Museum

Street Address(es): Independence Avenue at Sixth Street, SW, Washington, DC 20560

Square(s) and Lot(s): Reservation Nos. 4 and 5

Property Owner(s): Smithsonian Institution

The property/properties is/are being evaluated for potential historical significance as/for:

- An individual building or structure.
- A contributing element of a historic district: National Mall Historic District
- A possible expansion of a historic district: Specify
- A previously unevaluated historic district to be known as: Specify
- An archaeological resource with site number(s): Specify
- An object (e.g. statue, stone marker etc.): Specify
- A new multiple property/thematic study regarding: Specify
- Association with a multiple property/thematic study: Specify
- Other: Specify



**Figure 1:** National Air and Space Museum, south elevation, facing northwest along Independence Avenue, 2016 (EHT Tracerics).



Figure 2. National Air and Space Museum, south elevation, facing northwest along Independence Avenue. New granite cladding visible at left, October 2021 (Smithsonian)

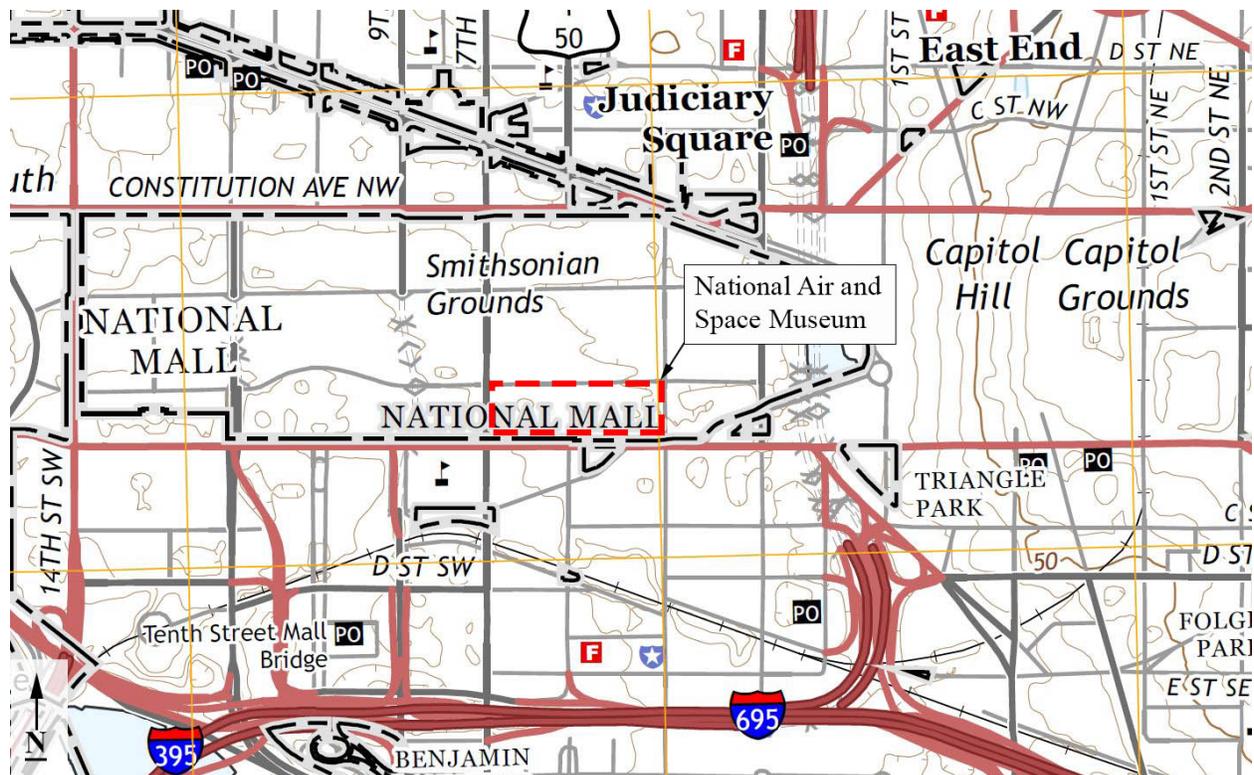


Figure 3: USGS Topographic Map, detail (U.S. Geological Survey, Washington West Quadrangle, 2014).

## INTRODUCTION

The purpose of this Determination of Eligibility (DOE) is to provide the Smithsonian Institution with an objective and independent professional assessment of the eligibility of the National Air and Space Museum for inclusion in the National Register of Historic Places, in compliance with Section 106 of the National Historic Preservation Act of 1966, as amended. A DOE was previously drafted for the museum in 2016 but was not completed due to a major revitalization of the building. The 2016 DOE recommended that the National Air and Space Museum was eligible for the National Register under Criteria A and C, and Criteria Consideration G, with a period of significance of 1976-1977. Since then, the Smithsonian has completed approximately half of the work per the major revitalization of the museum building that includes replacement of its exterior envelope, a new north entrance vestibule, improvements to its site and landscape, and replacement of building systems and other interior renovations. These planned changes are noted throughout the building and site description and are discussed at greater length later in the document in the section on alterations.

This report includes a brief discussion of the project's purpose and methodology, a description of the building's physical appearance, and the history of its design and construction. A discussion of the building's historic context and evolution over time has also been included. The report also provides a statement of significance and an assessment of the property's historic integrity. Apart from the major, site-specific pieces installed at the time of the building's completion, a discussion of specific collections and exhibits, including their evolution over time, has not been included in this report.



Figure 4: Satellite image of the National Air and Space Museum (Google Earth, Open Data DC).

## Methodology

This determination of eligibility was completed in accordance with the documentation, analysis, and evaluation guidelines established by the National Register Bulletin *How to Apply the National Register Criteria for Evaluation*. Various primary and secondary sources were referenced to assess the potential eligibility of the National Air and Space Museum and place it within a contextual framework. Research was conducted at various archival repositories

including the Smithsonian Institution Archives, the National Air and Space Museum Archives, the Library of Congress, the National Archives, the U.S. Commission of Fine Arts Library, and the Martin Luther King, Jr. Memorial Library. Interior and exterior examination of the National Air and Space Museum was conducted in August 2016 to document the building and assess its integrity.

## **DESCRIPTION**

The National Air and Space Museum (NASM) is a large museum building on the National Mall in Washington, D.C. The museum showcases a nationally important collection of artifacts documenting the history of flight and space travel. In addition to museum galleries and associated public amenities, the building includes a planetarium and theater, administrative offices, a research library, and various support spaces. The Modernist-style building was designed by Gyo Obata of the St. Louis-based architectural firm Hellmuth, Obata & Kassabaum (HOK) and opened to the public in 1976.

### **Site Context**

NASM is located at Independence Avenue and Sixth Street, S.W., within Reservations 4 and 5 along the south edge of the National Mall. The entirety of the site falls within the National Mall Historic District. The museum and its grounds are bounded by Jefferson Drive, S.W., to the north, Fourth Street, S.W., to the east, Independence Avenue, S.W., to the south, and Seventh Street, SW, to the west. The museum is sited on center with the Sixth Street axis, and in line with the West Building of the National Gallery of Art. The Hirshhorn Museum and Sculpture Garden sits to the west of the Museum, across Seventh Street S.W., while the National Museum of the American Indian lies across Fourth Street S.W. to the east.

### **Building**

The building's simplicity and clarity of composition, reflecting the Modernist style, are consistently employed throughout its exterior and interior design. Architect Gyo Obata incorporated many tenets of the style in his design for NASM, including: its rectangular form; articulation of solids and voids; horizontal massing; lack of applied ornamentation; smooth, planar wall surfaces; and employment of contemporary technology, including glass curtain walls, thin-stone veneer cladding, and light steel-frame construction. Extensive glazing, especially along the museum's three, two-story sky-lit galleries, provides ample natural light and emphasizes reciprocal views to its National Mall context. The building's modern interior museum planning enables circulation through broad pedestrian concourses, which provide access to the adjacent enclosed galleries. On the upper floors, these east-west concourses overlook the entrance atrium, which along with the building's vertical circulation elements, allows visitors to experience collections from multiple visual perspectives.

#### *Exterior*

NASM features three above-grade stories and a below-grade basement story. The building is rectangular in plan, measuring 685 feet by 225 feet at its widest point, and is sited on a three-tier terrace. The upper three stories of the museum are framed with structural steel and tubular trusses, while the below-grade basement is comprised of reinforced, poured-in-place concrete.

The museum originally featured alternating bays of solid blocks of curtain wall construction clad with Tennessee Pink Marble (limestone) panels and gray-tinted glass curtain walls. The original stone cladding is commonly known as Tennessee Pink Marble, but the stone is actually a limestone. The original limestone cladding system failed, and the majority has been replaced with Colonial Rose Granite from Canada because the original limestone was no longer available in sufficient quantity and quality, and was susceptible to warping over time from the building's structure. The roof consists of flat planes that vary in height between the stone-clad pavilions and sunken skylights.



**Figure 5:** North elevation rendering with new entrance canopy, 2018 (Smithsonian).

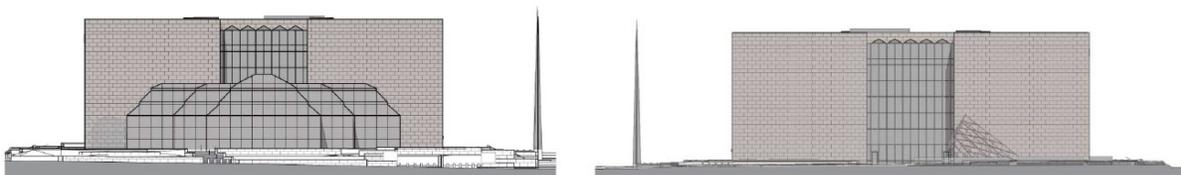
The museum's primary (north) façade faces Jefferson Drive and the National Mall. The seven-bay, symmetrical façade is composed of a regular rhythm of alternating solid and glass elements. The façade's four projecting solid blocks extend the full height of the museum, while the three recessed, glass-enclosed exhibit bays are two stories in height with glazed ceilings comprised of pyramidal skylights. A projecting, glass-enclosed vestibule on the north side houses the primary entrance. It will be replaced with a glazed exterior expansion of the vestibule footprint under a curvilinear, steel-frame and tensile fabric-covered entrance canopy. Recessed glazed hyphens span above the glass galleries below on the third story.

The south side of the museum faces Independence Avenue and is a variation on the primary façade. Here, the glass bays are replaced with a cantilevered, masonry-clad block. The heavy use of opaque cladding at the south elevation was intended to reduce solar heat gain on the south side of the museum and provide additional interior wall space for exhibit galleries.



**Figure 6:** South elevation rendering, 2018 (Smithsonian).

The museum's east and west elevations, facing onto Fourth and Seventh Streets, respectively, each feature a recessed, three-story central glass bay flanked by solid, projecting bays. The east elevation has a later restaurant addition from 1988 described in subsequent sections.



**Figure 7:** East (left) and west (right) elevations, 2016. Smithsonian National Air and Space Museum (Smithsonian).



**Figure 8:** NASM north facade and entrance vestibule, facing southeast, 2016 (EHT Tracerics).



**Figure 9:** NASM north facade and entrance vestibule. New granite cladding is visible at right, October 2021 (Smithsonian).



**Figure 10:** South elevation, cantilevered, masonry-clad block at glass bay, facing north, 2016 (EHT Traceries).



**Figure 11:** South elevation, cantilevered, masonry-clad block at glass bay, facing north. New granite cladding visible at center and left, October 2021 (Smithsonian).



**Figure 12:** NASM Exterior, south and west elevations, facing northeast, 2016 (EHT Traceries).



**Figure 13:** NASM Exterior, south and west elevations, facing northeast, October 2021 (Smithsonian).



**Figure 142:** 1988 Restaurant addition with original building beyond, facing northwest, 2016 (EHT Traceries).

### *Interior*

The interior of NASM is comprised of a basement story primarily used for staff parking; first and second stories with exhibit space; and a third story with administrative spaces. The building's exterior form follows its interior function; at each of the glass bays is a two-story, full height gallery intended for the display of aircraft alternating with smaller, enclosed galleries in each solid block section. Interior spaces at the glass bays provide expansive views of the National Mall, the U.S. Capitol, and the surrounding area.

Circulation in the museum's first, second, and third stories extends from east to west along a central, linear corridor lined by galleries and other program elements—such as the planetarium—to the north and south. Movement to each of the museum's floors is achieved through the use of public and staff-only staircases, escalators, and six elevators, including original escalators and dogleg stairs with brass handrails and tinted glass panels at the two-story, sky-lit galleries.

NASM has two public pedestrian entrances. The primary entrance, at Jefferson Drive, enters the north vestibule (added c. 1994-2000, and expanded with new canopy) and north lobby, situated within the central, two-story, sky-lit gallery. The secondary entrance, at Independence Avenue, enters the south vestibule (also added circa 1994-2000) and the central south lobby. Two murals are painted at the south lobby's east and west walls, respectively: *The Space Mural: A Cosmic View* (1976) by Robert McCall and *Earth Flight Environment* (1976) by Eric Sloane.



**Figure 15:** North lobby and sky-lit gallery, facing northwest. The north lobby houses the “Milestones of Flight” exhibit, 2016 (EHT Tracerics).



**Figure 16:** Murals in south lobby: *The Space Mural: A Cosmic View* (above left, east side) and *Earth Flight Environment* (above right, west side) (Smithsonian Air and Space Museum).

The first floor is comprised of alternating sky-lit galleries and smaller, enclosed galleries and other program elements. Each sky-lit gallery has open steel trusses designed to carry heavy loads, allowing for the aircraft on display to be suspended from their framework. The second floor is similar to the first floor, with an east-west concourse that allows access to the adjacent, enclosed galleries and balconied areas that overlook the two-story, sky-lit galleries. The alternating pattern of solid and glass enclosed spaces continues on the third floor. Throughout, a modest material palette of carpet, gypsum wallboard, gray-tinted glass, and acoustic ceiling panels is used. Many of these materials have been replaced in kind over time.

DC State Historic Preservation Office  
Determination of Eligibility Form for the National Air and Space Museum



**Figure 17:** Typical interior conditions on first (left) and second (right) floors, 2016 (EHT Traceries).



**Figure 3:** Typical third floor office and corridor conditions, 2016 (EHT Traceries).



**Figure 4:** Restaurant addition interior, 2016 (EHT Traceries).

## Restaurant Addition

Completed in 1988, a large restaurant addition was added to the east side of the original museum. The symmetrical addition is cruciform in plan with a stepped, hipped roof. The tubular steel structure is fully encased in gray-tinted glass. The interior of the space is three stories in height with a second story mezzanine and below-grade basement story. In 2020, the Smithsonian began considering the replacement of the restaurant addition with a new structure. In 2021, the Smithsonian is engaged in Section 106 consultation for a project to demolish the addition and construct a new addition to the NASM featuring a learning center.

## Site and Landscape

The NASM site is comprised of a three-tiered terrace with granite paving, extensive planters; and pedestrian stairs and ramps; turf yards at the east and west lawns; and automobile ramps providing access to the underground garage. The original concrete pavers were replaced with granite in 1986. Paving for terrace areas, ramps and stairs at the north, west and south sides of the building has been partially replaced with new concrete and granite per the revitalization.



Figure 20: Site plan and first floor, Smithsonian National Air and Space Museum, 2016 (Smithsonian).

Several changes were made to the original NASM site prior to the current revitalization underway including: the construction of the restaurant addition, which involved changes to the east terrace; the installation of a temporary astronomical observatory; and the installation of perimeter security elements throughout the site.



Figure 21: Retaining walls and stairs create and connect tiered terraces throughout the site, 2016 (EHT Tracerics).

The current revitalization will include the reconfiguration of planters throughout to accommodate additional sloped accessible walkways, and the addition of new sloped walkways and granite-faced walls at these entrances. This work has been partially completed as of October 2021. On the west side of the site, the terraced planters will be reconfigured to create more open space. The sculpture known as *Delta Solar* was shifted to the southwest corner of the site and elevated on a raised plinth which also functions as a water feature. Low existing perimeter walls at the southwest corner of the site, installed in 2005, have been removed.



**Figure 22:** *Delta Solar* relocated to the southwest corner, raised on a black granite plinth, facing northeast, October 2021 (Smithsonian).

### *Vegetation*

Over seven acres of the museum's grounds are planted with trees, shrubs, and groundcover, as well as herbaceous perennial and annual plants.<sup>1</sup> Since the museum's completion, the landscape and planting plan have undergone several iterations. The current revitalization maintains mature trees in the grove at the west side of the building. Most other vegetation will be replaced under the revitalization beginning in 2022.

### *Site Sculpture*

Three sculptural pieces from the museum's collection are located on NASM grounds: *Ad Astra* (1976) by Richard Lippold, located at the museum's primary entrance at the Mall; *Continuum* (1976) by Charles O. Perry, centered on axis with Sixth Street and the museum's Independence Avenue entrance; and *Delta Solar* (1977) by Alejandro Otero, located at the southwest corner of the property, near the intersection of Independence Avenue and Seventh Street.

<sup>1</sup> Smithsonian Gardens, "National Air and Space Museum," Smithsonian Institution, accessed September 22, 2016, <http://www.gardens.si.edu/our-gardens/air-space-museum.html>.



**Figure 23:** *Ad Astra* (above left) and *Continuum* (above right), 2016 (EHT Tracerics).

## **CHRONOLOGY OF DEVELOPMENT AND USE**

### **Summary**

The NASM was constructed and completed with all exhibits installed between 1972 and 1976. The building was designed by Gyo Obata of the architectural firm HOK. Chartered by Congress in 1946 as the National Air Museum, NASM consolidated the diverse Smithsonian flight collections into a single department, partially housed in the South Yard behind the Castle and the Arts and Industries Building. Nearly three decades of planning efforts ensued as Smithsonian officials and legislators debated an appropriate site and design for the museum. Under the direction of Smithsonian Secretary S. Dillon Ripley and NASM Director Michael Collins, the vision for NASM was finally realized. NASM was completed earlier than its expected completion date, on budget, and opened to the public on July 1, 1976.

### **Historical Overview of the Smithsonian Institution**

The Smithsonian Institution was created in 1846 through enabling legislation signed into law by President James K. Polk. The law provided structure and definition to the bequest of Englishman James Smithson, whose will gifted his estate to the United States of America, to be used for the creation of a scientific and educational institution (should his nephew and principal heir die without children). Although Smithson died in 1829, the death of his nephew in 1835 freed the funds of his estate, which were claimed and returned to the United States by 1838. Widely divergent views over the appropriate use and mission of the institution delayed its creation by nearly another decade. Under the enabling legislation, the Smithsonian was created as a “trust instrumentality” (or public trust) of the United States, independent of the three branches of the federal government and managed by a Board of Regents. Joseph Henry, a noted physicist and professor of natural philosophy at the College of New Jersey (now Princeton University), became the Smithsonian’s first Secretary in 1846. The organization’s first building, designed by James Renwick, Jr., and today known as the “Castle,” was officially opened to the public in

1855. Henry was primarily focused on scientific research and publication during his tenure as Secretary, rather than expanding the Institution's collections and facilities.<sup>2</sup>

Beginning in the late nineteenth century, the Smithsonian evolved to become a great national museum, in addition to its role as a scientific research institution. Under the leadership of its second Secretary, Spencer Fullerton Baird, the Institution enlarged its natural history collections, and in 1879 established the Bureau of American Ethnology. Under Baird, the Institution erected a large building to house the collections of the National Museum, which was completed in 1881 (formerly the U.S. National Museum Building, now known as the Arts and Industries Building). To study and document solar phenomenon, third Secretary Samuel Langley established the Smithsonian Astrophysical Observatory in 1890. Langley also established the National Zoological Park in 1891.<sup>3</sup>

The first decades of the twentieth century represented a period of growth for the Smithsonian. In 1911, a new National Museum Building (now the National Museum of Natural History) was completed on the north side of the Mall to house the Institution's natural history and art collections. In 1923, the Smithsonian opened the Freer Gallery of Art, its first museum dedicated to the display of fine arts, which was constructed to house the Asian and American art collections of industrialist Charles Lang Freer.<sup>4</sup>

After World War II, the Smithsonian modernized its exhibits and programs and, under the leadership of Secretary S. Dillon Ripley, constructed several new museum buildings. The Smithsonian expanded the 1911 National Museum Building with additions during the 1960s and completed the Museum of History and Technology (now the National Museum of American History) in 1964. In 1968, the Institution transferred the collections of the American Art Museum and National Portrait Gallery bureaus to the former Patent Office Building in downtown Washington. The acquisition of the Renwick Gallery, the first home of the Corcoran Gallery of Art, in 1972 provided additional exhibit space for the Smithsonian's art collections. During the 1970s, the Institution constructed the Hirshhorn Museum and Sculpture Garden (1974) and the National Air and Space Museum (1976). The Smithsonian also constructed a museum building to the south of the Castle, an area historically known as the South Yard, between 1983 and 1987. Known as the Quadrangle Complex, it included the Arthur M. Sackler Gallery and the National Museum of African Art. Additional underground space in the complex contains the S. Dillon Ripley International Center. It is accessed through the Ripley Center Pavilion, which was also completed in 1987. The National Museum of the American Indian was established in 1989 during the tenure of Secretary Robert McCormick Adams, and in 2004, moved into a new museum building built on the Mall.<sup>5</sup> In December 2003, The National Museum of African American History and Culture (NMAAHC) was established under the tenure of Secretary Lawrence M. Small.<sup>6</sup> The NMAAHC museum, located on the Mall, officially opened to the public on September 24, 2016.

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<sup>2</sup> *Historic Structure Report, Smithsonian Institution Building* (Washington, DC: SmithGroupJJR, 2009), 2.1:1-5.

<sup>3</sup> *Historic Structure Report, Smithsonian Institution Building* (Washington, DC: SmithGroupJJR, 2009), 2.1:14-19.

<sup>4</sup> *Historic Structure Report, Smithsonian Institution Building* (Washington, DC: SmithGroupJJR, 2009), 2.1:19-34.

<sup>5</sup> Heather Ewing and Amy Ballard, *A Guide to Smithsonian Architecture* (Washington, DC: Smithsonian Books, 2009), 14-29.

<sup>6</sup> "General History," Smithsonian Institution Archives, accessed January 25, 2017, <https://siarchives.si.edu/history/general-history>.

## Administrative History of the National Air and Space Museum

### *Formation and Early Buildings*

The Smithsonian's connection to the history of flight began long before the formal establishment of the National Air Museum in 1946. First Smithsonian Secretary Joseph Henry had an avid interest in hot air balloons. In 1861, he invited balloonist Thaddeus Sobieski Constantine to inflate his balloon on the Smithsonian Grounds. Also during Henry's tenure, in 1876 the Smithsonian acquired its first artifacts related to flight—a collection of twenty kites gifted by the Chinese Imperial Commission.<sup>7</sup> Third Secretary Langley was also interested in flight. He strove to create the first manned flying machine; however, his efforts were unsuccessful. Langley was also interested in the study of space, and on March 1, 1890, he established the Smithsonian

Astrophysical Observatory. The observatory was originally housed in a shed behind the Smithsonian Castle. Its headquarters moved from Washington to Cambridge, Massachusetts in 1955 to form a partnership with Harvard University.<sup>8</sup>

The first object accessioned to the Smithsonian's flight collection was the Stringfellow engine, added in 1889.<sup>9</sup> The collection was initially housed in the National Museum. Following World War I, the collection was relocated to a Quonset hut behind the Smithsonian Castle. The hut was erected in 1917 by the United States Signal Service and was transferred to the Smithsonian in 1919.<sup>10</sup> Referred to as the "Tin Shed," the hut opened to the public as an exhibit space in 1920.<sup>11</sup> After World War II, the expanding collections were also housed outdoors along "Rocket Row," along the west side of the Arts and Industries Building.<sup>12</sup>

### *National Air Museum Legislation*

On August 12, 1946, President Harry Truman signed the bill establishing the National Air Museum as a subsidiary of the Smithsonian Institution. The bill charged the new museum to:

...memorialize the national development of aviation; collect, preserve, and display aeronautical equipment of historical interest and significance; serve as a repository for



**Figure 24:** The Smithsonian's early flight collection was housed in a Quonset hut behind the Castle, circa 1920 (SIA, Neg. No. 2002-10653).

<sup>7</sup> National Air and Space Museum, "History," <https://airandspace.si.edu/history-0> (accessed September 16, 2016).

<sup>8</sup> SIA, "Smithsonian Astrophysical Observatory," <http://siarchives.si.edu/history/smithsonian-astrophysical-observatory> (accessed September 16, 2016).

<sup>9</sup> SIA, "National Air and Space Museum and Udvar-Hazy Center," <http://siarchives.si.edu/history/national-air-and-space-museum-and-udvar-hazy-center> (accessed September 16, 2016).

<sup>10</sup> SIA, "The South Yard," <http://siarchives.si.edu/history/exhibits/pictures/south-yard> (accessed September 16, 2016).

<sup>11</sup> The Quonset hut was demolished in 1975 as part of preparations for the Bicentennial.

<sup>12</sup> National Air and Space Museum, "History," <https://airandspace.si.edu/history-0> (accessed September 16, 2016).

scientific equipment and data pertaining to the development of aviation; and provide educational material for the historical study of aviation.<sup>13</sup>

The bill empowered the Smithsonian with the ability to appoint a museum head as well as other officers and employees. It further allowed government department heads to transfer or lend aviation artifacts to the museum without charge. Finally, it directed the Smithsonian Secretary—with the advice of an Advisory Board composed of military leaders and others—to “...investigate and survey suitable lands and buildings for selection for a site for said national air museum” and to make recommendations to Congress for the museum’s placement.<sup>14</sup>

The legislation, however, did not make provision for a building for the museum, which was outgrowing its available space. Consequently, several collections were stored in an abandoned aircraft factory in Park Ridge, Illinois, while others were kept at a U.S. Navy facility in Norfolk, Virginia. When the Korean War began in 1951, the Museum was forced to vacate the Park Ridge facility. By 1952, curator Paul Garber had quickly established a storage facility in Silver Hill, Maryland, on land that is now a part of the larger Suitland Collections Center. Garber’s efforts saved the Museum’s collections. In his honor, the museum storage center at Suitland and its associated outbuildings were renamed the Paul E. Garber Preservation, Restoration, and Storage Facility in 1980. Nonetheless, the establishment of this center did not solve the issue of the Museum’s lack of exhibition space.

## **National Air and Space Museum Development**

### *Early Site Search and Preliminary Designs*

The site search for the new museum began almost immediately after it was chartered. At the Air Museum Advisory Board’s meeting on August 19, 1947, several locations throughout the nation were considered, with the Board unanimously adopting a resolution that the National Air Museum be located in Washington, DC, and that “a search be made for sites which are to be submitted to the Advisory Board for approval as to location and adequacy in size.”<sup>15</sup> It was envisioned the proposed museum would require over 500,000 square feet of exhibition space with a “place of honor” for the Wright Brother’s 1903 airplane. The museum would also have space for offices, laboratories, library, auditorium, manufacturers’ display rooms, shops, and facilities for building maintenance and operation.<sup>16</sup> The Board directed the Chairman to enlist the aid of the Public Buildings Administration of the Federal Works Agency to undertake a study on a proposed plan for the Air Museum.<sup>17</sup>

On August 13, 1948, \$15,000 was transferred to the Public Buildings Administration for a study on a proposed plan for the Air Museum.<sup>18</sup> By August 26, 1948, the first version of this study had

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<sup>13</sup> *An Act to establish a national air museum, and for other purposes.* Public Law 722, *U.S. Statutes at Large* 60 (1946): 1024-1025.

<sup>14</sup> *An Act to establish a national air museum.*

<sup>15</sup> “Appendix 9: Report on the National Air Museum,” in *Annual Report of the Smithsonian Institution, 1948, Secretary’s Report*, 128. SIA, Accession 06-225, Box 51.

<sup>16</sup> “Appendix 9: Report on the National Air Museum,” in *Annual Report of the Smithsonian Institution, 1948, Secretary’s Report*, 129. SIA, Accession 06-225, Box 51.

<sup>17</sup> “Appendix 9: Report on the National Air Museum,” in *Annual Report of the Smithsonian Institution, 1948, Secretary’s Report*, 128. SIA, Accession 06-225, Box 51.

<sup>18</sup> “Chronological Summary Relating to Proposed National Air Museum Building.” SIA, Accession 06-225 Box 53.

been completed, which was considered at the Board's meeting on that date. Several proposed sites were referenced in the document, including the first choice, Arlington Farms.<sup>19</sup> In December, a second version of this report was provided at the Board's meeting, where the Board voiced their support for the selection of Arlington Farms.<sup>20</sup> The version of the report identified fifteen potential sites located in Washington, DC, Maryland, and Virginia. The first, second, and third choices were Arlington Farms, Theodore Roosevelt Island, and the brick yard to the south of the Pentagon, respectively. Alternate locations included: a site owned by Bucknell University (along the Mount Vernon Parkway south of Alexandria); Andrews Field; Alexandria Reservoir; the Washington National Airport; Daingerfield Island; Anacostia Park Tree Nursery; University of Maryland (a site approximately one mile to the northwest of the school); Suitland Office District; Langley; along the Baltimore-Washington Parkway; Oxon Hill; and Indian Queen Point.<sup>21</sup>

The National Capital Park and Planning Commission (NCPPC, later NCPC) requested that the U.S. Commission of Fine Arts (CFA) review the sites identified by the Federal Works Agency study, which occurred at the CFA meeting held on May 5, 1949. At the time it was anticipated the building would be 400,000 square feet, 120 feet tall, and require fifteen to twenty acres of land for its construction. Several possible locations were presented, three of which were unanimously disapproved: Arlington Farms; Roosevelt Island; and adjacent to the Mount Vernon Memorial Highway. CFA felt after further study, however, one of the alternate locations may be acceptable.<sup>22</sup> At the Board's meeting on June 29, 1949, they were informed that NCPPC would not approve the use of the Arlington Farms site.<sup>23</sup> On January 25, 1950, NCPC unanimously voted to approve the use of the study's third proposed location, the brick yard site to the south of the Pentagon, provided the Arlington County Planning Board agreed with the proposed use.<sup>24</sup>

On March 17, 1950, the Smithsonian sent the completed study with recommendations to Congress, as required by Public Law 722. The report included draft legislation authorizing the building, the acquisition of a site, and the creation of plans and specifications for the National Air Museum, as well as the Public Buildings Administration's study, which included a building plan adaptable to a much larger area. The authorizing legislation, however, was not reported out of the Congressional committee because of "defense priorities."<sup>25</sup>

By March 4, 1953, Secretary Carmichael had asked J.L. Keddy to prepare an analysis for possible sites for the Air Museum. Keddy identified three possible sites for the museum, all of which had been originally considered in the preliminary site study: the brick yard; Washington

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<sup>19</sup> According to "The Preliminary Site Selection Report," Arlington Farms was approximately 190 acres in size and was located to the east of Arlington National Cemetery. The exact boundaries of the site remain unclear, but it was located within the parcel of land that was bound by Memorial Avenue to the north, Arlington National Cemetery to the west, the George Washington Memorial Parkway to the east, and South Washington Boulevard (Route 27) to the south. At the time of its consideration for the site of the National Air Museum, Arlington Farms had already been earmarked for an extension of Arlington Cemetery.

<sup>20</sup> A. Wetmore to Grover Loening, January 30, 1952, 4. SIA, Accession 06-225, Box 54.

<sup>21</sup> "Preliminary Site Selection Report," 6. SIA, Accession 06-225, Box 54.

<sup>22</sup> "Minutes of the Meeting of the Commission of Fine Arts, Held in Washington, DC, May 6, 1949" in *Minutes of the Commission of Fine Arts, Washington, DC, From July 1, 1948 - June 30, 1949*, 6 & Exhibit G-1. Commission of Fine Arts Archives.

<sup>23</sup> A. Wetmore to Grover Loening, January 30, 1952, 4. SIA, Accession 06-225, Box 54.

<sup>24</sup> "Meetings with National Capital Planning Commission Members Regarding National Air Museum Site," March 8, 1957. SIA, Accession 06-225, Box 54.

<sup>25</sup> "Chronological Summary Relating to Proposed National Air Museum Building." SIA, Accession 06-225, Box 53.

National Airport; and Suitland, Maryland. Carmichael forwarded this analysis to Dr. Jerome C. Hunsaker, asking for his opinion on the matter. In his letter, Carmichael identified a fourth possible site for the museum, along Independence Avenue south of the Smithsonian Grounds the current site of the James V. Forrestal Building, home of the U.S. Department of Energy).<sup>26</sup>

On October 22, 1952, NCPC approved *The Land Use Plan for the Southwest Survey Area*, which designated a site for the Smithsonian Air Museum at the head of Tenth Street at Independence Avenue.<sup>27</sup> In June 1953, the National Air Museum's Advisory Board decided that the National Air Museum should be located within the vicinity of the existing group of Smithsonian buildings, which "would be of the maximum service to the millions of visitors who will want to see the museum." The Board also identified the preferred site of the new museum, on the south side of Independence Avenue, somewhere between Seventh and Twelfth streets.<sup>28</sup>

In June 1954, the New York City-based architecture firm McKim, Mead & White was retained by the Smithsonian to design the proposed National Air Museum to be located at the Smithsonian's newly chosen preferred site. Deliverables, including preliminary drawings and presentation materials such as perspective renderings and models necessary for requests to Congress for future authorizations, were to be completed by December 1954.<sup>29</sup> Funding for this undertaking was donated by the Aircraft Industries Association and the Air Transport Association.<sup>30</sup>

On September 1, 1954, Secretary Carmichael requested approval from NCPC for the Independence Avenue location, also expressing his views on the suitability of the site at the NCPC hearing held in November 1954. In February 1955, NCPC gave tentative approval to its *Study of Major Thoroughfares Connecting with the Southwest Expressway and Potomac River Bridges as Related to Land Use in the Southwest Development Area*, which confirmed the location of the National Air Museum in the Smithsonian's preferred site, to be located within the confines of the "wine-glass" thoroughfare system in which Tenth Street, located to the south of the site, flowed into Twelfth and Ninth streets. These streets bound the rounded southern edge of the site, with Twelfth Street to the west and Ninth Street to the east, which transitioned to run north-south at the site's east and west boundary.<sup>31</sup>

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<sup>26</sup> Leonard Carmichael to Dr. Jerome C. Hunsaker, March 5, 1953. SIA, Accession 06-225, Box 54.

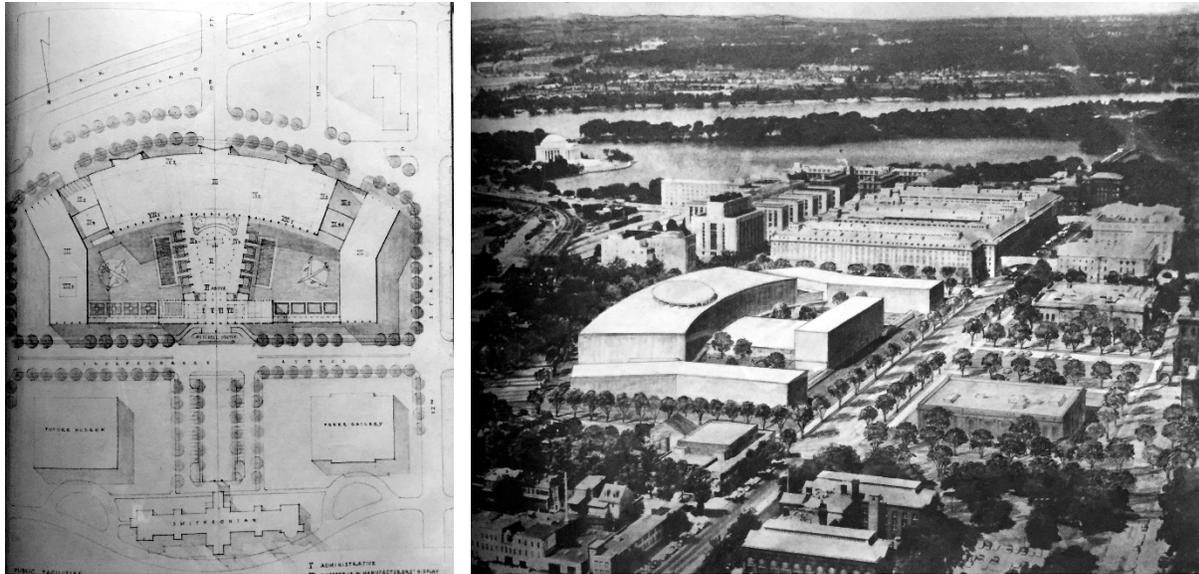
<sup>27</sup> National Capital Planning Commission, "Minutes of the 28<sup>th</sup> Meeting of the National Capital Planning Commission held on Wednesday and Thursday, June 15-16, 1955," Appendix C. NARA, Record Group 328, Entry A1-1, Box 27.

<sup>28</sup> "Smithsonian Institution Building Program, 1955," 5. SIA, Accession 06-225, Box 54.

<sup>29</sup> James Kellum Smith to Dr. Leonard Carmichael, June 28, 1954. SIA, Accession 06-225, Box 38.

<sup>30</sup> "Chronological Summary Relating to Proposed National Air Museum Building." SIA, Accession 06-225, Box 38.

<sup>31</sup> "Smithsonian Institution Building Program, 1955," 5. SIA, Accession 06-225, Box 54; National Capital Planning Commission, "Minutes of the 25<sup>th</sup> Meeting of the National Capital Planning Commission held on Thursday, March 3, 1955, 7 & Appendix D. NARA, Record Group 328, Entry A1-1, Box 27.



**Figure 25:** Plan and Rendering of the proposed National Air Museum on Independence Avenue south of the Smithsonian Grounds, 1954. "Report on the Preliminary Designs for the National Air Museum," Smithsonian Institution, Washington, DC, October 22, 1954, McKim, Mead & White, Architects (NARA, Record Group 328, Entry A1-E7, Box 37).

Shortly thereafter, however, NCPC tentatively approved the Webb and Knapp plan for the redevelopment of southwest Washington, better known as the Zeckendorf Plan, at their April 1955 meeting. The plan provided for a Tenth Street Mall to extend south from Independence Avenue. This designed element would divide the Smithsonian's Air Museum site in two, and would require the Smithsonian to abandon McKim, Mead and White's plan, and to begin again from scratch. NCPC, at their May 1955 meeting, requested that I.M. Pei, the lead designer for the Zeckendorf Plan, and the Smithsonian, coordinate to develop an "agreeable plan."<sup>32</sup>

Over the following months, it appears that I.M. Pei and McKim, Mead & White attempted to resolve outstanding design issues. On October 26, 1955, Robert W. Fleming, Chairman, Executive Committee, of the Board of Regents, wrote a letter to NCPC that was considered at their meeting. In his letter, Fleming held that the Smithsonian still favored its proposed location, had rejected an alternative site suggested by Webb and Knapp located between Seventh and Ninth Streets (current site of FOB 10A, the Orville Wright Building), and suggested a new, alternate site for the museum bound by Independence Avenue and Fourth, Seventh, and C Streets (current sites of FOB 10B, the Wilbur Wright Building, and FOB 6, the LBJ Department of Education Building). However, for the site to be truly considered, the Smithsonian needed assurance that both Maryland Avenue from Fourth to Seventh Streets, and Sixth Street from Independence Avenue to C Street, would both be closed.<sup>33</sup> NCPC requested their Special Committee on Southwest Development to submit a report addressing this recommendation.<sup>34</sup>

<sup>32</sup> National Capital Planning Commission, "Minutes of the 27<sup>th</sup> Meeting of the National Capital Planning Commission held on Thursday and Friday, May 5-6, 1955, 13-14. NARA, Record Group 328, Entry A1-1, Box 27.

<sup>33</sup> "Chronological Summary Relating to Proposed National Air Museum Building." SIA, Accession 06-225, Box 38; National Capital Planning Commission, "Minutes of the 32<sup>nd</sup> Meeting of the National Capital Planning Commission held on Thursday and Friday, November 3-4, 1955," 7-8. NARA, Record Group 328, Entry A1-1, Box 26.

<sup>34</sup> National Capital Planning Commission, "Minutes of the 32<sup>nd</sup> Meeting of the National Capital Planning Commission held on Thursday and Friday, November 3-4, 1955," 7-8. NARA, Record Group 328, Entry A1-1, Box 26.

NCPC Committee's report stated that the permanent closure of Maryland Avenue was not possible.<sup>35</sup>

At the NCPC meeting held in either December 1955 or January 1956, NCPC asked the Smithsonian to find an alternate location for the National Air Museum outside of southwest Washington.<sup>36</sup> At the Annual Meeting of the Board of Regents in January 1956, however, the Regents passed a resolution reaffirming their preference for the site located on the south side of Independence Avenue between Ninth and Twelfth streets.<sup>37</sup> The Regents also, however, agreed "'not to interfere' with the redevelopment of Southwest Washington and 'to cooperate as fully as possible' in finding a site...that will not conflict with plans for rebuilding the blighted area."<sup>38</sup> On February 8, 1956, the Smithsonian sent a letter to NCPC stating the same, pledging to continue to consider alternate sites for the museum.<sup>39</sup> At NCPC's meeting in November 1956, the Commission acknowledged a letter received from the Smithsonian's Acting Secretary requesting the Commission's assistance to identify a suitable site for the National Air Museum, to which the Commission agreed to refer to the Commission's Southwest Committee.<sup>40</sup>

### *Final Site Selection*

On January 14, 1957, a formal meeting of the Subcommittee on a Site for the National Air Museum of the National Capital Planning Commission was held. Members of the Subcommittee included Chairman Conrad L. Wirth and members H.J. Spellman, Leon Zack, and John Nolen, Jr., with Secretary Carmichael and Assistant Secretary Keddy in attendance. Those present concurred that the site presently assigned to the Smithsonian Gallery of Art, located on the south side of the Mall and bound by Jefferson Drive, Independence Avenue, and Fourth and Seventh Streets, be reassigned to the Smithsonian Institution as the site for the National Air Museum. The availability of the Old Patent Office for use as the National Portrait Gallery for the National Collection of Fine Arts, allowed this change in the proposed location for the National Air Museum.<sup>41</sup> The Mall location, within walking distance of other Smithsonian museums and galleries as well as the Capitol and Washington Monument, would increase the accessibility of the museum for the millions of visitors who traveled to Washington each year to see the memorials and museums concentrated in the Mall area. The proximity of the location to other Smithsonian facilities would also allow for greater administrative efficiency in the areas of supervision, joint use of shops, equipment, and personnel. The museum would also benefit from the cultural and educational atmosphere of the Smithsonian's Mall campus.<sup>42</sup>

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<sup>35</sup> "Chronological Summary Relating to Proposed National Air Museum Building." SIA, Accession 06-225, Box 38.

<sup>36</sup> National Capital Planning Commission, "Minutes of the 34<sup>th</sup> Meeting of the National Capital Planning Commission held on Thursday and Friday, February 2-3, 1956," 8. NARA, Record Group 328, Entry A1-1, Box 27.

<sup>37</sup> "Proceedings of the Ninth Meeting of the Advisory Board of the National Air Museum Smithsonian Institution," December 14, 1956, 2. SIA, Accession 06-225, Box 51.

<sup>38</sup> Robert C. Albrook, "Smithsonian Yields on Site Of Proposed Air Museum," *Times Herald*, January 14, 1956, 1. SIA, 06-225, Box 54.

<sup>39</sup> National Capital Planning Commission, "Minutes of the 34<sup>th</sup> Meeting of the National Capital Planning Commission held on Thursday and Friday, February 2-3, 1956," 8-9. NARA, Record Group 328, Entry A1-1, Box 27.

<sup>40</sup> National Capital Planning Commission, "Minutes of the National Capital Planning Commission held on Thursday and Friday, November 8-9, 1956," 6. NARA, Record Group 328, Entry A1-1, Box 27.

<sup>41</sup> "Meetings with National Capital Planning Commission Members Regarding National Air Museum Site." SIA, Accession 06-225, Box 54.

<sup>42</sup> "Memorandum Regarding Mall Site for the National Air Museum," June 1958, SIA, Accession 06-225, Box 54.

At the NCPC meeting held in March 1957, Secretary Carmichael presented to the Commission the Smithsonian's proposed museum location on the Mall, which NCPC unanimously approved.<sup>43</sup> On May 2, 1957, Senator Clinton P. Anderson introduced a bill to authorize construction of the National Air Museum on the National Mall. Several weeks later, at its May 1957 meeting, the Advisory Board of the National Air Museum also enthusiastically approved the site.<sup>44</sup> CFA, however, notified the Smithsonian Institution on August 2, 1957, that they were opposed to the construction of the National Air Museum on the site previously intended for a national art museum.<sup>45</sup>

Between the period when this legislation was introduced and its passage, several other bills were introduced for alternate locations for the National Air Museum. Representative DeWitt S. Hyde of Maryland introduced a bill to utilize the Old Pension Building for the new museum, claiming it would save the government an estimated forty million dollars.<sup>46</sup> A second proposal, from Representative Richard E. Lankford, also of Maryland, sponsored legislation to place the Air Museum at College Park, Maryland.<sup>47</sup>

On June 26, 1958, the United States Senate passed Anderson's original bill. On September 6, 1958, President Eisenhower enacted Public Law 85-935, authorizing the Smithsonian Regents to "prepare plans, including drawings and specifications for the construction of a suitable building for a National Air Museum," to be located on the site bound by Fourth Street, SW, to the east, Seventh Street, SW, on the west, Independence Avenue to the south, and Jefferson Drive to the north, on the south side of the National Mall opposite the National Gallery of Art.<sup>48</sup>

## Preliminary Designs

Having received approval for the Mall site, Secretary Carmichael and the Smithsonian reasserted their efforts to pursue Congressional appropriations to fund design and planning efforts. During the period, the number of anticipated visitors to the museum varied, although most estimates ranged from four to five million annual visitors. With some limited initial funding, Smithsonian developed initial site plans and massing studies for review by NCPC and CFA, which were presented in the fall of 1962. These studies envisioned a five-story building measuring approximately 843 feet by 245 feet, or roughly 100 feet longer than the National Gallery of Art building, which the future NASM would face across the Mall. Both NCPC and CFA expressed lingering reservations over the size of the building in relationship to its site, which limited opportunities for public parking and future expansion.<sup>49</sup>

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<sup>43</sup> National Capital Planning Commission, *Minutes of the 45<sup>th</sup> Meeting of the National Capital Planning Commission*, 20. NARA, Record Group 328, Entry A1-1, Box 28.

<sup>44</sup> Grover Loening, "Final Location Approved for National Air Museum," May 28, 1957. SIA, Accession 06-225, Box 54.

<sup>45</sup> "Chronological Summary Relating to Proposed National Air Museum Building." SIA, Accession 06-225, Box 38.

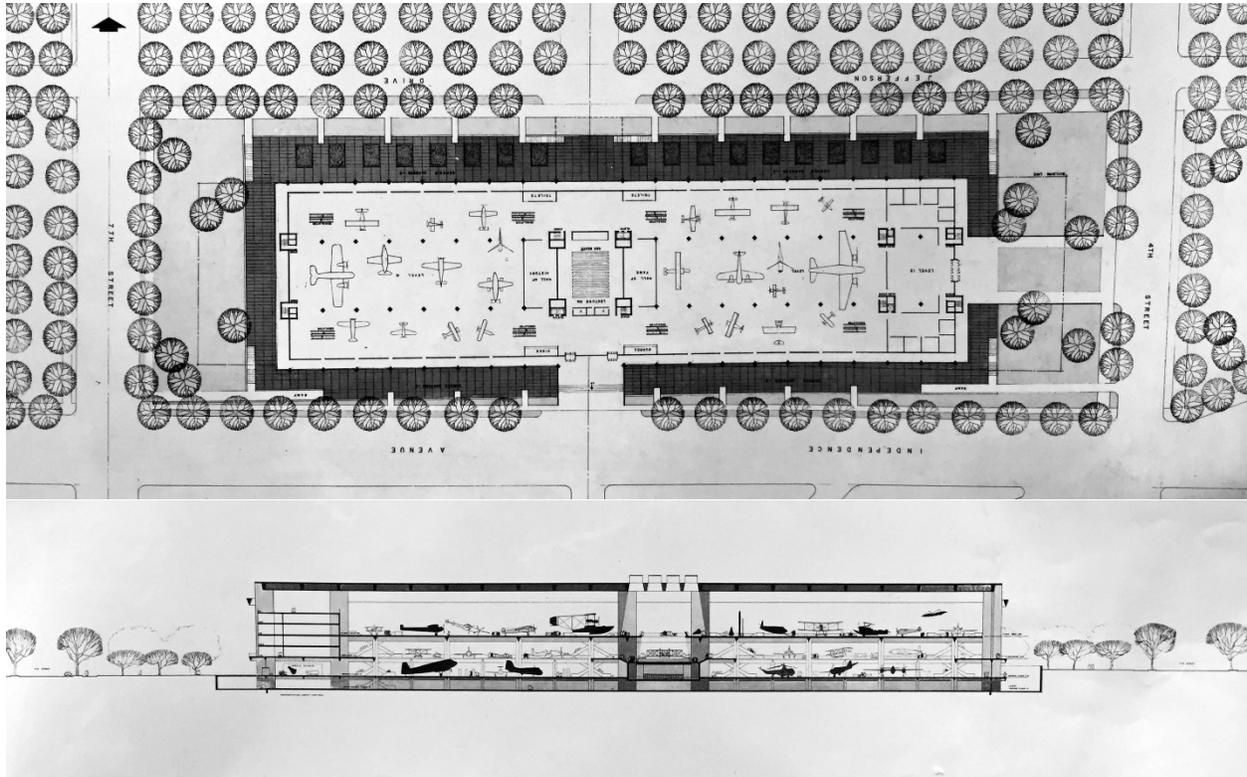
<sup>46</sup> "Air Museum Bill Seems Lost in '58," *The Washington Post*, July 8, 1958, B1. SIA, Accession 06-225, Box 54.

<sup>47</sup> Frank Thompson, Jr. to Leonard Carmichael, December 4, 1957. SIA, Accession 06-225, Box 54.

<sup>48</sup> "Public Law 85-935," September 6, 1958, Office of the Law Revision Counsel, United States Code, <http://uscode.house.gov/statutes/pl/85/935.pdf>.

<sup>49</sup> "Transcript of Proceedings, Executive Session, September 14, 1962," Entry EA1-1, Box 82. Record Group 328, Records of the National Capital Planning Commission, NARA, Washington, DC; "Minutes of the Meeting of the Commission of Fine Arts," September 18, 1962, 5-6. Bound copy at the U.S. Commission of Fine Arts Library.

In mid-1963, the House and Senate Appropriations Committees approved approximately \$500,000 in funding to allow Smithsonian to continue planning efforts for NASM on the approved site.<sup>50</sup> President Kennedy signed the funding bill into law in July of that year.<sup>51</sup>



**Figure 26:** Preliminary floor plans and sections of the National Air Museum on the Mall site, prepared by Harbeson Hough Livingston & Larson Architects, 1962 (NARA, Record Group 328, Entry A1-E7, Box 41).

## Architect Selection

### *Selection Process*

With funding approved, Smithsonian and the General Services Administration (GSA)—who at that time managed the construction of new Smithsonian facilities—initiated a formal search for the building’s architect. GSA supplied the Board of Regents with a list of architectural firms that they considered acceptable for the commission.<sup>52</sup> On May 15, 1963, the Board of Regents elected to confer the power of selection to the Chancellor, the Executive Committee, and Senator Anderson.<sup>53</sup> Senator Anderson had introduced the legislation that had authorized the Smithsonian to develop a building to house the National Air Museum. He was a longtime member of the Board of Regents (1949-1972) and an avid proponent of space exploration and

<sup>50</sup> “Funds to Buy River Land Denied by House Unit” *Evening Star*, March 28, 1963: 23; Grace Bassett, “Building, Park Funds Okd by Senate Group,” *Evening Star*, May 22, 1963: 23

<sup>51</sup> “Interior’s Money Bill of \$952 Million Signed,” *Washington Post*, July 27, 1963: B4.

<sup>52</sup> Chatelain, Gauger, and Nolan to Dr. Leonard Carmichael, July 9, 1963, SIA, Accession 06-225 Box 38.

<sup>53</sup> Minutes of a special meeting to select an architect for the National Air Museum of the Smithsonian Institution, September 18, 1963, SIA, Accession 06-225 Box 38.

served as a member of the Committee on Aeronautical and Space Sciences from the 88<sup>th</sup> through the 92<sup>nd</sup> Congresses (1963-1973).<sup>54</sup>

From that list provided by GSA, Smithsonian officials narrowed the field to three choices: HOK of St. Louis; Skidmore, Owings & Merrill (SOM) of Chicago; and Eero Saarinen and Associates of Hamden, Connecticut. Smithsonian Secretary Leonard Carmichael enlisted local architectural and engineering firm Chatelain, Gauger, and Nolan to write a report comparing each of the three firms to assist with the decision-making process. The report noted: "It is believed that this will be the first museum of consequence devoted to aeronautics and that, therefore, there exist no design precedents and no architectural firm can be considered to be exclusively expert in this field."<sup>55</sup> The report concluded that each of the three potential firms were likely to produce quite different designs.

The Board of Regents met on September 18, 1963 to make the final selection. In attendance were Board Chairman Robert V. Fleming; Clarence Cannon and Dr. Caryl P. Haskins, members of the Executive Committee; Senator Anderson; Dr. Jerome Hunsaker; Secretary Carmichael; and Associate Secretary James Bradley. The Chancellor, Chief Justice Earl Warren, was not able to attend; however, he sent his vote in favor of HOK. Warren also proposed the appointment of local firm Mills, Petticord, and Mills as associates to the principal architectural firm, though he specified that Mills, Petticord, and Mills should have no responsibility for the basic appearance or design of the building. Rather, their role would be to bring knowledge of the local architectural environment to the project. The meeting concluded with the unanimous selection of HOK as the principal architects and landscape designers.<sup>56</sup> Smithsonian and GSA awarded contracts to HOK and to Mills, Petticord, and Mills in December 1963.<sup>57</sup>

### *Gyo Obata and HOK*

Gyo Obata was born in San Francisco in 1923 to Chiura Obata, a painter, and Haruko Obata, a floral designer who was responsible for introducing the Ikebana School of Japanese flower arrangement to the West Coast. Obata's original home was in the heart of San Francisco's Japan Town. Obata's mother, determined to keep him out of a segregated school for only Japanese Americans, sent Obata to an integrated grammar school in Redding. When Obata was in fourth grade, his father was offered a professorship at the University of California at Berkeley; the family relocated to the college town, where Obata continued his early education. After graduating from high school, Obata matriculated into the School of Architecture at the University of California at Berkeley.<sup>58</sup>

In February 1942, President Franklin D. Roosevelt signed Executive Order 9066, requiring the relocation of tens of thousands of American citizens and resident aliens of Japanese descent to internment camps. In a successful attempt to avoid detention, Obata applied and was granted admission to the Architecture and Engineering School at the Washington University in St. Louis,

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<sup>54</sup> "Anderson, Clinton Presba," History, Art, and Archives of the United States House of Representatives, <http://history.house.gov/People/Detail/8515?ret=True> (accessed September 19, 2016).

<sup>55</sup> Chatelain, Gauger, and Nolan to Dr. Leonard Carmichael, July 9, 1963.

<sup>56</sup> Minutes of a special meeting to select an architect for the National Air Museum of the Smithsonian Institution.

<sup>57</sup> "Capital, St. Louis Firms to Design Air Museum," *Washington Evening Star*, December 29, 1963.

<sup>58</sup> Marlene Ann Berkman, *Gyo Obata Architect / Clients / Reflections* (Australia: The Images Publishing Group Pty Ltd., 2010), vi-vii.

Missouri. Although Obata avoided internment, his family was temporarily detained at the Tanforan Racetrack Japanese Assembly Center in San Bruno, California and Topaz in Provo, Utah, before their release in the spring of 1943.<sup>59</sup>

After completing his undergraduate studies, Obata enrolled in the Master of Architecture and Urban Design program at the Cranbrook Academy of Art in Bloomfield Hills, Michigan. At Cranbrook, Obata became a student and mentee of Eliel Saarinen, who encouraged him to study city planning and develop a broader view beyond architecture.<sup>60</sup>

Upon completion of his graduate degree in 1946, Obata was drafted into the U.S. Army and was stationed in Adak in the Aleutian Islands. In 1947, Obata declined an offer of employment from Saarinen to instead work at SOM in Chicago. In 1951, he left his position at SOM to become Minoru Yamasaki's assistant at the Detroit based firm of Hellmuth, Yamasaki and Leinweber. Obata spent most of his time with the firm at their St. Louis office, working on airport design with Yamasaki. After Yamasaki and Leinweber left the fledgling firm, it was reorganized in St. Louis by George Hellmuth, who replaced his former partners from inside the organization with Obata and George Kassabaum. The new firm was renamed Hellmuth, Obata & Kassabaum, Inc. in 1955.<sup>61</sup>

From the beginning, Hellmuth's philosophy was that architectural firms must diversify, and that there are three roles of an architect: salesman, project manager, and designer. Hellmuth sought to find architects who could satisfy each role completely: Hellmuth as salesman; Obata as designer; and Kassabaum presumably as project manager.<sup>62</sup> Early on, almost all of HOK's projects were located within Missouri, most of which centered in and around St. Louis.<sup>63</sup>

By the time HOK was selected to design NASM in 1963, the eight-year-old firm was considered to be one of the "leading firms in the country."<sup>64</sup> The 105-person firm had opened a branch office in East St. Louis, Illinois, and offered, "Complete architectural services including master planning, design, bidding and contract documents, construction management supervision, and interiors," specializing in airfield facilities, commercial buildings, hospitals, housing master planning, public buildings, surveys and reports, educational buildings, office buildings, building services, and industrial buildings. By July 1963, HOK was designated as the architect of record for thirty-five projects; had completed nine college and university master plans; had worked collaboratively on five projects; and was the architect of record for twenty-one active projects.<sup>65</sup> Notable projects included: IBM Research Laboratory (1963) in San Jose, California; St. Louis Planetarium (1963); the Saint Louis Abbey (1962); the Southern Illinois University Master Plan and Buildings (1963-67) in Edwardsville, Illinois; Federal Office Building No. 9 (1963) in Washington, DC; and Lambert-St. Louis Municipal Airport's terminal addition (1965) (the

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<sup>59</sup> Marlene Ann Berkman, *Gyo Obata Architect / Clients / Reflections* (Australia: The Images Publishing Group Pty Ltd., 2010), vii-viii; "The Complete Lecture and Interview with Kimi Kodani Hill," Asian American Books, accessed January 24, 2017, <http://www.asianamericanbooks.com/khlngtlk.htm#lecture>.

<sup>60</sup> Marlene Ann Berkman, *Gyo Obata Architect / Clients / Reflections* (Australia: The Images Publishing Group Pty Ltd., 2010), viii-ix.

<sup>61</sup> Roger Hahn, "Architecture and Harmony," *St. Louis*, 55. SIA, Accession 06-225 Box 51; HOK, "Timeline," <http://www.hok.com/about/timeline/> (accessed November 8, 2016).

<sup>62</sup> Roger Hahn, "Architecture and Harmony," *St. Louis*, 55. SIA, Accession 06-225 Box 51.

<sup>63</sup> U.S. Government Architect-Engineer Questionnaire (July 19, 1963). SIA, Accession 06-225 Box 51.

<sup>64</sup> Karel Yasko to James Bradley, August 9, 1963. SIA, Accession 06-225 Box 51.

<sup>65</sup> U.S. Government Architect-Engineer Questionnaire (July 19, 1963). SIA, Accession 06-225 Box 51.

airport was originally designed by HOK's predecessor firm, Hellmuth, Yamasaki and Leinweber, and opened in 1956).<sup>66</sup>



**Figure 27:** Saint Louis Abbey (1962, left) and the Neiman Marcus store at the Houston Galleria (1970, right) (HOK).

The firm's successes continued into 1970, when HOK was ranked sixtieth on the Engineering News-Record's top 500 design firms of the year, with the firm's 1969 business volume totaling \$5.6 million. By this time, the firm had expanded to 235 employees with seventy registered architects and ten professional engineers on staff, working out of six offices in the United States.<sup>67</sup> Between 1972 and 1976, the period during which NASM was under construction, HOK (and Obata in particular), were engaged in several high-profile projects including the Palo Alto Research Center (1975) and the Courthouse of the District of Columbia (1978).

HOK continued to design major commercial, institutional, and government facilities during the 1980s, both in the United States and abroad as the firm expanded its global presence. Important commissions included the George R. Moscone Convention Center in San Francisco (1981), Levi's Plaza in San Francisco (1982), the King Khaled International Airport (1983) and King Saud University (1984) in Riyadh, Saudi Arabia, and the Kellogg Company Corporate Headquarters in Battle Creek, Michigan (1986). Recent work of note has included the Community of Christ World Headquarters in Independence, Missouri (1993), the Japanese American National Museum in Los Angeles (1999), federal courthouses in St. Louis (2000) and Denver (2002), and the Great American Building in Cincinnati, Ohio (2011).

Gyo Obata and HOK have received many awards over the years. In 1969, Obata was inducted as a Fellow in the American Institute of Architects (AIA). In addition, he has received honorary doctorate degrees from Washington University, the University of Missouri, and Southern Illinois University. In 1992, he was named the first Howard A. Friedman Visiting Professor of Architecture at the University of California, Berkeley. HOK was the recipient of the AIA St. Louis Gold Award Honor in 2002. In 2019, AIA California awarded HOK its Firm Award, the highest honor it can bestow on an architectural firm, in recognition of HOK's contributions to design and innovation over the past 50 years.<sup>68</sup>

<sup>66</sup> U.S. Government Architect-Engineer Questionnaire (July 19, 1963). SIA, Accession 06-225 Box 51; "Preserving the Modern in St. Louis," Peter Meijer Architect, accessed May 11, 2017, <http://pmapdx.com/blog-pmafndings/755/preserving-the-modern-in-st-louis>.

<sup>67</sup> Engineering News-Record, *Architect George Hellmuth has a plan to keep firm busy despite recession* (USA: McGraw Hill, March 11, 1971 (Reprint). SIA, Accession 06-225 Box 51.

<sup>68</sup> Birkman, 235; Hellmuth, Obata & Kassabaum, "AIA California Honors HOK with 2019 Firm Award," <https://www.hok.com/news/2019-02/aia-california-honors-hok-with-2019-firm-award/> (Accessed May 29, 2020).

### *Mills, Petticord, & Mills*

The local associate to HOK was the firm of Mills, Petticord, & Mills. This partnership was founded in 1947 and consisted of Alan B. Mills, his son Alan B. Mills, Jr., and his son-in-law George W. Petticord. Alan B. Mills, Sr., died in 1963, and Mills, Jr., and Petticord continued to practice together. In addition to their work on NASM, the firm designed the east and west wings of the Natural History Museum and worked under McKim, Mead & White on the design of the Museum of History and Technology (now the National Museum of American History). Mills, Petticord, & Mills was also involved in the planning of Fairlington, McLean Gardens, and Naylor Gardens communities.<sup>69</sup> In 1974, the renamed Mills-Petticord merged with the Washington-based office of HOK, which had been established in 1968.<sup>70</sup>

### **Design Development**

HOK commenced design work in January 1964. Principal designer Gyo Obata faced a set of architectural requirements nearly without precedent: a museum dedicated to the display of air- and spacecraft. The program compelled a design that was modern in spirit and technology, yet complementary to the Neoclassical character of the National Mall and its component buildings.

The initial designs produced by HOK were in keeping with preliminary massing diagrams developed in 1962 by the Smithsonian, albeit with the introduction of two levels of parking below grade. These designs represented a building of 775 feet in length, 260 feet in depth, and ninety-seven feet in height. The building was organized around twelve vertical piers that housed the structural elements, mechanical systems, and vertical circulation. These piers framed five monumentally scaled, sky-lit exhibition halls intended for the display of large-scale collections.<sup>71</sup> The building program followed a simple parti, with parking on the bottom level, museum galleries in the center, and a strip of administrative and research areas forming the top level. This top floor was contained within a horizontal band that formed a continuous visual overhang for the floors below. The exhibit galleries were divided between large, wide-span areas for the display of aircraft and enclosed galleries for the display of smaller collections. The spacing of the steel truss system provided rationale for the location of suspended collections as well as the size and placement of the enclosed galleries.<sup>72</sup>

The initial design of the exterior of the building was clad in precast panels with an exposed aggregate finish as well as bronze-tinted glazing; most of the north (Mall) elevation was glazed, while the south (Independence Avenue) had opaque cladding. This distribution of glazing was intended to reduce solar heat gain on the south side of the building and provide for reciprocal views to and from the Mall on the north side. Additionally, the building contained a 1,400-car parking garage, a 400-seat auditorium, and a public cafeteria on the east side of the third floor

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<sup>69</sup> “Alan B. Mills, Sr., Dies, Designed Post Offices,” *Washington Evening Star*, December 1, 1963.

<sup>70</sup> “Mills, Petticord, and Mills,” *The AIA Historical Directory of American Architects*, American Institute of Architects, <http://public.aia.org/sites/hdoaa/wiki/Wiki%20Pages/ahd4003818.aspx> (accessed September 19, 2016).

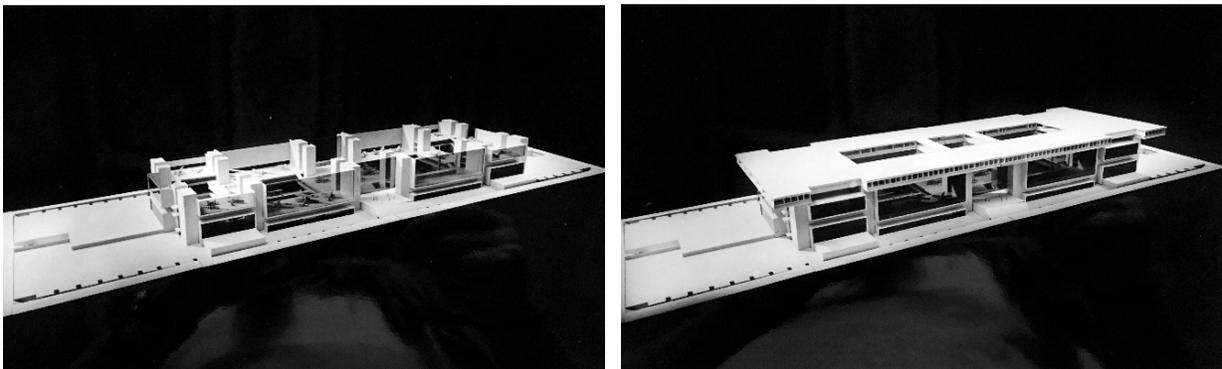
<sup>71</sup> At this time, the practice of hanging aircraft for display—to simulate their appearance during flight—was considered unsafe and harmful to the collections. Instead, the aircraft were intended to be mounted on supports, with some miscellaneous collections like engines suspended from the ceiling. The great height of the exhibition halls was intended to accommodate the vertical display of rockets.

<sup>72</sup> “Transcript of Proceedings, Executive Session, April 2, 1964,” Entry EA1-1, Box 86. Record Group 328, Records of the National Capital Planning Commission, NARA, Washington, DC.

overlooking the U.S. Capitol. Smithsonian leadership, including the Board of Regents and the National Air Museum Advisory Board approved the building concept on April 1, 1964.<sup>73</sup>

*Agency Design Review, 1964*

Obata, with representatives of the Smithsonian and the Public Buildings Service, presented the preliminary NASM designs to CFA and NCPC throughout the spring, summer, and fall of 1964. Initially, members of both commissions bristled over the limitations the designated site placed on the size of the museum and its potential for future expansion. Smithsonian officials remained resolute in the appropriateness of the site, citing its central location and proximity to other Smithsonian museums.<sup>74</sup> Both commissions eventually accepted the site and enthusiastically supported Obata's vision for its development.



**Figure 28:** Preliminary NASM designs, showing vertical piers and gallery organization (above left) and horizontal band overhang (above right), 1964 (NARA, Record Group 66, Entry A1-17A, Box 11).

After discussing the project at several executive sessions in the spring of 1964, NCPC approved the design in a single meeting in July 1964. In their preliminary approval comments, NCPC requested additional study for the design of the entrances and exits to the underground parking garage and the alignment of the sidewalk along Jefferson Drive.<sup>75</sup>

Review by CFA was more extensive, with the commissioners offering very detailed comments regarding the proposed design. The Commission reviewed the design in April 1964. They expressed optimism for the proposed design and offered comments relative to fenestration, materials, and the treatment of interior public spaces.<sup>76</sup> At their June meeting, CFA commissioners responded positively to Obata's proposed design changes, which included the addition of a continuous band of windows along the overhanging roof slab, which they felt strengthened its visual presence. Obata also presented the proposed cladding system, composed of five-foot by ten-foot pre-cast concrete panels to wrap all interior and exterior structural systems. The aggregate in the panels would reference the color of the Tennessee Pink Marble (limestone) of the National Gallery (although the CFA minutes repeatedly reference granite as the aggregate material) and would include several variations in texture. After discussing the

<sup>73</sup> *Annual Report of the Board of Regents of the Smithsonian Institution...1964*. Washington, DC.: U.S. Government Printing Office, 1965, 236-237.

<sup>74</sup> Leonard Carmichael to Mrs. James H. Rowe [Elizabeth] Rowe, Jr., October 25, 1962, Entry 17A, Project Files, 1941-1994, Box 11. Record Group 66, Records of the Commission of Fine Arts, NARA, Washington, DC.

<sup>75</sup> "Memorandum of Actions Taken at Commission Meetings, 1964," Entry EA1-1, Box 31. Record Group 328, Records of the National Capital Planning Commission, NARA, Washington, DC.

<sup>76</sup> William Walton, Chairman, to Bernard Boutin, Administrator, April 28, 1964. SIA, Accession 06-225 Box 38.

proposed structural system, the Commission expressed reservation over the proposed steel girder system, instead favoring poured-in-place concrete for the vertical structural elements as more appropriate for the building's size and scale.<sup>77</sup>

Obata incorporated this suggestion and returned to CFA in both September and October to present additional refinements (CFA granted the design preliminary approval in September). Fearing that the incorporation of the parking garages caused the western portion of the site to be depressed below street grade, CFA recommended that this area be expanded to create a formal, sunken plaza.<sup>78</sup>

After the project received approval by CFA and NCPC, the local press enthusiastically embraced the design. The *Washington Evening Star* reported it as "Obata's Miracle" and *Washington Post* architecture critic Wolf Von Eckardt described the building as "handsome... gutsy... and dignified" and cited the careful forethought of Obata in accommodating the requirements of both program and architectural setting.<sup>79</sup>

**Figure 29:** Sketch that appeared in the *Washington Post*, October 1964 (Smithsonian Institution).



### *Delay and Design Revisions, 1964-1972*

Upon receipt of agency approvals, the Smithsonian had originally intended for the project to break ground in the summer of 1966 and open to the public in 1969.<sup>80</sup> Congress appropriated an additional \$1.4 million of funding in fiscal year 1965 to allow for continued planning. However, beginning in the summer of 1964, the escalating involvement of the United States in the Vietnam War diverted federal funds away from capital projects. Despite having received approval for the project, the Smithsonian was unable to muster the political will necessary to have Congress appropriate any of its forty-million-dollar construction cost.<sup>81</sup>

Through the combined efforts of Smithsonian Secretary S. Dillon Ripley, Assistant Secretary James Bradley, Senator Barry Goldwater, and Michael Collins (former astronaut and director of the museum between 1971 and 1978), the Smithsonian was successful in convincing Congress and President Richard Nixon to recommit appropriating the funds in fiscal year 1973. A growing

<sup>77</sup> "Minutes of the Meeting of the Commission of Fine Arts," June 24, 1964, 1-2. Bound copy at the U.S. Commission of Fine Arts Library.

<sup>78</sup> "Minutes of the Meeting of the Commission of Fine Arts," September 16, 1964, 1-2. Bound copy at the U.S. Commission of Fine Arts Library.

<sup>79</sup> "Obata's Miracle," *Washington Evening Star*, October 13, 1964: 8; Wolf Von Eckardt, "Happy Landing for Space Museum," *Washington Post*, October 11, 1964: G10.

<sup>80</sup> Wolf Von Eckardt, "Happy Landing for Space Museum," *Washington Post*, October 11, 1964: G10.

<sup>81</sup> Kirk Scharfenberg, "Aviation Museum Pushed," *Washington Post*, October 28, 1971: B1.

interest in the U.S. space program—including the July 1969 moon landing—fostered this campaign and lent popular support to the memorialization of American air and space achievements (Congressional action in 1966 had officially renamed the organization from the “National Air Museum” to the “National Air and Space Museum”). By the early 1970s, however, rising labor and construction prices during the perennial delays in Congressional appropriations had inflated the cost of the project from forty million dollars to estimates ranging from sixty to seventy million dollars.<sup>82</sup> Instead of increasing the budget for the project, the Smithsonian instead tasked Obata and HOK with a redesign of the building to reduce its size and construction costs. Congress appropriated 1.9 million dollars in 1971 to fund the redesign.<sup>83</sup>

Obata, the Smithsonian, and the Public Buildings Service returned to NCPC and CFA in the fall of 1971 to again solicit approval for the project. As presented, the new building amounted to approximately half of the volume of the earlier iteration, although the corresponding exhibit design had been reduced by only one third. The revised total dimensions measured 785 feet long, 225 feet wide, and 85 feet tall, or almost exactly the size of the National Gallery of Art. The new building also lacked the continuous overhanging roof cornice of the original design.<sup>84</sup>

At their November 1971 meeting, NCPC approved the revised preliminary site and building plans by a slim margin (five to four votes), noting that the reduction in the size of the building had improved its compatibility with the Mall context. They recommended that development and clarification of the exterior terrace areas be provided, and that Smithsonian coordinate its site development and landscaping plans with the broader Mall Development Plan. Although the Commission in this meeting was only charged with reviewing a limited number of site and building plans, they offered extensive commentary on the other aspects of the building design, including cladding. The commissioners asked if consideration had been given to marble as a cladding material. Both Obata and museum director Collins responded that they favored precast concrete for several reasons, including its lower cost (according to Obata, replacing the concrete with marble would add approximately four million dollars to the project cost), its forthright expression of modernity, and its compatibility with the adjacent Hirshhorn Museum (then under construction). Nevertheless, NCPC urged Smithsonian to consider the use of marble cladding. They also recommended that the design maintain a clean roofline, free of obstructions from mechanical equipment.<sup>85</sup>

CFA reviewed the project later that month, granting preliminary approval but requesting a more developed landscape plan, greater articulation of vertical elements, and additional glazing along the Independence Avenue elevation. Commissioners Gordon Bunshaft and Kevin Roche—both noted Modernist architects—scorned the suggestion that marble would be an appropriate cladding material. Bunshaft also called for a “more articulated” landscape plan and the need for retaining green space at the east and west ends of the site.<sup>86</sup> The Commission reviewed the project an additional five times—almost monthly—between December 1971 and May 1972. Records of their meeting transcripts reveal the Commission’s growing exasperation with the

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<sup>82</sup> Kirk Scharfenberg, “Aviation Museum Pushed,” *Washington Post*, October 28, 1971: B1.

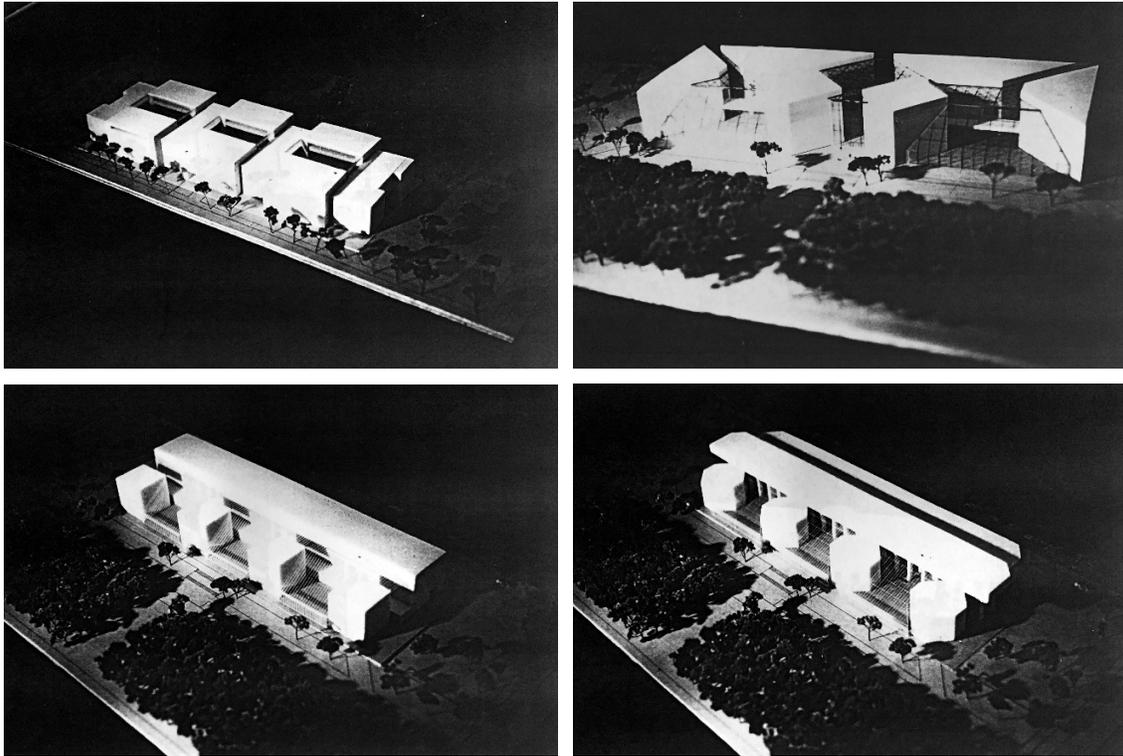
<sup>83</sup> Harriet Griffiths, “Flight Museum Design Submitted to Arts Unit,” *Evening Star*, November 17, 1971: 4.

<sup>84</sup> “Transcript of Proceedings,” November and December 1971. Bound copy at the U.S. Commission of Fine Arts Library.

<sup>85</sup> “Official Proceedings, Commission Meeting, November 4, 1971,” Entry EA1-1, Boxes 122-123. Record Group 328, Records of the National Capital Planning Commission, NARA, Washington, DC.

<sup>86</sup> “Transcript of Proceedings,” November 17, 1971. Bound copy at the U.S. Commission of Fine Arts Library.

architects' inability to reach a satisfactory level of design development. Of particular concern to the Commission was the building's enormous volume, but they also commented extensively on proportions of the solid-to-void relationship, relative prominence of the main entrances, articulation of the structural system, development of the landscaped terraces, and design of the openings in the east and west end walls.<sup>87</sup>



**Figure 30:** Design iterations presented to CFA, 1971-1972 (NARA, Record Group 66, Entry A1-17A, Box 13).

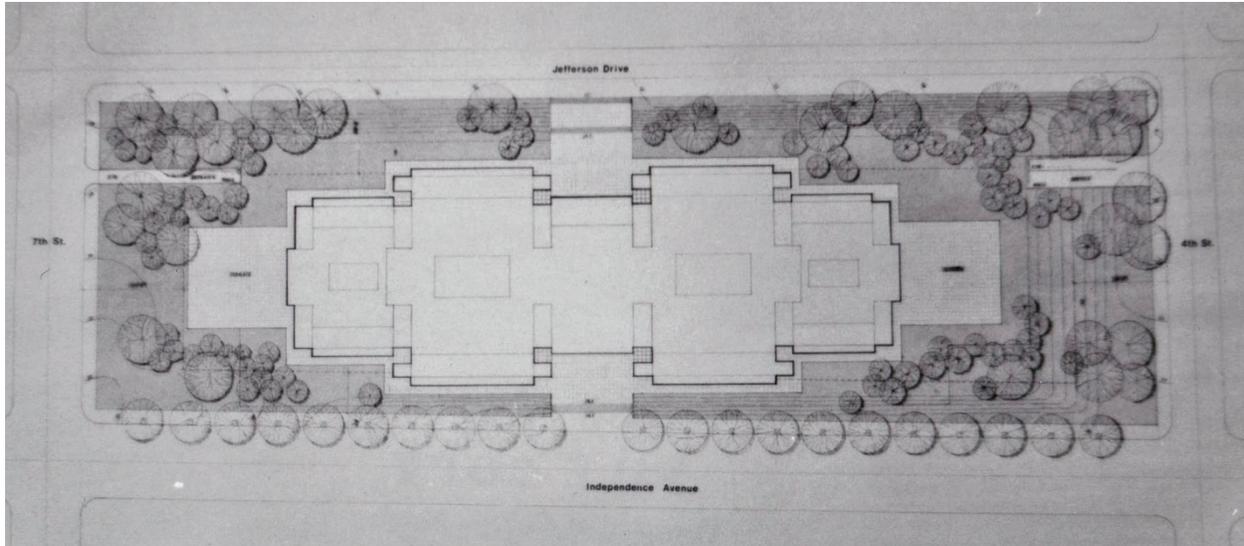
Through successive iterations, Obata and Smithsonian arrived at a design composed of four massive, rectangular prisms, which on the north side framed recessed courtyards with fully glazed vertical wall and ceiling surfaces. On the south side, these recessed openings were infilled with small, enclosed prisms, which cantilevered over glazed wall openings. Slots in the east and west walls featured glazed, recessed openings for the galleries below and cafeteria and library above. Between the January and February meetings, the architects replaced the exposed aggregate concrete cladding with marble veneer. Although the Commission had accepted the use of exposed aggregate, they welcomed its replacement with marble, particularly noting how the coursing pattern (designed to imitate 2'-6" by 5' blocks) refined the scale of the rectangular prisms.<sup>88</sup> CFA granted approval to this preliminary design at their May 1972 meeting.

NCPC reviewed the design several times between the spring and fall of 1972. The Commission commented favorably on the architectural design of the building and the integration of their earlier comments. Following the November 1971 NCPC meeting, Smithsonian and HOK had produced an updated site plan in conjunction with NCPC staff and the National Park Service (Figure 26). This landscape plan underwent several revisions, in response to NCPC comments, during the spring and summer of 1972 before attaining its final form. By June, the approaches to

<sup>87</sup> "Transcript of Proceedings," November 1971 to May 1972. Bound copies at the U.S. Commission of Fine Arts Library.

<sup>88</sup> "Transcript of Proceedings," February 16, 1972. Bound copy at the U.S. Commission of Fine Arts Library.

the north and south entrances had been redesigned, with new retaining walls and wider steps. Retaining walls and plantings were also added at the parking garage entrances and exits.<sup>89</sup> NCPC withheld final approval of the project until a traffic impact study could be completed by September 1972.<sup>90</sup>



**Figure 31:** Conceptual site plan, December 1971 (Smithsonian Institution).

The final 1972 site plan (Figure 27) placed the museum building within a series of landscaped terraces. Some of these terraces were paved with exposed aggregate concrete pavers and connected with exposed aggregate stairways to facilitate circulation. On the east terrace, a long limestone-clad planter, oriented north-to-south, marked the transition to the lower lawn facing Fourth Street, SW. A similar lawn, screened by trees, extended from the west terrace, along Seventh Street, SW. Because of the slope of the site, the west lawn was graded flat while the east lawn was steeply graded to meet the sidewalk. Immediately surrounding the building were tiers of cascading planters clad in limestone, which created a pedestal-like effect in relation to the museum. Breaks in the tiered planters were located at the glazed central bays of the east and west elevations, and at the north and south entrances. Plantings included evergreen shrubs, deciduous trees, and seasonal flowers.

<sup>89</sup> "Official Proceedings, Commission Meeting, June 29, 1972.

<sup>90</sup> "Official Proceedings, Commission Meeting, September 7, 1972.



demarcated by strong contrasts: vast, open galleries alternating with smaller, enclosed blocks that included both galleries as well as the auditorium and planetarium. Linking this progression of spaces was a central, east-west spine on the first two levels. Obata likened the experience of progressing through the building to that of a shopping mall: visitors could wander at their own pace, selecting exhibits that appealed to them, while experiencing collections from a variety of levels and perspectives. Glazed openings on the east and west end walls provided clear-span views across the length of the building and also addressed the functional consideration of moving collections in and out of the building. Another principal consideration of Obata's was the connectivity between the interior and exterior. The extensive glazing in the larger exhibition halls provided expansive views of the Mall and sky, interrupted only by the lacy pattern of the intervening space frame trusses. Obata also carried the limestone cladding into the building interior, although budgetary restrictions limited this treatment to only the main exhibit halls. Otherwise, the museum interior had a relatively modest palette of gypsum wallboard, carpet, and acoustic tile ceilings.<sup>91</sup>

To reduce the cost and supply issues associated with the limestone cladding, the architects developed an unprecedented thin-stone veneer application system. The use of thin-stone veneer in architectural applications was not new—thin-cut stone had been employed on curtain walls since the turn of the twentieth century and was widely employed by the 1930s. Innovations in stonecutting techniques contributed to a growing popularity and demand for the product by the 1960s. In Washington, the first monumental project to employ thin-stone veneer curtain walls was the John F. Kennedy Center for the Performing Arts, designed by Edward Durrell Stone in 1964 and completed in 1971.<sup>92</sup> For the Kennedy Center, Stone employed marble veneer cut a mere one inch thick.<sup>93</sup>

For NASM, the architects were compelled by supply and schedule considerations to deviate from conventional thin-stone veneer detailing, in which stone slabs were integrally attached to precast concrete panels. The light steel frame used to construct NASM—which allowed for faster, modular construction—could not have supported the additional load created by the heavy, concrete panels. Furthermore, because the single available source of the Tennessee Pink Marble (limestone) cladding—selected to match that of the National Gallery of Art building—was busy supplying marble panels for the National Gallery East Building (then under construction), Smithsonian could not be overly selective with the color or cut of each panel.<sup>94</sup> To resolve these considerations, they opted for uniform marble panels, with color variants distributed randomly across the façade.<sup>95</sup> A foamed-in-place thermal insulation was sprayed individually on each 1 ¼"-thick panel, which was then mounted on the curtain wall system. This method greatly reduced the weight and depth of the assembly, allowing the exterior wall cavities to be used for mechanical, electrical, and plumbing distribution.<sup>96</sup> This method ultimately led to the bowing and warping of each limestone panel, requiring complete replacement of the exterior stone cladding per the revitalization.

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<sup>91</sup> Andrea O. Dean, "Evaluation: The World's Most Popular Museum," *AIA Journal* 69 (November 1980): 43.

<sup>92</sup> Michael J. Sheffler and Edward A. Gerns, "Thin Stone Veneer," in *Twentieth-Century Building Materials*, ed. Thomas C. Jester, 137-141. Los Angeles: Getty Conservation Institute, 2014.

<sup>93</sup> Nancy B. Solomon, ed. *Architecture* (New York: The American Institute of Architects, 2008), 150.

<sup>94</sup> The stone was supplied by the Georgia Marble Company from a quarry in Knoxville, Tennessee.

<sup>95</sup> Tennessee Pink Marble varies in color, including dark and light pink and gray. The marble, which is actually a limestone, is very finely textured and has wavy, thin dark lines known as stylolites.

<sup>96</sup> Gyo Obata, "The National Air and Space Museum," in *The Military Engineer* 444 (July-August 1976): 281.

## Construction, 1972-1976

Construction on the building began in September 1972. To meet the expedited construction schedule and accommodate a July 1976 opening, Smithsonian and GSA adopted a novel construction management method known as Project Management/Construction Management (PM/CM). Unlike a traditional construction project, wherein the architect develops bid documents that are then passed to a general contractor, the PM/CM method integrates the design and construction management processes, allowing the contractor to lend practical construction management experience to the completion of the design drawings. This method also saves time by overlapping the design and bid processes. During construction, the project manager is responsible for delegating subcontracts, thereby eliminating the bureaucracy that sometimes slows decision making. For NASM, the Gilbane Building Company was selected to act as the construction manager. Although not without growing pains, this innovation was generally credited as a major factor in completing the building on time and within budget. Additionally, both NASM and Smithsonian leadership, notably Director Collins, retained strict control over change orders as the building progressed.<sup>97</sup>

Excavation was completed in the summer of 1973, allowing for work on the foundations and structural system to begin. To speed construction, the building was erected in a modular fashion, which allowed contractors of various disciplines to be working simultaneously in a phased progression. Using this method, a majority of the exterior work was completed by late 1974.<sup>98</sup> Similarly, occupancy of the building was phased as portions were completed. Library and administrative staff moved into the building in July 1975. The 400-car parking garage opened to the public later in the summer of 1975.<sup>99</sup> In February 1976, the central lobby and gallery—housing the momentous “Monuments of Flight” exhibit—was opened to the public on a limited basis.<sup>100</sup>

### *Exhibit Design and Art Installations*

Design of the exhibit galleries commenced in 1974, with installation continuing until the museum’s opening in July 1976. Through combined federal appropriations and corporate sponsorships, the Smithsonian allocated an additional six million dollars toward exhibit production. A number of large-scale, site-specific works of art were planned to accentuate the NASM landscape and interior. These included two sculptural installations on the exterior and a pair of large murals on the interior.

Smithsonian commissioned two pieces of sculpture for the north and south entrances, intending to orient visitors to the central entrances. On the south side, *Continuum* was a swirling, bronze form mounted on a stone pedestal, created by the artist Charles O. Perry. On the north side, *Ad Astra* (“To the Stars”), by the artist Richard A. Lippold, was representative of man’s thrust into space. A nickel-plated, stainless steel pylon extended 100 feet to support clusters of stars. CFA

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<sup>97</sup> “Air and Space Efficiency,” *Washington Post*, May 20, 1975: A18.

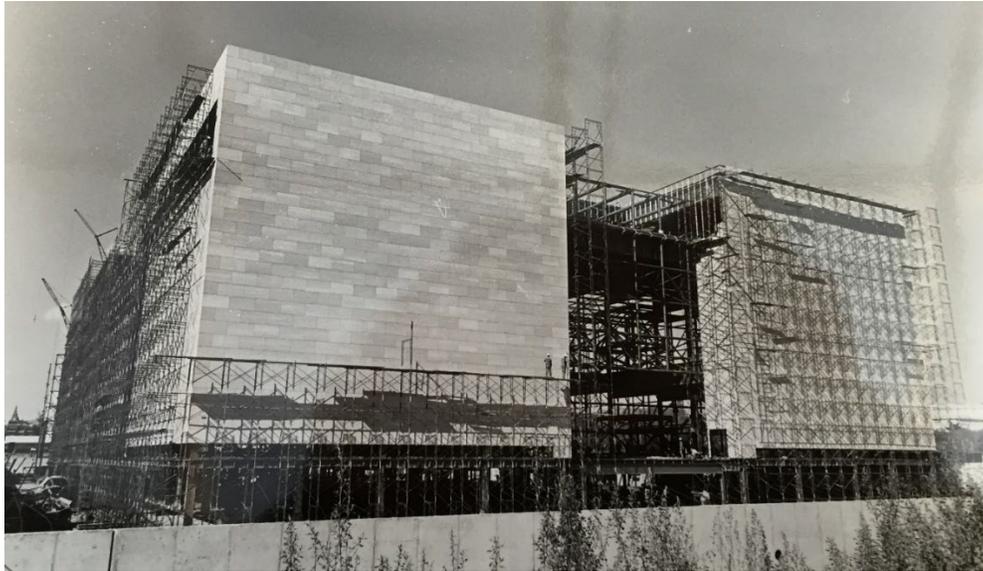
<sup>98</sup> Undated manuscript on the design and construction of the National Air and Space Museum, author unknown. SIA, Accession 06-225, Box 51.

<sup>99</sup> “Mall Garage to Open for 400 Cars,” *Washington Post*, July 13, 1975: 24.

<sup>100</sup> “Air and Space Museum Opens Lobby to Visitors,” Smithsonian Institution Office of Public Affairs, January 19, 1976. SIA, Accession 06-225, Box 51.

reviewed designs for the pieces at several meetings beginning in 1972 and ultimately approving the pieces in 1975. Both were installed on the site in 1976.<sup>101</sup>

On the interior, Smithsonian commissioned the artists Robert T. McCall and Eric Sloane to create murals for the available, L-shaped spaces on the east and west walls of the south entrance lobby. McCall painted *The Space Mural: A Cosmic View* (on the east side, a representation of the *Apollo* space landing) and Sloane painted *The Earth Flight Environment* (on the west side, a panorama of sky and rock formations).<sup>102</sup> Both were painted on linen with durable acrylic paints.



**Figure 34:** Museum under construction, c. 1970s (Smithsonian Institution).



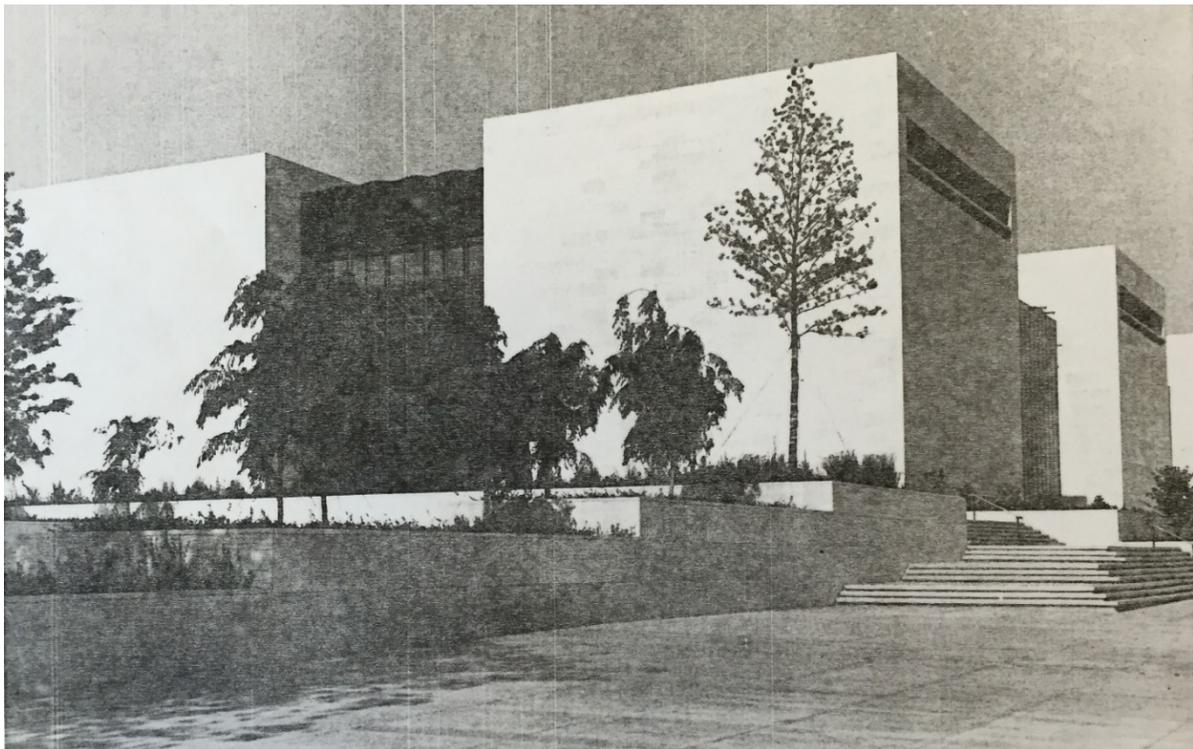
**Figure 35:** Museum nearing completion, looking west, c. 1970s (Smithsonian Institution).

<sup>101</sup> James M. Goode, *Washington Sculpture* (Baltimore: The Johns Hopkins University Press, 2008), 285-287.

<sup>102</sup> Smithsonian Institution, *Smithsonian Year 1976, Report of the Smithsonian Institution for the Period July 1, 1975, through September 30, 1976* (Washington, DC: Smithsonian Institution Press, 1977), 95. SIA, Accession 06-225, Box 51.



**Figure 36:** Completed museum, looking east, c. 1976 (Smithsonian Institution).



**Figure 37:** Completed museum, looking west, with east terrace in foreground, c. 1976 (Smithsonian Institution).

### *Gilbane Building Company*

The Gilbane Building Company was hired as an outside construction manager to manage the project. Founded in 1873, the Gilbane Building Company was headquartered in Providence, Rhode Island. The company expanded during World War II through wartime construction contracts, after which they grew their commercial and industrial markets through a contract with General Motors. Other notable projects in the Washington region have included the District of Columbia Courthouse (1978, also designed by HOK), the Vietnam Veterans Memorial (1982), and the National World War II Memorial (2004).<sup>103</sup>

### **Early Use and Reception**

The museum officially opened on July 1, 1976; three days earlier than originally scheduled. President Gerald Ford and Vice President Nelson Rockefeller met with Secretary Ripley and Director Collins to tour the museum, emerging from the museum just as the Air Force precision flying team, known as the Thunderbirds, made their third salutatory flight above Jefferson Drive. The ribbon cutting ceremony was attended by numerous dignitaries, including several Smithsonian Regents and Mayor Walter E. Washington. President Ford dedicated the museum, calling it “a perfect birthday present from the American people to themselves.” The red, white, and blue ribbon was burned, not cut, in half by a replica Viking’s soil-sampling mechanism, receiving its signal to cut the ribbon from the Viking spacecraft which at that time was approaching Mars. Upon its opening, the public was immediately enamored with the new museum. Twenty-five days after its inauguration, the museum welcomed its one-millionth visitor. Only three-and-one-half weeks later, the museum received its two-millionth visitor.<sup>104</sup>

The museum was also well-received critically, both individually and as one of the final buildings to be constructed on the Mall. Wolf Von Eckardt, architecture critic for *The Washington Post*, gave a glowing review of the museum just before its opening, writing, “Gyo Obata has resisted all temptation to give us a space age flight of fancy. He has given us a dignified, handsome work of architecture – an appropriate and harmonious finale to the grand architectural concert on the Mall”<sup>105</sup>

In her trademark, unapologetic style, *New York Times* architecture critic Ada Louise Huxtable characterized the structure as a marked improvement in the Smithsonian’s architectural portfolio: “With the Air and Space Museum, Washington and the Smithsonian have finally moved into the 20<sup>th</sup> century architecturally – when it is almost over. It has been a slow, hard trip.” Huxtable deemed NASM “...a building of less than startling effect but of considerable design merit.” She also claimed “...the Museum is having an impact of an unexpected kind. This building, and the National Gallery wing under construction almost opposite, are finally giving scale and meaning to the Mall and its elephantine company.”<sup>106</sup> Examining the museum a few years after its opening, the *AIA Journal* praised the building as “...a series of easily comprehensible spaces in

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<sup>103</sup> “History Timeline,” Gilbane Building Company, <http://www.gilbaneco.com/one-family/history-timeline/> (accessed November 8, 2016).

<sup>104</sup> Smithsonian Institution, *Smithsonian Year 1976, Report of the Smithsonian Institution for the Period July 1, 1975, through September 30, 1976* (Washington, DC: Smithsonian Institution Press, 1977), 82-84. SIA, Accession 06-225, Box 51.

<sup>105</sup> Wolf Von Eckardt, “Space, Time and Architecture,” *The Washington Post*, June 27, 1976, 109.

<sup>106</sup> Ada Louise Huxtable, “Architectural View: Supermuseum Comes to the Mall,” *The New York Times*, July 4, 1976, D22.

which one can wander at leisure, gape, study, daydream for hours without getting lost or feeling museum fatigue.”<sup>107</sup>

Though reviews were primarily positive, some writers were also critical of the structure. An article in *Progressive Architecture* called the building “a profound failure of nerve...half-wanting-to-be-classical, half-wanting-to-be-modern.”<sup>108</sup> An earlier article in the *AIA Journal* had also been critical of the building from the perspective of accessibility for handicapped visitors, framing the shortcomings as less the responsibility of the architects than as a failure of the standard requirements for accessibility.<sup>109</sup>

### 1988 Restaurant Addition

Plans to upgrade the existing food service facilities at the museum were initiated during the spring of 1982 when newly appointed museum director Walter Boyne placed the issue high on his list of priorities. Located on the east side of the third floor, the existing restaurant accommodated only 400 visitors and was accessible only by elevators. The Smithsonian retained Fred Schmidt Associates in July 1983 to conduct a feasibility study of food service at the Air and Space Museum, the National Museum of American History, and the National Museum of Natural History. The study found that due to limited seating, crowded elevators, and long wait times, only ten percent of visitors were using the existing restaurant facilities at the Air and Space Museum. Based on these findings, the study concluded that there was a clear need for a large cafeteria to serve the visiting public.<sup>110</sup>

The Smithsonian Board of Regents approved the funding of a new restaurant addition at their September 19, 1983 meeting. Writing in October to congressman Sydney R. Yates, chairman of the House Committee on Appropriations, S. Dillon Ripley reported that, “at my request and that of the Museum’s Director, Mr. Gyo Obata, the building’s architect, made preliminary sketches of a ground floor addition on the east terrace of the building.”<sup>111</sup> The east terrace represented the most logical location for the new restaurant for multiple reasons. An unprogrammed, sizable terrace already existed on the east side of the museum site that was the result of value-engineering in 1972, when the size of the museum building was reduced. The west terrace functioned as a formal plaza and contained existing programming in the form of the 1977 *Delta Solar* installation. Also, there was insufficient space to build on the west side of the museum due to its close proximity to Seventh Street, S.W. Finally, the existing restaurant was already located on the east side of the museum, in proximity to the primary service entrance from Fourth Street, S.W.

Gyo Obata was responsible for architectural design and HOK architect Robert Blaha prepared the interior design.<sup>112</sup> Obata’s design for the restaurant addition was sited to appear as a freestanding glass pavilion on the east terrace of the museum, connected to the original building

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<sup>107</sup> Andrea O’Dean, “Evaluation: The World’s Most Popular Museum,” *AIA Journal* Vol 69, No. 13 (1980): 43.

<sup>108</sup> Suzanne Stephens, “Modernism and the Monolith,” *Progressive Architecture*, Vol. 57, No. 7 (July 1976): 74.

<sup>109</sup> Michelle Morgan, “Evaluation: The National Air and Space Museum as Barrier-Free Design,” *AIA Journal* Vol. 65, No. 12 (December 1976): 34-37.

<sup>110</sup> S. Dillon Ripley to Sidney R. Yates, October 21, 1983, CFA Project File 12 Oct/83-6, Records of the Commission of Fine Arts, Record Group 66, Entry 17A B141, National Archives, Washington, DC.

<sup>111</sup> S. Dillon Ripley to Sidney R. Yates, October 5, 1983, CFA Project File 12 Oct/83-6, Records of the Commission of Fine Arts, Record Group 66, Entry 17A B141, National Archives, Washington, DC.

<sup>112</sup> Edie Lee Cohen, “NASM,” *Interior Design* 63, no. 1 (January 1992): 116-17.

via a glazed, one-story hyphen. The two-story pavilion featured a tiered pyramidal form, fully encased in dark tinted glass supported on a space frame structural system. The glass originally installed on the restaurant addition matched that originally found on the main museum building. The sloping glass was replaced c. 2000. The basement story—a portion of which encroached into the existing building basement—contained staff, mechanical, and kitchen facilities, while the first floor and mezzanine above featured open dining and serving facilities.

The new landscape plan for the east terrace (Figure 33) considerably altered the original 1972 design. The plan removed the series of terraced, limestone-faced planting boxes that wrapped around the northeast and southeast corners of the main museum building. To accommodate the addition, the existing terrace was extended to the east and surfaced in new granite pavers. New limestone planting boxes were added along the north and south sides of the terrace, and at its northeast corner. In addition, a new set of steps was added at the east end of the terrace, providing access to the Fourth Street sidewalk, and at the north and south ends, providing access to Jefferson and Independence Avenues.<sup>113</sup>

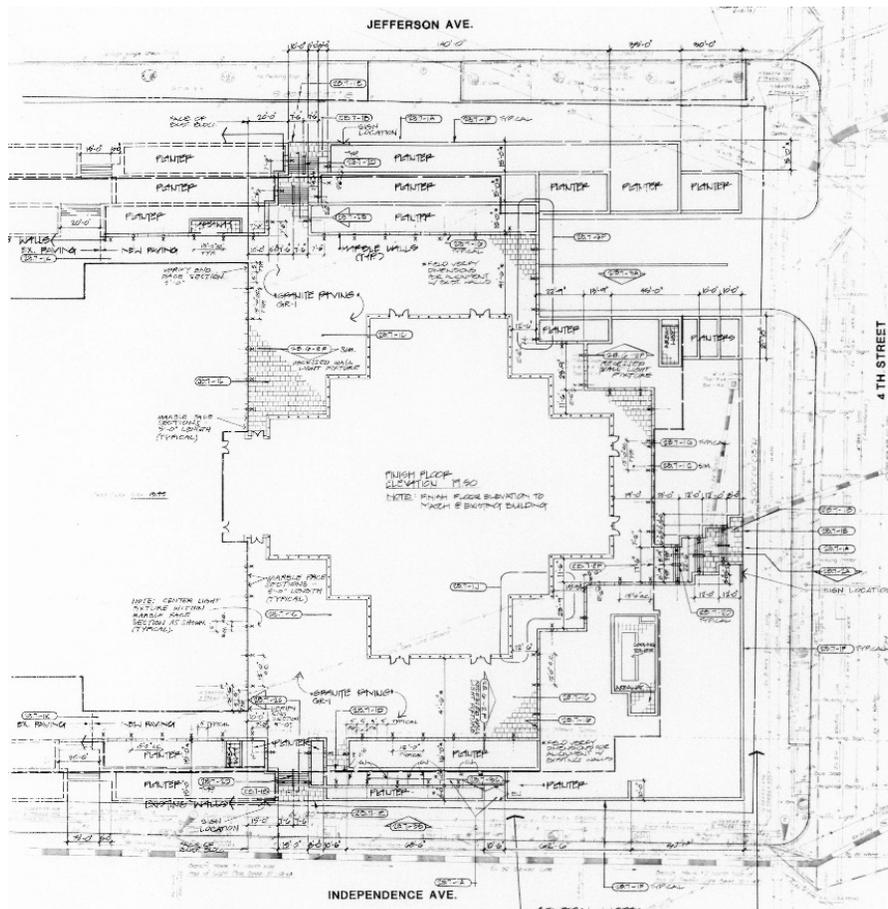
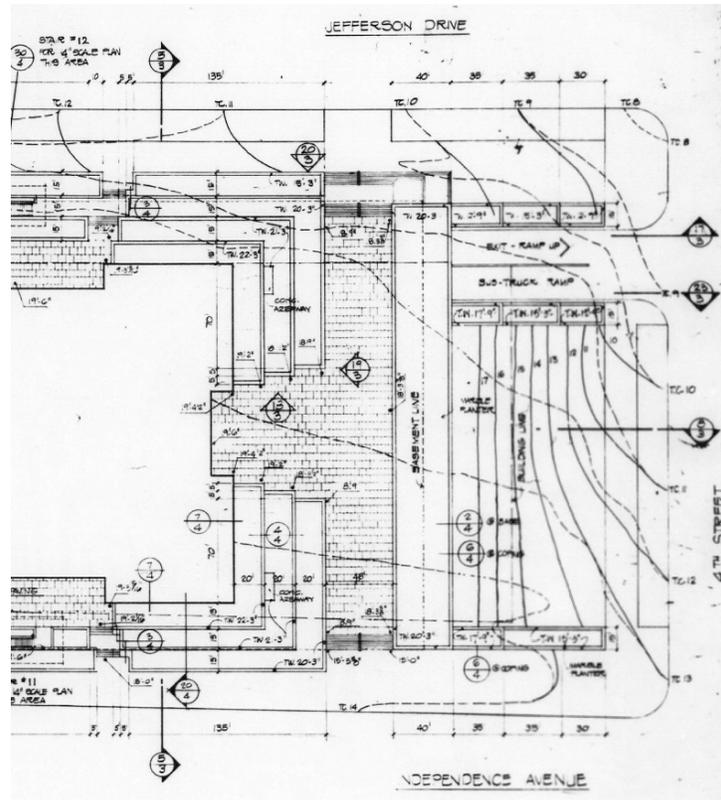


Figure 38: Layout plan for the restaurant addition, 1986 (Smithsonian Institution).

<sup>113</sup> OFEO Project No. 8335143, “National Air and Space Museum, Restaurant Addition,” Smithsonian Institution’s Office of Facilities, Engineering and Operations Archives.



**Figure 39:** Detail from 1972 site plan, shown for comparison (Smithsonian Institution).

CFA first reviewed the initial concept at its October 12, 1983 meeting. Obata described his design "...essentially as a pavilion in a garden and a simple glass structure with a connecting link to the existing glass end of the museum."<sup>114</sup> Obata went on to describe the design intent on the interior of the building "...would be filled with trees and so forth, so you have the feeling you are dining under a canopy of trees."<sup>115</sup> Though this may have been Obata's intention for the interior, there is no photographic or other documentation that the space was ever filled with trees or plantings. Most of the Commission's comments regarding the addition did not have to do with its design or massing, although Obata was encouraged to reduce the building's scale as much as possible, but with the choice of material, particularly the potential reflectiveness of the glass and the adverse effect that could have on the National Mall.

At its January 31, 1984 CFA meeting, Philip Reiss of the Smithsonian provided a progress report on the development of the design and presented a preliminary landscaping plan and a glass sample for the Commission's inspection. It was determined that the tint of the glass would reduce the visibility by 50% and that the tint should match that on the existing structure. Reiss stated that the Smithsonian was desirous of maintaining the vista created by the lawn approach on the Fourth Street side of the site. There were no objections to the preliminary landscape design or planting plan from the Commission.<sup>116</sup>

<sup>114</sup> Commission of Fine Arts, Meeting Transcript, October 12, 1983, 37, CFA Archives, Washington, DC.

<sup>115</sup> Commission of Fine Arts, Meeting Transcript, October 12, 1983, 38, CFA Archives, Washington, DC.

<sup>116</sup> Commission of Fine Arts, Meeting Transcript, January 31, 1984, 95-101, CFA Archives, Washington, DC.

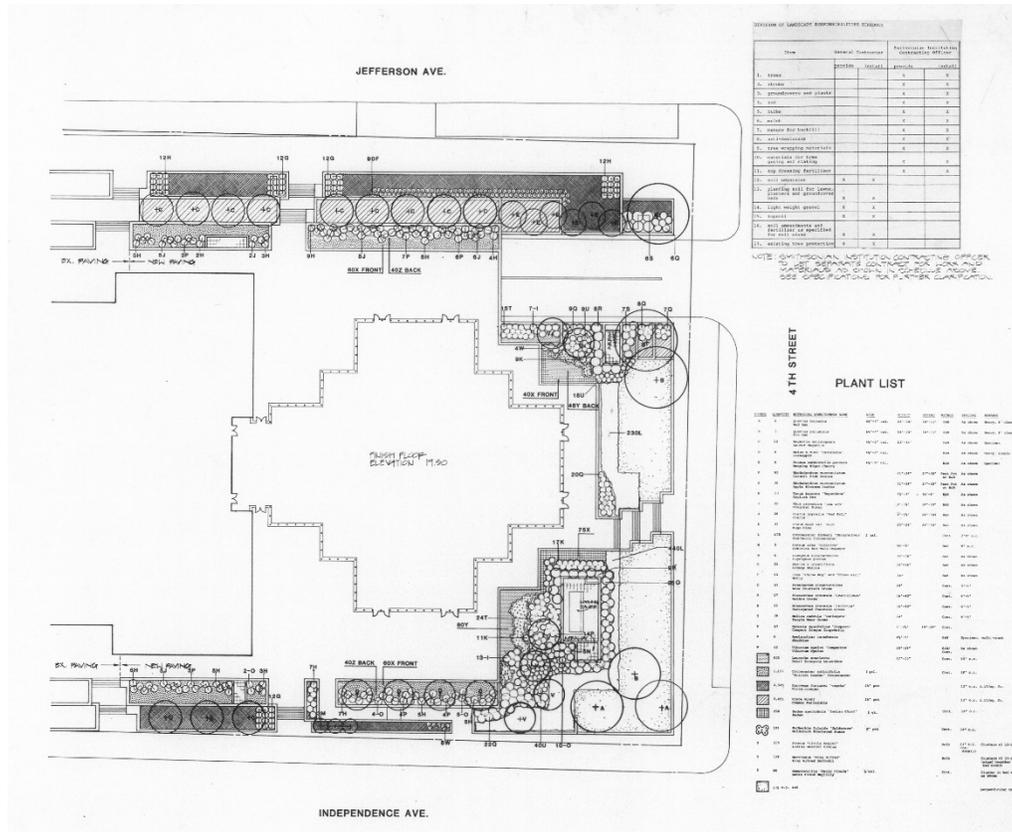


Figure 40. Planting plan for the restaurant addition, 1983 (Smithsonian Institution).

At the April 10, 1984 CFA meeting, Reiss again presented glass samples and Jim Buckler, from the Smithsonian’s landscaping division, discussed the planting scheme. The new plantings included magnolia soulangeana, weeping cherry, and planters with seasonal flowers. Buckler said that many of the trees in the existing pavilion site had already been removed and planted on the north side of the museum. Ornamental grasses were incorporated into the planting scheme to provide more of a summer and winter interest. The Commission unanimously approved the final pavilion and landscape designs at this final presentation.<sup>117</sup>

Construction began in the spring of 1987 under the direction of general contractor Charles H. Tompkins.<sup>118</sup> The addition was completed in 1988 at a cost of \$14.3 million. The space housed two restaurants, the 800-seat “Flight Line” cafeteria on the first floor and the 180-seat “Wright Place,” a full-service restaurant, on the second. Four cafeteria lines serviced the lower-level eatery, to minimize crowding. Food prepared in the pavilion’s underground kitchen was transported to the above-ground eateries by elevator.<sup>119</sup>

<sup>117</sup> Commission of Fine Arts, Meeting Transcript, April 10, 1984, 45-49, CFA Archives, Washington, DC.

<sup>118</sup> Charles H. Tompkins, Construction Management Report, February 1988, Smithsonian Archives.

<sup>119</sup> Jeffrey Goldberg, “Air and Space Museum’s New Eatery to Take Flight,” *The Washington Post*, August 5, 1988, F1-F2.



**Figure 41:** Restaurant addition exterior, 2020 (EHT Traceries).

### Opening and Critical Response

The Air and Space Museum restaurant officially opened on August 7, 1988.<sup>120</sup> *Washington Post* architectural critic Benjamin Forgey was generally complimentary in his assessment of the new addition. In a 1988 review, Forgey described the interior as “lively” and “appropriately open in feeling.” He went on, however, to write that:

Unfortunately, the brightness and excitement of the interior don’t carry over to the outside. The shape seems right – the stepped pyramid makes a sharp outline against the blunt end of the museum building. But the dark bronze tinting of the glass and the matching mullions – exactly the colors used in the museum itself – go a long way in the direction of neutralizing the architecture.<sup>121</sup>

In 1989, Roger K. Lewis, FAIA, urban planner and professor emeritus of architecture at the University of Maryland, wrote that:

Obata’s strategy is convincing, if not daring. He crafted a visually free-standing, 39-foot high, steel and glass pavilion whose articulated geometry, both in plan and in section, is everything that the boxy museum is not.

Lewis went on to note the compatibility of materials - white tubular steel trusses, aluminum window frames, solar glass - between the museum and restaurant.<sup>122</sup>

<sup>120</sup> Jeffrey Goldberg, “Air and Space Museum’s New Eatery to Take Flight,” *Washington Post*, August 5, 1988, F1.

<sup>121</sup> Benjamin Forgey, “In-Flight Fare at Air and Space,” *Washington Post*, August 20, 1988, C1.

<sup>122</sup> Roger K Lewis, “This Spacious Smithsonian Addition Works as Art and Eatery,” *Museum News* 68, no. 1 (January-February 1989): 21.

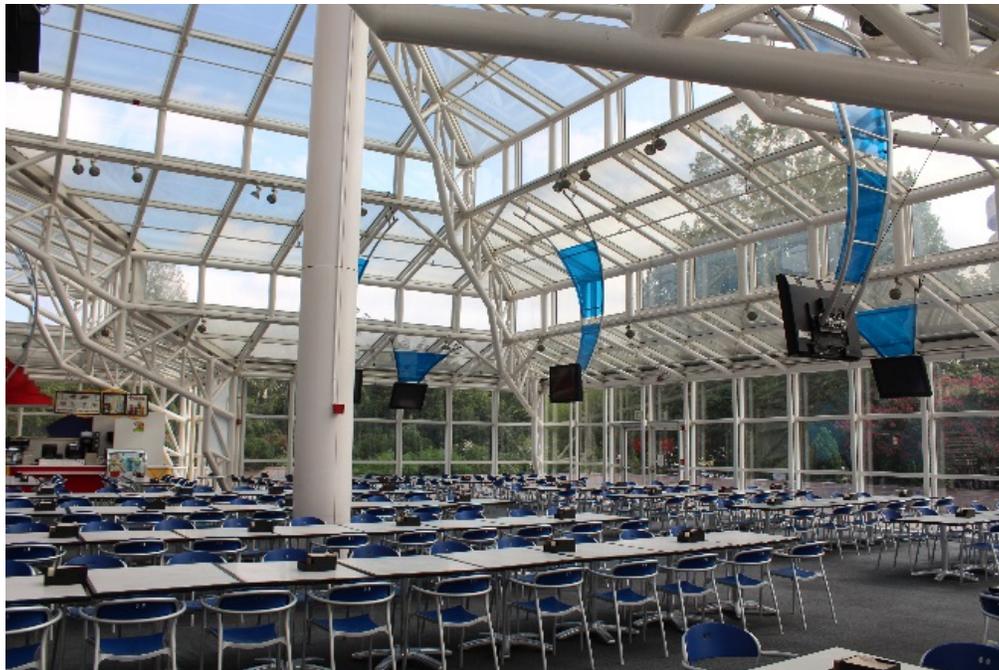


Figure 42: Restaurant addition interior, 2016 (EHT Traceries).

### Architectural Context for the New Restaurant Addition

The restaurant addition was designed and constructed between 1983 and 1988, a period when HOK was growing in size as an organization and increasing its production. By the early 1980s, HOK had grown into a firm of 700 people, with five major offices, in addition to various overseas project offices, as the company continued to expand its global footprint. Following George Kassabaum's death in 1982, and George Hellmuth's decreasing leadership role in the company, Gyo Obata assumed the role of chairman and lead designer. To restore the three-person leadership structure, he promoted King Graf, head of the Dallas office and marketing expert, and Jerry Sincoff, one of HOK's top project managers, as vice-chairmen. While at HOK, during the 1970s, Sincoff had managed the National Air and Space Museum main building project. The need to collectively diversify the firm's expertise across multiple market sectors, seen early on by Hellmuth as a way of building a recession-proof architectural practice, continued as one of the firm's guiding directives during the 1980s. HOK's reputation for designing a wide array of specialized building types also provided an advantage over many of its competitors.<sup>123</sup>

HOK's rapid expansion, both in the U.S. and abroad, prompted criticism from certain quarters of the national architectural press, such as the *New York Times*'s Paul Goldberger, who savaged HOK and Obata in a December 1984 book review in which he charged that the firm's primary talents were in the areas of marketing and self-promotion rather than design.<sup>124</sup> Goldberger's criticism revealed the degree to which HOK's meteoric growth as a corporate design firm

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<sup>123</sup> Patrick MacLeamy, *Designing A World-Class Architecture Firm: The People, Stories, and Strategies Behind HOK* (Hoboken, NJ: John Wiley & Sons, 2020), 79-84.

<sup>124</sup> Paul Goldberger, "Architecture in the Real World, The Work of HOK," *New York Times*, December 2, 1984, A18. In the piece, Goldberger brazenly stated that Gyo Obata had never "made a major contribution to contemporary architecture."

affected how its work was being critically received by some during this period. In 1989, E. F. Porter, architectural critic for the *St. Louis Dispatch* characterized the firm's work from this period as not groundbreaking, but stylish enough and functional, and referred to its design quality as "uneven."<sup>125</sup>

Gyo Obata's NASM restaurant addition incorporates design elements that are found in several of HOK's major commissions from this period. As seen in the restaurant pavilion, HOK utilized tubular steel structural systems and glazed curtain walls in the design of the George R. Moscone Convention Center in San Francisco, completed in 1981. Levi's Plaza, also in San Francisco, was completed in 1982 for the Levi Strauss Co. Like the restaurant pavilion, it exhibits a set-back massing of elevations creating a stepped appearance. The design also includes a glass pavilion with a tubular steel structural system. HOK followed a similar approach for the Kellogg Company Corporate Headquarters in Battle Creek, Michigan (1986). The restaurant addition also closely resembles the stepped, hexagonal form of the Congregation B'Nai Amoona (1987) in St. Louis, designed by HOK. One of the firm's most ambitious projects of the 1980s, the King Khaled International Airport in Riyadh, Saudi Arabia (1983) embodies geometric forms, a pavilion with subtle set-back massing, and the use of curtain walls and glazing to naturally light the interior.<sup>126</sup> Natural lighting is also a key feature of the restaurant pavilion, and Obata considered lighting one of the most important aspects of interior and, particularly, restaurant design.<sup>127</sup> In addition to these HOK projects, the restaurant addition also bears similarities to the concurrent Museum of Flight in Seattle (1987, Ibsen Nelson), with its tubular steel space frame and glazed exterior.



**Figure 43:** Kellogg's headquarters (above), Congregation B'Nai Amoona (below) (Birkman).

By the mid-1980s, when the addition was designed, Obata and HOK were operating within a much different architectural context than when the original museum building was completed in 1976. In Washington, postmodernism had begun to shape the character of the city's commercial core. Communicated through overt historical references and symbolism, examples that effectively illustrate the postmodern aesthetic in Washington include 1718 Connecticut Avenue, N.W. (1982, David M. Schwarz), the Inter-American Development Bank Building (1983, SOM), and Presidential Plaza (1986, Keyes, Condon & Florance). These buildings feature elements such as roofline pediments, large-scaled entrance arches, and articulation of the façade through robust

<sup>125</sup> E. F. Porter, "Some of the People Behind the Comeback," *Architecture* (April 1989): 74-75.

<sup>126</sup> Marlene A. Birkman, *Gyo Obata: Architect, Client, Reflections* (Mulgrave, Australia: Images Publishing, 2010), 62, 68, 80.

<sup>127</sup> Birkman, 41.

masonry details.<sup>128</sup> Contemporary with these buildings, Gyo Obata's 1983 design for the NASM restaurant pavilion, by contrast, is modest, light and glassy, and only subtly references the past through its pyramid-like form.



**Figure 44:** H. Carl Moultrie Courthouse (left), USA Today Towers (right) (kcct.com, Emporis).

The buildings designed by HOK in the greater Washington area vary widely in terms of design and materials, but some exhibit a commonality of shared design traits with the restaurant addition. The H. Carl Moultrie Courthouse (1976) at 500 Indiana Avenue, N.W., features a large, steel-framed, glazed atrium that, while not stepped, is similar to the addition's glassy exterior and interior framing. The USA Today Towers in Arlington, Virginia (1977) are twin office buildings with glassy exteriors and curving geometries. The Tysons II Galleria shopping mall in Tysons Corner, Virginia was completed in 1988, the year that the NASM restaurant pavilion opened, and is a large suburban retail complex with a ribbon-windowed exterior and naturally lit interior atrium.

Designed in collaboration with architect John Carl Warnecke, 2000 Pennsylvania Avenue, N.W. (1983) is a concrete and glass, ribbon-windowed office building that, like the addition, exhibits set-back massing that incorporates the facades of a row of historic buildings. Other area HOK projects from this period are more postmodern in design. The Fairfax County Judicial Center (1981) in Fairfax, Virginia is a postmodern government complex that features arcaded masonry elevations combined with glass curtain walls and concrete elements. Completed in 1987, World Bank (Building J) at 701 18<sup>th</sup> Street, N.W., is another example of the firm's postmodern work that combines glazed curtain walls with granite and concrete spandrels and columns that suggest traditional façade elements.

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<sup>128</sup> Claudia D. Kousoulas, and George W. Kousoulas, *Contemporary Architecture in Washington, D.C.* (New York: John Wiley & Sons, 1995), 32-33, 48, 72.



Figure 45: 2000 Pennsylvania Avenue, N.W.

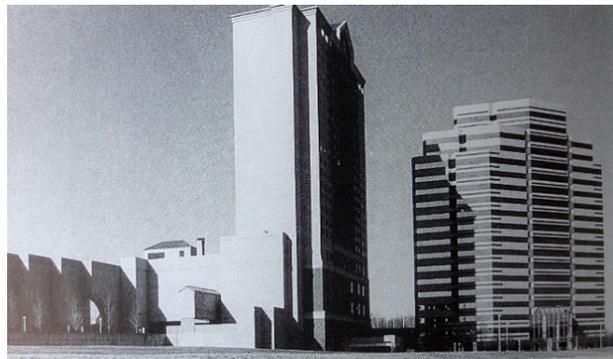


Figure 46: Tysons Galleria (Kousoulas).

## Alterations to the National Air and Space Museum

### *Delta Solar, 1977*

The abstract sculpture *Delta Solar* was installed on the southwest corner of the site in 1977. It is a large, triangular piece with a stainless-steel grid supporting sixty-four rotating fans. The sculpture is surrounded by a shallow reflecting pool. Created by artist Alejandro Otero, *Delta Solar* was a gift from the Venezuelan government to the United States, in recognition of the 1976 Bicentennial. The United States Government considered at least two sites—the Kennedy Center and Constitution Gardens—before the NASM site was approved by the Commission of Fine Arts.<sup>129</sup> CFA requested that the work and surrounding reflecting pool be sited asymmetrically from the east-west axis of the NASM building, to preserve open space to the north of the site and better catch the afternoon sun.<sup>130</sup>

### *Terrace Repaving, circa 1986*

In 1986, in conjunction with the restaurant addition and east terrace alterations, the precast concrete pavers and stair treads throughout the terraces were removed and replaced with Stoney Creek granite. Additionally, the project improved the exterior lighting throughout. The original stairs had been outfitted with recessed light fixtures within each riser that proved faulty soon after installation. In the repaving project, larger recessed fixtures were added to the existing, marble-clad side walls, and the original bronze railings were replaced with new railings that featured an integrated light along the central rail.<sup>131</sup>



Figure 47: Delta Solar and reflecting pool, 2016 (EHT Tracerics).

<sup>129</sup> James M. Goode, *Washington Sculpture* (Baltimore: The Johns Hopkins University Press, 2008), 286.

<sup>130</sup> “Transcript of Proceedings,” November 23, 1976. Bound copy at the U.S. Commission of Fine Arts Library.

<sup>131</sup> OFEO Project No. 8635108, “Plaza Surface Replacement,” Smithsonian Institution’s Office of Facilities, Engineering and Operations Archives.

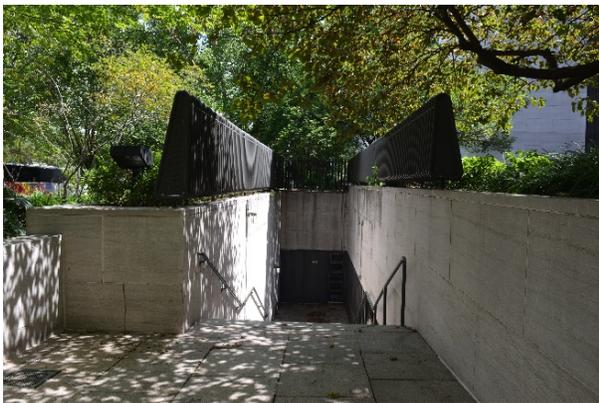


**Figure 48:** South entrance vestibule addition, facing northwest, 2016 (EHT Tracerics).

#### *Vestibules and Skylight Replacement, 1994-2000*

Between circa 1994 and 2000, Smithsonian conducted extensive renovations on the NASM building and site. To address water infiltration and excess solar transmission from expansive skylights and window walls, these large areas of glazing were replaced with better performing alternatives. The domed acrylic skylights were replaced with glass skylights with a repeating ridge pattern and the vertical window walls on the north and south were replaced with new glass with

a darker gray tint (slightly lighter on the north side to preserve reciprocal views from the Mall). Smithsonian also added vestibules to the primary entrances on the north and south, removing the original revolving doors. The new south vestibule was rectangular in plan and extended to fill a portion of the covered area beneath the cantilevered mass above. The new north vestibule was significantly taller, with a fully glazed exterior and side walls that canted inward to meet the original wall face. The original gallery lighting was replaced throughout.<sup>132</sup>



**Figure 49:** Looped steel guardrail above garage egress stairs on the west terrace, 2016 (EHT Tracerics).

#### *Terrace Waterproofing and Landscape, circa 1996-1998*

To address water infiltration problems along the exterior terraces that serve as the roof of the basement level, Smithsonian was compelled to remove all vegetation and fill from the terraces to replace the waterproofing membrane. Upon completion of that portion of the project, the Smithsonian Horticulture Services Division (now Smithsonian Gardens) designed a new landscape plan and installed completely new vegetation. Smithsonian also introduced several

safety improvements, including guardrails along the rims of the garage egress stairs and automobile ramps. Smithsonian had originally intended to raise the height of the walls using stone that matched the original; when no match could be obtained, they instead designed looped, painted steel railings.<sup>133</sup>

#### *Alterations to the Restaurant Addition, 2001-2002*

Alterations to the restaurant addition have been primarily interior in scope. In 2001-2002, the architectural and engineering firm Helbing Lipp designed upgrades to the serving and seating areas. The project included the installation of a new elevator and stairs from the first floor to the

<sup>132</sup> “Meeting of the Commission of Fine Arts, Minutes,” March 17, 1994, June 15, 1995, and December 14, 1995. Bound copy at the U.S. Commission of Fine Arts Library

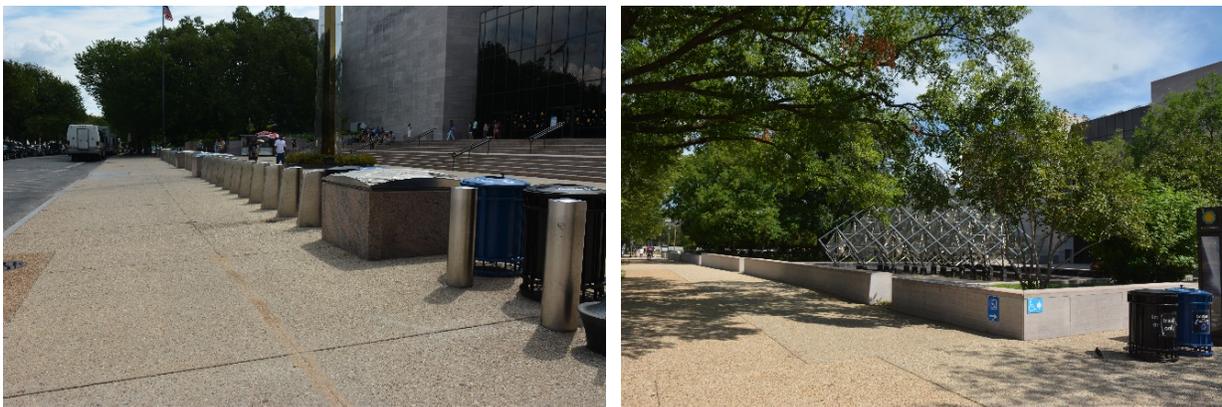
<sup>133</sup> “Meeting of the Commission of Fine Arts, Minutes,” April 18, 1996 and May 22, 1997. Bound copy at the U.S. Commission of Fine Arts Library; Carole Ottesen, *A Guide to Smithsonian Gardens* (Washington, DC: Smithsonian Books, 2011), 84-85.

mezzanine. Upgrades to the first-floor serving area included new electronic display boards, partitions, new stainless steel and glass guard rails matching the existing, and new mechanical openings. Smithsonian replaced the original glazing on the sloped areas of the exterior c. 2000, and the new glass matches that installed on the main building at this time.

#### *Perimeter Security, circa 2001-2005*

After the events of September 11, 2001, Smithsonian installed temporary perimeter security barriers at several of its sites. They also initiated a planning process to implement permanent perimeter security measures at its properties Mall-wide. Although comprehensive in scope, the perimeter security plan was contextual for each site, with treatments and materials that responded to the architectural character and site conditions of each museum. The preliminary plan was completed and presented to NCPC and CFA in 2004, with perimeter security at NASM the first to be implemented.<sup>134</sup>

The plan took advantage of the existing terraces, using the outer row of walls to create a hardened perimeter. Some existing walls were raised, and a new wall was introduced along the Seventh Street sidewalk (west of *Delta Solar*). Openings in the terrace walls—for stairs, automobile ramps, and the two principal entrances on the north and south—were infilled with bollards. Most of the bollards were stainless steel with a round profile; those along the north side had a custom fin shape, reminiscent of airplane wings. Two new guard booths were also added near the main garage entrance on Fourth Street. The project also introduced two new ramps to improve accessibility to the north entrance; these were contained within the outermost terrace flanking the existing stairs.<sup>135</sup>



**Figure 50:** Perimeter security elements include bollards (above left) and the low wall along the western edge of the site (above right), 2016 (EHT Tracerics).

#### *Astronomical Observatory, 2009*

<sup>134</sup> OFEO Project No. 0269910, “Improve Mall-Wide Perimeter Security, Preliminary Design Submission,” September 2004, Smithsonian Institution’s Office of Facilities, Engineering and Operations Archives; “Staff Recommendation, National Air and Space Museum, Perimeter Security, NCPC File No. 6423/6492,” National Capital Planning Commission, September 2, 2004.

<sup>135</sup> OFEO Project No. 0269910A, “Improve Mall-Wide Perimeter Security, National Air and Space Museum,” August 2004, Smithsonian Institution’s Office of Facilities, Engineering and Operations Archives; “Meeting of the Commission of Fine Arts, Transcript,” July 15, 2004. Bound copy at the U.S. Commission of Fine Arts Library.



**Figure 51:** Astronomical observatory on east terrace, 2016 (EHT Tracerics).

Smithsonian installed a temporary astronomical observatory on the east terrace in 2009 as part of the International Year of Astronomy's celebration of the 400th anniversary of Galileo's invention of the telescope. Smithsonian presented CFA with plans for the observatory on November 5, 2008. The project involved the installation of a temporary astronomical observatory on the southeast terrace, which was to remain for two-years as a public exhibition. The 16-inch Boller and Chivens reflecting telescope, loaned by the Harvard-Smithsonian Oakridge Observatory, is housed within a demountable fiberglass

observatory that measures 22 feet in diameter and 18 feet in height. CFA granted its approval for the observatory at its November 20, 2008 meeting.<sup>136</sup> NCPC granted approval in December 2008, noting that the observatory's location on the east terrace would not impact views along the Mall. The DC State Historic Preservation Office also reviewed the project at this time and determined that it would have no adverse effect on the National Mall Historic District.<sup>137</sup> The observatory opened to the public in October 2009.<sup>138</sup> NCPC approved a renewal of the exhibition in January 2013.<sup>139</sup>

#### *Miscellaneous Alterations and Repairs, 1980s to Present*

Since the 1980s, various projects have been completed on the NASM building and site. Following the completion of the restaurant addition in 1988, the original restaurant on the third floor was converted to a staff-only cafeteria. This space was recently renovated. In 1986, citing security risks, Smithsonian closed its below-grade parking garage to the public.<sup>140</sup> The garage originally communicated with a small, basement-floor lobby, with escalators that carried visitors to the first-floor galleries. This lobby and opening have remained in place, but the lobby floor area was later reduced to create space for other program uses. Otherwise, the garage continued to be used for staff parking, deliveries, etc., and therefore this change had a limited impact on the physical fabric of the building. Other changes completed over time have included minor façade improvements, interior alterations (especially in the third-floor administrative offices), renovation of the museum shop, replacement of the roof membrane and insulation, addition of security screening equipment to the north and south entrances, replacement of the suspended acoustical tile ceiling and lighting fixtures on the third and portions of the first and basement floors, and renovation of the public restrooms.

<sup>136</sup> U.S. Commission of Fine Arts, Consent Calendar, CFA Meeting, November 20, 2008, CFA Archives, Washington, DC.

<sup>137</sup> National Capital Planning Commission, "Building Exterior, Vestibules, and Site Improvements, National Air and Space Museum Washington, DC," Executive Directors Recommendation, January 10, 2013, 2-5.

<sup>138</sup> Blaine P. Friedlander, "3-Planet Monte, Meteors and the Mall," *Washington Post*, October 4, 2009, C6.

<sup>139</sup> National Capital Planning Commission, "Building Exterior, Vestibules, and Site Improvements, National Air and Space Museum Washington, DC," Executive Directors Recommendation, January 10, 2013, 2-5.

<sup>140</sup> John Mintz, "Air & Space Museum Bars Garage to Public," *Washington Post*, June 7, 1986: B1.

*National Air and Space Museum Revitalization*

Over time, the original exterior wall assembly of the 1976 museum building, consisting of foam insulation-backed Tennessee Pink Marble (limestone) panels applied to a steel frame, experienced major failure due to the warping and buckling of the original 1-1/4-inch limestone panels. Integrated with the exterior wall system, the building's HVAC systems also reached the end of their service life and require replacement. In addition, the terrace roof membrane again needed to be replaced to prevent further water leaks into the underground parking garage.<sup>141</sup>

In 2015, Smithsonian submitted concept plans to CFA for upgrades to the museum's building exterior, vestibules, and site. Proposed were the replacement of the main museum building's envelope, including its exterior stone cladding, glazed curtain walls, skylights, roof, and site paving. The proposal also included a new glazed security vestibule and exterior canopy at the north entrance. In addition, Smithsonian proposed a complete energy-efficient overhaul of the museum's HVAC systems to LEED Gold certification standards and the revitalization of the 112,000 square-foot terrace.<sup>142</sup> Section 106 consultation was concluded in 2017, and CFA and NCPC approved the final design package in 2018.

In addition to the façade of the main museum building, Colonial Rose Granite was used to face the terrace planter beds, retaining walls, and perimeter security walls. Smithsonian conducted a two-year cladding study and considered over 80 options including Tennessee Pink Marble (limestone), other natural stones, and manufactured materials. Considerations included aesthetic compatibility with the National Mall Historic District, particularly the 1941 National Gallery of Art and 1978 East Wing buildings, procurement issues, and performance analysis. Following this study and guided by input from review bodies and consulting parties, Smithsonian selected Colonial Rose Granite, which is quarried near Lac du Bonnet in Manitoba, Canada. This granite has a warm hue and appearance that is similar to the original material used. A range of tonal variation in the granite panels selected for the museum cladding will mimic the veining and striations of the original Tennessee Pink Marble (limestone). The original stone cladding in the interior atriums will remain. Consistent with Obata's original design intent, the replacement glazing will ensure continued visibility of the museum's interior galleries from the Mall, and daylighting of the interior, while protecting the collections from UV damage. Salvageable panels of the original Tennessee Pink Marble (limestone) will be used for interior atrium galleries and concourse finishes.<sup>143</sup>

At the north entrance, the footprint of the glazed exterior vestibule will be expanded under a curvilinear, steel-framed entrance canopy designed by Quinn Evans. The canopy will provide shelter to waiting museum guests and will function as a visual way-finder to help identify the primary north entrance. The addition of the vestibule will contrast as a new addition with the existing 1976 building, in keeping with the Secretary of the Interior's Standards and the intent to preserve the museum's National Register eligibility. Plans for the south vestibule include an

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<sup>141</sup> Advisory Council on Historic Preservation, *Memorandum of Agreement Among the Smithsonian Institution, The National Capital Planning Commission, The District of Columbia State Historic Preservation Officer and the Advisory Council on Historic Preservation Regarding the National Air and Space Museum National Mall Building Revitalization – Exterior, Vestibules, and Site Work*, Washington, DC, December 28, 2017, 1-2.

<sup>142</sup> National Capital Planning Commission, "Building Exterior, Vestibules, and Site Improvements, National Air and Space Museum Washington, DC," Executive Directors Recommendation, July 7, 2016, 1-2.

<sup>143</sup> Advisory Council on Historic Preservation, *Memorandum of Agreement*, 2-6.

interior expansion of the footprint that maintains the existing exterior enclosure. With the exception of the section of wall to be removed at the southwest corner of the site, all existing security infrastructure installed in 2005 will remain.<sup>144</sup>



**Figure 52:** Rendering of the north vestibule, 2018 (Smithsonian).

The project will also introduce several changes to the existing landscape plan. Smithsonian will eliminate the planters at the north and south entrances and add new sloped walkways and granite-faced walls at these entrances. The walls will bear the name of the museum engraved in Times New Roman script. On the west side of the site, the terraced planters at the northwest and southwest corners of the museum building will be removed to open-up these areas and improve circulation. They will be replaced with two smaller planting beds at the north and south ends of the west elevation that will be enclosed by stone-clad seat walls.

The three existing works of sculpture, *Ad Astra*, *Continuum*, and *Delta Solar*, will remain in their approximate locations on the site. Smithsonian raised *Delta Solar* and added a new water feature installed on the west terrace in keeping with the composition of the original *Delta Solar* installation. The plinth of the water feature serves as perimeter security at this corner of the site. Low existing perimeter walls at the southwest corner of the site, installed in 2005, were removed, merging the plaza surrounding the sculpture and water feature with the public sidewalk.

The overall design of the east terrace will remain mostly intact, but with new plantings. Pedestrian access to the east terrace will be provided through the renovation of the existing stairways and adjacent sloped walkways. LED lighting will be integrated into the handrails of all stairs and walkways, as well as the existing seat walls that extend around the inner perimeter of the terrace. The planting plan retains some existing trees and introduces a wide range of new tree

<sup>144</sup> Quinn Evans Architects and AECOM, *National Air and Space Museum*, 68, 122-35.

species and ground plane plantings around the perimeter of the site. Exposed aggregate concrete will be used throughout to surface the paved areas of the grounds.<sup>145</sup>

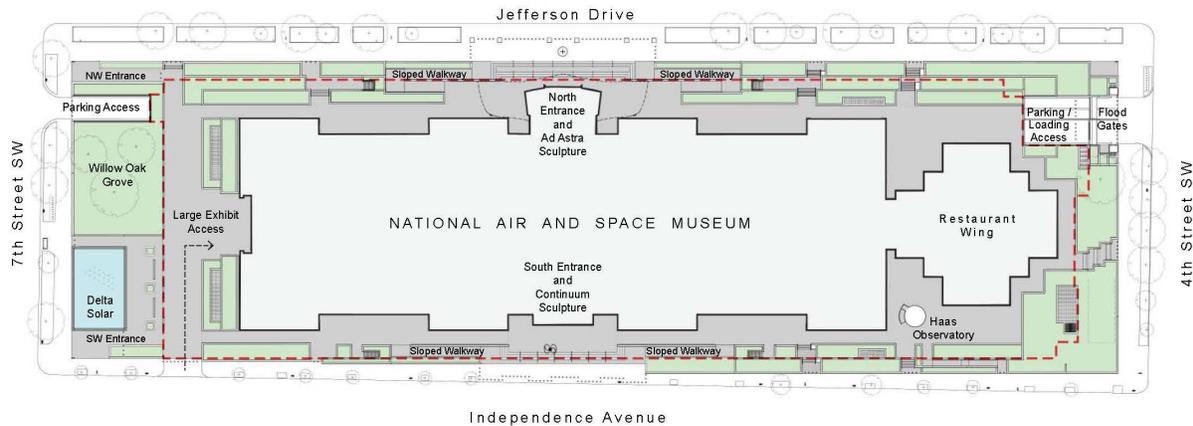


Figure 53: Final site plan, 2018 (Smithsonian).

## HISTORIC CONTEXT

### Modernist Architecture in the District of Columbia

The Modern Movement began to slowly influence the architecture of Washington during the 1920s and 1930s. During the early twentieth century, the city's architectural tastes were conservative and decidedly classical in nature, inspired by the City Beautiful Movement and the McMillan Commission. During the 1920s, modernism in Washington was expressed through the Streamlined Moderne phase of the Art Deco style, with its rounded surfaces, asymmetrical massing, and horizontal emphasis. During the 1930s, the Stripped Classical style was applied to the design of public buildings in Washington. Stripped Classicism bridged the city's conservatism with the modern aesthetic, maintaining the overall massing and form of classical architecture while simplifying, or stripping, exterior ornament.<sup>146</sup> A good example of stripped classicism in Washington is the Federal Reserve Board Building (1937), designed by Paul Cret.<sup>147</sup>

The expansion of the federal presence in the Washington area during the twentieth century resulted in an environment of heightened construction that enabled the spread of architectural modernism throughout the region. Federal expansion continued into the Post-War Period, resulting in an increase in funding, employees, and construction activity. The GSA was created within this context in 1949 to provide building management and general procurement services for the federal government. Central to the GSA's early mission was the need for greater federal office space. During the 1960s, these efforts were directed by the Kennedy Administration,

<sup>145</sup> Quinn Evans Architects and AECOM, *National Air and Space Museum National Mall Building Envelope and HVAC Revitalization*, final design report prepared for the U.S. Commission of Fine Arts, March 1, 2018, 9, 20, 28.

<sup>146</sup> Robinson and Associates, *DC Modern: A Context for Modernism in the District of Columbia, 1945-1976*, prepared for the DC Historic Preservation Office, 2009., 14.

<sup>147</sup> Pamela Scott and Antoinette J. Lee, *Buildings of the District of Columbia* (New York: Oxford University Press, 1993), 210.

leading to the development of the *Guiding Principles for Federal Architecture*, released in 1962.<sup>148</sup> President Kennedy also stimulated the spread of modernism in Washington through the President's Council on Pennsylvania Avenue, which was tasked with redeveloping portions of this iconic urban streetscape.<sup>149</sup>

Urban renewal in Post-War Washington also allowed for the creation of new modernist buildings and landscapes in the city. Promoted by European modernists, such as Le Corbusier, who in 1925 unveiled his *Plan Voisin* for central Paris, urban renewal was enabled in the District of Columbia by the Redevelopment Act of 1945 and was viewed as a preferred strategy for the revitalization of urban residential and commercial districts. In addition, the National Housing Act of 1949 provided funds and redevelopment. In Southwest Washington, urban renewal efforts between 1950 and 1970 resulted in new high-rise apartments, office towers, mixed-use developments, and public buildings designed by architects that included Keyes, Lethbridge & Condon (formerly Keyes and Lethbridge), Albert I. Cassell, Charles M. Goodman, I. M. Pei, Harry Weese, and Chloethiel Woodard Smith, set within integrated landscapes by designers that included Dan Kiley and Hideo Sasaki.<sup>150</sup>

By mid-century, the International Style had emerged as the preferred design idiom for corporate and institutional architecture in the United States. The term, International Style was first adopted following a 1932 exhibition in New York entitled, "Modern Architecture – International Exhibition," which was curated by Philip Johnson and Henry-Russell Hitchcock. Mid-century practitioners, such as Ludwig Mies van der Rohe and SOM, emphasized form and function over stylistic concerns, as seen in the severity of van der Rohe's minimalist design for the Martin Luther King, Jr. Memorial Library (1972).<sup>151</sup>

Several design trends in architectural modernism surfaced during the Post-War Period, particularly the 1960s and 1970s, as a reaction to the International Style. During the 1960s, the Expressionist impulse within the Modern Movement sought to break away from the functional rationalism that had defined the International Style. Informed by social and cultural changes during this period and drawing on new technological developments in the production of precast concrete, Expressionist buildings convey a plasticity of form in comparison to the rectangular plans and curtain wall construction inherent to the International Style.<sup>152</sup> A strong local example can be seen in Eero Saarinen's design for Dulles International Airport in Chantilly, Virginia (1962). Closely related to Expressionism, New Formalism, which also emerged during the 1960s, looked again to classical building forms, and is characterized by symmetrical elevations, columns, arches, overhanging roofs, the use of marble, and a return to exterior ornamentation in the form of metal grilles and patterned masonry screens.<sup>153</sup> An illustrative local example of New Formalism exists in Edward Durell Stone's Kennedy Center for the Performing Arts (1971).

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<sup>148</sup> Judith H. Robinson and Stephanie S. Foell, *Growth, Efficiency, and Modernism: GSA Buildings of the 1950s, 60s, and 70s*, prepared by Robinson and Associates for the General Services Administration, Washington, DC, December 2005, 28-45.

<sup>149</sup> *DC Modern*, 66-68.

<sup>150</sup> *DC Modern*, 27-28; District of Columbia, Department of Transportation, "North-South Corridor Planning Study: Historic Resources Study," prepared by EHT Tracerics, Inc., 2014, 23-30.

<sup>151</sup> Hasan-Uddin Khan, *International Style: Modernist Architecture from 1925 to 1965* (New York: Taschen, 2009), 114-28; Scott and Lee, 194.

<sup>152</sup> *DC Modern*, 80-81.

<sup>153</sup> Robert Twombly, *Power and Style: A Critique of Twentieth-Century Architecture in the United States* (New York: Hill and Wang, 1995), 97.

Brutalism, another divergent design trend within late modernism, first arose during the 1950s. The Brutalist style is known for its exaggeration of sculptural form, its extreme articulation of the building's structure, and its use of exposed reinforced concrete forms. By the 1970s, Brutalism was in use as a prevailing style for the design of public buildings in the United States, Europe, and Japan.<sup>154</sup> A leading example of Brutalist architecture in Washington was I. M. Pei's Third Church of Christ Scientist (1972, demolished in 2014).<sup>155</sup>

The National Mall, a showcase for architecture and urban planning in the Nation's Capital, reflects the varying aesthetic trends that characterized twentieth century modernism in Washington. New construction and landscape work on the Mall was guided by two master plans for its development in 1966 and 1973, which were produced by SOM.<sup>156</sup> In addition to the NASM, noteworthy examples of modernism on the Mall include the National Museum of American History (1964), the Hirshhorn Museum and Sculpture Garden (1974), the East Wing of the National Gallery of Art (1978), and the Vietnam Veterans Memorial (1982).<sup>157</sup>

## **SIGNIFICANCE AND EVALUATION**

The criteria for the evaluation of a historic property are set forth by the Code of Federal Regulations, Title 36 Part 60 and implemented by the National Park Service through the U.S. Department of the Interior. To be eligible for listing in the National Register of Historic Places, a building must meet one or more of the National Register Criteria for Evaluation. In addition, the property must possess sufficient integrity to convey its historic and/or architectural significance.

### **National Mall Historic District**

The National Air and Space Museum is a contributing resource to the National Mall Historic District. A National Mall Historic District National Register Amendment and Boundary Expansion has been prepared by the National Park Service in cooperation with the Smithsonian Institution and other federal agencies. On December 15, 2016, the DC Historic Preservation Review Board unanimously approved the National Mall Historic District amendment, which provided for an expanded period of significance, enlarged physical boundaries, a more comprehensive historical narrative, and a more clearly defined statement of significance. The purpose of this report is not to evaluate the property's contributing status to the National Mall Historic District, but rather its individual eligibility for National Register listing.

### **Determination of Eligibility Findings**

*This study finds that the National Air and Space Museum is individually eligible for National Register listing under Criteria A and C and retains sufficient integrity to convey its historical and architectural significance.*

This determination is based on a thorough examination of the property's historical significance based on National Register Criteria, as well as an evaluation of its physical integrity. This

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<sup>154</sup> Charles Jencks, *Architecture Today* (New York: Harry N. Abrams, 1982), 21-29.

<sup>155</sup> Scott and Lee, 121-22.

<sup>156</sup> Richard Guy Wilson, "High Noon on the Mall: Modernism versus Traditionalism, 1910-1970," in *The Mall in Washington, 1791-1991*, ed. Richard Longstreth (Washington: National Gallery of Art, 1991), 162.

<sup>157</sup> Scott and Lee, 91-92.

determination of eligibility also proposes a period of significance of 1976, the year of the building's completion. In addition, the National Air and Space Museum meets Criteria Consideration G, for properties of exceptional importance that have achieved significance within the last fifty years.

**Criterion A: Properties that are associated or linked to events that have made significant contributions to the broad patterns of our history.**

The National Air and Space Museum is eligible under National Register Criterion A for its reflection of the evolution of the Smithsonian Institution in the second half of the twentieth century. The development of the museum was an integral component of the concentrated period of growth experienced by the Smithsonian from the 1960s to the 1980s. Led by Secretaries Leonard Carmichael (1953-1964) and S. Dillon Ripley (1964-1984), the Institution embraced the diversity and modernity of its collections and greatly expanded its physical plant to accommodate. With the Museum of History and Technology (1964) and the Hirshhorn Museum and Sculpture Garden (1974), NASM represents a distinct period of Smithsonian growth, in which new institutions focused on modern American ingenuity and culture, before shifting to broader explorations of cultural and international diversity. For NASM, this meant an investigation into the conservation, display, and interpretation of collections relating to the history of air and space technology—which had captured the excitement and imagination of Americans during the 1960s space program. The enormous popularity of the museum after its opening in 1976 validated the Smithsonian's prolonged effort to design and construct the museum.

**Criterion B: Properties that are associated with the lives of persons significant in our past.**

The National Air and Space Museum does not meet Criterion B as it does not possess significance as a resource associated with the lives of persons significant in our past. Generally, Criterion B is restricted to “those properties that illustrate (rather than commemorate) a person's important achievements.”<sup>158</sup> Although the museum commemorates early flight innovators, the museum is not associated with the productive life of these persons, nor does it reflect the time period in which he or she gained significance.<sup>159</sup> Although the building does have nominal associations with several figures significant in the nation's history—including Smithsonian Secretaries Carmichael and Ripley and astronaut Michael Collins—its level of association is not sufficient to merit historic significance under Criterion B.

**Criterion C: Properties that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possesses high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction.**

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<sup>158</sup> “National Register Bulletin: How to Apply the National Register Criteria for Evaluation; VI. How to Identify the Type of Significance of a Property,” U.S. Department of the Interior, National Park Service, accessed January 25, 2017, [https://www.nps.gov/nr/publications/bulletins/nrb15/nrb15\\_6.htm](https://www.nps.gov/nr/publications/bulletins/nrb15/nrb15_6.htm).

<sup>159</sup> “National Register Bulletin: How to Apply the National Register Criteria for Evaluation; VI. How to Identify the Type of Significance of a Property,” U.S. Department of the Interior, National Park Service, accessed January 25, 2017, [https://www.nps.gov/nr/publications/bulletins/nrb15/nrb15\\_6.htm](https://www.nps.gov/nr/publications/bulletins/nrb15/nrb15_6.htm).

The National Air and Space Museum is significant under Criterion C as an outstanding example of Modernist architecture by a recognized master in the field. Completed in 1976, NASM represents the culmination of more than thirty years of planning and design. The resulting design represented a successful integration of contemporary architectural and engineering technologies with the classical influences of the National Mall. In the design of NASM, Obata faced a museum program without precedent in a highly regulated architectural environment. These challenges were compounded by strict limitations placed on the construction budget and timeline. Strengthened by these dilemmas as well as constructive input offered by reviewing agencies, Obata arrived at a solution that was remarkable for its simplicity and clarity of composition offering an accessible and immersive visitor experience and high functional performance.

Obata's 1964 design for the museum was shelved for several years due to a delay in federal appropriations for its construction. When the project was relaunched in the early 1970s, escalating costs compelled a total redesign. This second iteration was reduced in scale and more heavily influenced by the input of the CFA and the NCPC. The serene and prismatic qualities of NASM's enclosed geometries resulted directly from the pervading Neoclassicism of the Mall, especially as endorsed by Congress and NCPC.<sup>160</sup> They also directed Obata in the refinement of the building's proportions and its solid-to-void relationships, as well as the selection of specific exterior materials. The resulting building balances Modernist detailing with a purist classical form. At the time of its completion, the building was compared favorably to the stark geometries of the Hirshhorn Museum and the hybrid classical modernism of the Museum of History and Technology.

Various component parts contributed to the holistic design aesthetic. The three major exhibition galleries accommodated large-scale collections installations; their expansive glazing frames and elevates the collections against a backdrop of sky and vegetation. The central east-west spine (including the balconies on the second floor) acts as the central organizing device, providing clear-span views and paths of travel throughout the interior. Open vertical circulation elements, namely the escalators and octagonal stairs, allowed for visitors to experience collections from multiple levels and angles. Alternating with these monumental halls were enclosed galleries whose function required buffering from natural light and sound. The integration of progressive material technologies, such as the insulated marble curtain wall, tubular space frame trusses, and acrylic dome skylights (since removed) made feasible these functional and aesthetic qualities.

Furthermore, innovations in the design and construction processes accommodated a strict budget and accelerated construction schedule. The adoption of the Project Management/Construction Management approach was a first for the GSA and represented a successful example of how the integration of the design and building processes could yield positive results. Additionally, the design and fabrication of the building's structural and cladding systems facilitated a modular and phased approach to construction.

**Criterion D: properties that have yielded, or may be likely to yield, information important in prehistory or history.**

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<sup>160</sup> In contrast, during this period CFA lobbied for a break from the classical traditions governing Mall development. Particularly vocal advocates of architectural Modernism were Aline Saarinen (1963-1971), Gordon Bunshaft (1963-1972), and Kevin Roche (1969-1980).

The National Air and Space Museum has not been evaluated for its potential to yield archaeological information. However, given the building's footprint and the extent of excavation completed during its initial construction, it is unlikely that the site retains intact archaeological deposits.

### **Period of Significance**

The proposed period of significance for this property is 1976, the year the museum was completed. Although the building's prolonged period of development—beginning even before the enabling legislation was passed in 1946—may suggest a longer period of significance, National Register guidance for Criterion C recommends that the period of significance be limited to the date of construction. Although later alterations—especially the 1988, HOK-designed restaurant addition—were generally compatible with the architectural character of the building and site, they do not rise to the same level of significance as the original design. Since its completion, the addition has been operationally and functionally separate from the museum and its development was not an expansion of its exhibition and programs.<sup>161</sup> Therefore, these elements do not contribute to the individual significance of the site and do not make a compelling case to expand the period of significance.

### **Criteria Consideration G: properties that have achieved significance within the last fifty years.**

The proposed period of significance falls within the fifty-year benchmark generally observed for the evaluation of historic properties. This determination finds that the National Air and Space Museum, 1976 museum building, displays the exceptional importance necessary to meet Criteria Consideration G, specifically under Criterion C as a work of Modernist architecture. Since the building's completion, Obata has been recognized as a master of modern architecture and HOK has grown to rank among the world's largest architecture, engineering, and interior design firms. Their early growth was often attributed to the successful designs of Obata, NASM's principal designer. With the Saint Louis Abbey (1962) and Houston Neiman Marcus (1969), NASM ranks among the most architecturally distinguished examples of Obata's early work. Considering the longevity of Obata's practice and the size and diversity of HOK's work—which has included the later expansion of NASM, the Steven F. Udvar-Hazy Center in Chantilly, Virginia, completed in 2003—both are underrepresented in the National Register of Historic Places. To date only two HOK-designed resources have been listed in the National Register: the American Zinc Company Headquarters in St. Louis (1967, Criterion C, POS 1967) and the Plaza Square Apartments in St. Louis (1959-1961, Criterion A and C, POS 1959-1961). This lack of representation is perhaps a reflection of the recent nature of much of their work, the corporate nature of the firm structure, and their preponderance of private and commercial over institutional or federal commissions.<sup>162</sup>

Within the District of Columbia, there exists a strong precedent for the designation of historic properties from this era under Criteria Consideration G, particularly when they represent the work of recognized modern masters. These include: Martin Luther King, Jr. Memorial Library (Office of Mies van der Rohe, completed 1972, listed 2007); the Watergate Complex (Luigi

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<sup>161</sup> Architectural drawings and CFA records for the design of the restaurant addition suggest that Obata took a similarly active role, as he had done for the original building.

<sup>162</sup> In a limited survey, no early HOK or Obata commissions were identified as being designated in any local, state, or national registers, although some (like NASM), may be contributing resources to historic districts.

Moretti, completed 1971, listed 2005); the Department of Housing and Urban Development (Marcel Breuer, completed 1968, listed 2008); and the Hirshhorn Museum and Sculpture Garden (Gordon Bunshaft, completed 1974, determined eligible 2016), among others.<sup>163</sup>

The 1988 restaurant addition contextualizes effectively with the main museum building. Unlike the museum, the more recent addition has not yet attained the level of significance needed to meet the test of exceptional importance under Criterion Consideration G. This is less a reflection on the quality or merit of Gyo Obata's design, but more so of the recent date of the addition, the lack of designation precedents for resources from this period, and the similarities between the addition and other major and more significant HOK commissions of the 1980s. While exceptional resources from the 1970s have been recognized for their importance in recent years, few buildings dating from the mid to late-1980s, and none of HOK's projects from this era, have been designated nationally under Criterion C and Criterion Consideration G.<sup>164</sup>

In addition to this lack of precedent in recognizing the significance of resources from this period, Department of the Interior guidance states that in order to be eligible under Criterion Consideration G, the resource must demonstrate exceptional importance within its historic context. This Determination of Eligibility has attempted to place the addition within both the national context of HOK's work from this period, as well as the local context of the greater Washington, D.C. area. As discussed, the restaurant addition is strikingly similar in many respects to other major HOK projects of the period, such as the 1986 Kellogg's Corporate Headquarters and, particularly, the 1987 Congregation B'Nai Amoona in St. Louis, which also exhibits a pyramid-like form and glazed exterior. These similarities in and of themselves are not unusual - many firms reused elements of their better work in other high-profile, contemporary projects. But the widespread usage of glazed, space-framed construction and stepped or set-back elevations in these and other HOK designs from the 1980s makes it difficult to argue that the restaurant addition is a singular, exceptional example of the firm's work. Evaluated within the local context, the addition is not a representative, leading example of 1980s postmodernism in the District of Columbia. Nor does it rise to the same level of importance as other HOK buildings in the greater Washington area, such as the earlier, International-Style Federal Office Building No. 9 (1963, contributing, Northwest Rectangle Historic District), the timeless, monumental quality of the 1976 National Air and Space Museum main building, or even the H. Carl Moultrie Courthouse (1976), which has not yet been evaluated, but is arguably a design of greater depth, permanence, and formal qualities than the space-framed addition, rendered in a higher quality palette of materials. In summary, the factors outlined above - from the addition's recent date of construction to its striking similarity to other HOK designs - render it problematic, at this time, to argue that the addition is of exceptional architectural importance under Criterion Consideration G.

## **Integrity**

At the time of writing, the National Air and Space Museum has retained sufficient integrity to convey its significance under Criteria A and C. The museum's location and setting on the National Mall have remained intact, and therefore the property has retained its integrity of

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<sup>163</sup> All of these properties were listed under Criterion C, some in addition to other Criteria.

<sup>164</sup> To date only two HOK projects have been listed in the National Register of Historic Places. They are the American Zinc Company HQ in St. Louis (1967, Criterion C, POS 1967) and the Plaza Square Apartments in St. Louis (1959-1961, Criterion A and C, POS 1959-1961).

**location.** The construction of the National Museum of the American Indian has obstructed reciprocal views between NASM and the U.S. Capitol Building, although otherwise the property has retained its integrity of **setting**.

The formal and spatial qualities of the museum building—both on the interior and exterior—have been retained. On the exterior, this includes the solid, cuboidal blocks alternating with planar glazing elements, set on a terraced plinth. In the interior, this includes the three principal open galleries, alternating with smaller enclosed galleries and program elements, and organized along an east-west axis. These elements reflected major design goals—the desire for NASM to harmonize with its architectural context, and to allow for a pleasant and efficient visitor experience. Despite later additions such as the restaurant, perimeter security, and entrance vestibules, these elements have remained dominant factors in the property’s use and appearance and therefore it has retained its integrity of **design**. The planned building envelope replacement, terrace revitalization, and north vestibule will diminish design integrity, but will not compromise it entirely. For example, the interior organization of the galleries and the spatial relationships and circulation patterns inherent to Gyo Obata’s design will remain unchanged. On the exterior, the overall austere, Modernist form of the building, and the formal rhythm of the façade, will still communicate the intent of Obata’s 1972 design. The planned north vestibule with its expressive entrance canopy will distract from these qualities, as they relate to the north elevation, but will be distinguishable from the original construction and subordinate in scale. The planned landscape upgrades will not compromise the formal function of the terrace as a pedestal for the museum building, and the new landscape plan will retain elements original to the 1972 design.

At a detailed level, the formal and spatial elements that characterize the original design were reliant on modern and innovative materials and technologies. Some of these materials have been retained, such as the tubular space frame trusses, light steel frame, and marble curtain wall cladding. Others, such as the original glazing, and acrylic domes, have performed poorly or failed, requiring replacement. Therefore, the museum has retained only a moderate degree of integrity of **materials** and **workmanship**. This aspect of integrity will be further affected by the partially completed building envelope replacement but mitigated somewhat by the similar appearance of the original Tennessee Pink Marble (limestone) to that of the Colonial Rose Granite replacement material and the replacement of the glazing with similarly scaled glazing that is as transparent as allowable while offering protection to the collections.

NASM’s integrity of **feeling** and **association** are strongly conveyed through two aspects of its design and history. The first relates to the building fabric and its embrace of a modern architectural vocabulary and construction methods. The second relates to the building’s evocation of air and space exploration. Although specific exhibits and collections have not been addressed in this determination, the building’s essential role and the importance of collections display have remained essential to its visual character. The museum’s design, including the scale of the museum’s galleries, the exposed tubular steel trusses, and the pits, allow for the exhibition of a variety of large- and small-scale items. Because these two aspects of the building’s character have remained intact, the property has similarly retained these two aspects of integrity.

### **Contributing Features**

The tables below have been developed to identify contributing and non-contributing features throughout the building and site. Contributing features are those that were present on the site during the period of significance (1976) and have retained integrity to that period.

*Table #1: NASM Site Contributing Features*

<i>Feature</i>	<i>Status</i>
Tiered terraces and planting beds	Contributing (modified)
Masonry clad retaining walls throughout	Contributing (modified)
Garage openings and ramps	Contributing
<i>Ad Astra</i> sculpture	Contributing
<i>Continuum</i> sculpture	Contributing
<i>Delta Solar</i> sculpture and reflecting pool	Non-Contributing
Vegetation	Non-Contributing
Plaza surrounding restaurant addition	Non-Contributing
Steel guardrails surrounding garage egress walls and ramps	Non-Contributing
Bronze and stainless-steel handrails throughout	Non-Contributing
Freestanding astronomical observatory	Non-Contributing
Freestanding planters, site furniture, and vendor carts throughout	Non-Contributing
Perimeter security elements	Non-Contributing
Granite paving and stair treads	Non-Contributing

*Table #2: NASM Building Exterior Contributing Features*

<i>Feature</i>	<i>Status</i>
Seven-bay building form with alternating solid-void pattern	Contributing
Recessed, glazed openings in east and west elevations	Contributing
Recessed, third-story linear openings and balconies	Contributing
Masonry wall panels	Contributing *
Carved inscriptions on north and south elevations	Contributing
Exterior terrace on southeast cantilevered block	Contributing
North and south entry vestibules	Non-Contributing
Restaurant addition	Non-Contributing
Vertical glazing and ridged skylights on first and second floors	Non-Contributing

\*The replacement granite panels are considered contributing because they form the exterior masonry wall panels that are an integral component of the museum's "solid and void" design concept and because they are as close to *in-kind* replacements as it was possible for the Smithsonian Institution to acquire.

*Table #3: NASM Building Interior Contributing Features*

<i>Feature</i>	<i>Status</i>
Basic finish types throughout (painted gypsum board, acoustic tile ceilings, and carpet)	Contributing
Tubular steel trusses supporting glass walls and skylights	Contributing
Marble (limestone) wall panels	Contributing
Wall-mounted light fixtures and linear diffusers in large galleries	Contributing
Gallery stairs with octagonal landings	Contributing
Escalators throughout	Contributing
Bronze-and-tinted-glass handrails throughout	Contributing
<i>The Space Mural: A Cosmic View</i> mural	Contributing
<i>Earth Flight Environment</i> mural	Contributing
Elevator Doors	Contributing

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**Archival Repositories**

Library of Congress  
Martin Luther King, Jr. Memorial Library, Washingtoniana Collection  
National Archives and Records Administration (NARA)  
National Air and Space Museum Library and Archives  
Newsbank, Inc.  
Proquest Historical Newspapers  
Smithsonian Institution Archives (SIA)  
U.S. Commission of Fine Arts Library

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**PREPARER'S DETERMINATION**

Eligibility Recommended

Eligibility Not Recommended

Applicable National Register Criteria:

A  B  C  D

Applicable Considerations:

A  B  C  D  E  F  G

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**DC SHPO REVIEW AND COMMENTS**

Concurs with Recommendation

Does Not Concur with Recommendation

David Maloney  
District of Columbia State Historic Preservation Officer

Date:

Reviewed by:  
DC Government Project/Permit Project Log Number: