National Air and Space Museum

Construct Integrated Bezos Learning Center

Environmental Assessment

EAXX-394-00-000-1725871368

November 2024

Smithsonian Institution

National Capital Planning Commission

wsp

Executive Summary

The National Capital Planning Commission (NCPC), as lead responsible federal agency for compliance with the National Environmental Policy Act (NEPA) of 1969, as amended, and the Smithsonian Institution (SI), as project owner, have prepared a Draft Environmental Assessment (EA) for the construction of the Bezos Learning Center. The EA has been prepared in compliance with NEPA (Title 42 U.S. Code 4321-4347); the Council on Environmental Quality's Regulations for Implementing NEPA (Title 40 Code of Federal Regulations 1500-1508); the NCPC implementing regulations (NCPC 2004) and the National Capital Planning Act. The National Park Service (NPS) is also participating as a cooperating agency. Concurrently, SI and NCPC are conducting Section 106 consultation in accordance with the National Historic Preservation Act (NHPA). SI and NCPC have agreed that SI will be the lead federal agency in conducting consultation in accordance with Section 106 of the National Historic Preservation Act (Title 36 Code of Federal Regulations 800.2(a)(2)). The proposed Bezos Learning Center is also subject to the review and approval of NCPC under the National Capital Planning Act (Title 40 U.S. Code 8722 (b)(1) and (d)).

The purpose of this project is to advance the National Air and Space Museum's (NASM) mission through construction and operation of a new world class center for education connected to the NASM National Mall facility; facilitate teacher and student engagement in Science, Technology, Math, Engineering, and Art (STEAM) learning, particularly in under-resourced communities; provide a positive visitor experience; permanently locate the Phoebe Waterman Haas Public Observatory; achieve site compliance with the Americans with Disabilities Act of 1990; and respect the historic context and use of open space. The project is needed to house a new pan-Institutional resource overseen by the NASM; improve site accessibility; provide visitor access to a ground level restaurant space; and locate facility-related programs in on-site outdoor public amenity spaces.

The EA analyzes two alternatives: the Proposed Action Alternative and the No Action Alternative. Government agencies and the public are encouraged to review and comment on the contents of this EA. A digital copy of the EA can be obtained from the following websites:

https://www.ncpc.gov/participate/notices/

https://s.si.edu/blc-environment

Written comments must be submitted during the official comment period, ending December 20, 2024. Questions or comments on the EA should be addressed to:

Smithsonian Institution
Attention: Jane Passman
PO Box 37012
MRC 511, Suite 5001
Washington, DC 20013-5012
Email: Preservation@SI.edu

Table of Contents

List of Figures

List of Tables

Appendices

Appendix A: Public Scoping Comment Response Matrix

Appendix B: Assessment of Effects on Historic Resources Report

List of Acronyms

ACS	American Community Survey
ADA	Americans with Disabilities Act of 1990
BG	Block Group
BLC	Bezos Learning Center
CFR	Code of Federal Regulations
CT	census tract
EA	Environmental Assessment
EO	Executive Order
LEED	Leadership in Energy and Environmental Design
NASM	National Air and Space Museum
NCPC	National Capital Planning Commission
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
PA	Programmatic Agreement
sf	square foot
SI	Smithsonian Institution
STEAM	Science, Technology, Engineering, Arts, and Math

1. Purpose and Need for the Proposed Action

1.1 Background

The Smithsonian Institution's (SI) National Air and Space Museum (NASM) National Mall Building is one of the top five most visited museum facilities in the world, attracting an average of seven million people annually. The museum opened in 1976 for the United States Bicentennial and to "commemorate the national development of aviation and spaceflight, and educate and inspire the nation" (SI n.d.). Within its 23 themed galleries, the 647,000 square foot (sf) museum houses some of the most iconic objects pertaining to the history and technology of aviation and space exploration. SI's National Air and Space Museum collects, preserves, studies, and exhibits artifacts, archival materials, and works of art related to the history, culture, and science of aviation and spaceflight and the study of the universe. Its research and outreach activities serve all audiences, within and beyond its walls. The National Air and Space Museum commemorates the past and is committed to educating and inspiring people to foster appreciation for the importance of flight to humanity.

In 1965, the architectural firm of Hellmuth, Obata and Kassabaum was commissioned to design the museum and surrounding landscape. Lead Architect Gyo Obata aspired to design a building that was in harmony with the character of the National Mall and reflected the architectural elements of the surrounding buildings, while also pursuing modern architectural principles (NCPC 2017). Obata's solution included four large marble-clad pavilions separated by three recessed steel-and-glass atria. Drawing inspiration from neighboring buildings, Obata reflected formal massing and materials in his design. The alternation of solids and voids were placed and proportioned to respond to corresponding projections and recesses of the West Building of the National Gallery of Art, which sat directly across the Mall. Equivalent volumes faced Independence Avenue, but the recessed glass-enclosed bays of the Mall façade were replaced by floating marble cubes, cantilevered to be flush with the south façade. The volumes were clad in Tennessee Pink marble, the same stone used for the National Gallery of Art West Building, which opened in 1941, and the National Gallery of Art East Building, which opened in 1978. Under a separate undertaking, the stone cladding was replaced with Colonial Rose granite as part of the NASM Revitalization Project between 2017 and 2023.

In 2021, SI received a $200 million donation from Jeff Bezos, founder and executive chair of Amazon, and founder of aerospace and space flight company Blue Origin. The donation is the largest gift to SI since the Institution's founding gift from James Smithson in 1846. A portion of this gift is intended to support construction of the Integrated Bezos Learning Center (BLC). The proposed BLC would connect to all SI museums, coordinating Science, Technology, Engineering, Arts, and Math (STEAM)-related collections and experts across the Institution and promoting inquiry-based learning in learners of all ages, with a focus on youth and educators in under-resourced communities. The BLC would activate

programming in part by establishing partnerships with community-based organizations to reach students and teachers in Washington, D.C., and in communities across the country.

SI is proposing to construct the BLC as an addition to the NASM (see Figure 1). Construction of an addition with education space was identified as a high-priority project in SI's NASM Master Plan of 2013. The proposed location on the east end of NASM was originally an open terrace space where a glass restaurant addition pavilion was added in 1988. In 2023 this addition was demolished. The proposed project includes a three-story addition connected to the east end of NASM, built over and integrated with the existing basement level loading dock. The program includes two levels of learning center program space above a ground floor restaurant, a permanent replacement of the Phoebe Waterman Haas Public Observatory, an associated outdoor Phoebe Waterman Haas Astronomy Park at the southeast side of the site, and a Learning Courtyard on the north side of the site fronting the National Mall.

Key					
NASM Site	Project Area	5	Terminal Refrigerating & Warehousing Co.	14	US Dept of Agriculture
Area of Potential Effects		6	US Botanic Gardens	15	Freer Gallery
National Mall Historic District		7	Ulysses S Grant Memorial	16	Smithsonian Castle
Pennsylvania Avenue NHS		8	US Capitol and Grounds	17	Arts & Industries Building
1	National Air & Space Museum (NR Eligible)	9	National Gallery of Art East Wing (NR Eligible)	18	Hirshhorn Museum (NR Eligible)
2	Lyndon B Johnson Dept of Education	10	National Gallery of Art West Wing	19	Orville & Wilbur Wright Federal Buildings (NR Eligible)
3	Social Security Administration	11	Bulfinch Gatehouses and Gateposts		
4	Mary E Switzer Federal Building	12	Natural History Museum	*	Plan of the City of Washington (Not Shown)
		13	National Museum of American History		

FIGURE 1: NASM, PROJECT AREA AND SURROUNDING NATIONAL MALL HISTORIC RESOURCES

1.2 Purpose of the Action

The purpose of this project is to advance NASM's mission through construction and operation of a new world class center for education connected to the NASM National Mall facility; facilitate teacher and student engagement in STEAM learning, particularly in under-resourced communities; provide a positive visitor experience; permanently locate the Phoebe Waterman Haas Public Observatory; achieve site compliance with the Americans with Disabilities Act of 1990 (ADA); and respect the historic context and use of open space.

1.3 Need for the Action

The project is needed to house a new pan-Institutional resource overseen by NASM; improve site accessibility; provide visitor access to a ground floor restaurant space; and locate facility-related program in on-site outdoor public amenity spaces.

1.4 Scoping

Public involvement and participation is an essential element of the National Environmental Policy Act (NEPA) of 1969, as amended, and the National Historic Preservation Act (NHPA) of 1966, as amended, processes, engaging citizens in the decision-making process through planning and development. NEPA regulations require an "early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action." To determine the scope of issues to be analyzed in depth in the Environmental Assessment (EA) for the project, the National Capital Planning Commission (NCPC) initiated a scoping period on September 29, 2023, that extended through November 16, 2023. NCPC and SI announced the public scoping period via an electronic announcement on September 29, 2023, to federal and District agencies, community groups, and individuals. SI issued the announcement on their public website, and information was also placed on NCPC's website.[1] An announcement was placed in the Washington Post Classified section and media advisories, Daybook calendars and bloggers. The announcement provided a project overview and invited the public to attend a virtual joint NEPA Public Scoping/Section 106 Consulting Parties Meeting #2 on November 1, 2023, from 3:00 p.m. to 5:00 p.m. The public was also invited to attend a site tour on November 6 from 9:30 a.m. to 10:30 a.m.

Approximately 40 people attended the virtual meeting, including NCPC and SI staff, and members of the public. Attendees were invited to submit comments on the project at the scoping meeting, electronically through email to Preservation@SI.edu, and by mailing written comments to SI. Four written comments were received at the scoping meeting.

During the site tour held on November 6, 2023, a total of seven verbal comments were received. During the public comment period, a total of two written comments were received, including letters from NCPC, and Docomomo US. All comments received during

[1] https://airandspace.si.edu/sites/default/files/documents/2023-09-25%20Air_and_Space%20BLC_NEPA_Scoping_Letter_NCPC.pdf

the scoping period were summarized in a Public Scoping Comment Summary matrix, which is included as Appendix A and incorporated herein by reference.

In addition to holding a scoping period for the public, SI and NCPC consulted with federal and local agencies throughout the preparation of this EA. In particular, SI and NCPC have coordinated with the following agencies on the conceptual design and historic preservation aspects of the project:

- District of Columbia State Historic Preservation Office
- District Department of Transportation
- United States Commission of Fine Arts

1.5 Basis for Review

The NEPA process is intended to help public officials make decisions based on an understanding of environmental consequences, and to take actions that protect, restore, and enhance the environment. Decisions should be made based on accurate scientific analysis, expert agency comments, and public scrutiny of readily available environmental information. Federal agencies are obligated to follow the provisions of NEPA to identify and assess reasonable alternatives to the proposed action that would avoid or minimize any adverse effects upon the quality of the human environment before proceeding with the proposed action.

The proposed project is subject to the review and approval of NCPC under the National Capital Planning Act. NCPC is the lead and responsible federal agency and works with SI as the project owner to comply with NEPA. NCPC and SI prepared this EA to analyze the environmental and cumulative impacts for this project, in accordance with the Memorandum of Agreement between NCPC and SI Regarding Implementation of the Requirements of NEPA. The National Park Service (NPS) serves as a cooperating agency in the preparation of the EA due to the project's location along the National Mall. NPS has no decision-making requirements associated with this action. SI would continue to apply for permits for construction-related use of NPS streets, as needed.

NCPC prepared this EA in accordance with NEPA, the Council on Environmental Quality's Regulations for Implementing NEPA (40 Code of Federal Regulations [CFR] 1500-1508); NCPC's Environmental and Historic Preservation Policies and Procedures (NCPC 2004); and the National Capital Planning Act. Based on comparable projects and scoping comments, NCPC determined that an EA is the appropriate NEPA document to evaluate and document potential impacts, and identify any mitigation, if appropriate. NCPC prepared this EA to ensure all environmental issues are identified and potential impacts are assessed before NCPC reviews and takes an action on an alternative for the BLC. Concurrently, NCPC is participating in SI's consultation in accordance with Section 106 of the NHPA to fulfill their Section 106 obligation.

2. Description of Alternatives

The EA evaluates an Action Alternative (the Proposed Action Alternative) and a No Action Alternative. The existing environment and potential impacts associated with the project are described in Chapter 3, Affected Environment and Impacts to the Human Environment.

2.1 No Action Alternative

The No Action Alternative describes the action of continuing present management operations, conditions, and use. It does not imply the restriction of regular use and maintenance of NASM. The No Action Alternative does not meet the Purpose and Need, but rather it is used as a basis from which to measure and compare environmental consequences of the Action Alternative.

Under the No Action Alternative, SI would continue its current management and maintenance of NASM. This alternative proposes no addition to the building or reconfiguration of exterior features (see Figure 2).

2.2 Proposed Action Alternative (Preferred Alternative)

The Proposed Action Alternative includes the construction of the BLC, which would be an approximately 58,000 sf above-grade addition to the NASM, and the renovation of an existing 38,064 sf basement level. The addition would be connected to the east elevation of the NASM. The project includes a permanent location for the integration of the Phoebe Waterman Haas Public Observatory and proposed Phoebe Waterman Haas Astronomy Park within the East Terrace (see Figure 3). Accessibility improvements into the site from Jefferson Drive and Independence Avenue are proposed to meet the ADA.

The Proposed Action Alternative would include: a three-story addition with a restaurant on its ground floor, BLC educational programming and building support spaces on the upper floors; a new vestibule directly connected to NASM on the ground floor; an upper terrace for BLC-related programming at the addition's northeast corner; the new permanent location for the Phoebe Waterman Haas Public Observatory and Astronomy Park at the East Terrace; a Learning Courtyard on the north side of the BLC, new accessible walkways to the north and south sides of the addition; and new landscape design at the east end of the site. The restaurant and outdoor spaces would be open to the public while the building support spaces on levels 2 and 3 would be for BLC employee and program participant access only. The Proposed Action Alternative is the preferred alternative as it meets the project purpose and need.

FIGURE 2: NASM AND EAST TERRACE, DURING CONSTRUCTION (1974)

Design Inspiration – Spiral Organization

Under the Proposed Action Alternative, the inspiration for the proposed design of the BLC is a spiral galaxy, a form that reflects two-thirds of the known galaxies, including the Milky Way (Figure 3). The building's architecture is intended to metaphorically place the individual student, educator, and visitor at the core of the galaxy, surrounded by educational experiences and paths of discovery that lead to infinite possibilities for their future in science, innovation, and leadership. The existing central circulation spine of NASM, which takes visitors through the legacy of aviation and spaceflight, would evolve into an energizing, spiral geometry within the BLC, and create a symbolic destination for the study of the universe. The spiral trajectory would extend out into the landscape to create the Learning Courtyard and Astronomy Park (Figure 3). From the National Mall, visitors would see the Learning Courtyard framed by the addition rising skyward, recalling the form of the galaxy. The design of the exterior enclosure would incorporate horizontal fins to create shadow patterns by day that reinforce the energy and movement within the BLC. At night, these fins would be illuminated with subtle light, recalling shooting stars in the night sky.

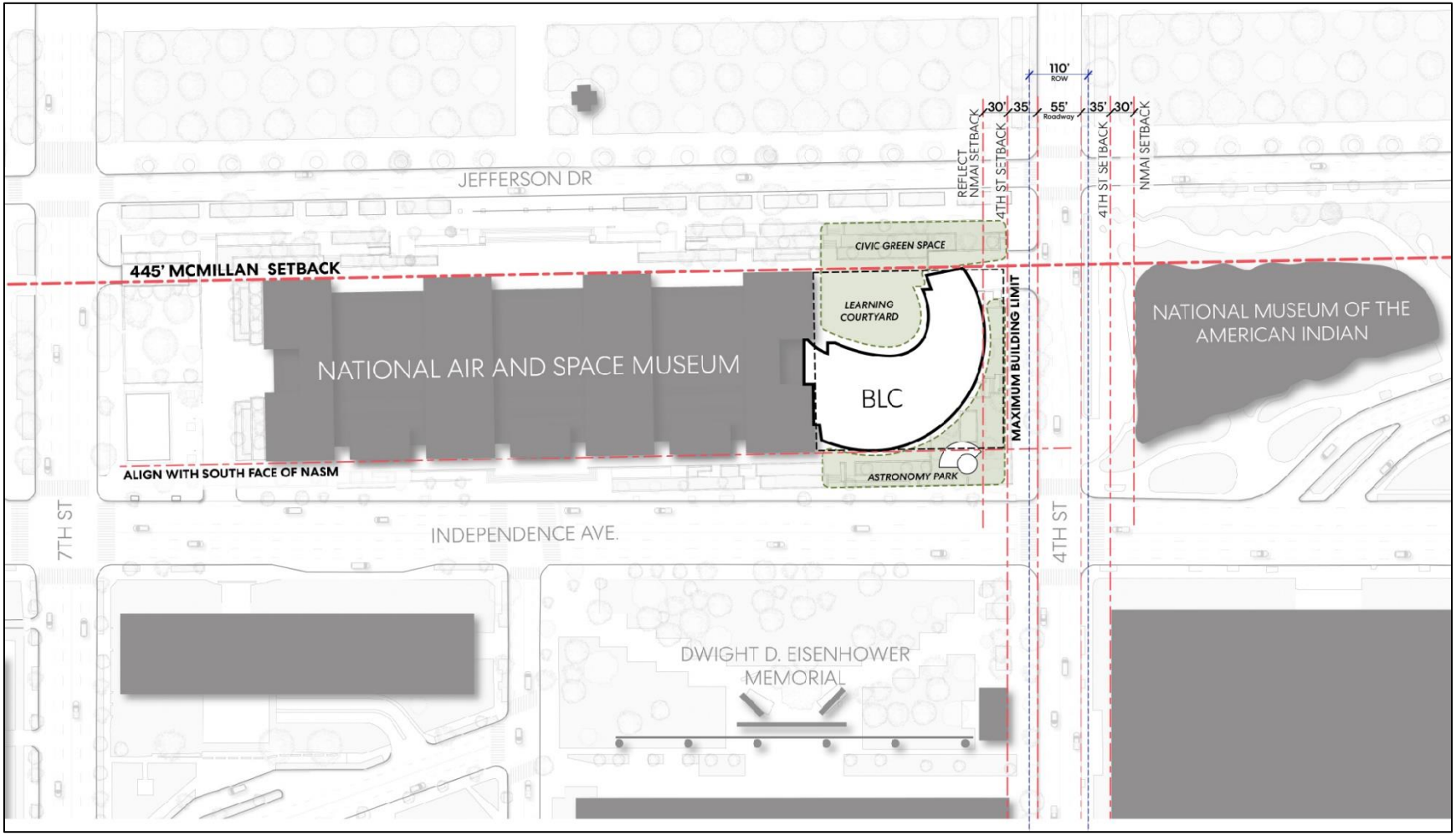
Source: Perkins&Will

FIGURE 3: BLC PREFERRED ALTERNATIVE – SPIRAL ORGANIZATION

Proposed Addition

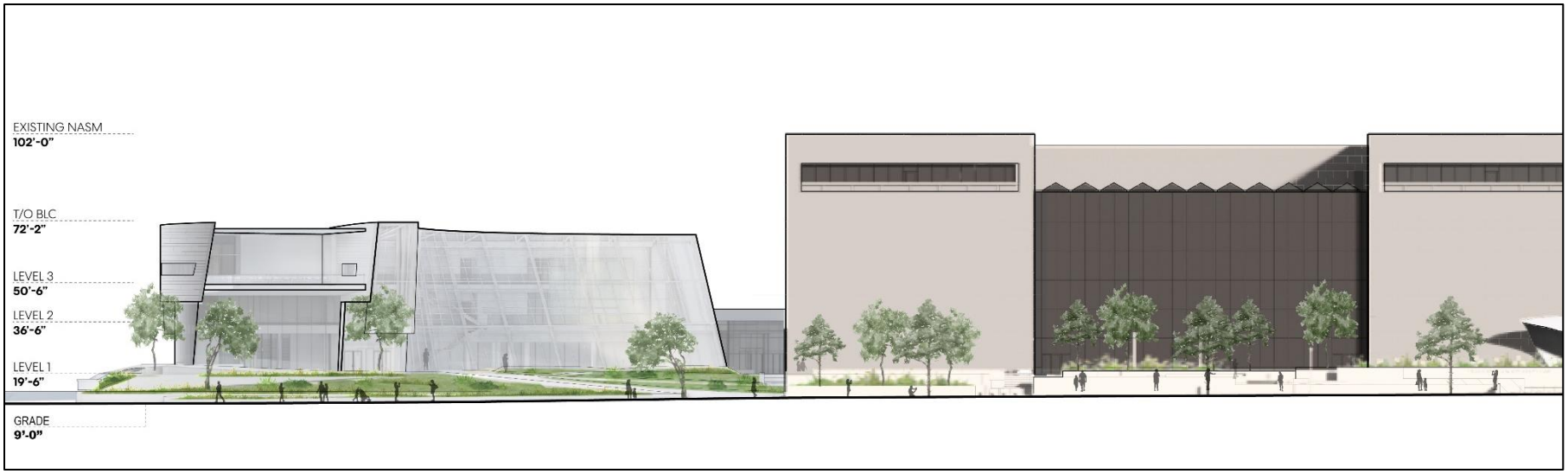
The three-story addition would connect to the east elevation of NASM with a one-story glass connection to allow maximum views of the east elevation of NASM from inside the new addition. The proposed addition would be set back 445 feet from centerline of the National Mall, following the McMillan Plan and aligning with the northern elevation of NASM, and 30 feet from Fourth Street SW, to mirror the adjacent National Museum of the American Indian's setback. The addition would align with the southern elevation of NASM on Independence Avenue SW (Figure 4), with the setbacks designed to protect significant viewsheds. The main mass of the addition would be located away from NASM, sloping to the east, spiraling up to the north, exercising motion and allowing further separation from NASM (Figures 5 and 6). The addition would range in height from 67 feet tall on the west end to 72 feet above sea level at its highest point on the northeast corner.

The main mass of the addition would be concentrated at the southeast end of the site, opening the northwest landscape to the National Mall. The interior curve of the spiral would be a two-story glazed curtain wall to maximize views to and from the National Mall, and in keeping with the NASM's rhythm of solid to void facade composition. At the east and south elevations, the addition would be clad with aluminum panels with tapered 8-inch deep, aluminum fins. The fins would have continuous 1-inch-tall reveals which incorporate lighting to accentuate the spiral motion of the addition. Figures 7 and 8 provide renderings of what the addition would look like at night.



Source: Perkins&Will

FIGURE 4: BLC SETBACKS FROM L'ENFANT PLAN STREETS, PROTECTING VIEWSHEDS



Source: Perkins&Will

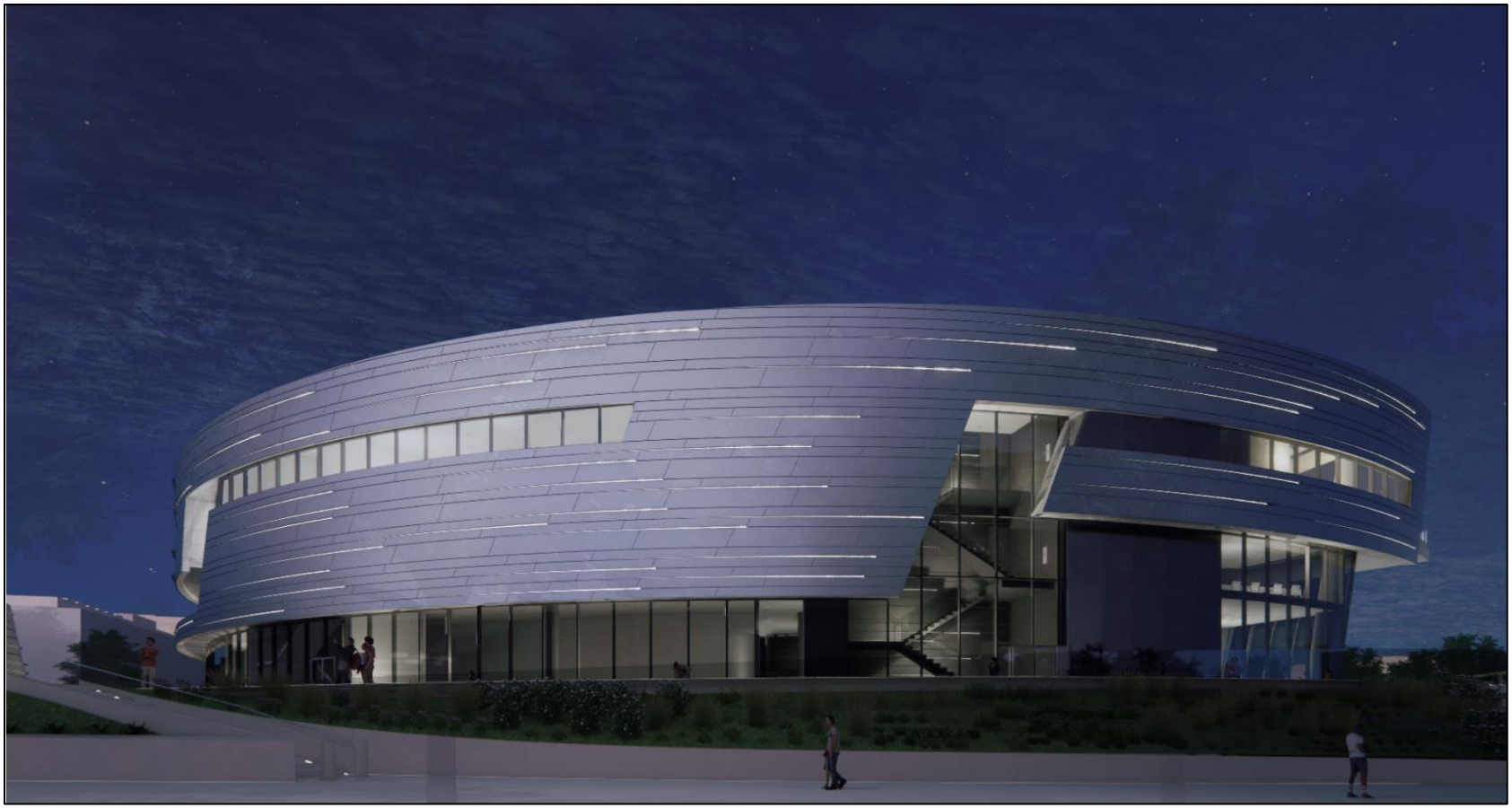
FIGURE 5: PROPOSED ADDITION - NORTH SECTION OF THE BUILDING

Source: Perkins&Will

FIGURE 6: PROPOSED ADDITION – SOUTH SECTION OF THE BUILDING.

Source: Perkins&Will

FIGURE 7: NIGHTTIME RENDERING OF THE PROPOSED ADDITION, FACING SOUTH



Source: Perkins&Will

FIGURE 8: NIGHTTIME RENDERING OF THE PROPOSED ADDITION, FACING NORTH

Phoebe Waterman Haas Observatory

The Phoebe Waterman Haas Public Observatory would be permanently located at the southeast corner of the site (see red arrow in Figure 9), the best location on the site for astronomical events and viewing. The proposed building to house the observatory would be a 27-foot diameter dome containing the telescope, with a curved mass that slopes from 14 feet tall to 10 feet tall with an entrance, office, and storage space wrapping around the northwest end of the observatory. The exterior of the observatory would be clad with the same metal panels and tapered fins as the new addition, as described above. Figure 10 provides a rendering of what the observatory would look like in the context of the proposed addition.

Source: Perkins&Will

FIGURE 9: PHOEBE WATERMAN HAAS PUBLIC OBSERVATORY AND ASTRONOMY PARK.

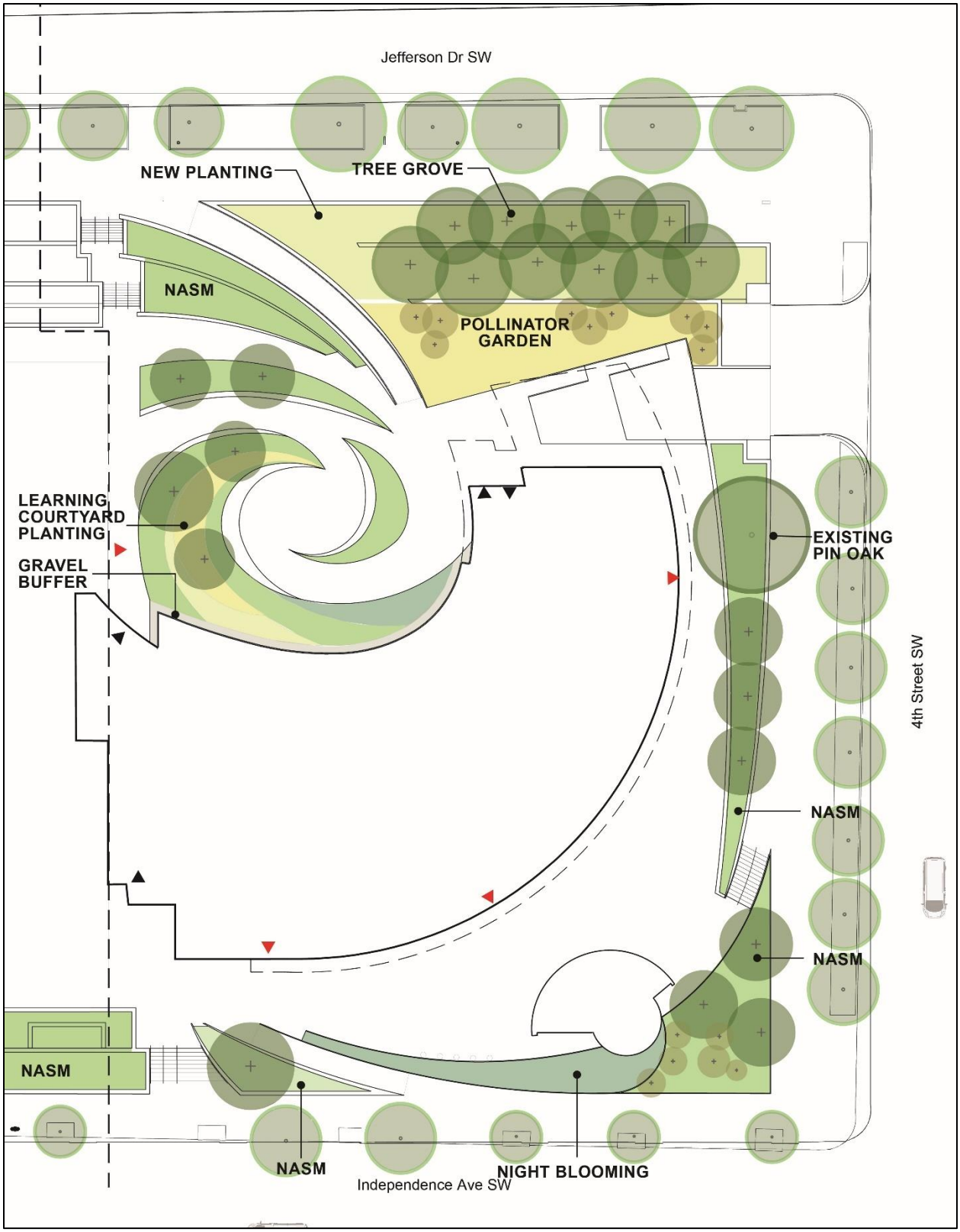
Source: Perkins&Will

FIGURE 10: VISUALIZATION OF THE BLC, HAAS OBSERVATORY AND ASTRONOMY PARK, FACING EAST.

Landscape Design and Astronomy Park

The spiral design that informs the BLC architectural form introduces an organic, outwardly expanding landscape scheme with two program areas: the north-facing Learning Courtyard located along Jefferson Drive SW, and the south and east-facing Astronomy Park, which provides opportunities to connect with visitors. The BLC design promotes visual and spatial continuity between the addition's interior and exterior spaces on the main floor and at Level Two to planted roofs and canopy vegetation, including canopies of trees on the National Mall.

The new landscape would be a spiral form at the Learning Courtyard with low canopy trees at the center to allow for temporary projections on the east elevation of NASM (Figure 11). The landscape would spiral out towards the National Mall with a new accessible ramp connecting to Jefferson Drive SW. The existing terraced stair to Jefferson Drive SW would be reconfigured to better align with the new curved ramp and landscape. A new pollinator garden would be inserted in the top tier of the NASM terraced walls, with a grove of trees on the middle and bottom tiers, increasing the tree canopy around the National Mall and NASM site. The east end of the landscape would be altered with a new curved stair extending from the observatory to Fourth Street SW. The south and east end would contain the Astronomy Park, with the extant stairs to remain and a new curved accessible ramp to Independence Avenue SW.



Source: Elizabeth Kennedy Landscape Architects

FIGURE 11: PROPOSED LANDSCAPE PLAN

2.3 Alternatives Considered but Dismissed

Additional options were considered during the public and agency scoping period. All alternatives considered included a similar building addition but varied in the design approach. An orthogonal, or right angle, landscape scheme was intended to mirror the existing angles of the building and its site walls. The orthogonal courtyard layout was dismissed from EA analysis due to the consulting parties' preference for incorporation of the landscape with the spiral concept.

Additional alternatives were also considered for how to connect the BLC to the existing NASM east façade. A two-story connection was considered but dismissed from consideration to reduce the visibility and amount of physical change to the existing east façade while also limiting the programmatic connection between the BLC and NASM to a single floor. A gap between the BLC and NASM was also considered to limit the physical connection to the NASM façade stone. However, this option was dismissed because it limited the functional interior space. Similarly, one additional alternative for the geometry of the glazed façade of the Spiral Concourse was considered, which proposed a Spiral Concourse that sweeps up towards the existing NASM building. Ultimately, this design consideration was dismissed and a sweep up and away from NASM was preferred for the Spiral Concourse as it reinforced the Spiral Galaxy's conceptual sweep northward toward the National Mall.

In addition to the design alternatives, additional materials were considered, including perforated metal and glass fiber reinforced concrete. These material options were dismissed because perforated metal would have compromised interior views and glass fiber reinforced concrete would not achieve the desired design aesthetic. In order for the façade design to emulate the linear movement and energy of stars streaking across the night sky, two additional metal fin options were considered, including densely-spaced horizontal fins and tubular-profile fins. Both options were dismissed because they appeared static and did not achieve the intended visual effect of creating movement and dynamism through shadow and contrast on the façade. While these design variations were considered, they do not differ substantially from the Proposed Action Alternative and are not considered separate alternatives under NEPA.

3. Affected Environment and Impacts to the Human Environment

Specific impact topics are identified in this chapter for analysis and to allow comparison of the environmental consequences of both alternatives. The assessment of impacts addresses potential changes that can be attributed to the proposed construction of the BLC. The duration of impacts is also addressed in the evaluation. Short-term impacts are those that would occur during construction and establishment of the proposed action. Long-term impacts are those that would occur after the establishment of the proposed action and continue into the foreseeable future. Impacts may be negative or beneficial. Cumulative impacts that consider the impacts of this project along with past, present, and reasonably foreseeable future projects in the vicinity of NASM are also analyzed. These projects are identified in Section 3.1.

Impact topics analyzed for this project are: Cultural Resources – Historic Districts, Aesthetics and Visual Resources, Visitor Use and Experience, and Climate Change. Impact topics that are dismissed from further analysis in this document are: Geology, Topography, and Soils; Vegetation and Wildlife, including Special Status Species; Noise; Air Quality; Traffic and Transportation; Environmental Justice; Floodplains; Water Resources; and Cultural Resources - Archaeological Resources. A brief rationale for dismissing specific topics from further consideration is provided in Section 3.2.

3.1 Cumulative Projects

Projects that have the potential to contribute cumulative effects include:

Fallen Journalists Memorial. In December 2020, Public Law 116-253 authorized the Fallen Journalists Memorial Foundation to establish a commemorative work on federal land in the District of Columbia to commemorate America's commitment to a free press by honoring journalists who sacrificed their lives in service to that cause. The memorial must be consistent with the Commemorative Works Act, which ensures that commemorative works in areas administered by NPS in Washington, D.C., are appropriately designed, constructed, and located. After soliciting public comments for a proposed site in 2023, the identified site for the memorial is on the north side of Independence Avenue SW at Third Street SW, adjacent to the National Museum of the American Indian.

Eisenhower Memorial. Located across Independence Ave SW from the NASM, the Dwight D. Eisenhower Memorial was completed in 2020 and is surrounded by the U.S. Department of Education, the Federal Aviation Administration, Voice of America, and the U.S. Department of Health and Human Services — all institutions to which Eisenhower was closely connected. At the center of the site is the contemplative memorial space where Eisenhower's legacy symbolically unfolds. Heroic-sized bronze sculptures, stone bas reliefs, and quotations from his most famous speeches and addresses celebrate Eisenhower's contributions to our nation as Supreme Commander of the Allied Expeditionary Force in World War II and as the nation's 34th President.

Hirshhorn Museum Revitalize Building and Plaza. The project proposes to renovate the existing building, plaza, and streetscape, and expand the existing building from 167,000 sf to approximately 234,000 sf to provide new types of exhibition space and visitor amenities and to accommodate increased visitorship. Also critical to the revitalization is a comprehensive upgrade of the museum's aging infrastructure and building systems. Through the museum revitalization, the SI aims to provide visitors with transformative art experiences; improve accessibility and circulation for all users; expand and improve amenities, and operational and programming space; ensure code compliance and significantly improve energy efficiency, sustainability, and resiliency; unify the building, plaza, and sculpture garden as a campus; strengthen the physical security of the site perimeter and entrances; and respect the integral relationship between the Hirshhorn building and outdoor gallery spaces as an evolving platform for the presentation of modern and contemporary art. This project is the third, and final, phase of a series of improvements to the Hirshhorn campus, including the building envelope repair project, completed in 2023, and Sculpture Garden revitalization project, under construction. The Hirshhorn was designed by architect Gordon Bunshaft, FAIA, of Skidmore, Owings and Merrill, and opened to the public in 1974. The Hirshhorn Museum and Sculpture Garden is considered a contributing resource of the National Mall Historic District, which is listed in the National Register of Historic Places (NRHP) and has been determined to be individually eligible for listing.

Independence Avenue SW Urban Design Study. The Independence Avenue SW Corridor Study completed in 2023 focused on improving multimodal mobility, streetscape quality, and the pedestrian experience along Independence Avenue from 15th Street SW to Third Street SW. The NCPC, the SI, and the District Department of Transportation initiated the study through the Metropolitan Washington Council of Government's Transportation-Land Use Connections Program to address multimodal challenges and develop a comprehensive vision for the Independence Avenue corridor. The study analyzed current and anticipated future traffic operations and identified the potential to reduce the existing eight-lane configuration on Independence Avenue, which prioritizes vehicle operations, and give more priority to people biking and walking. The study explored three concepts for reallocating travel lanes to prioritize other modes and create a safer, more comfortable, and welcoming environment for all users. Building on these findings, the NCPC and the SI are currently conducting an urban design study that further refines the analysis and concepts developed through the previous study with input from key stakeholders.

NASM Revitalization. NCPC previously approved a revitalization project for NASM's building exterior envelope (including the stone cladding, curtain walls, skylights and roof systems), heating, ventilation, and air conditioning, plumbing, and fire protection systems. The project also addressed related work including revitalization of the landscape, portions of perimeter security, addition of vestibules at the north and south entrances (for security screening and improvement of visitor experience; only the north vestibule was constructed), flood protection, and reductions to carbon emissions and energy consumption.

National Mall Plan. NPS is implementing the National Mall Plan/Environmental Impact Statement, which was approved by NCPC in December 2010 and was re-enforced by Secretarial Order 3326 (January 2013). The plan defines a 50-year future vision to respectfully rehabilitate the historic and symbolic National Mall so that very high levels of use can be perpetuated, and the needs of visitors and users will be met in an attractive, universally accessible, convenient, high-quality, energy-efficient and sustainable manner. The plan protects and preserves memorials, improves resource conditions, and improves circulation, amenities and opportunities for pedestrians, bicyclists, tourists and other users. Projects such as Constitution Gardens, the Mall Turf, Circulator, and Capital BikeShare are examples of plan implementation. The plan also contemplates new comfort stations, several of which will be located in the eastern portion of the National Mall, replacing existing kiosks.

Pennsylvania Avenue Initiative. The 1.2-mile segment of Pennsylvania Avenue between the White House and U.S. Capitol plays a significant role locally and nationally. A 1974 Plan has guided development and use of the street for five decades. While transformative at the time, the 1974 Plan no longer addresses current needs and best practices in city planning, urban design, and economic development, particularly in response to the changing market dynamics post-Covid. In March 2022, the NCPC released a new vision — the Avenue as a Venue — and three early concepts for public comment. The vision looks to the future and sees the Avenue elevated as America's stage for nationally and internationally significant events with modern infrastructure and flexible public spaces supporting both daily activities and special programming. In 2023, the General Services Administration and NCPC secured the funding and federal and District agencies formalized a partnership to prepare a New Pennsylvania Avenue Plan. Procurement for consultant services to prepare the New Pennsylvania Avenue Plan are in the final stages and preliminary planning and designs are anticipated to begin development in 2025.

South Mall Master Plan. SI developed a Master Plan for the South Mall Campus located on the National Mall, approved by the NCPC in 2018. The Smithsonian South Mall Campus encompasses from the Freer Gallery of Art on the west to the Hirshhorn Museum and Sculpture Garden on the east, between Independence Avenue and Jefferson Drive. The purpose of the Master Plan is to improve the alignment between Smithsonian facilities and their strategic plan, increase public access, rehabilitate facilities, and realize benefits from the efficiencies of an integrated plan. A primary goal of the Master Plan is to improve and expand visitor services and education by providing spaces for public gatherings and programming as well as retail and food service. Projects such as the Hirshhorn Museum Revitalization, Hirshhorn Sculpture Garden Revitalization, and Revitalize Castle are examples of plan implementation.

Southwest Ecodistrict Plan. In 2013, NCPC completed the SW Ecodistrict Plan, which provides a comprehensive forward-looking approach to transform the disconnected and aging federal precinct located in the District's SW quadrant, south of Independence Avenue, into a mixed-use, livable neighborhood, with opportunities for cultural uses reliant on cutting-edge strategies for environmental sustainability.

3.2 Impact Topics Dismissed from Further Analysis

As with any environmental analysis, there are resource issues that are dismissed from further analysis because the proposed action would cause limited or no impact. This section provides descriptions of these topics, with a brief justification for their dismissal.

Topics dismissed from further analysis include:

Environmental Justice - Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, directs federal agencies to identify and address disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority or low-income populations. More recently, EO 14096, Revitalizing Our Nation's Commitment to Environmental Justice for All, builds upon EO 12898 to complement and deepen ongoing environmental justice work within the federal government.

Environmental justice is a term used to describe the fair and equitable treatment of all people, regardless of income, race, color, national origin, Tribal affiliation, or disability, in agency decision-making and other federal activities that affect human health and the environment—collectively referred to as communities with environmental justice concerns. Communities with environmental justice concerns experience disproportionate and adverse human health or environmental burdens, which can arise from a number of causes, particularly as a result of federal activities.

For the purposes of analyzing demographic data, potential communities with environmental justice concerns were identified through the review of US Census Data, including the census tracts (CT) within and adjacent to the proposed project area. Data was obtained from the 2018-2022 American Community Survey (ACS) 5-year estimates at the CT level, and Block Group (BG) level. As shown in Figure 12, the project area is located within and/or adjacent to the following: CT 006202, BG 1; CT 010200, BG 1, BG 2; CT 010500, BG 1, BG 2; CT 005900, BG 1; and CT 005800, BG 1, BG 2.

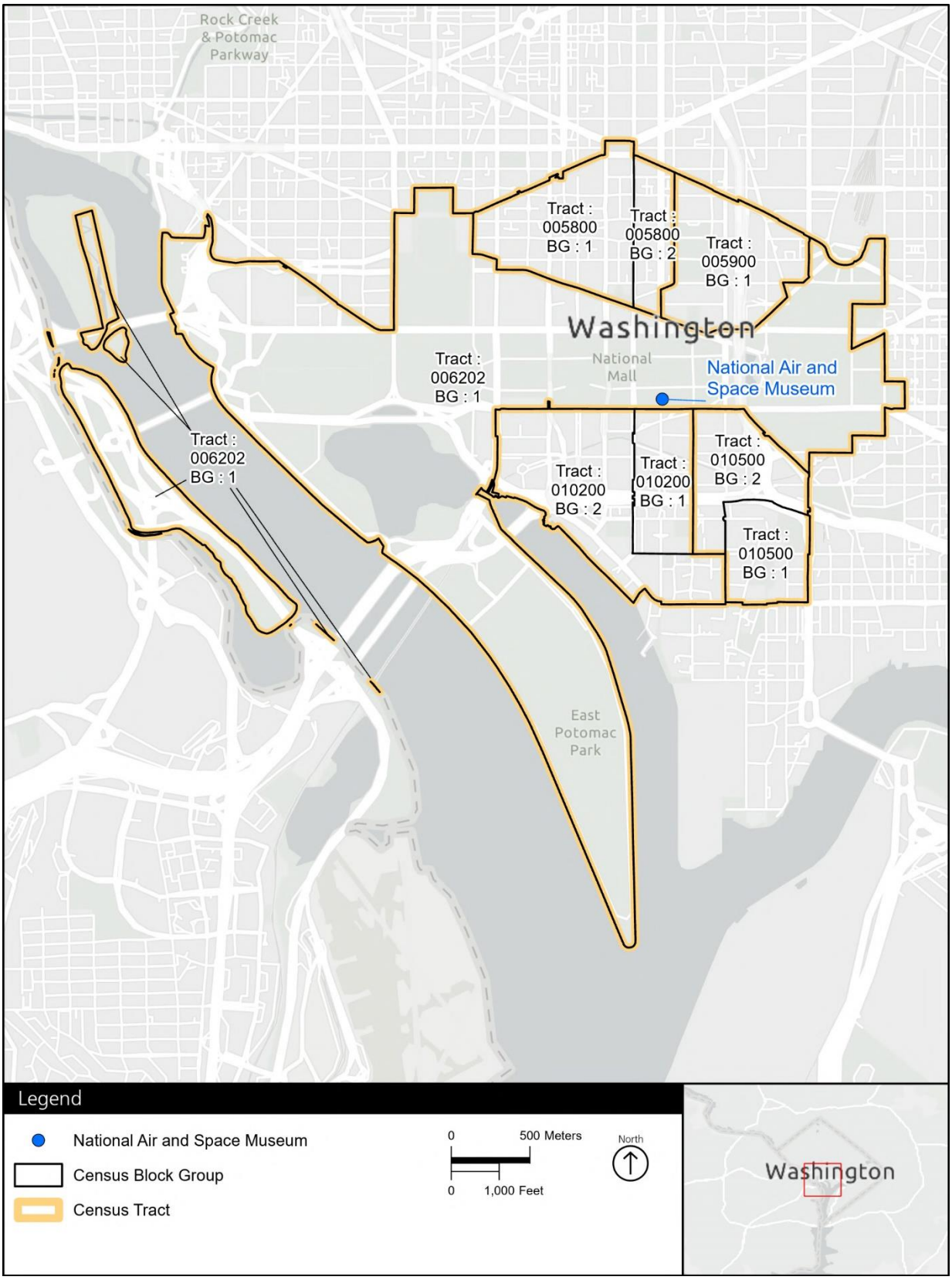


FIGURE 12. CENSUS TRACTS NEAR THE PROJECT AREA

The most recent data available from the US Census Bureau for ethnicity and race is from the 2018-2022 ACS 5-year estimates at the CT level. A minority population is considered a community with environmental justice concerns if the population of any CT is 50 percent or more minority, or if any CT has a minority population that is at least 10 percent higher than the county average (the District of Columbia is considered a county subdivision equivalent for the purposes of data presentation with the US Census Bureau). As shown in Table 1, census data indicates that none of the CTs identified near the project area meet the threshold for minority populations, since 50 percent or more of the population is not considered minority, and the populations do not exceed the District of Columbia average by more than 10 percent.

TABLE 1: MINORITY POPULATIONS NEAR THE PROJECT AREA

Location	Total Population	White (%)	African American (%)	American Indian and Alaska Native (%)	Asian (%)	Native Hawaiian or Pacific Islander (%)	Hispanic or Latino (%)
Census Tract 005800, BG 1, BG 2*	—	—	—	—	—	—	—
Census Tract 005900, BG 1	2,296	69.5%	14.9%	0%	8.4%	0%	8.8%
Census Tract 006202, BG 1*	—	—	—	—	—	—	—
Census Tract 010200, BG 1, BG 2	3,953	49.3%	38.3%	0%	3.8%	0%	8.8%
Census Tract 010500, BG 1, BG 2*	—	—	—	—	—	—	—

District of Columbia	670,587	39.6%	44.4%	0.3%	4%	0.1%	11.5%

*No data available in the 2018 – 2022 ACS 5-Year Estimate
Source: 2018-2022 ACS 5-Year Estimate, Table S0601

The most recent data available from the US Census Bureau for income and poverty status is from the 2018-2022 ACS 5-year estimates at the CT level. The poverty threshold is determined by the US Census Bureau and is updated annually. A low-income population is considered a community with environmental justice concerns if any CT exceeds the county average (i.e., District of Columbia). As shown in Table 2, census data indicates that none of the CTs identified near the project area meet the threshold for low-income populations since they do not exceed the District of Columbia average by more than 10 percent.

TABLE 2: LOW-INCOME POPULATIONS NEAR THE PROJECT AREA

Location	Total Population	Low-Income Population	Low-Income Population (%)	Exceeds County Average by 10%?
Census Tract 005800, BG 1, BG 2*	—	—	—	
Census Tract 59, BG 1	2,296	360	16.6%	No
Census Tract 62, BG 1*	—	—	—	
Census Tract 102, BG 1, BG 2	3,953	880	22.3%	No
Census Tract 105, BG 1, BG 2*	—	—	—	
District of Columbia	649,184	98,039	15.1%	---

*No data available in the 2018 – 2022 ACS 5-Year Estimate
Source: 2018 – 2022 ACS 5-Year Estimate, Tables B17001 and S1701

The project would not require the relocation of any District residents or employees into or outside of the project area. No housing immediately adjacent to the site would be adversely affected. The project is not anticipated to bisect any neighborhoods, which could result in social isolation or separation of residents from community or public facilities, decrease the size of any neighborhood, or impact community cohesion. All construction staging areas would occur within the existing right-of-way or in previously disturbed areas. Construction-related impacts would include noise, lighting, and dust. Construction activities are anticipated to result in short-term, adverse impacts, but would equally impact the general population. The NASM is a community facility that provides educational opportunities, programs, events, exhibit galleries and other additional learning resources.

Access to these services and resources is available to all District residents and visitors, and would not only continue, but would be improved upon following the addition of BLC.

While there are minority and low-income populations in the vicinity of NASM, none of the CTs or BGs identified above meet the burden thresholds for disproportionality high and adverse human health or environmental effects for communities with environmental justice concerns. Any short-term, adverse impacts experienced by communities with environmental justice concerns would be similar to those experienced by the overall population. Benefits of this project would include long-term, beneficial improvements and access to educational opportunities for all, especially communities with environmental justice concerns. These improvements would particularly benefit under-resourced school-aged children, which benefits the larger District community, and is discussed further under the Visitor Use and Experience analysis. Therefore, this impact topic was dismissed from further consideration.

Socioeconomics - Washington, D.C., is among the top visitation locations within the nation. The 2022 NPS visitor spending effects report estimated that approximately 921,000 visitors generated approximately 88.6 million in local spending (NPS 2022). Travel and tourism in Washington, D.C., is notable and a popular activity for visitors to D.C. is touring museums and historical sites. Of the nine Smithsonian museums and one visitor center on the Mall, NASM is generally in the top three SI museums in terms of annual visitation, generating 1.9 million visits in 2023 with part of the museum closed to the public due to construction (SI 2024). While the BLC annex would potentially increase visitation, especially for under-resourced communities, the increase would not measurably change visitation at the museum. The project implementation would also ensure that the NASM and majority of its site would be open to visitors throughout construction. Therefore, this impact topic was dismissed from further consideration.

Geology, Topography, and Soils - The soils of the project area are classified as Urban Land Association, which are soils that have been previously disturbed, cut, or filled, and may be covered by impervious surfaces. Existing fill material may be present on the project site at varying depths. The current project would include some disturbance of previously disturbed soils, which have been located under impervious surface since NASM was constructed. Similarly, the project area is located on fill placed upon a geologic terrace above the Potomac River floodplain. The study area is located within the geological province of the Atlantic Coastal Plain Region, where natural sedimentary materials of sand, clay, and silt overlie crystalline bedrock. The terrace deposits have been encountered at depths of 32 to 44 feet below the ground surface (NCPC 2017). Groundwater in the vicinity has previously been identified at a depth of 22 to 28 feet below the ground surface during a recent subsurface project on the Mall (SI 2022). The construction of the BLC would not require excavation at these depths and would not affect geology in the project area. The construction of the BLC would be located on an existing disturbed area, where the restaurant had previously been located, and would not alter the overall topography of the project area, with the exception of minor site grading for pedestrian access and stormwater management. Therefore, this impact topic was dismissed from further consideration.

Vegetation and Wildlife, including Special Status Species - The project area is located in an urban environment, in which the natural environment has been previously disturbed and developed. Therefore, the area does not provide natural habitat for plant and animal species. Existing landscaping is limited and is being replaced as part of the ongoing NASM revitalization project. The existing canopy is composed of ornamental and shade tree species, but several are showing signs of canopy or bark damage, stress, or deterioration due to ongoing construction access and staging. There is one specimen-quality oak situated at the NE corner of the property, along with exceptional quality understory flowering trees in the associated planters. The existing wildlife community likely includes common transient urban species of small mammals and birds, such as gray squirrels (*Sciurus carolinensus*), house sparrows (*Passer domesticus*), and pigeons (*Columba livia*) (NCPC 2017). Migratory birds also may also pass through the site seasonally. These species are generally already adjusted to urban environments, including the presence of pedestrians and loud vehicles. Species may avoid the site during the construction period, but the vegetation plan for the exterior plaza may improve potential habitat once construction is complete. Two types of bird-safe glass would be used in the exterior construction, and both are designed with low reflectivity to achieve bird collision deterrence requirements as part of the LEED Building Design and Construction rating system. Additionally, while there would be new lighting on site, lighting would either be downlighting or at low lumens to reduce the potential for wildlife impacts. The current project would not adversely affect vegetation or wildlife in the project area.

The U.S. Fish and Wildlife Service's Information for Planning and Consultation database was utilized to determine the potential for critical habitats or listed rare, threatened, or endangered species in the project area. The project area includes the potential for one federally listed endangered species, the Northern long-eared bat (*Mytosis septentrionalis*), one species proposed as endangered, the tricolored bat (*Perimyotis subflavus*), and one candidate species, the Monarch butterfly (*Danaus Plexippus*). With the exception of occasional transient individuals, these species are highly unlikely to occur within the urban setting of the National Mall. Because the Northern long-eared bat and tricolored bat generally avoid high-traffic areas, no impacts on either bat species are anticipated. Any tree removal would be completed between November 1 and March 31 to avoid any potential impacts on transient bats that may occur in the project vicinity during the active season. Additionally, the vegetation plans include development of pollinator gardens, including milkweed (*Asclepias* spp.), which provides habitat for Monarch butterflies. Because of the highly urbanized environment in downtown Washington, D.C., and the relatively small size and scope of the project, it is highly unlikely that the proposed work would affect the migratory birds of concern. Because the project would have "no effect" on federally listed species or critical habitats, there is no requirement to consult with the U.S. Fish and Wildlife Service, and compliance with the Endangered Species Act will be documented in the decision document for this project. Therefore, this impact topic was dismissed from further consideration.

Water Resources - There are no natural surface waters or wetlands in the direct vicinity of the project area, therefore there would be no direct impacts on surface waters. The

majority of the site is already paved, however stormwater management would be integrated into the design to ensure no increase in stormwater runoff from the site. Therefore, this impact topic was dismissed from further consideration.

Cultural Resources - Archaeological Resources. The entire project area has been extensively disturbed previously. The museum includes below-grade parking and service areas that required excavation and disturbance of the project area during the original construction of NASM in 1974 and the 1988 construction. The proposed action would be within the limits of previously disturbed areas. Because the entire project area was disturbed previously, this impact topic was dismissed from further consideration.

Air Quality - The project area is located in Washington, D.C., which is in nonattainment for the 2015 ozone standard (EPA 2024). Construction of the BLC would require the use of heavy construction vehicles and motorized equipment that could contribute emissions that affect local air quality; however, impacts from construction would be temporary and below the *de minimis* threshold and would not trigger a General Conformity Rule Determination. While the BLC would be an addition to the existing emissions from NASM, they are anticipated to be similar or less than baseline emissions, because new equipment would operate more efficiently and produce fewer emissions. The project would not affect the attainment status of an airshed. As a result, this topic was dismissed from detailed analysis.

Noise - Noise levels are usually measured and expressed in decibels that are weighted to sounds perceivable by the human ear, or A-weighted sound level. Although the A-weighted sound level may adequately indicate the level of environmental noise at any instant in time, community noise levels vary continuously. Sensitive noise receptors in the project area include the museums on the Mall, considered to be sensitive noise receptors since they serve educational and cultural functions. Other than museums, the vicinity includes office buildings that are not considered to be sensitive to noise. The predominant existing noise source on the Mall is vehicle traffic on the roads on and adjacent to the Mall. Periodic elevated noise levels are generated by special events or concerts on the Mall (NCPC 2017).

During the construction period, heavy equipment use would contribute noise in the vicinity of the project area, and would potentially adversely impact pedestrians, office workers, and visitors to the Mall, NASM, and the National Museum of the American Indian. Impacts would be limited, however, because District noise regulations establish maximum permissible sound levels for an operation, activity, or noise source on a property, which limit both the duration of the noise as well as the A-weighted sound level. The noise limits of these regulations are designed to protect human activities or land uses that may be interfered with by noise levels, reducing the potential for adverse impacts. Long-term impacts are not anticipated, as the museum would continue operations at a level comparable to existing conditions. As a result, this topic was dismissed from detailed analysis.

Floodplains - The NASM is located immediately adjacent to, but not within, the 100-year and 500-year floodplain of the Potomac River. SI would take into account the site's potential to flood in its design. Flood barriers and garage ramps were also previously

constructed under the NASM revitalization effort. Accepted flood protection measures would be applied to protect the BLC expansion. The building is potentially subject to flooding from three situations: (1) local community water main breaks, (2) interior drainage flooding caused by torrential rainfall, and (3) flooding of the Potomac River. The building is protected from riverine flooding and coastal flooding by an Army Corps of Engineers Federal Control Project of permanent and temporary levees (NCPC 2017). During a flood disaster, a series of temporary closures must be completed by the National Park Service.

Traffic and Transportation - Washington, D.C., experiences a high level of traffic congestion in the vicinity of the National Mall. The BLC is not expected to noticeably alter the level of visitation to NASM or to the National Mall, more broadly. In general, visitors to the National Mall tend to arrive via the regional Washington Metropolitan Area Transit Authority, or Metro. SI anticipates that trend would continue with the construction of the BLC, which does not include public parking at the site. There would be a temporary increase in heavy equipment vehicles during the construction period, however those vehicle trips would cease once construction is complete. In the long-term, it is anticipated that school bus trips may increase, however school buses drop off school-aged children and then leave the immediate vicinity for the duration of the visit. In the context of Washington, D.C., impacts on overall traffic patterns, volume, and circulation are not anticipated. As a result, this impact topic was dismissed from further consideration.

3.3 Cultural Resources - Historic Structures and Districts

NHPA Section 106 and as implemented in 36 CFR Part 800, requires federal agencies to consider the effects of federally funded, regulated, or licensed undertakings on cultural resources listed on or eligible for inclusion in the NRHP; moreover, the federal agency must afford the Advisory Council on Historic Preservation the opportunity to comment in the event that an undertaking will have an adverse effect on a cultural resource that is eligible for or listed in the NRHP. As noted in Section 4.1, consultation under Section 106 is ongoing and an assessment of effects on historic resources has been completed as required by 36 CFR § 800.

Eligibility for the NRHP is established according to the official Criteria of Evaluation (36 CFR § 60.4) issued by the Department of the Interior. The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association as well as, the following:

- Criterion A: That are associated with events that have made a significant contribution to the broad patterns of our history; or
- Criterion B: That are associated with the lives of persons significant in our past; or
- Criterion C: That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

- Criterion D: That have yielded, or may be likely to yield, information important in prehistory or history.

Affected Environment

This section details the designated historic resources present on the site and within the area of analysis for Historic Structures and Districts. The most relevant of these resources to the project are described below.

National Mall Historic District

The National Mall Historic District encompasses some of the oldest and most iconic public lands in our nation. Its development reflects two seminal historic plans for the federal city - the plan designed by Maj. Peter (Pierre) Charles L'Enfant in 1791 and the 1901-02 McMillan (Senate Park) Commission Plan - and represents significant contributions to the design heritage of our national capital. As the nation's foremost commemorative landscape, the National Mall's monuments and memorials symbolize the country's collective values and ideals. Its open spaces define the setting of the executive and legislative branches of our federal government and provide essential civic space for historic events of national significance. The National Mall Historic District was listed in the DC Inventory in 1964 and administratively in the NRHP in 1966 as a historic site. The National Mall Historic District was formally designated in the NRHP in 1981, and in 2016, the NRHP boundaries were expanded. The NASM contributes to the National Mall Historic District under Criterion A.

National Air and Space Museum

The NASM is the largest museum building on the National Mall and showcases a nationally significant collection of artifacts documenting the history of flight and space travel. The Modernist-stye building was designed by Gyo Obata of Hellmuth, Obata and Kassabaum and opened to the public in 1976. NASM is a contributing element to the National Mall Historic District, under Criterion A. The building itself has been evaluated and may be eligible for individual listing in the NRHP under Criteria A, C, and Criteria Consideration G with a period of significance of 1976. Later additions and changes made to the building and site after 1976 are not considered contributing. Table 3 provides a list of character-defining features and descriptions that are contributing to the NASM’s historic significance.

TABLE 3: LIST OF HISTORIC CHARACTER-DEFINING FEATURES

Feature Name	Feature Description
Seven-bay building form with alternating solid-void pattern	The solid and void pattern of NASM is a critical design element. It is visible on all elevations. At the north façade, four solid sections are divided by three void sections, with the void sections continuing to the roof, with large skylights that continue to the building’s central spine. The south elevation has four solid sections, mimicking the north façade, with three smaller solid cantilevered bays held within void glazing.

Recessed, glazed openings in the east and west elevations	The east and west elevations have solid north/south wings framing a central void section, which continues the solid-void pattern of the building form. The physical glass and frames are not original and do not retain integrity of material.
Recessed third-story, linear openings and balconies	Eight recessed, third-floor balconies are located within the solid sections of the design. Their horizontality, emphasized with their railings and deep recesses, help articulate the monumental solid bays.
Marble curtain wall panels	The Tennessee Pink Marble exterior panels were replaced with Colonial Rose Granite panels; a substitute material selected as part of the Section 106 process during the NASM Revitalization project. Installation of new Colonial Rose Granite panels resulted in a loss of integrity of material.
Carved inscriptions on north and south elevations	Located at the north and south elevations. Incorporated into accessible walkway stone walls under the NASM Revitalization project.
Exterior terrace on southeast cantilevered block	Located on top of the southeast cantilever block, the exterior terrace was part of Obata's original design.
Tiered terraces and planting beds	Surrounding the site, the historic landscape plan had tiered terraces and planting beds. Almost all the tiered terraces and planting beds located at the east end of the site were altered c. 1988 with the restaurant addition; these reconfigured terraces and beds are not considered character defining. Vegetation within the planters is not considered character defining. Non-historic stairs, ADA-compliant ramps, and perimeter security features have been inserted into the historic tiered terraces over time and are not considered character defining.
Marble-clad retaining walls throughout the site	Located throughout the site, the retaining walls remain but the Tennessee Pink Marble panels have been replaced with Colonial Rose Granite. Marble retaining walls at the east terrace are in poor condition.
Garage openings and ramps	Located at the east elevation, the garage opening and ramps flow under the east ramps terrace to

	the museum basement and loading dock. Historically clad in Tennessee Pink Marble, the material was removed and replaced with Colonial Rose Granite. There is a non-contributing guardrail atop the garage opening, and non-contributing perimeter security features throughout.
***Ad Astra* sculpture**	Sculpture has always been displayed at the north façade, main entrance and was designed by Richard Lippold.
***Continuum* sculpture**	Sculpture has always been displayed at the building's west elevation and was designed by Charles O. Perry.

Impacts to Historic Structures and Districts

This section analyzes the potential adverse impact of the preferred alternative on the following historic resources:

> An adverse effect (or impact) to a cultural resource occurs when the characteristics of a historic property that qualify it for inclusion in or eligibility for the NRHP are altered in a manner that diminishes the resource's integrity (36 CFR § 800.16(i)). For those properties that could be affected, the criteria of adverse effect (i.e., impact) from Section 106 of the NHPA were applied (36 CFR § 800.5). An adverse impact to a historic property is determined when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify it for inclusion in the NRHP in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association.

Proposed resource protection measures to resolve the adverse impacts to historic resources are listed below. The Assessment of Effect is provided in Appendix B. These potential protection measures, which would be presented as stipulations in a Section 106 agreement document, would depend on whether the proposed design avoids or minimizes impacts on historic resources. The protection measures include documentation of historic properties, avoidance of historic sites, construction monitoring, and compliance with Section 106 of the NHPA. The conclusion of the Section 106 process will be documented in the decision document for this EA.

No Action Alternative

Under the No Action Alternative, SI would continue its existing use of the NASM and would continue its current management and maintenance routine. This alternative proposes no alterations or renovations to the building interior or exterior, nor the adjacent site. Therefore, the No Action Alternative would result in no adverse or beneficial impacts to the NASM.

Proposed Action Alternative

The Proposed Action Alternative would have no potential to adversely affect several character-defining features of NASM, including: the recessed third-story, linear openings and balconies; carved inscriptions; the exterior terrace on the roof of the southeast cantilevered block; and the *Ad Astra* and *Continuum* sculptures. These features are not within the project area. Additionally, there would be no alterations to the historic interior configuration of NASM and the existing doors at the east elevation would be retained, avoiding any potential adverse impacts. The sections described below detail the potential impacts on the remaining character-defining features of the NASM and their historic significance as part of the National Mall Historic District.

NASM - BLC Design, Haas Observatory Design and Form, Mechanical Systems, and Materials and Integrated Façade Lighting

The spiral form and massing of both the BLC and Phoebe Waterman Haas Public Observatory are distinctive from the large, imposing massing and rigid form of Obata's NASM design. Both the BLC and Phoebe Waterman Haas Public Observatory are compatible and contemporary, but both the design and forms, would have long-term, adverse impacts on the historic significance of the NASM. The light and airy design, showcasing movement, minimizes the adverse impact by clearly differentiating the new additions to Obata's original monumental design building form, combined with setbacks and a lower height to allow NASM's massing and form to remain as the primary feature of the site.

The BLC's entry points at the southwest and northeast portions of the addition call visual attention and may signify that the addition is the primary entrance to the museum, resulting in adverse effect. This adverse effect may be intensified at night due to lighting.

All mechanical systems would be integrated within the building designs and forms of the spirals, and would not be interrupted by mechanical equipment, thus maintaining the distinctive form on all elevations. Therefore, the mechanical systems would not result in adverse impacts on the historic significance of the NASM.

The metal panels/fins with integrated lighting would feature a dynamic texture of light and shadow around the spiral building forms. At nighttime, the cove lighting would illuminate a series of metal fins, further reinforcing the streaking light pattern of the cosmos. The aluminum cladding color would strike a delicate balance with the NASM's Colonial Rose Granite to help minimize the adverse impact. However, there is no comparable lighting or design feature on NASM's existing architecture. Therefore, such dynamic lighting at nighttime directly adjacent to the NASM could detract from the NASM's formal setting, and result in a long-term, adverse impact on the historic significance of the NASM.

Lastly, the Spiral Concourse of the BLC faces the National Mall and would be clad with bird-safe glass to maximize the views and connection between the interior and exterior of the building. Horizontal shading elements would continue the horizontal motif and shade the glass, where needed. The clear glass and spiral concourse system would further communicate the building's lightness, in contrast with NASM's heavy form and heavy tint from the glazing. To offer further differentiation, all the non-concourse elevations would

receive a gray-tinted glass. As a result, the glazing would not result in adverse impacts on the historic significance of the NASM. Additionally, the transparent walls would be in accordance with the NASM East End Programmatic Agreement (PA) design framework.

Character-defining Feature: Seven-Bay Building Form with Alternating Solid-Void Pattern

The new addition would not alter the seven-bay solid-void pattern of NASM's north and south elevations. Both the north and south elevations and their solid-void pattern would continue to be fully visible. However, the new addition would extend and reinterpret the solid-void pattern on both the north and south elevations, as shown in Figure 13, while the limited height of the additions would allow the original building to continue to be the primary feature of the site, resulting in no adverse effect. The BLC addition form would respect the NASM building and respond to its architecture and massing in accordance with the PA design framework.

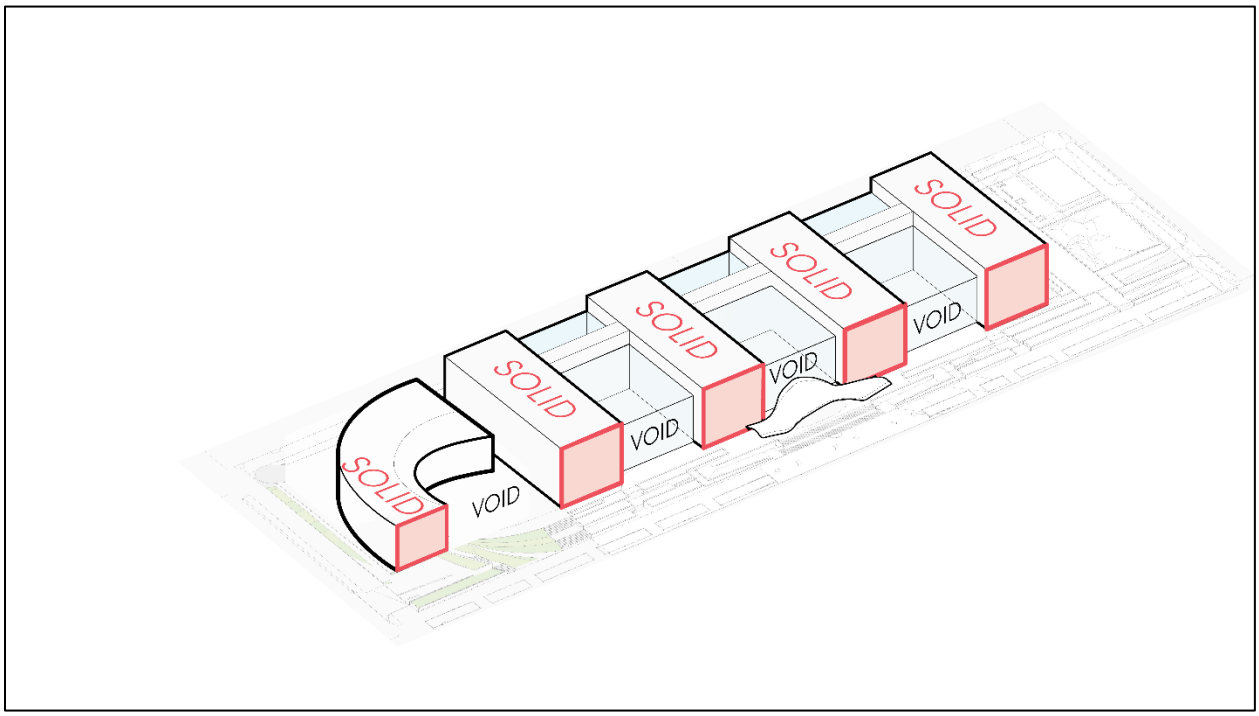


FIGURE 13: NORTH ELEVATION OF NASM WITH THE SEVEN-BAY SOLID-VOID PATTERN, CONTINUED TO THE NEW ADDITION

Character-defining Feature: Recessed Glazed Openings in the East and West Elevations, Curtain Wall Panels, and Connection to the East Elevation

Under the Proposed Action Alternative, the west elevation of the NASM would not be impacted. Similarly, no adverse impacts are anticipated with the limited removal of Colonial Rose Granite panels and portions of the east elevation glazing, since both materials lack integrity after previously being replaced.

However, the three-bay solid-void pattern of the east elevation would be partially obscured by the addition, as shown in Figure 14. Therefore, the addition would result in a long-term, adverse impact on the NASM due to changes in the views and vistas. Since the pattern would still be communicated, due to the setback leaning away from the face of the building

on the first story with a glazed hyphen, the long-term, adverse impacts would be minimized. The new addition would also be reversible, as it lightly connects to the east elevation and would allow the NASM to remain the primary feature on the site, minimizing adverse effect. Similarly, the hyphen would incorporate a skylight at the connection, which would expose the east elevation from inside the new addition, further minimizing the adverse impacts (see Figure 15). The addition's physical connection to the NASM would incorporate a light touch and glazed hyphen in accordance with the PA design framework.

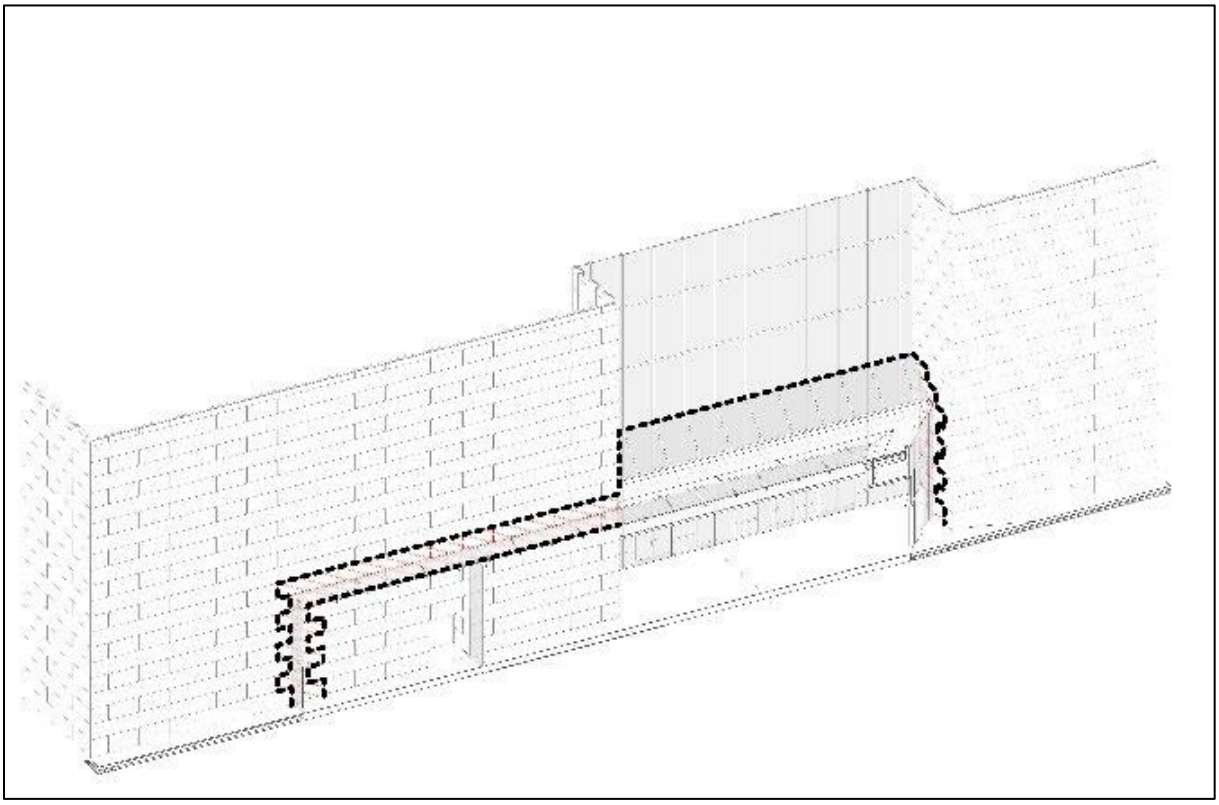


FIGURE 14: VIEW OF THE LIMITS OF CONNECTION AT THE EAST ELEVATION

FIGURE 15: INTERIOR RENDERING OF THE CONNECTION TO THE NASM WITH THE PROPOSED SKYLIGHT, ALLOWING FOR VIEWS OF THE EAST ELEVATION FROM INSIDE THE NEW BLC HYPHEN

Character-defining Feature: Tiered Terraces and Planting Beds

The new site access and accessible ramps would require the demolition of existing small-scale features, including tiered terraces, planting beds, and retaining walls. Although the original features at the east end of the site were previously demolished and reconfigured in 1988, as shown in red in Figure 16, portions of the planting beds and retaining wall along Fourth Street SW retain their historic design, as shown in green in Figure 16. Therefore, changes from these site improvements would result in long-term, adverse impacts on the NASM; however, impacts would be minimized due to the location of these changes on the east end.

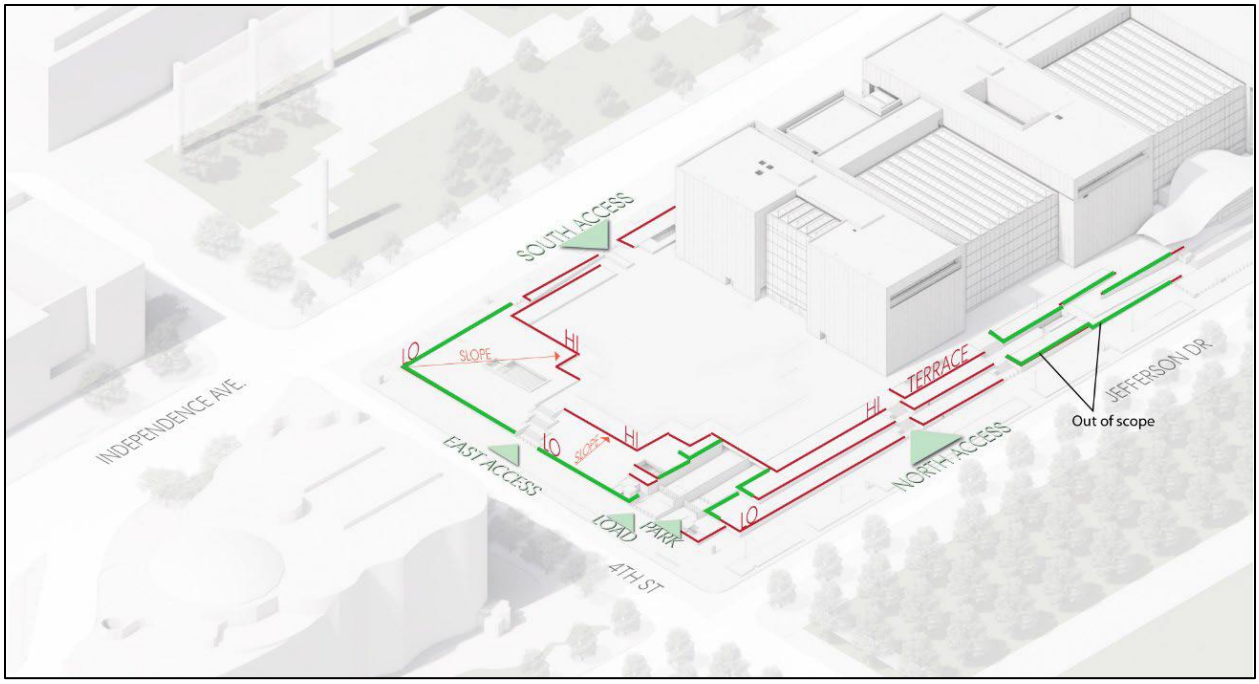


FIGURE 16: DIAGRAM OF THE CURRENT RETAINING WALLS, TIERED TERRACES, AND PLANTING BEDS AT THE EAST END OF THE NASM.

However, the proposed ADA-compliant ramp to the south, as well as the reconfiguration of the stairs stepping down to the west to Jefferson Drive, would not result in adverse impacts since they are not within the period of significance. The stair to Jefferson Drive SW, currently steps down to the east and the proposed stair would step down to the west, thus altering the planting beds at the north elevation, however, these planting beds fall outside of the period of significance and would not result in an adverse impact. Additionally, the existing stair to the south, leading to Independence Avenue SW, would also be retained, and therefore, would not result in an adverse impact.

Finally, the tiered planting beds flanking the garage would be demolished to the south and reconfigured to the north, resulting in a long-term, adverse impact. The planting bed and retaining wall along Fourth Street SW, south of the garage, was previously reduced in size with the construction of the restaurant addition in 1988. However, due to the new location of the addition and expanded Astronomy Park, the planting bed along Fourth Street SW, would be further diminished in size, resulting in a long-term, adverse impact. While the location of the opening for the new ramp would further diminish the retaining wall, resulting in long-term, adverse impacts as well.

Character-defining Feature: Garage Openings and Ramps

Under the Proposed Action Alternative, the ramps extending down to the garage would remain, including the previously replaced Colonial Rose Granite on the walls. The new addition, which is setback further away from the NASM towards Fourth Street SW, would also propose decking over both ramps and garage openings. The decking would create a tunnel effect when entering the garage and loading deck area, which was not an aspect of Obata's original design intention; therefore, the change in the feel of the original ramps and

the relationship with the east elevation of the NASM would result in long-term, adverse impacts.

Landscape and Astronomy Park Actions

The terrace level paving would be cast-in-place concrete with exposed aggregate and integral color, which would be in keeping with the extant paving throughout the NASM as completed during the Revitalization Project. The use of granite for the planters and knee walls of varying heights and widths, would also be compatible with the existing landscape design. Since the extant pavers are not character-defining features, the new design and material would be compatible with the existing design of the NASM and would not result in an adverse impact.

The Proposed Action Alternative would also use integrated site lighting features, which would follow site lighting established throughout SI sites and the National Mall and would therefore not result in an adverse impact.

Finally, the proposed vegetation at the site includes a planting concept of native trees, shrubs, and an understory of perennial and prairie plants. SI is proposing to develop a planting plan to establish a visual and ecological connection with the broader landscape of the National Mall, and foster biodiversity to support a diverse array of pollinators. The proposed restoration of the tree canopy to the east end of the site would not rise above the height of the existing trees on the National Mall, therefore, the new vegetation and planting plan would not result in an adverse impact.

New Construction within National Mall Historic District

The National Mall consists of a wide, east-west oriented lawn flanked by paired rows of American elm trees, most of which range from 60 to 80 feet in height. This creates a visual screen between the central lawn and the building along Jefferson and Madison Drives. The building rooflines and monumental massing form the backdrop setting for the Mall's association with Criterion A. While the maximum height of the BLC addition would be 72 feet above sea level, the elm trees would largely obscure the BLC addition's visibility from the National Mall, which is in accordance with the PA design framework. However, the new construction at the BLC site would alter the setting and therefore, result in long-term adverse impacts.

There is no precedent on the National Mall for the proposed integrated façade lighting at BLC, especially at night, and the proposed lighting could result in light pollution on the National Mall, which could interrupt its formal setting. The Section 106 process has not yet determined if the proposed lighting would be considered an adverse effect. In an effort to minimize the potential for adverse impacts, the design of the new BLC addition would adhere to and respect all setbacks and viewsheds. The approach also uses subtle illumination that would adhere to NCPC district lighting guidance and would not be brighter or more prominent than the existing NASM façade. The spiral form, massing, and complementary landscaping would be compatible with the monumental and significant museums, and other federal buildings that line the National Mall.

Since the BLC and Haas Observatory would be directly adjacent to the character-defining Fourth Street SW, vista within the National Mall Historic District, the Haas Observatory, located further east than the BLC, respects the setback from Fourth Street SW. Therefore, its setting would only be altered nominally with slight changes to the retaining walls, tiered terraces, and planting beds along Fourth Street SW, and none of the changes would intrude into the Fourth Street roadway. In accordance with the PA design framework, the Proposed Action Alternative respects the Fourth Street SW, vista and, therefore would not result in an adverse impact.

The Proposed Action Alternative would not have adverse impacts on the location, design, setting, materials, workmanship, feeling or association of any of the remaining historic resources within the area of analysis, including the following:

- L'Enfant's Plan for the City of Washington
- LBJ Building
- Social Security Administration
- U.S. Capitol, Ulysses S. Grant Memorial, and U.S. Botanic Gardens
- National Gallery of Art, East and West Wings
- Mary E. Switzer Federal Building, Terminal Refrigerating & Warehousing Co, U.S. Botanic Gardens, Bulfinch Gatehouses and Gateposts, Natural History Museum, National Museum of American History, U.S. Department of Agriculture, Freer Gallery, Smithsonian Castle, Arts and Industries Building, Hirshhorn Museum, and Orville and Wilber Wright Federal Buildings.

Cumulative Impacts

Considered with the ongoing and planned projects identified in Section 3.1, implementation of the Proposed Action Alternative could generate short-term and long-term adverse impacts to historic resources. In particular, if construction of the BLC project occurs concurrently with the implementation of other construction projects along the National Mall, the combined effects could temporarily change the overall appearance and character of the National Mall during the construction activities.

In the long term, the proposed project, along with the previous Revitalization project, could result in long-term, adverse cumulative impacts on the NASM. Continued changes and alterations, such as materials, additions, access, and landscape could have cumulative impacts on the potential for the resource to be individually listed in the NRHP. However, all the proposed actions have been executed with compatible and sensitive designs that have enhanced the ability of NASM to display their significant collections and increase education to a broader public, minimizing those adverse impacts.

Additional, alterations to the tiered terraces, planting beds, and retaining wall could have cumulative impacts on these historic resources. However, all the proposed actions would be limited to the east end of the NASM site, thus minimizing those adverse impacts.

Mitigation and Minimization Measures

NCPC and SI are working to avoid or mitigate impacts to the known historic resources to the greatest extent possible. Additionally, minimization efforts through design solutions are

being included, where possible, to reduce impacts to the known character-defining features contributing to the NASM's historic significance. NCPC and SI will continue to consult with the Washington, D.C. State Historic Preservation Office (SHPO), and other consulting parties, through the NHPA Section 106 process. Any unavoidable impacts to historic resources would be addressed in a Section 106 agreement document.

3.4 Aesthetics and Visual Resources

Affected Environment

The National Mall includes a mile-long uninterrupted vista of open lawn, monumentally anchored by the U.S. Capitol Building to the east and the Washington Monument to the west. The central grass area of the Mall is lined on the north and south with formal allées of mature elm trees, major pedestrian and vehicular thoroughfares, and the gardens, monumental museums and other federal buildings. NASM is located on the south side of the Mall, across the Mall from the National Gallery of Art West Building and in between the American Indian Museum and the Hirshhorn Museum and Sculpture Garden.

Impacts to Aesthetics and Visual Resources

An assessment of impacts to visual resources addresses potential changes to views and vistas that can be attributed to the proposed BLC construction. The analysis of visual impacts can range from no impact, where a project would not be visible, to a significant impact, where a project would contrast with the existing surroundings or be a dominant element that interferes with views and substantially alters the character of existing views. Consideration of nighttime lighting is also analyzed.

No Action Alternative

Under the No Action Alternative, the BLC would not be constructed. As a result, there would be no change to existing views or vistas and no long or short-term impacts on aesthetics and visual resources.

Proposed Action Alternative

Under the Proposed Action Alternative, the BLC would be constructed on the east side of the existing NASM building. A visualization of the BLC is displayed in Figure 17. In general, the Proposed Action Alternative would represent a long-term adverse impact on the visual landscape, particularly when adjacent to the NASM on Independence Ave SW, Fourth Street SW, and along the National Mall. While the BLC and Observatory would introduce a new built element to the visual setting, it would not change the character of existing views and would not interfere with notable existing views. The proposed construction would be in line with the existing conditions of a museum and federal building-focused monument core along the National Mall, reducing the potential for adverse impacts. Additionally, the height of BLC would be lower than the existing NASM structure and would be adjacent to a mature tree canopy, further reducing the potential for visual impacts. Specific views, associated impacts, and visualizations are provided in Figure 18 through Figure 21, below.

FIGURE 17: VISUALIZATION OF THE BLC

The BLC and Phoebe Waterman Haas Public Observatory would be visible from Fourth Street SW. In addition to the BLC and Observatory structures, there would be the addition to new visual elements of retaining walls, tiered terraces, and planting beds, but these would remain within the current setbacks and would not noticeably alter the overall visual setting. Figure 18 displays a visualization of the proposed action alternative within the National Mall, looking south down Fourth Street.

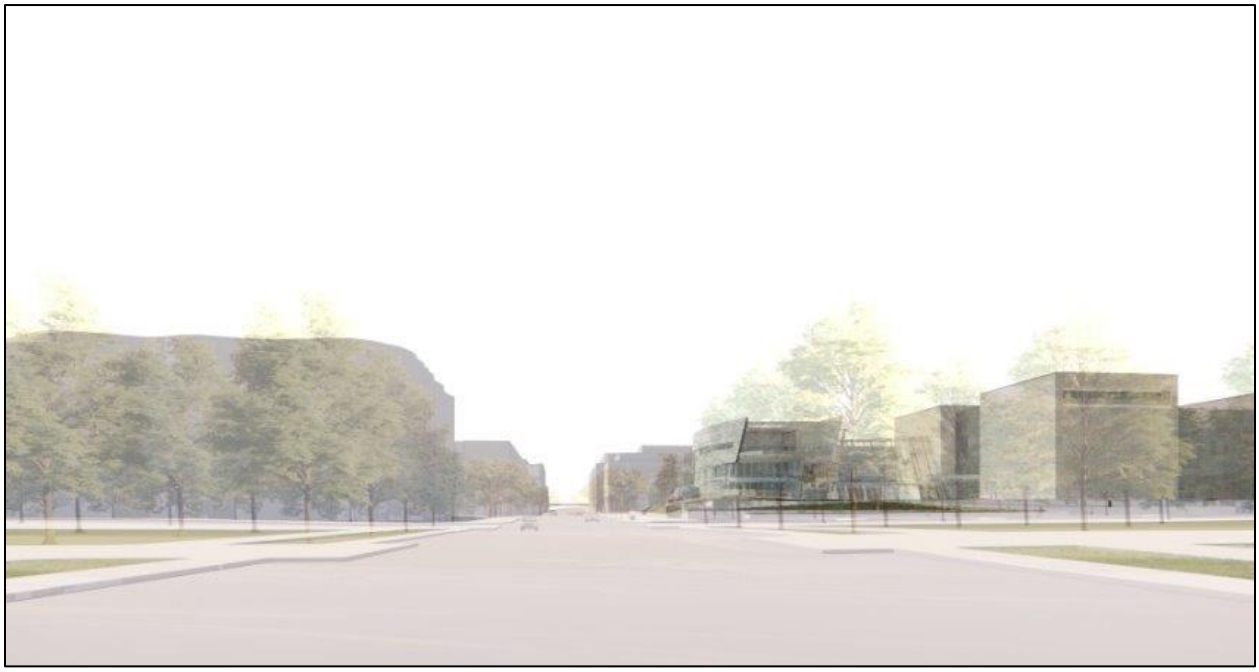


FIGURE 18: VIEW OF BLC AND HAAS OBSERVATORY (LOOKING SOUTH)

Additional views include vistas from the Department of Education Building along 4th Street SW (Figure 19) as well as the Social Security Administration (Figure 20) along Independence Avenue. Similar to the view from the National Mall, the views from both buildings would not be noticeably altered from existing conditions and both buildings would retain the current visual setting among neighboring federal, museum, and institutional buildings. The BLC would contribute an additional compatible museum structure to the existing visual conditions.

The proposed construction would also be visible from the U.S. Capitol Building. However, views would be minimized by the existing building infrastructure, reducing the potential for long-term adverse impacts on the visual setting. Figure 21 displays the potential view from the U.S. Capitol Building. Similar with the other adjacent buildings, the proposed construction is in line with the existing setting and would not represent a significant departure from existing conditions or be a dominant intrusion on the visual landscape.

FIGURE 19: VIEW FROM LYNDON B. JOHNSON DEPARTMENT OF EDUCATION BUILDING (LOOKING NORTH)

FIGURE 20: VIEW FROM SOCIAL SECURITY ADMINISTRATION BUILDING (LOOKING WEST)

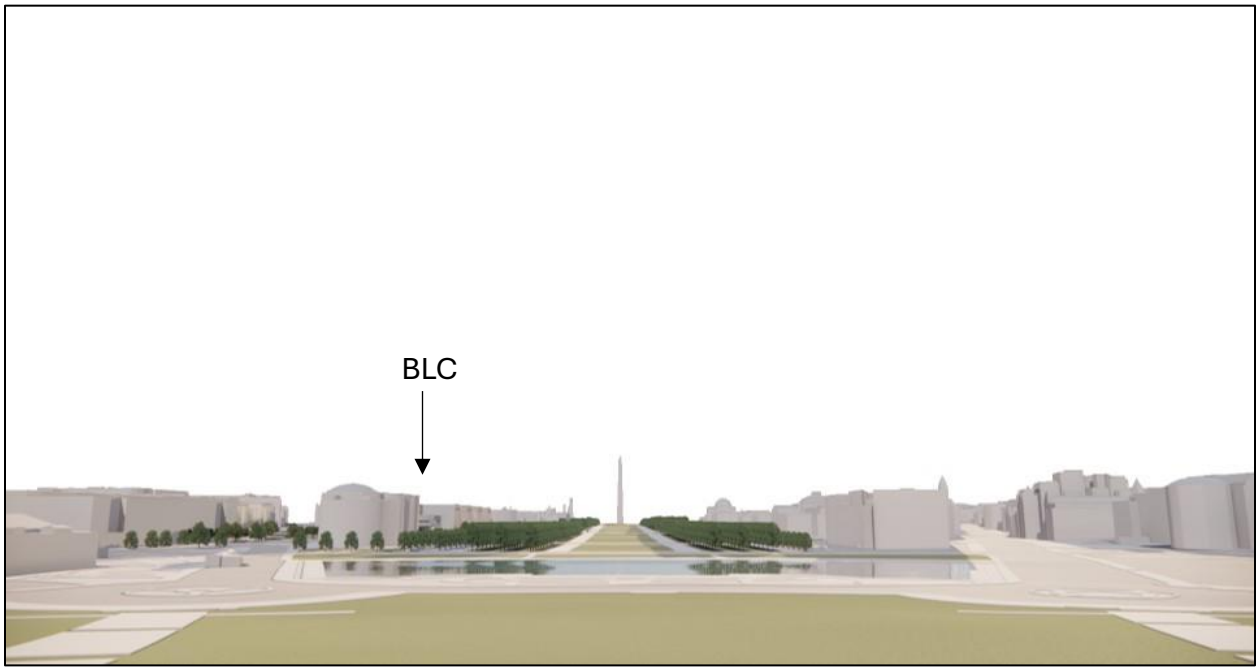


FIGURE 21: VIEW FROM U.S. CAPITOL BUILDING (LOOKING EAST)

In addition to views and vistas, the Proposed Action Alternative would introduce new lighting elements. Specifically, the exterior of the BLC would include integrated lighting in the metal panels/fins. As day transitions to night, cove lighting would illuminate a series of metal fins reinforcing the streaking light pattern of the cosmos and the mission of the BLC as a beacon along the National Mall for space exploration and discovery. There is no comparable lighting or design feature on NASM's static, solid, monumental architecture

and dynamic lighting at night would alter the existing visual landscape at night, resulting in a long-term adverse effect on visual resources. However, integrated site lighting features would follow site lighting established throughout the SI sites and National Mall, and additionally low level to not interfere with Observatory operations, reducing the adverse impact. As noted under Historic Structures and Districts, subtle illumination would adhere to NCPC district lighting guidance and would not be brighter or more prominent than the existing NASM façade. Overall, the potential adverse impacts from lighting adheres to all setbacks and viewshed requirements. Figures 22 and 23 display the exterior during the day and at night, with the lighting illuminated.

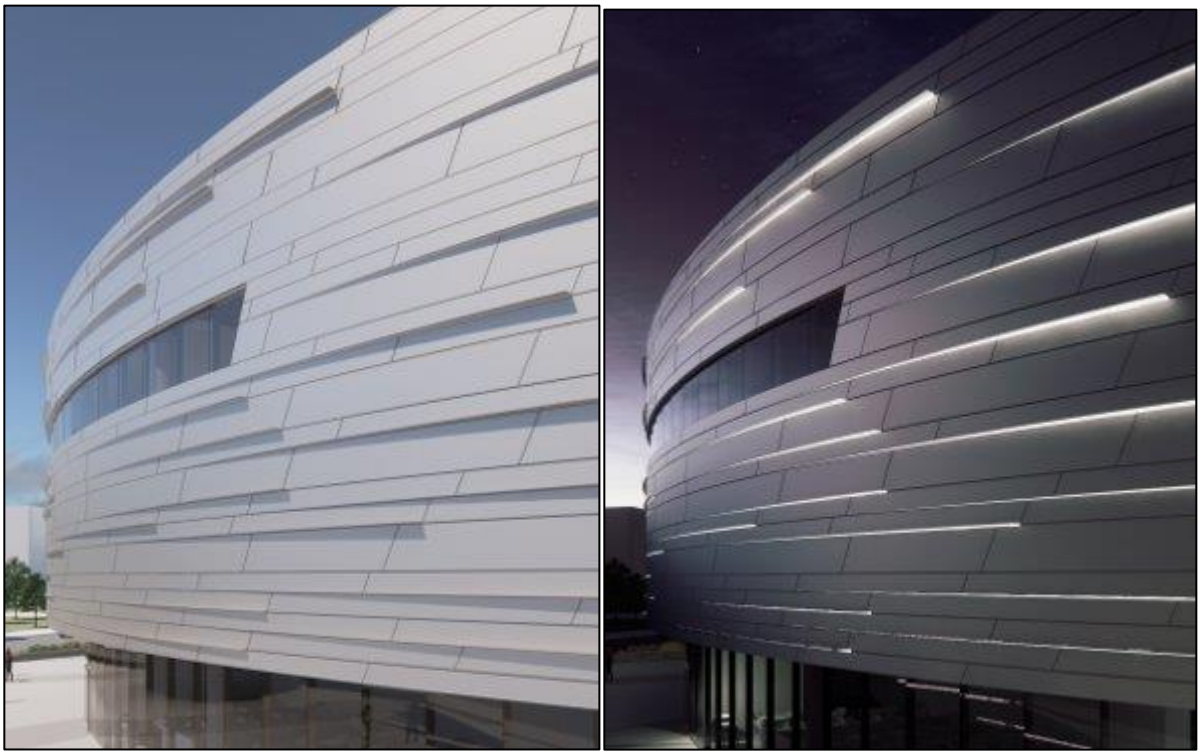


FIGURE 22: INTEGRATED EXTERIOR LIGHTING

FIGURE 23: EXTERIOR OF BLC AT NIGHT

Cumulative Impacts

Considered with the ongoing and planned projects identified in Section 3.1, implementation of the Proposed Action Alternative could generate short-term and long-term cumulative impacts to aesthetics and visual resources. In the short term, if construction of the BLC project occurs concurrently with the implementation of other construction projects along the Mall, the combined effects could temporarily alter the overall appearance and character of the Mall during the construction activities. While some cumulative projects, such as the Eisenhower Memorial or Fallen Journalist Memorial, also introduce new visual elements to the existing National Mall setting, they are all appropriate in the context of the museum core and would not result in long-term adverse impacts.

Minimization Measures

Reducing the potential visual impacts has been, and would continue to be, a focus of the design and Section 106 processes, with minimization efforts through design solutions. The Proposed Action Alternative represents the current design, with consideration of the existing setting and with an effort to ensure the building is appropriate for the setting. Although the alternative would alter existing views of the building, the design would continue to be developed to respond to the mission of the museum and minimize visual impacts.

3.5 Visitor Use and Experience

Affected Environment

Washington, D.C. is one of the most popular tourist destinations in the country, with visitors regularly frequenting the National Mall and SI Museums. The NASM building is

located on the National Mall and opened in July 1976, housing many of the icons of flight, including the original 1903 Wright Flyer, Charles Lindbergh's Spirit of St. Louis, Chuck Yeager's Bell X-1, John Glenn's Friendship 7 spacecraft and a lunar rock sample that visitors can touch. Additionally, NASM maintains the world's largest collection of historic aircraft and spacecraft among more than 68,000 objects and serves the public through exhibitions, public programs, educational activities, publications and electronic outreach. It is also a vital center for historical research on aviation and spaceflight and related science and technology, and home to the Center for Earth and Planetary Studies, which performs original research and outreach activities in planetary sciences.

With an average of more than 7 million visitors annually, the NASM is one of the world's most popular museums, with the highest visitation occurring between the months of March and August (SI 2024). The NASM is open to the public every day from 10:00 a.m. to 5:30 p.m. Access to the NASM is free; however, visitors are required to obtain a timed-entry pass to visit.

Since 2018, the NASM has undergone multi-year renovations to radically transform the interior and exterior of the building to improve the visitor experience. Interior improvements include reimagining 23 exhibitions and spaces for immersive learning, adding 1,400 new objects for display, and moving and preserving over 5,200 artifacts. Exterior improvements include replacing 12,000 stone panels on the exterior of the existing building. In 2022, 8 of the 23 exhibitions reopened to the public, along with other amenities and visitor experiences, including the Southwest Airlines Welcome Center, the Mars Café, a Museum store, the Planetarium, and the Family Care Suite. However, the remaining exhibition halls on the first and second floors of the building are currently closed to visitors during renovations through 2025, as well as the Phoebe Waterman Haas Public Observatory (where the proposed BLC site is located).

Impacts to Visitor Use and Experience

No Action Alternative

Under the No Action Alternative, SI would continue to maintain the existing NASM building to its current standards. Visitors, particularly school-aged students and teachers, would continue to experience the museum and existing exhibitions in its current state. Under the No Action Alternative, the BLC would not be constructed at NASM, and therefore, the indoor and outdoor educational programming, Phoebe Waterman Haas Public Observatory and Astronomy Park, restaurant, and landscaping improvements would not be implemented. Overall, because no changes would be implemented, there would be no adverse or beneficial impacts to visitor use and experience.

Proposed Action Alternative

Under the Proposed Action Alternative, visitors would experience short-term, adverse impacts to the visitor experience at NASM during construction. During the construction period, visitors of NASM, as well as pedestrians, motorists, and office workers in the vicinity of the project, would be subject to noise and fugitive dust from construction equipment, resulting in short-term adverse impacts. The construction equipment

anticipated to be used on-site has not yet been determined. Visitors may also be adversely impacted by constructions activities, such as the installation of building materials and removal of construction materials from heavy trucks. However, Washington D.C. limits construction noise levels (to 80 decibels) and timeframes (between 7 a.m. and 7 p.m.), unless a variance is granted. Therefore, construction-related impacts are anticipated to be short-term for the duration of construction.

In the long term, visitors would experience beneficial improvements with the addition of the new three-story facility, including programs and activities for students to explore STEAM topics, including students from under-resourced communities. These improvements would connect to all SI museums, promoting inquiry-based learning in visitors of all ages. The Proposed Action Alternative would activate programming through innovative community partnerships to reach students and teachers in Washington, D.C., and in communities across the country. The BLC would also implement all existing accessibility standards currently included at NASM, including ADA-compliant ramps, elevators, and assistive listening solutions, providing a long-term, beneficial improvement to the visitor experience.

Cumulative Impacts

Because there would be no adverse or beneficial impacts associated with the No Action Alternative, there would be no cumulative impacts.

Implementation of the Proposed Action Alternative, combined with the addition of other new visitor experiences, including the Dwight D. Eisenhower Memorial and the Fallen Journalists Memorial, could contribute overall beneficial cumulative impacts for visitor use and experience.

Mitigation Measures

Construction would be phased to minimize disturbances to visitors. SI would maintain access to the museum using clearly marked signage and flagging to provide routes through and around the construction area to minimize disruptions to visitors. Additional safety precautions would be implemented to reduce construction-related noise for visitors by implementing best management practices and complying with District noise regulations. The project contractors would adhere to appropriate best management practices during construction to reduce, minimize, or eliminate construction vehicle dust emissions for visitors.

3.6 Climate Change

Affected Environment

Greenhouse gas emissions, released from activities that involve the combustion of fossil fuels, are widely recognized as the main contributing factor to climate change. Greenhouse gases such as carbon dioxide, nitrous oxide, and methane absorb and trap heat that is radiated by the earth, preventing it from escaping into the atmosphere. The result is a change in global temperatures and can also cause changes to patterns and intensities of precipitation, increased frequency and magnitude of severe weather, and/or sea level rise.

EO 13693, EO 14008, and EO 14057 set goals for federal agencies to improve environmental, energy and economic performance. SI is committed to the goals set by EO 13693, EO 14057, and EO 14008 and is focused on making improvements in environmental, energy, and economic performance, as well as increasing sustainability while becoming a more climate-ready organization. Plans to advance sustainability in energy use are identified in the SI Sustainability Strategic Plan for FY24. The 2024-2027 SI Climate Change Adaptation Plan, 2022 Progress Report and previous plans detail Institution-wide efforts to assess vulnerabilities, enhance resiliency, research Earth systems, adapt to a changing climate and its effects, and educate staff and the public on the climate crisis. In the plan, SI identifies five priority agency actions, including Public Programs, Research, Collections, Central Services, and Facilities and Infrastructure. The plan identifies implementation methods to address these urgent concerns of preparing for and mitigating against the impacts of climate change as well as steps to create a more sustainable future.

Impacts to Climate Change

No Action Alternative

Under the No Action Alternative, SI would continue to maintain the existing NASM building to its current standards. The level of emissions associated with the operation and maintenance of the building would not change from existing conditions. Under the No Action Alternative, the BLC would not be constructed at NASM, and therefore, there would be no new short-term emissions associated with construction. Overall, because no changes would be implemented, there would be no adverse or beneficial impacts to climate change.

Proposed Action Alternative

Given the availability of public transit and limited street parking in the area, the proposed project is not likely to greatly increase the number of vehicles coming to NASM under the Proposed Action Alternative. During construction, emissions of nitrous oxides and carbon dioxide from the burning of fuel in vehicles and equipment could result in incremental increases in greenhouse gases that contribute to global climate change. However, these short-term impacts would be negligible in comparison to other local and regional sources of greenhouse gas emissions.

Under the Proposed Action Alternative, the BLC would include sustainable design principles to maintain climate responsibility, including improving building energy efficiency and carbon reduction, adopting mitigation and climate adaptation strategies for vulnerabilities and resiliency, using low-emitting materials, improving indoor air quality, incorporating biophilic design, and enhancing mechanical, electrical, and plumbing systems throughout the facility. The project would increase rainwater capture and reuse, installation of high-performing heating, ventilation, and air conditioning systems, and incorporation of natural elements to improve access to daylight and views of nature in the indoor environment. The construction of BLC is also anticipated to include low-carbon and low-emitting materials to improve indoor air quality and minimize toxin exposure.

Through comprehensive planning and the adoption of advanced sustainability practices, the BLC aims to not only protect its infrastructure from climate-related challenges but also to foster a healthier, more sustainable community environment, resulting in long-term beneficial impacts. The construction of the BLC would actively align with SI's existing Climate Action Plan and would pursue the U.S Green Building Council's Leadership in Energy and Environmental Design (LEED) Building Design and Construction: New Construction, Gold criteria,[2] adhering to standards set by Smithsonian Directive 422. These building design considerations would result in long-term, beneficial impacts to SI and the larger Washington, D.C., area by proactively addressing future climate-related impacts through sustainable building design and reducing greenhouse gas emissions.

Cumulative Impacts

Because there would be no adverse or beneficial impacts associated with the No Action Alternative, there would be no cumulative impacts.

Implementation of the Proposed Action Alternative, combined with other similar construction projects, such as the revitalization efforts for the Hirshhorn and NASM buildings, would contribute short-term adverse impacts during construction but overall long-term beneficial impacts on climate change from improved heating and ventilation systems.

Mitigation Measures

Sustainable design practices and improved facility operations are already included as part of the Proposed Action. As a result, no additional mitigation measures are needed to reduce potential impacts on climate change.

3.7 Summary of Environmental Consequences

TABLE 4: SUMMARY OF ENVIRONMENTAL CONSEQUENCES

Impacted Resource	No Action Alternative	Proposed Action Alternative
Historic Structures and Districts	No impact.	**Long-term, Minor, Adverse Impacts.** There would be the potential for long-term adverse impacts from spiral form and massing, dynamic lighting, alternations to the solid/void pattern, demolition of tiered planting beds, and decking

[2] The USGBC is a non-profit organization dedicated to supporting prosperous, healthy and resilient communities. LEED is the world's most widely used green building rating system. LEED certification provides a framework for healthy, highly efficient, and cost-saving green buildings, which offer environmental, social and governance benefits. LEED certification is a globally recognized symbol of sustainability achievement, and it is backed by an entire industry of committed organizations and individuals paving the way for market transformation.

		over the ramps and garage, as well as adverse impacts to the setting and feeling of the National Mall Historic District. However, the overall spiral form, massing, and complementary landscaping would be compatible with the monumental and significant museums, and other federal buildings that line the National Mall.
Aesthetics and Visual Resources	No impact.	**Long-term, Minor, Adverse Impacts.** The new construction would result in a long-term adverse impact on the visual landscape, particularly when adjacent to the NASM. While the BLC and Observatory would introduce a new built element to the visual setting, it would not change the character of existing views and would not interfere with notable existing views.
Visitor Use and Experience	No impact.	**Short-term, Minor, Temporary Adverse Impacts and Long-term Beneficial Impacts.** Short-term impacts during the construction period but in the long term, visitors would experience beneficial improvements with the addition of the new three-story facility, including programs and activities for students to explore STEAM topics, including students

		from under-resourced communities.
Climate Change	No impact.	**Short-term, Minor, Temporary Adverse Impacts and Long-term Beneficial Impacts.** Short-term impacts from heavy equipment during the construction period and long-term beneficial impacts from installation of high-performing heating, ventilation, and air conditioning systems.

4. Consultation and Coordination

4.1 Section 106 Consultation

Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on historic properties. SI initiated the Section 106 consultation process in 2020, focused on the replacement of the previous restaurant addition. Pursuant to Section 106 of the NHPA, a PA was developed and signed on March 30, 2022, by the SI, the D.C. SHPO, and NCPC regarding the NASM East End Project, which encompassed the restaurant addition demolition and the BLC design and construction. SI is the lead agency pursuant to 36 CFR § 800.2(a)(2) and NCPC is fulfilling its Section 106 responsibilities by participating in consultation and signing any agreement documents related to resolving adverse effects related to the project. Section 106 consultation for the design of the Construct Integrated Bezos Learning Center was initiated with the D.C. SHPO on June 30, 2023.

During the conceptual design of the BLC, the first consulting parties meeting was held on August 9, 2023. Additional consulting party meetings were held on November 1, 2023, February 26, 2024, and July 24, 2024. The November meeting was held concurrently with the public scoping meeting for NEPA as well as site visit. Throughout these meetings, the consulting parties discussed the potential design alternatives, the potential for adverse effects on historic properties, possible ways to avoid, minimize, and mitigate adverse effects, and solicited comments from attendees. A separate assessment of effects was completed and adverse impacts on historic resources are anticipated. As a result, SI, NCPC, and D.C. SHPO will develop an agreement document through ongoing Section 106 consultation to identify mitigation and minimization to resolve adverse effects. The completed agreement document will be provided as part of the decision document for this EA.

5. References

Environmental Protection Agency (EPA)

2024 EPA Greenbook. National Ambient Air Quality Standards Nonattainment Areas. https://www3.epa.gov/airquality/greenbook/anayo_dc.html

National Park Service (NPS)

2022 2022 National Park Service Visitor Spending Effects Report. https://www.nps.gov/nature/customcf/NPS_Data_Visualization/docs/NPS_2022_Visitor_Spending_Effects.pdf

National Capital Planning Commission (NCPC)

2004 Adoption of Final Environmental and Historic Preservation Policies and Procedures. Federal Register, Vol. 69, No. 130, 42199. July 8, 2004.

2017 Revitalization of the Air and Space Museum Environmental Assessment. March 2017.

Smithsonian Institution (SI)

2022 Project Report: HMSG Sculpture Garden Revitalization – General Contract (Package #1) (Final Construction Documents) – Volume 4. August 31, 2022.

2024 Visitor Statistics - 2023. https://www.si.edu/newsdesk/about/stats

n.d. National Air and Space Museum: Bezos Learning Center. https://airandspace.si.edu/about/major-projects/bezos-learning-center

US Census Bureau

2022 2018-2022 American Community Survey 5-Year Estimates, Tables S0601, B17001, S1701. https://data.census.gov/

6. List of Preparers

Smithsonian Institution

Mike Henry, PE, BLC Project Manager

Carly Bond, ATP RP, Associate Director

Jane Passman, Assoc. AIA, Senior Facilities Master Planner

National Capital Planning Commission

Matthew Flis, AICP, Senior Urban Planner

Stephanie Free, Urban Planner

WSP USA Inc.

Rudi Byron, AICP, Project Manager

Robert Greene, Environmental Planner

Patrick McKitrick, Editor

Alexandria Sentilles, Environmental Planner

Scott Shifflett, Vice President

Appendix A:

Public Scoping Meeting Comment Response Matrix

Bezos Learning Center
November 1st, 2023, Public Scoping Meeting Attendees

ATTENDEE	TITLE AND/OR ORGANIZATION
Carly Bond	Smithsonian Institution
Millie Latack	Smithsonian Institution
Lucas Harmon	Smithsonian Institution
Scott Shifflett	WSP, NEPA Specialist
Jane Passman	Smithsonian Institution
Elizabeth Kennedy	EKLA Studio
Tina Menendez	Smithsonian Institution
Zena Howard	Perkins and Will
Stephanie Free	National Capital Planning Commission
Charles Obi	Smithsonian Institution
Mike Henry	Smithsonian Institution
de Teel Tiller	Committee of 100
Jim Evans	Smithsonian Institution
Sarah Batcheler	Commission of Fine Arts
Andrew Lewis	DC State Historic Preservation Office
Susan Wertheim	National Gallery of Art
Kim Daileader	EHT Traceries
Matthew Flis	National Capital Planning Commission
Kristi Tunstall Williams	General Services Administration
Natalia Zambrano	Member of the Public
Bridget Lesniak	Perkins and Will
Hillary Lord	National Gallery of Art
Carlton Hart	Commission of Fine Arts
Jason Theuer	National Park Service

Ramón Labrador	Member of the Public
John Edwards	Committee of 100
Jared Oldroyd	Member of the Public
Nell Warren	Member of the Public
George Conard	Clark Construction
Kirill Pivovarov	PAGE
Eliza Voigt	General Services Administration
Shelly Jones	General Services Administration
Molly Raglani	Clark Construction
Larry Travis	Smithsonian Institution
Michael Stelfox	Member of the Public
Kara Katsarelis	Smithsonian Institution
Sarah Stephenson	Member of the Public
Michael Weil	National Capital Planning Commission
Joel Gorder	National Park Service
Judy Feldman	National Mall Coalition
Jaime Kurry	National Gallery of Art
Duane Blue Spruce	Smithsonian Institution
Alison Wood	Smithsonian Institution
Kelsey Bridges	District Department of Transportation
Sarah daSilva	Member of the Public
Lee Webb	National Capital Planning Commission
Raj Solanki	Member of the Public
Gregory Rismiller	Member of the Public
Ann Trowbridge	Smithsonian Institution
Chris Wilson	Advisory Council on Historic Preservation
Laura Hughes	EHT Traceries

Bezos Learning Center
November 6th, 2023, Public Scoping Site Tour Attendees

ATTENDEE	TITLE AND/OR ORGANIZATION
Carly Bond	Smithsonian Institution
George Conard	Clark Construction
Jane Passman	Smithsonian Institution
Jeremiah Montague, Jr	*Citizen*
Jim Evans	Smithsonian Institution
Joe Swank	Vice President (Clark Construction)
John Edwards	Assoc. AIA (Bonstra Architects)
Kara Katsarelis	Smithsonian Institution
Kirill Pivovarov	AIA (Page Think)
Larry Travis	Smithsonian Institution
Lindsey Veas	NEPA Compliance Specialist (GSA)
Matt Flis	National Capital Planning Commission
Mike Henry	Smithsonian Institution
Millie Latack	Smithsonian Institution
Nell Connors	Project Executive (Clark Construction)
Perry Klein	The Southwester
Scott Shifflett	WSP, NEPA Specialist
Stephanie Free	National Capital Planning Commission
Tina Menendez	Director, BLC, Smithsonian Institution
Kim Daileader	EHT Traceries, Historic Preservation Specialist

November 1st, 2023, Public Scoping Meeting - Comment Summary*

COMMENT TOPIC	SUMMARIZED COMMENT	COMMENT RESPONSE	COMMENT AUTHOR
Public Engagement	The proposed building is turning its back on southwest. It should engage more with the District residents in SW and SE.	The building design at the time of scoping was conceptual. The design team will consider additional frontage options during the design process.	*Citizen*
Access	How will people access the Learning Center?	The BLC entrance would be on the northeast side. Students would have their own entrance, as well as an entrance for the restaurant.	*Citizen*
Vegetation and Landscape Design	Will the trees and open space on the National Mall be impacted with this project?	No, the trees and the open space on the National Mall would not be directly impacted by the proposed project.	*Citizen*
	Will the specimen tree on the east side of the project site, along 4th Street, SW be saved?	The proposed project wwould look to preserve the specimen tree.	*Citizen*
	The scoping materials include a conceptual approach to the landscape plan and planting palette that will be developed in more detail as the plans progress. During the November 6 site visit, several trees were observed on the site, including a specimen tree on the east side of the site. Existing trees on the north and east sides also provide a visual and physical buffer	Noted. While the final design and landscaping is not finalized, the proposed project would look to preserve the specimen tree.	*Agency - NCPC*

	between the site and the streets. We note that, as part of the approval for the NASM revitalization project, the Commission approved removal and replacement of all the vegetation on the NASM east end site except for the specimen oak tree located along 4th Street, SW. Staff supports preservation of this tree given its size and location.	Street trees removed due to NASM revitalization have been replaced.	
	Policies related to tree canopy and vegetation in the Comprehensive Plan encourage preservation and protection of existing trees, especially those that measure 31.85 inches in diameter (100 inches in circumference) or greater; transplantation of healthy, native, or non-invasive trees when practicable; and replacement of trees when removal is necessary. Therefore, staff recommends that impacts to vegetation are evaluated in the EA with consideration for the trees that can potentially be saved, those that would potentially be removed, and an estimation of trees that could be replanted on site.	Comment noted. The NEPA document will consider impacts to vegetation.	*Agency - NCPC*
Building Design	The project should be somewhere that people want to tell their friends and family about and to revisit again and again; it should stand out for both tourists and District residents.	Comment noted. The design is in development.	*Citizen*
Location/Siting	Why is the Phoebe Waterman Haas Public Observatory going to be located on the south end of the site, away from the views on the National Mall?	Views of astronomical events are best on the southeast side.	*Citizen*
Existing NASM Building	Docomomo US participated in the Section 106 Consulting Parties public consultation meetings for the proposal to demolish the original NASM Addition designed by Gyo Obata. While we continue to believe the original NASM restaurant addition required additional research by the Smithsonian Institution to determine its significance, we appreciate having the opportunity to participate in the next phase. At this point in the conceptual design for the Bezos Learning Center, Docomomo US does not see negative impacts on the original NASM building or landscape.	Comment noted.	*Agency – Docomomo US*

	Our main concerns for the new addition would be that it does not take away the focus or compete with the original building. We find the massing proposed in the conceptual design, while distributed differently, is similar to the original restaurant addition. We also believe the connection from the main NASM building to the new addition should be similar to the Obata solution and that the exterior landscaping between the buildings does not distract from the original museum.	Comment noted	*Agency - Docomomo US*
Viewsheds	What is the total height of the building? Will it block views of the dome on the Natural History Museum from Independence Avenue?	The addition would be approx. 72'high, 30' less than NASM.	*Citizen*
	The Comprehensive Plan also encourages use of the District's physical framework of major axial views, vistas, streets, termini, and natural elements to establish new places and create symbolic points of reference and distinctive settings for new museums, commemorative works, and civic spaces. The scoping materials identified contributing views and visual relationships in the National Mall Historic District, which staff supports evaluating. During the November 6 site tour, staff identified additional views that should be considered in development of the EA: • View looking east from the north side of Jefferson Drive, SW immediately across from the entrance to the NASM. • View looking northeast (towards the Capitol) from the approximate mid-point of the Maryland Avenue right-of-way within the Dwight D. Eisenhower Memorial. Both views noted here will offer additional understanding of the project's impact on the surrounding context and the visitor experience.	These views would be considered in the future NEPA document.	*Agency - NCPC*
Building Form and Massing	Policies in the Urban Design Element of the Comprehensive Plan call for careful planning of the design and land uses in and around the Monumental Core to reinforce and enhance its special role in the image of the nation's capital. In general, federal agencies and local jurisdictions are encouraged to incorporate	Comment Noted.	*Agency - NCPC*

	urban design strategies that consider the relationship between the design of new development and significant adjacencies, such as major public spaces, urban and historic fabric, and along the preeminent viewsheds. As such, staff supports the conceptual building form and massing which respects the contextual framework of the Integrated Bezos Learning Center, including the McMillan Line and corresponding setbacks of the south face of NASM and 4th Street, NW. The conceptual building form, which abstractly takes the shape of a spiral galaxy, is reflective of the proposed program, respects the physical form of the NASM building itself without replication, and does not overwhelm NASM in scale or height. The proposed Astronomy Park also opens out toward the National Mall at Jefferson Street, NW without infringing on the civic qualities and integrity of the Mall itself.		
	Comprehensive Plan policies also support improving visual and functional connections between the National Mall, waterfront, and the rest of the city. Therefore, staff encourages further study of the building massing and form along Independence Avenue in an effort to create an inviting approach from the south. The views presented in the scoping materials demonstrate favor to an approach from the north, while equal consideration should be given to the approach from the south that engages with the Dwight D. Eisenhower Memorial and residents in the southwest and southeast parts of the District.	The proposed project would continue to study the building massing and form and will consider additional viewsheds in the NEPA document.	*Agency-NCPC*
Site and Building Plan Review	NCPC's NEPA responsibilities stem from its approval authority of the project pursuant to the National Capital Planning Act (40 U.S.C. § 8722(b)(1) and (d)); therefore, NCPC is the lead and responsible federal agency for compliance with NEPA. In addition, the National Park Service has accepted NCPC's invitation to be a cooperating agency due to the project's proximity to the National Mall. The following comments, which reflect policies from the Comprehensive Plan for the National Capital, are intended for consideration in development	Comment noted.	*Agency - NCPC*

	of the EA and as guidance for project development and future submissions to NCPC.		
	The Public Scoping materials indicate that impacts related to cultural resources; aesthetics and visual resources; visitor use and experience; traffic and transportation; environmental justice; air quality; and climate change may be addressed in the EA. NCPC staff concurs with the evaluation of these topic areas.	Comment noted.	*Agency - NCPC*
	The Construct Integrated Bezos Learning Center project is subject to the review and approval of NCPC. It is staff's understanding that a concept plan for the proposed project will be submitted to the Commission in the spring of 2024 for review. The proposed preliminary plans are anticipated for review in late 2024 and final plans will be submitted in the spring of 2025. Per our previous discussions, NCPC encourages aligning the Commission's review with the public comment opportunities through the NEPA process, including the review of the Draft EA and ultimately the Finding of No Significant Impact (FONSI), as applicable. A summary of the Commission's interest in each review stage and an outline of submission content can be found online at https://www.ncpc.gov/guidelines.	Comment noted.	*Agency - NCPC*

*Some questions/comments summarized above were received verbally at the November 6, 2023, scoping site tour meeting and are not recorded verbatim.

Appendix B:

Assessment of Effects on Historic Resources Report

Construct Integrated Bezos Learning Center **October 2024**
Draft Assessment of Effects on Historic Resources

Introduction

The Smithsonian Institution (SI), with the National Capital Planning Commission (NCPC), is undertaking a project known as the Construct the Integrated Bezos Learning Center (BLC/Undertaking) which includes the construction of an addition that connects to the National Air and Space Museum (NASM) at the east elevation and the integration of the existing Phoebe Waterman Haas Observatory and Astronomy Park (Haas Observatory and Astronomy Park) within the East Terrace. This Assessment of Effects Report (AOE Report) describes the project and analyzes potential adverse effects on historic properties, including archeological resources, within the project area in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations (36 Code of Federal Regulations [CFR] Part 800 "Protection of Historic Properties"). It has been prepared as part of the continuing consultation process among the SI, NCPC, and the District of Columbia State Historic Preservation Office (DC SHPO) and the consulting parties.

The Section 106 implementing regulations define adverse effect as: "An adverse effect is found when an undertaking may directly or indirectly alter any of the characteristics of a historic property that qualify it for inclusion in the National Register in a manner that would diminish the property's integrity of location, design, setting, materials, workmanship, feeling, or association."[1]

Project Description

The project to Construct the Integrated BLC includes the construction of an above-grade 57,045 square-foot addition and the renovation of an existing 38,064 Basement Level/Loading dock. The addition will be connected to the east elevation of NASM and includes the integration of the Phoebe Waterman Haas Observatory and Astronomy Park within the East Terrace. The Undertaking and subsequent Section 106 process follows the parameters outlined in the NASM East End Project Programmatic Agreement (PA), executed on March 30, 2022, among SI, DC SHPO, and NCPC. Also outlined in the PA are the design framework for the BLC, which include:

1. Design concepts must respect the formal setting of the National Mall and neighboring museums, including the Hirshhorn Museum, National Gallery of Art, and the National Museum of the American Indian. The NASM is sited on center with the Sixth Street axis, designed in a symmetric relationship with the National Gallery of Art west building.
2. Design concepts must respect the NASM building and respond to its architecture and massing with an addition design that maintains the essential form and integrity of the NASM and its environment. Design concepts shall meet the *Secretary of the Interior's Standards for the Treatment of Historic Properties for Rehabilitation*.
3. Design concepts must carefully consider the BLC addition's physical connection to the NASM and materials. Design concepts may consider transparent walls to inspire learning through connection to the National Mall, BLC learner projects, and to the NASM's artifacts.
4. Design concepts must consider and respect contributing vistas of the National Mall Historic District, including the Fourth Street north-south vista, the east-west viewshed of the central greensward, the building line established by the Plan of the City of Washington and views to the flanking elm trees and buildings along the Mall from pedestrian paths and the central greensward.

The complete project scope includes: a three-story addition that holds a 600-700 seat restaurant on its ground floor, BLC programming, and building support spaces on the upper floors; a new east vestibule directly connected to NASM on its level one; an upper terrace for BLC related programming at the addition's northeast corner; a new permanent location for the Haas Observatory and Astronomy Park at the East Terrace; outdoor educational programming space; new accessible walkways to the north and south sides of the addition; and new landscape design at the east end of the site.

[1] 36 CFR 800.5(a)(1).

Bezos Learning Center

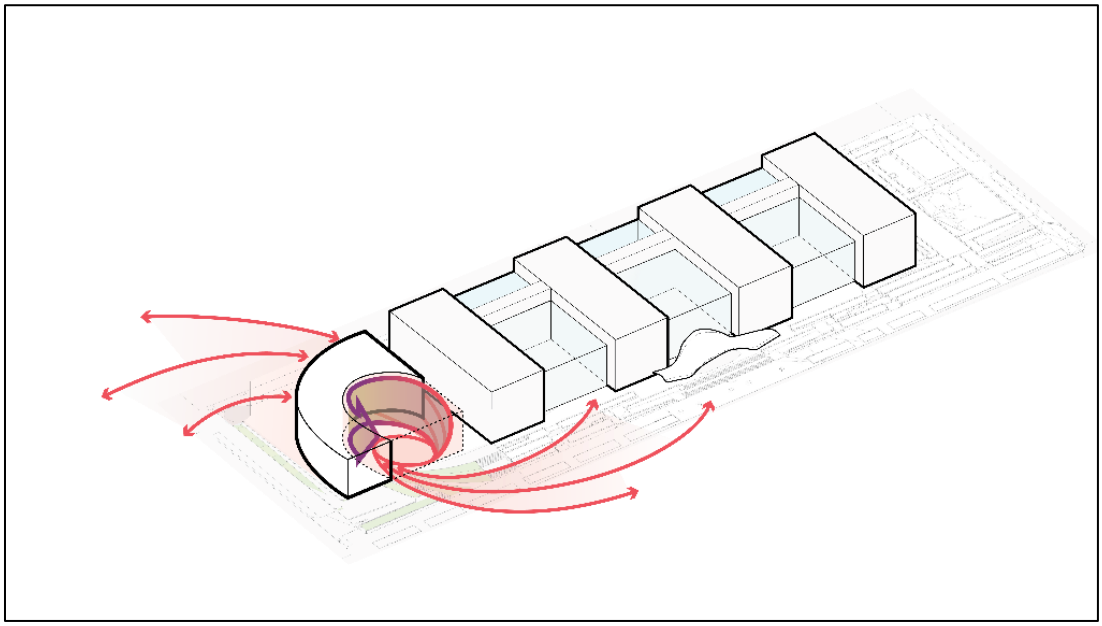


Figure 1: Inspired by spiral galaxies, the spiral force draws people in and diffuses knowledge out. (Perkins&Will, 2023)

The inspiration for the form of the BLC is a spiral galaxy, a form that reflects two-thirds of the known galaxies, including the Milky Way (Figure 1). The building's architecture metaphorically places the individual student, educator, and visitor at the core of the galaxy, surrounded by educational experiences and paths of discovery that lead to infinite possibilities for their future in science, innovation, and leadership.

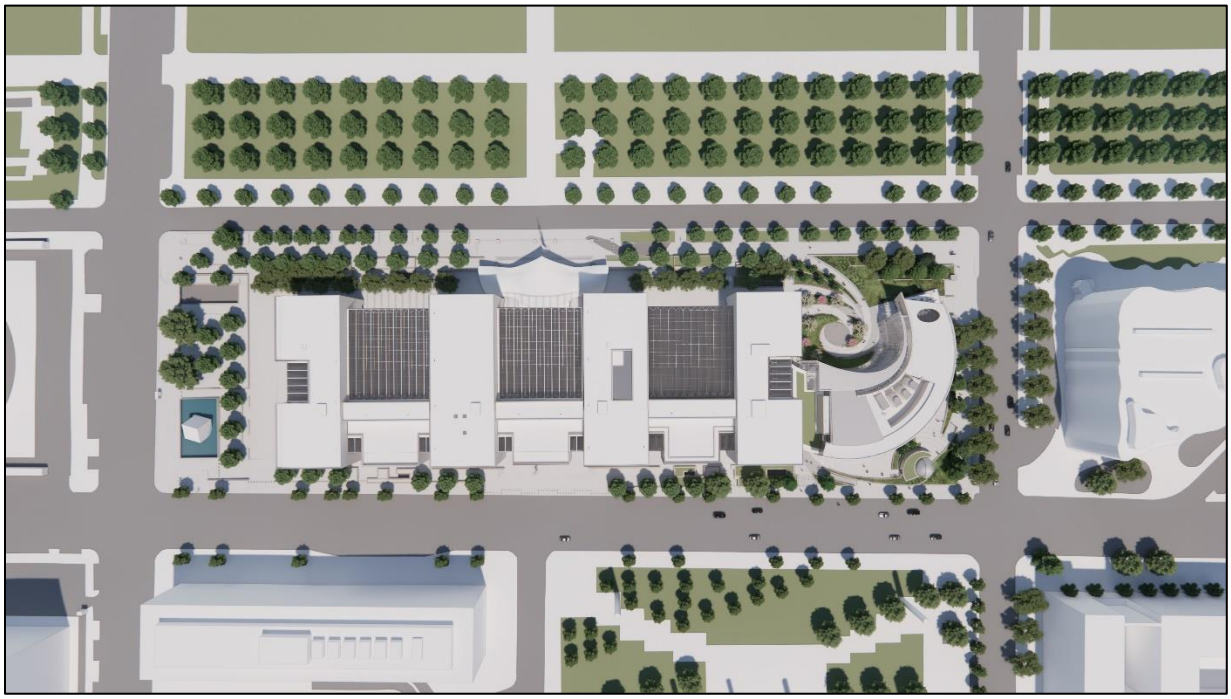


Figure 2: NASM and BLC proposed site. (Perkins&Will, 2024)

The central circulation spine of NASM, which takes visitors through the legacy of aviation and spaceflight, evolves into an energizing, spiral geometry within the BLC, and creates a symbolic destination for the study of the universe. The spiral trajectory extends out into the landscape to create the Learning Courtyard and Astronomy Park (Figure 2). From the National Mall, visitors will see the Learning Courtyard framed by the addition rising skyward, recalling the form of the

galaxy. The design of the exterior enclosure uses texture to create dramatic shadow patterns by day that reinforce the energy and movement within the BLC. At night, these openings transform into streaks of subtle light, recalling shooting stars in the night sky.

The addition will connect to the east elevation of NASM with a one-story glazed hyphen to allow maximum views of the east elevation of NASM from inside the new addition and recalling the stone and glass composition of the NASM's atriums. The main mass of the addition will be pulled back from NASM, sloping to the east, spiraling up to the north, exercising motion and allowing further separation from NASM (Figures 3 and 4). The height of the west end of the addition is sixty-seven feet, while the highest point at the northeast corner reaches seventy-two feet. The proposed addition will be set back 445 feet from the National Mall, following the McMillan Plan, thirty feet from Fourth Street, SW, to conform to the adjacent National Museum of the American Indian's setback, and aligns with the southern elevation of NASM on Independence Avenue, SW (Figure 5).

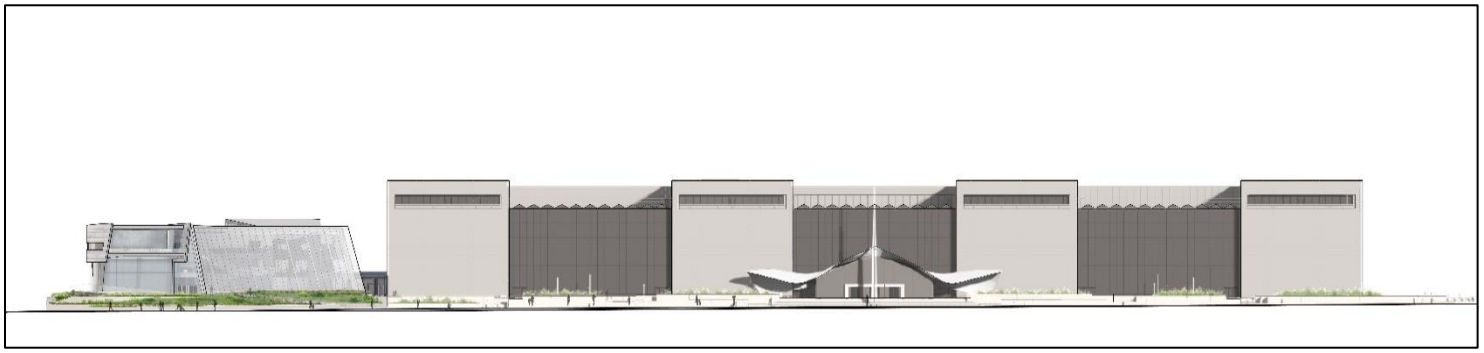


Figure 3: Proposed north section of the building. (Perkins&Will, 2024)

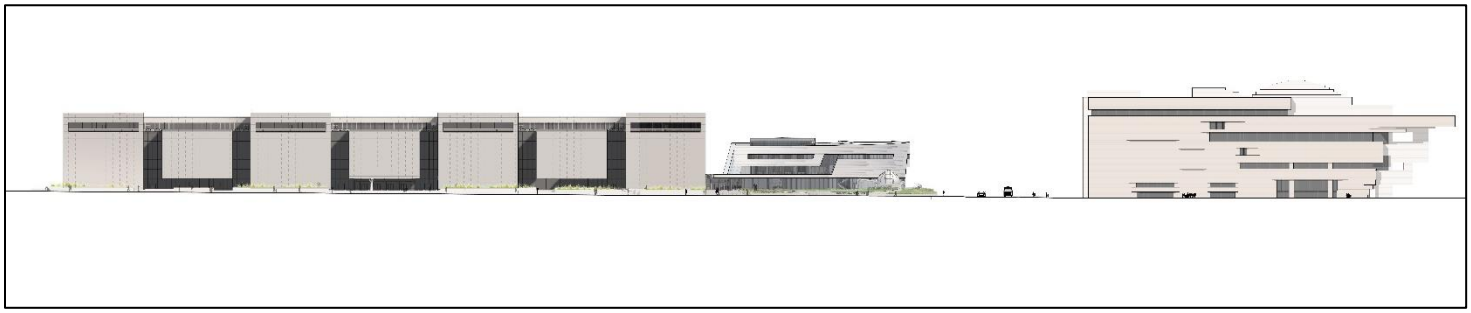


Figure 4: Proposed south elevation of the addition. Note the main mass of the new construction set back, and leaning away from the NASM, to allow the east elevation to remain visible and create a visual separation between the museum and the BLC. (Perkins&Will, 2024)

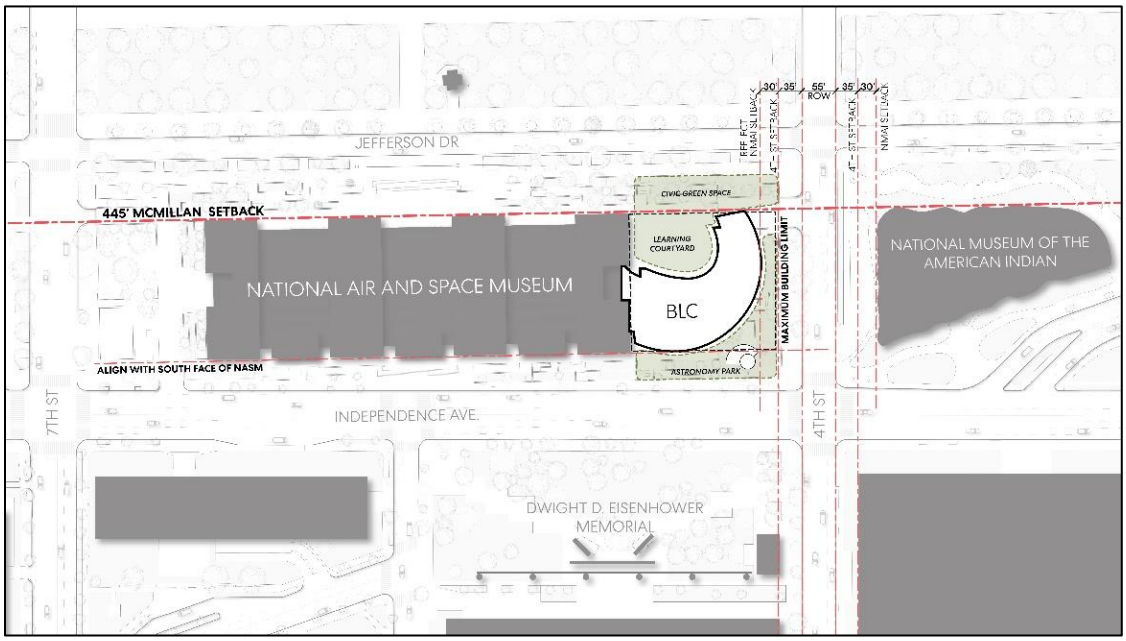


Figure 5: BLC setbacks from L'Enfant Plan streets, protecting viewsheds. (Perkins&Will, 2023)

The main mass of the addition will be concentrated at the southeast end of the site, opening the northwest landscape to the National Mall. The interior curve of the spiral will be a two-story glazed curtain wall to maximize views to and from the National Mall, and in keeping with the NASM's rhythm of facade composition. At the east and south elevations, the addition is clad in aluminum panels with tapered eight-inch deep, aluminum fins. The fins have continuous two-inch tall reveals which could incorporate lighting, to accentuate the spiral motion of the addition's form.

Phoebe Waterman Haas Observatory[2]

Figure 6: Phoebe Waterman Haas Observatory and Astronomy Park. (Perkins&Will, 2024)

[2] This section will be updated as the design develops.

The permanent Phoebe Waterman Haas Observatory will be located at the southeast corner of the site (Figure 6), the best location on the site for astronomical events and viewing. The proposed building to house the Observatory is a twenty-six-foot-wide dome containing the telescope, with a curved, ten-foot-fourteen-inch-tall entrance, office, and storage space wrapping around the northwest end of the Observatory. The Observatory will be clad in the same aluminum panels and tapered fins as the new addition.

Landscape Design and Phoebe Waterman Haas Astronomy Park[3]

The galactic spiral that informs the BLC architectural form introduces an organic, outwardly expanding landscape scheme with two program areas: the north-facing Learning Courtyard fronting Jefferson Drive, SW, and the south-facing Astronomy Park, which provides the Observatory and telescope array the best views of the night sky. The design promotes visual and spatial continuity between the addition's interior and exterior spaces on the main floor and at Level Two to planted roofs and canopy vegetation, including canopies of trees on the National Mall.

The new landscape will be a spiral form at the Learning Courtyard with low canopy trees at the center to allow for temporary projections on the east elevation of NASM (Figure 7). The landscape spirals out towards the National Mall with a new accessible ramp connecting to Jefferson Drive, SW. The extant terraced stair to Jefferson Drive, SW, will be reconfigured to better align with the new curved ramp and landscape. A new pollinator garden will be inserted in the top tier of the extant NASM terraced walls, with a grove of trees on the middle and bottom tiers, increasing the tree canopy around the National Mall and NASM site. The east end of the landscape will be altered with a new curved stair extending from the Haas Observatory to Fourth Street, SW. The south end will contain the Astronomy Park, with the extant stairs to remain and a new curved accessible ramp to Independence Avenue, SW. A radiating pattern in the terrace paving is centered from the Observatory.

For more images and information on each element of the Undertaking, please refer to the presentation materials from past Section 106 Consulting Parties meetings available on the project webpage (https://airandspace.si.edu/about/major-projects/bezos-learning-center).

[3] This section will be updated as the design develops.

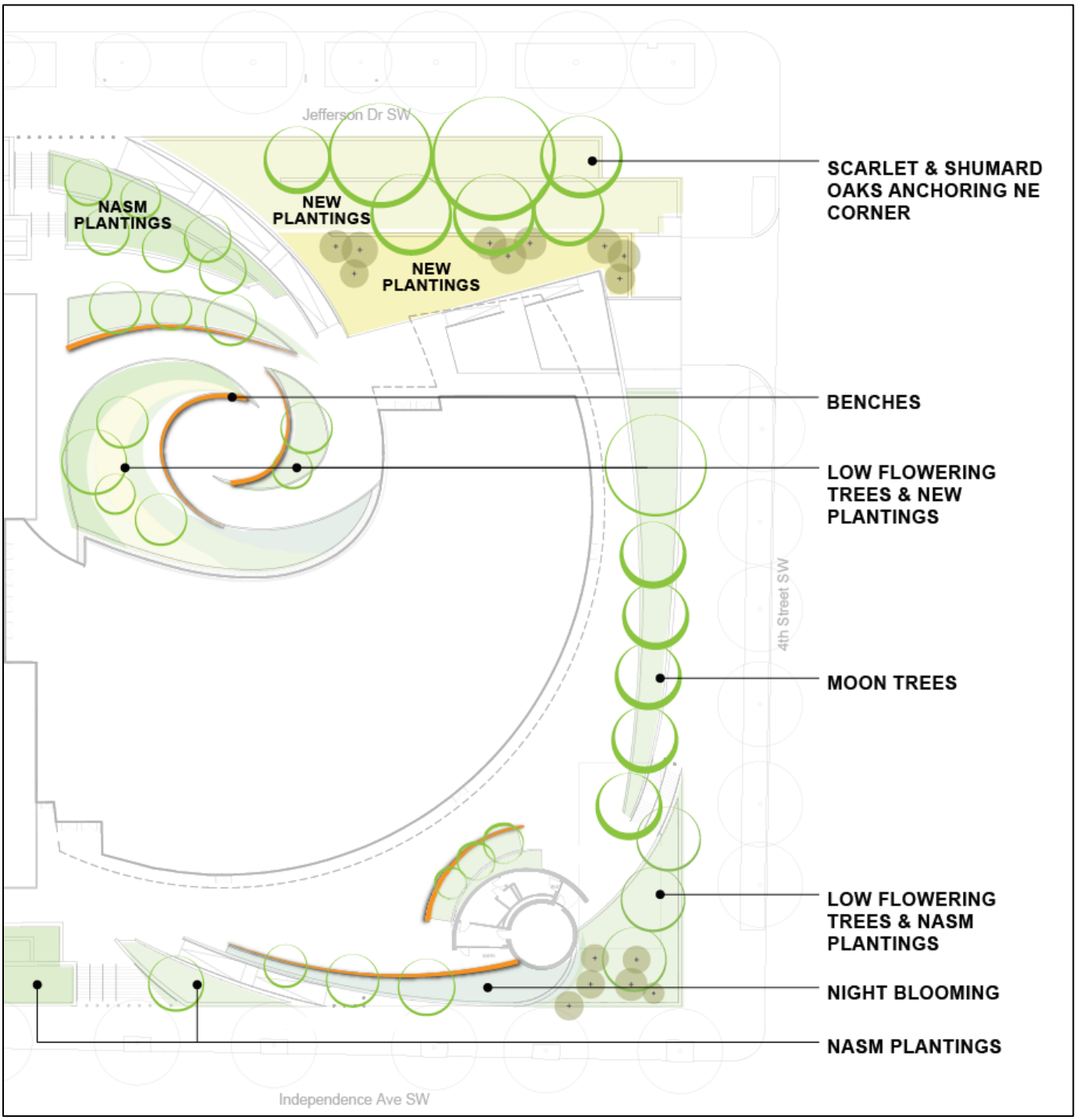
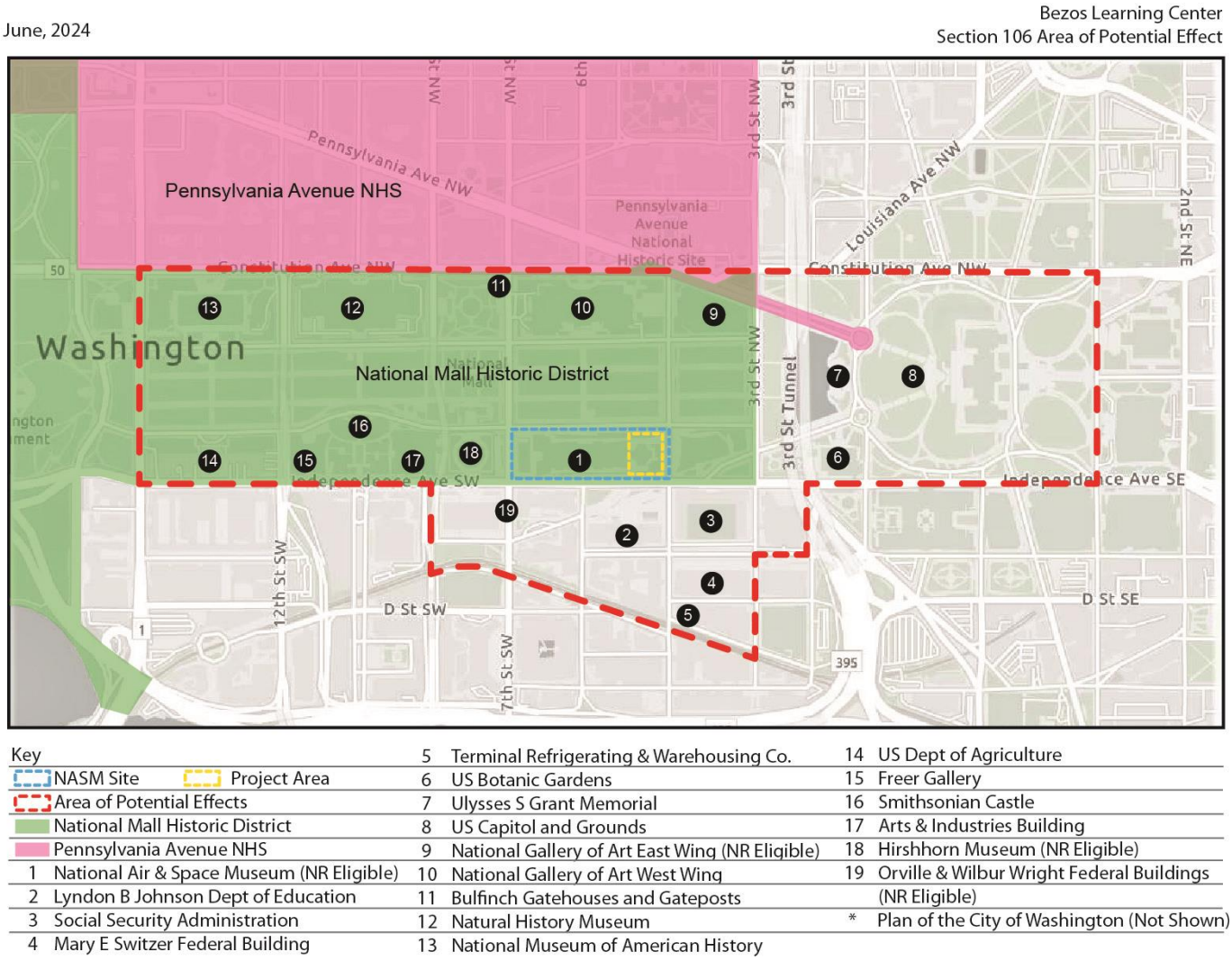


Figure 7: Proposed landscape plan that emphasizes the spiral design concept of the new addition. (Elizabeth Kennedy Landscape Architects, 2024)

Area of Potential Effects

The APE (Figure 8) is defined as the geographic area within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties under the implementing regulations Section 106 (36 CFR § 800.16[d]). This AOE Report on Historic Resources considers the effects of the Undertaking within the APE outlined in the below mapped area. This APE was presented and finalized during the Section 106 consultation process. More information on the APE and descriptions of the identified historic resources can be found in **Attachment A**.



Key					
NASM Site / Project Area		5	Terminal Refrigerating & Warehousing Co.	14	US Dept of Agriculture
Area of Potential Effects		6	US Botanic Gardens	15	Freer Gallery
National Mall Historic District		7	Ulysses S Grant Memorial	16	Smithsonian Castle
Pennsylvania Avenue NHS		8	US Capitol and Grounds	17	Arts & Industries Building
1	National Air & Space Museum (NR Eligible)	9	National Gallery of Art East Wing (NR Eligible)	18	Hirshhorn Museum (NR Eligible)
2	Lyndon B Johnson Dept of Education	10	National Gallery of Art West Wing	19	Orville & Wilbur Wright Federal Buildings (NR Eligible)
3	Social Security Administration	11	Bulfinch Gatehouses and Gateposts	*	Plan of the City of Washington (Not Shown)
4	Mary E Switzer Federal Building	12	Natural History Museum		
		13	National Museum of American History		

Figure 8: Area of Potential Effects and Identified Historic Resources. (EHT Traceries, 2024)

National Air and Space Museum – Character Defining Features

The NASM is the largest museum building on the National Mall and showcases a nationally significant collection of artifacts documenting the history of flight and space travel. The Modernist style building was designed by Gyo Obata of Hellmuth, Obata & Kassabaum and opened to the public in 1976. NASM is a contributing element to the National Mall Historic District under Criterion A. The building itself has been evaluated and may be eligible for individual listing in the National Register of Historic Places under Criteria A, C, and Criteria Consideration G with a period of significance of 1976. Later additions and changes made to the building and site after 1976 are not considered contributing features. Below is a list of character-defining features that are contributing to NASM's historic significance.

Character Defining Feature*	Notes
Seven-bay building form with alternating solid-void pattern	-The solid and void pattern of NASM is a critical design element. -Visible on all elevations. -At the north façade, four solid sections are divided by three void sections, with the void sections continuing to the roof, with large skylights that continue to the building's central spine. -The south elevation has four solid sections, mimicking the north façade, with three smaller solid cantilevered bays held within void glazing.
Recessed, glazed openings in the east and west elevations	-The east and west elevations have solid north/south wings framing a central void section, which continues the solid-void pattern of the building form. -The physical glass and frame are not original and do not retain integrity of material
Recessed third-story, linear openings and balconies	-Eight recessed, third-floor balconies are located within the solid sections of the design. -Their horizontality, emphasized with their railings and deep recesses, help articulate the monumental solid bays.
Marble curtain wall panels	-The Tennessee Pink Marble exterior panels were replaced with Colonial Rose Granite panels; a substitute material selected as part of the Section 106 process during the NASM Revitalization project. -Installation of new Colonial Rose Granite panels resulted in a loss of integrity of material.
Carved inscriptions on north and south elevations	-Located at the north and south elevations. Incorporated into accessible walkway stone walls under the NASM Revitalization project.
Exterior terrace on southeast cantilevered block	-Located on top of the southeast cantilever block, the exterior terrace was part of Obata's original design.
Tiered terraces and planting beds	-Surrounding the site, the historic landscape plan had tiered terraces and planting beds. -Almost all the tiered terraces and planting beds located at the east end of the site were altered c. 1988 with the restaurant addition; these reconfigured terraces and beds are not considered character defining. -Vegetation within the planters is not considered character defining. -Non-historic stairs, ADA-ramps, and perimeter security features have been inserted into the historic tiered terraces over time and are not considered character defining.
Marble-clad retaining walls throughout the site	-Located throughout the site, the retaining walls remain but the Tennessee Pink Marble panels have been replaced with Colonial Rose Granite. -Marble retaining walls at the east terrace are in poor condition.
Garage openings and ramps	-Located at the east elevation, the garage opening and ramps flow under the east terrace to the museum basement and loading dock. -Historically clad in Tennessee Pink Marble, the material was removed and replaced with Colonial Rose Granite. -There is a non-contributing guardrail atop the garage opening, and non-contributing perimeter security features throughout.
Ad Astra sculpture	-Sculpture has always been displayed at the north façade, main entrance. -Designed by Richard Lippold.
Continuum sculpture	-Sculpture has always been displayed at the building's south elevation. -Designed by Charles O. Perry.

**Please note that there are a number of contributing elements to NASM on the interior of the building, but as work is limited to the exterior of NASM they have not been included within this AOE Report.*

Assessment of Effects on Historic Resources

The following provides an assessment of effects for each of NASM's character-defining features, as well as an assessment of effect for each action of the Undertaking on the identified historic resource within the APE (Attachment A). The effects determination is based on the criteria of adverse effect. For more images and detailed information on each action and assessment, please refer to the presentation materials from past Section 106 Consulting Parties meetings available on the project webpage.

A number of character-defining features of NASM have no potential to be adversely affected by the BLC project, including: the recessed third-story, linear openings and balconies; the exterior terrace on southeast cantilevered block; carved inscriptions on the north and south elevations, and the *Ad Astra* and *Continuum* sculptures. As such they are not addressed below.

National Air and Space Museum

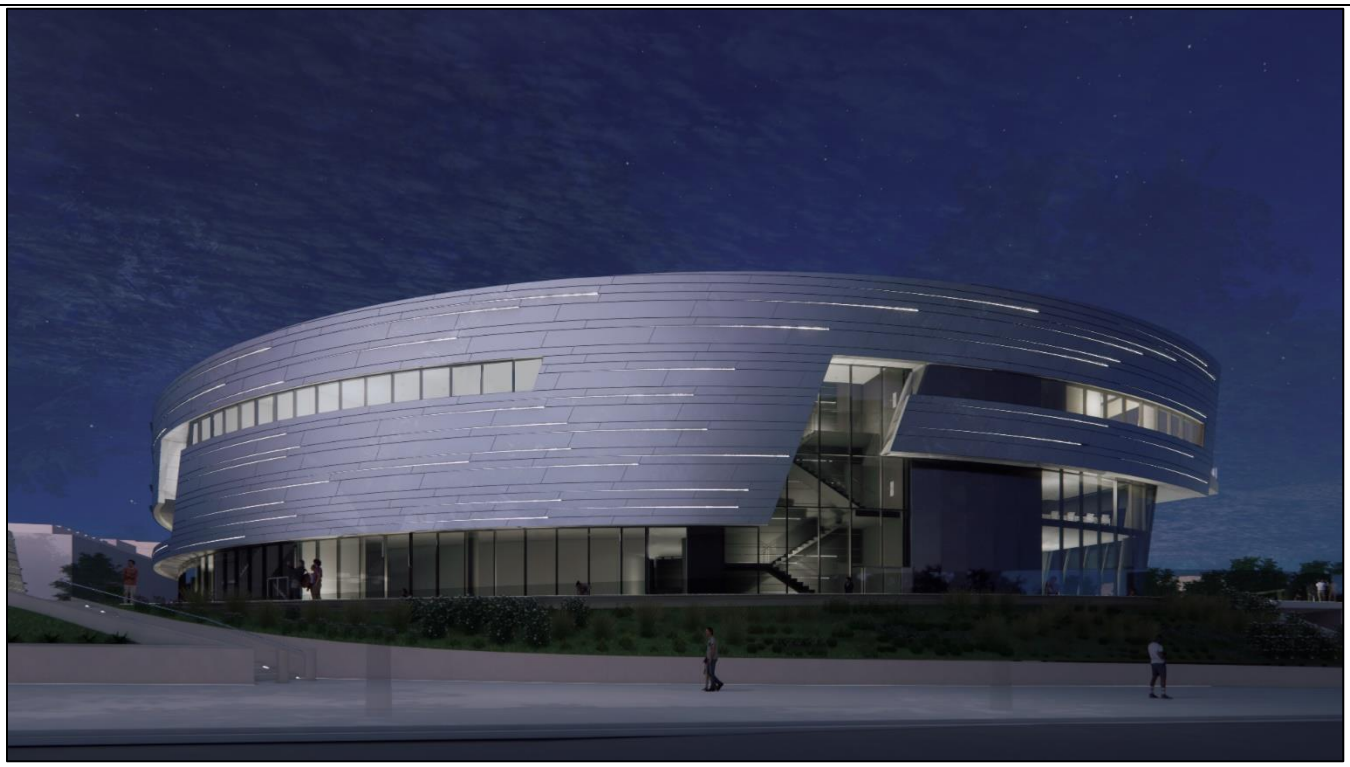
National Air and Space Museum	
Feature/Action	**Design Details[4]**
BLC and Haas Observatory Design and Form / Mechanical Systems / Materials and Integrated Façade Lighting	-The spiral form and massing of both the BLC and Haas Observatory are substantial additions to the NASM and its site, distinctive from the geometric imposing massing and rigid form of Obata's NASM design, resulting in adverse effect. -To minimize adverse effect, the light and airy design, showcasing movement, is differentiated as new additions to Obata's original monumental building form, designed with setbacks and lower height to allow the NASM's massing and form to remain the primary feature of the Museum and site. -The BLC's entry points at the SW and NE portions of the addition call visual attention and may signify that the addition is the primary entrance to the Museum, resulting in adverse effect. This adverse effect may be intensified at night due to lighting. -All mechanical systems will be integrated within the building designs and forms of the spirals and will not be interrupted by mechanical equipment, maintaining the distinctive form on all elevations, minimizing adverse effects. -The BLC's façade cladding with PPG Titanium finished metal panels and fins with integrated cove lighting create a dynamic texture of light and shadow that wrap the spiral building forms evoking the linear energy and dotted landscape within the Spiral Galaxy. The aluminum cladding color will complement the NASM's Colonial Rose Granite to minimize adverse effects. -The size of the panels follows a 1'3" module, derived from NASM's 2'6" stone panel joints. There will be six panel sizes, three thick, three thin, that will be randomized across the elevation and will correspond to the tapered fins and integrated lighting. The size of the reveal between panels was reduced to one inch, bringing the metal panels closer to the monolithic aesthetic of NASM. -As day transitions to night, integrated cove lighting will gently illuminate the metal fins. There is no current comparable lighting or design feature on NASM's static, solid, monumental architecture. Such dynamic lighting at night directly adjacent to NASM may detract from the NASM's formal setting, and further studies will be conducted to evaluate the potential effects. -The Spiral Concourse of the BLC faces the Mall and is clad with clear Viracon GL-01 Make-up glass (with bird frit pattern) to maximize views and connection between interior and exterior in keeping with the NASM's configuration. The Spiral Concourse system will be a custom steel column, steel horizontal connector beam, custom steel mullion, and

[4] This analysis will be updated as the design develops.

	stainless-steel outrigger, with aluminum fins, all to be executed in the Sherwin Williams On the Rocks 7671 in keeping with the NASM's interior space frame structure. The clear glass and spiral concourse system will further communicate the building's lightness, in contrast with NASM's heavy, monumental form and heavy tint of its glazing. -All non-concourse elevations will receive a darker, grey-tinted Interpane GL-02 Make-up #2 glass (with bird frit pattern). This tint is not as dark as NASM's extant glass, for differentiation. -On going review of the tint of the two different glasses, the chosen frit patterns, and shading elements, results in a conditional finding of adverse effect; however, the incorporation of transparent walls are in accordance with the PA design framework.

Images

The form and massing are distinctive and complimentary to Obata's original design intention. (Perkins&Will, 2024)

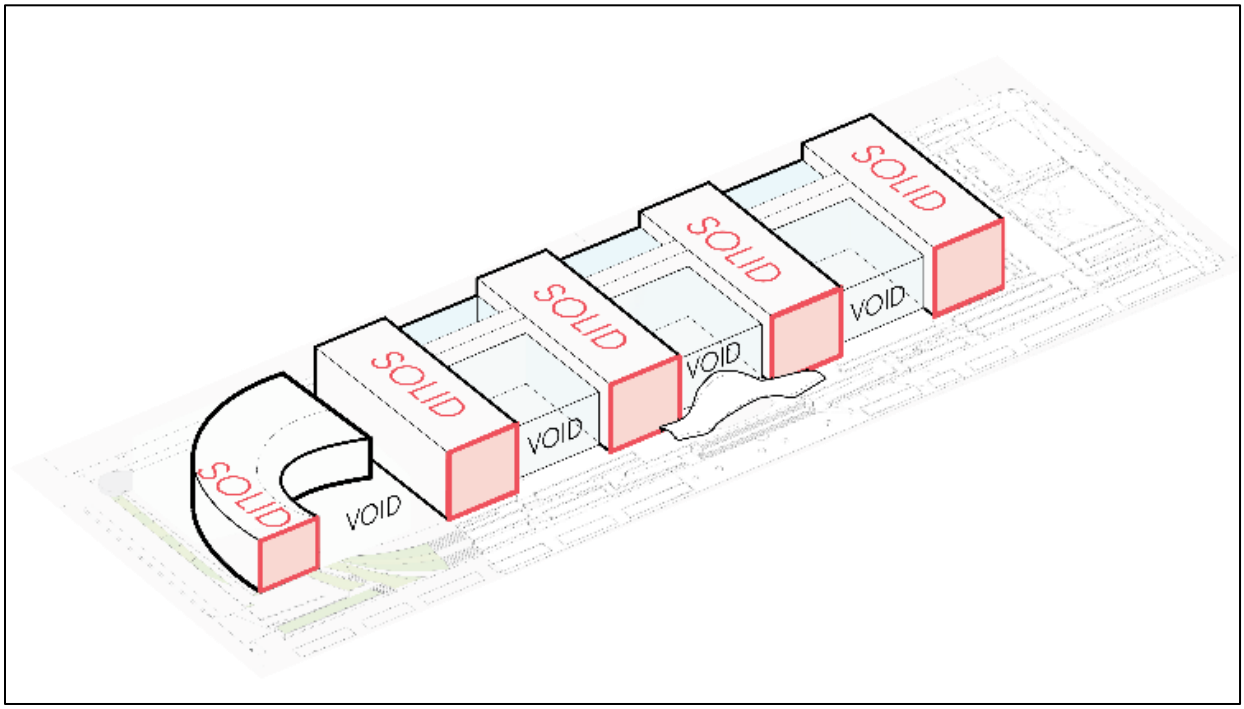


East elevation rendering at night of BLC and Hass Observatory with the integrated façade lighting within the metal panels. (Perkins&Will, 2024)

South elevation rendering at night of BLC and Hass Observatory with the integrated façade lighting within the metal panels. (Perkins&Will, 2024)

Proposed Effect Determination – Potential Adverse Effect

National Air and Space Museum	
Feature/Action	**Design Details**
Seven-bay building form with alternating solid-void pattern / New addition	-The new addition will not alter the seven-bay solid-void pattern of NASM's north and south elevations. Both the north and south elevations, and their solid/void pattern, will continue to be fully legible. -The new addition will extend and reinterpret the solid-void pattern, on both the north and south elevations, relating to Obata's original design intent, -The limited height of the addition and extending the solid-void pattern improves the compatibility of the BLC addition to the NASM's form and this character defining feature of the original design and will not result in an adverse effect. -The addition form respects the NASM building and responds to its architecture and massing in accordance with the PA design framework. -See "Connection to the east elevation of NASM" for related analysis.
Images	



North elevation of NASM with the seven-bay solid-void pattern, continued to the new addition. (Perkins&Will, 2023)

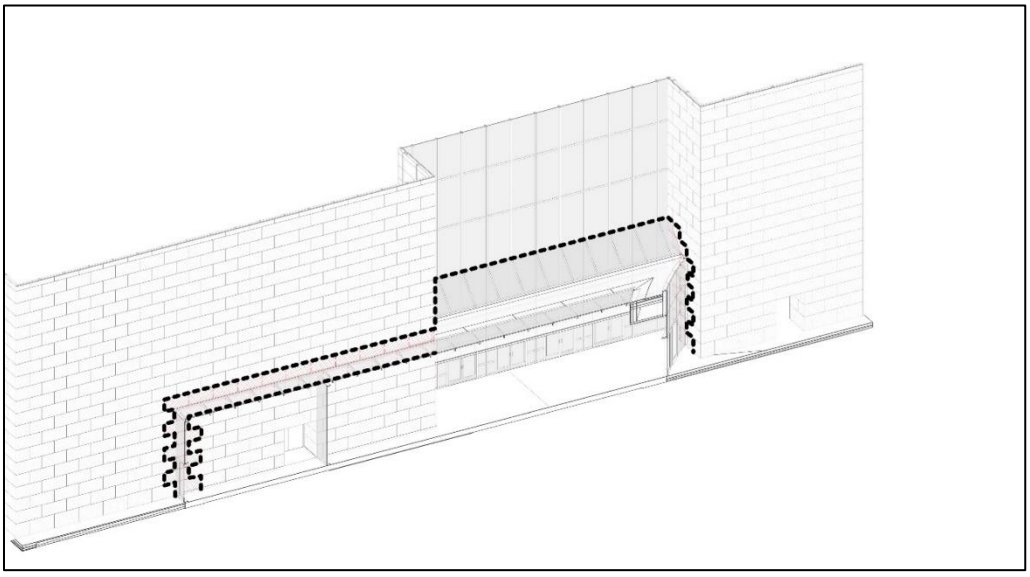
Proposed Effect Determination – No Adverse Effect

National Air and Space Museum	
Feature/Action	**Design Details**
Recessed, glazed openings in the east and west elevations / Marble curtain wall panels (no longer extant) / Connection to the east elevation of NASM	-The west elevation of NASM will not be impacted by the Undertaking. -Though the Undertaking involves the limited removal of Colonial Rose Granite panels and portions of the east elevation glazing, both materials lack integrity as they were previously replaced, resulting in no adverse effect. -The three-bay solid/void pattern of the east elevation will be partially obscured by the addition resulting in an adverse effect. The pattern will still be communicated, as the main mass of the addition is set back, leaning away from the face of the building, only connected at the first story, with a glazed hyphen, minimizing adverse effect. -The new addition is also reversible as it lightly connects to the east elevation and permits NASM to remain the primary feature on the site, minimizing adverse effect.

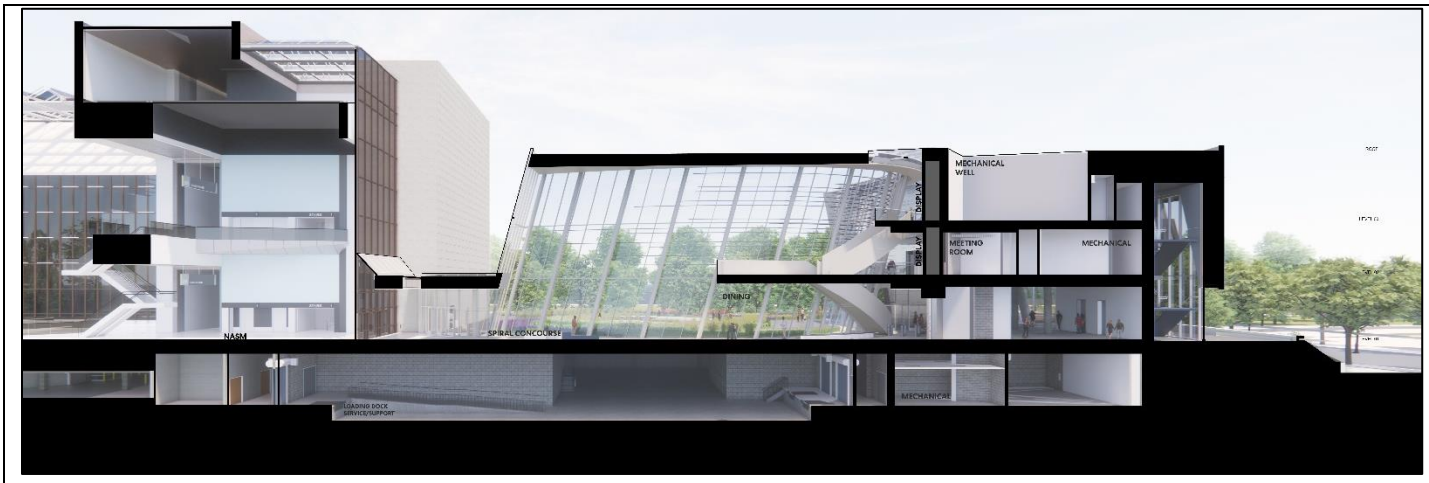
	-The hyphen incorporates a skylight at the connection, exposing the east elevation from inside the new addition, further minimizing adverse effects, and recalls the configuration of the NASM's atriums. -The addition's physical connection to NASM was carefully considered and incorporates a light touch and glazed hyphen in accordance with the PA design framework.

Images

Extant view of NASM's east elevation, looking west, with the solid-void pattern, new glazing, and Colonial Rose Granite panels. (EHT Traceries, 2024)



Axonometric view of the limits of connection at the east elevation of NASM. (Perkins&Will, 2024)



Interior section of the new addition and hyphen connection to NASM. Note the main mass of the BLC angled away from NASM allowing for separation and maintaining views to the museum's east elevation. (Perkins&Will, 2024)

Interior rendering of the connection to NASM with the skylight allowing for views of the east elevation from inside the new BLC hyphen. (Perkins&Will, 2024)

Rendering of the south elevation of BLC and the glazed hyphen connection to the east elevation of NASM. (Perkins&Will, 2024)

Southeast corner where the new connection will be made with the newly installed Colonial Rose Granite panels. (EHT Traceries, 2024)

Proposed Effect Determination – Adverse Effect

National Air and Space Museum	
Feature/Action	**Design Details**
New Signage	-Signage program for the BLC and East Terrace includes engraved signage on the stone walls, in keeping with NASM and other Smithsonian buildings on the National Mall. The signage will not result in an adverse effect.
Images	

Proposed signage at the north elevation with "BEZOS LEARNING CENTER" carved into the stone site wall. (Perkins&Will, 2024)

Proposed signage at the south elevation with "PHOEBE WATERMAN HASS OBSERVATORY" carved into the stone site wall. (Perkins&Will, 2024)

Proposed Effect Determination – No Adverse Effect

National Air and Space Museum	
Feature/Action	**Design Details**
Tiered terraces and planting beds / Retaining walls / New addition and insertion of new site access, including stairs and ADA ramps	-New site access and accessible ramps will require the demolition of tiered terraces, planting beds, and retaining walls, resulting in an adverse effect. However, most of the original tiered terraces, planting beds, and retaining walls at the east end of the site were demolished and reconfigured in 1988. Only portions of the planting beds and retaining wall along Fourth Street, SW, and flanking the garage entrance retain their historic design. -The stair to Jefferson Drive, SW, currently steps down to the east; the newly configured stair will step down to the west altering the planting beds at the north elevation. However, these planting beds fall outside of the period of significance and these alterations will not intensify adverse effects. -The new accessible ramp from the Learning Courtyard to Jefferson Drive, will impact the tiered planting beds at this location; however, these planting beds fall outside of the period of significance. The retaining wall in this location is not original. This will not result in an adverse effect. -The tiered planting beds flanking the garage will be demolished to the south and reconfigured to the north, resulting in an adverse effect. -The planting bed and retaining wall along Fourth Street, SW, south of the garage, was previously reduced in size with the construction of the restaurant addition in 1981. Due to the new location of the addition and expanded Astronomy Park, the planting bed along Fourth Street, SW, will be further diminished in size, resulting in an adverse effect. The location of the opening for the new ramp will result in further loss of the retaining wall, resulting in an adverse effect. -The extant stair to the south, leading to Independence Avenue, SW, will be retained, minimizing adverse effect. -The ADA ramp to the south will be reconfigured to conform with the new spiral design; however, the ramp falls outside of the period of significance. This will not intensify adverse effects. -Alterations to the tiered terraces, planting beds, and retaining wall will have a cumulative impact on these features, resulting in an adverse effect. However, all the alterations will be limited to the east end of the NASM site, minimizing those adverse effects.
Images	

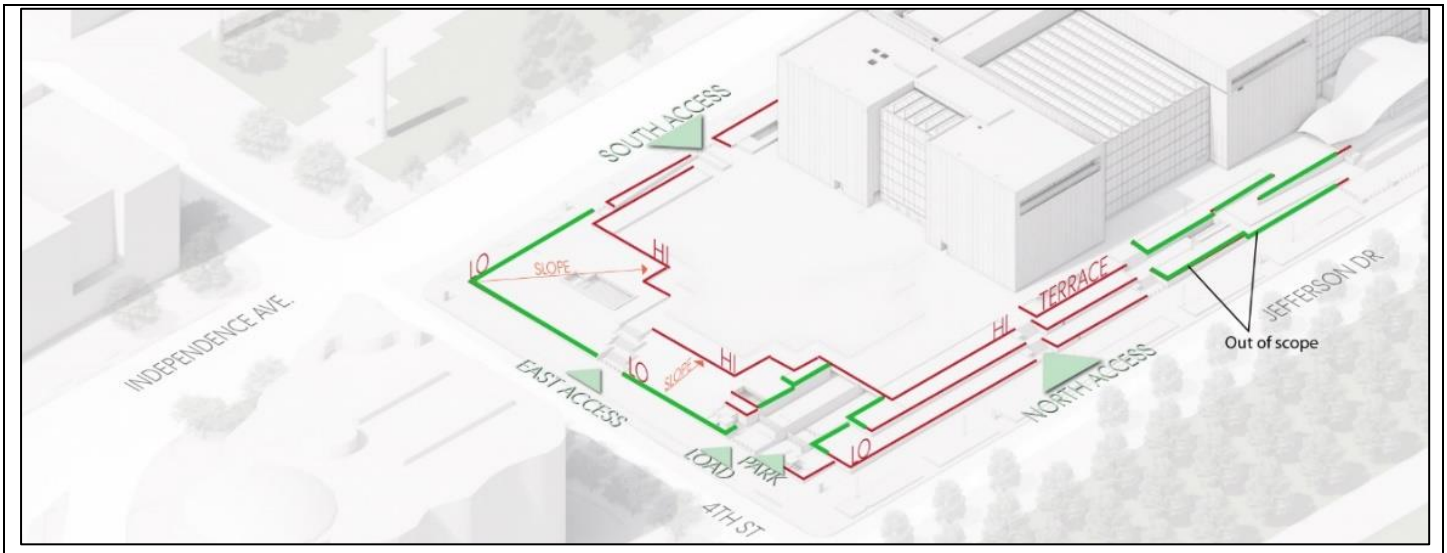
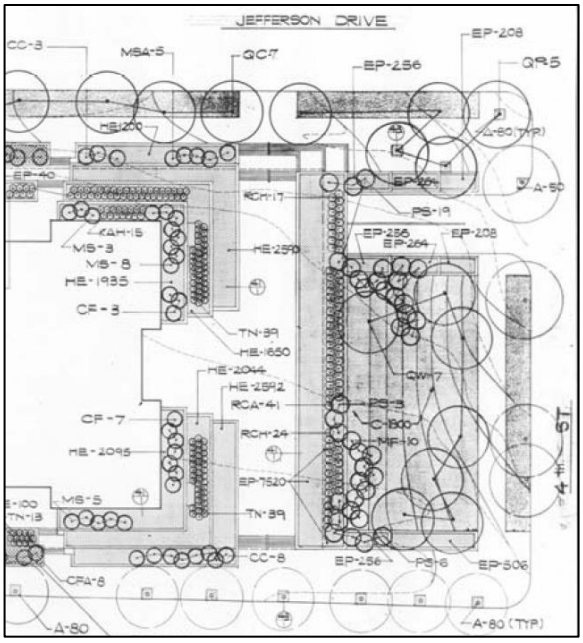
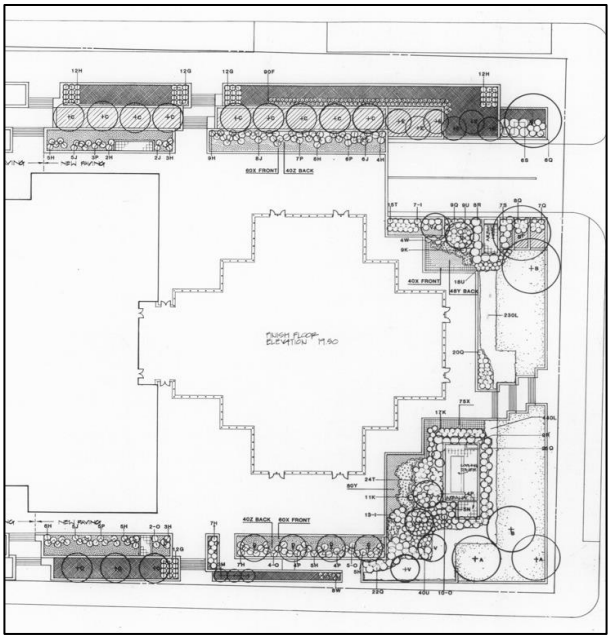


Diagram of the current retaining walls, tiered terraces, and planting beds at the east end of NASM. Walls highlighted in green are part of the original design and are character-defining features; walls highlighted in red were altered in 1988 and are not considered character-defining features. (Perkins&Will, 2023, annotated by EHT Traceries, 2024)



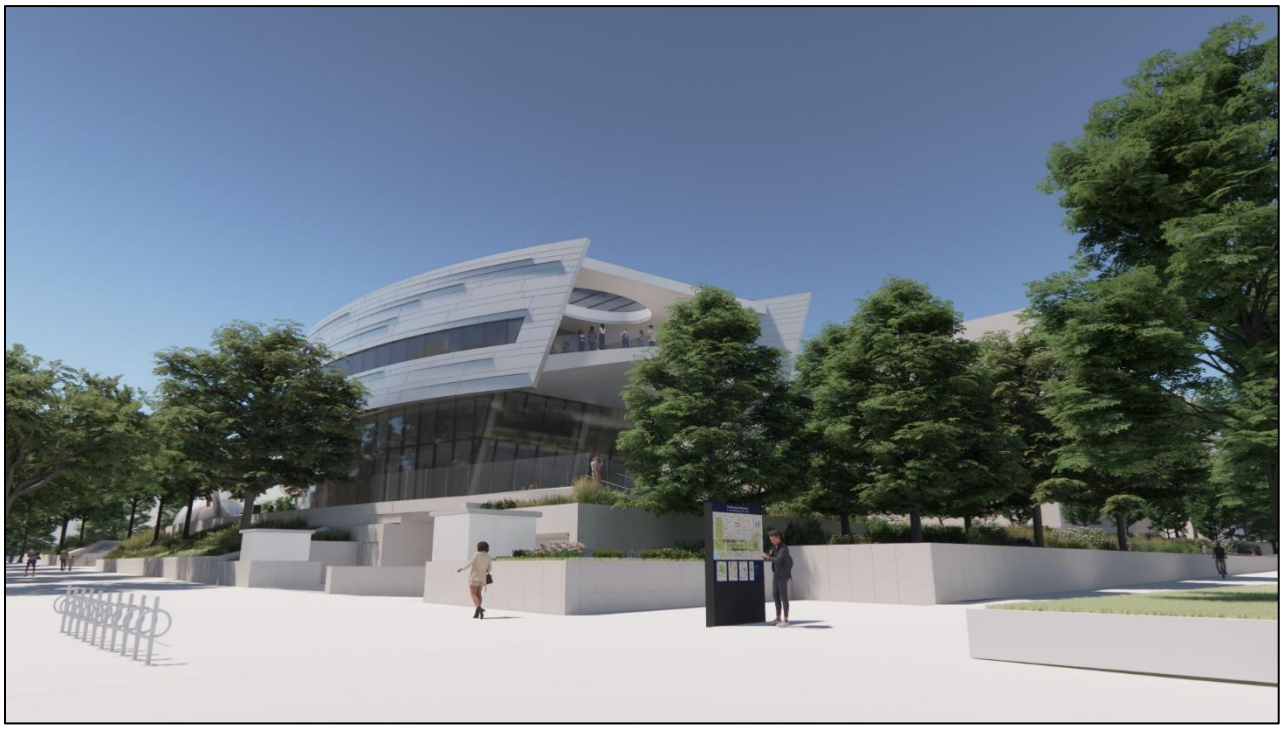


Left: Original 1972 landscape and planting plan (Smithsonian Institution, 1972)
Right: 1988 restaurant addition and landscape plan showing the alteration of character-defining features. (Smithsonian Institution, 1988)

Proposed landscape and planting plan as part of the Undertaking. (Elizabeth Kennedy Landscape Architects, 2024)

Proposed Effect Determination – Adverse Effect

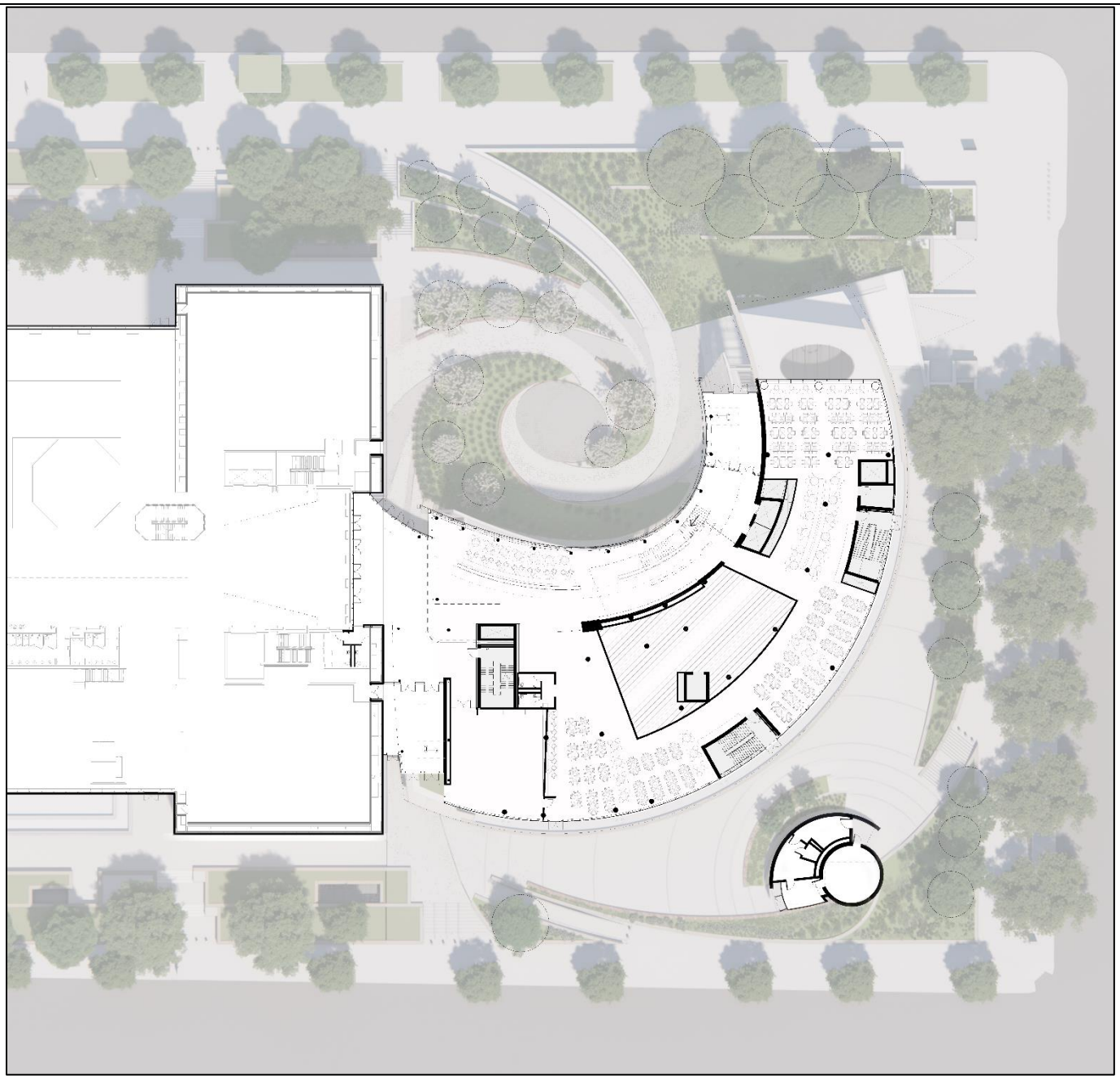
National Air and Space Museum	
Feature/Action	**Design Details**
Garage openings and ramps / New addition extending over the garage	-Vehicular ramps down to the garage will remain, though the marble-clad walls were previously replaced with Colonial Rose Granite. -The new addition, which is pulled further away from NASM towards Fourth Street, SW, will result in decking over both ramps and garage openings. This decking will cause a tunnel effect when entering the garage/loading dock area, an aspect that was not part of Obata's original design intention. The change in the feel of the original ramps and their relationship with the east elevation of NASM will result in an adverse effect.
Images	



Proposed extent of the decking over the existing garage openings and ramps. (Perkins&Will, 2024)

Proposed Effect Determination – Adverse Effect

National Air and Space Museum	
Feature/Action	**Design Details**
Interior of NASM	-There will be no alterations to the historic interior configuration of NASM. All systems will be independent of the main NASM building and the existing doors at the east elevation will be retained. There will be no adverse effect to the interior of NASM.
Images	



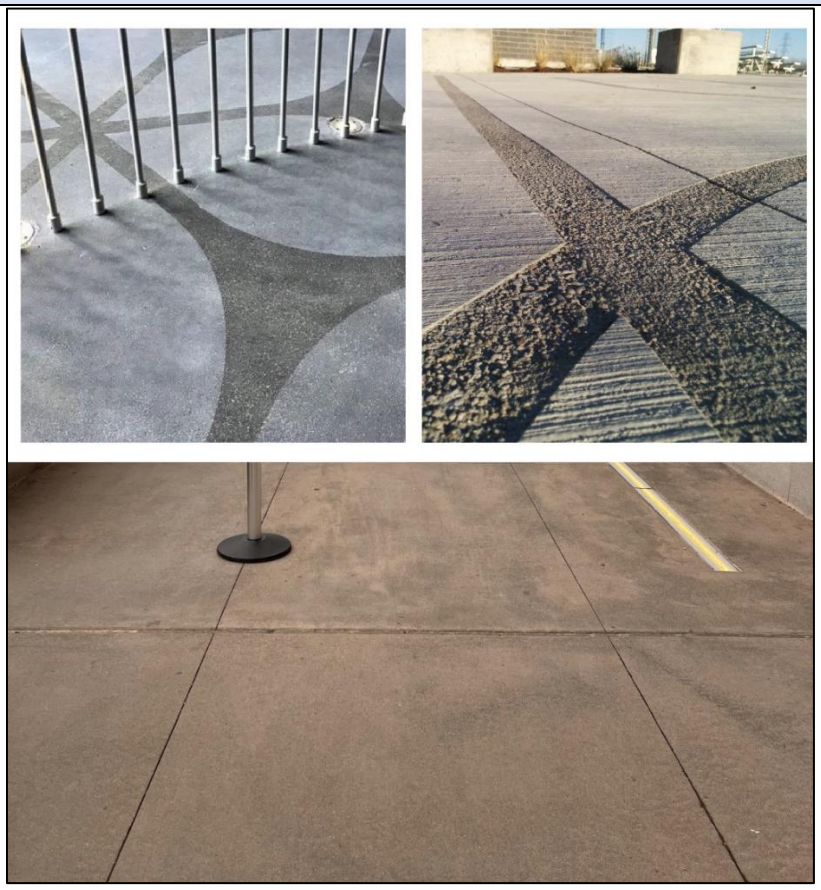
This undertaking does not include any work on the interior of NASM. (Perkins&Will, 2024)

Proposed Effect Determination – No Adverse Effect

National Air and Space Museum	
Feature/Action	**Design Details[5]**
Landscape and Astronomy Park features including: New paving design and pattern / Integrated site lighting / New vegetation	-The terrace level paving will be cast-in-place concrete with exposed aggregate and integral color, in keeping with the extant paving throughout NASM installed in the Revitalization Project. Varying levels of sandblasting will be used to create the designed paving patterns in both the Learning Courtyard and Astronomy Park. Paving joints will be scored or formed by non-corrosive metal divider strips.

[5] This analysis will be updated as the design develops.

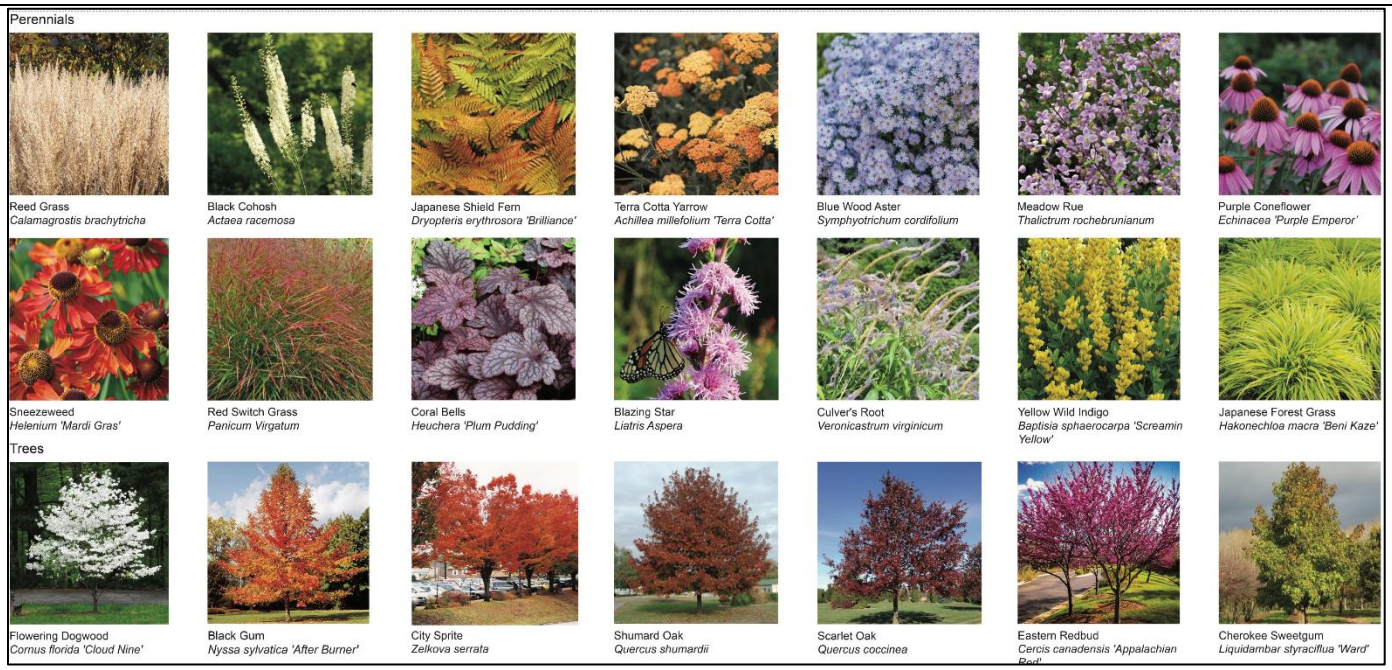
	-In the Learning Courtyard, the use of Rainbow granite, with diamond 8 finish, for planters and knee walls, is a compatible material to the Colonial Rose granite used throughout the rest of the site. The diminutive height of the Learning Courtyard seating walls is compatible with the larger NASM landscape design and will not result in an adverse effect. Paving joints will be scored or formed by non-corrosive metal divider strips. -The extant pavers are not character-defining features, and the new design and material will be compatible with the concrete paving used through the NASM site. -The Undertaking will include the use of integrated site lighting features which will not result in an adverse effect as the design will follow site lighting established throughout Smithsonian sites and the National Mall. -New vegetation includes a planting concept of native trees, shrubs, and an understory of perennial and prairie plants, that foster biodiversity and support a diverse array of pollinators. The planting plan establishes a visual and ecological connection with the broader national prairie landscape of the National Mall. -The Undertaking restores the tree canopy to the east end of the NASM site, with native trees spaced appropriately to provide sufficient sunlight for the planting understory. The tree canopy will not be high enough to obscure views to the east end of NASM, nor will they rise above the height of the elm trees on the National Mall. The new vegetation and planting plan will not have an adverse effect.
Images	



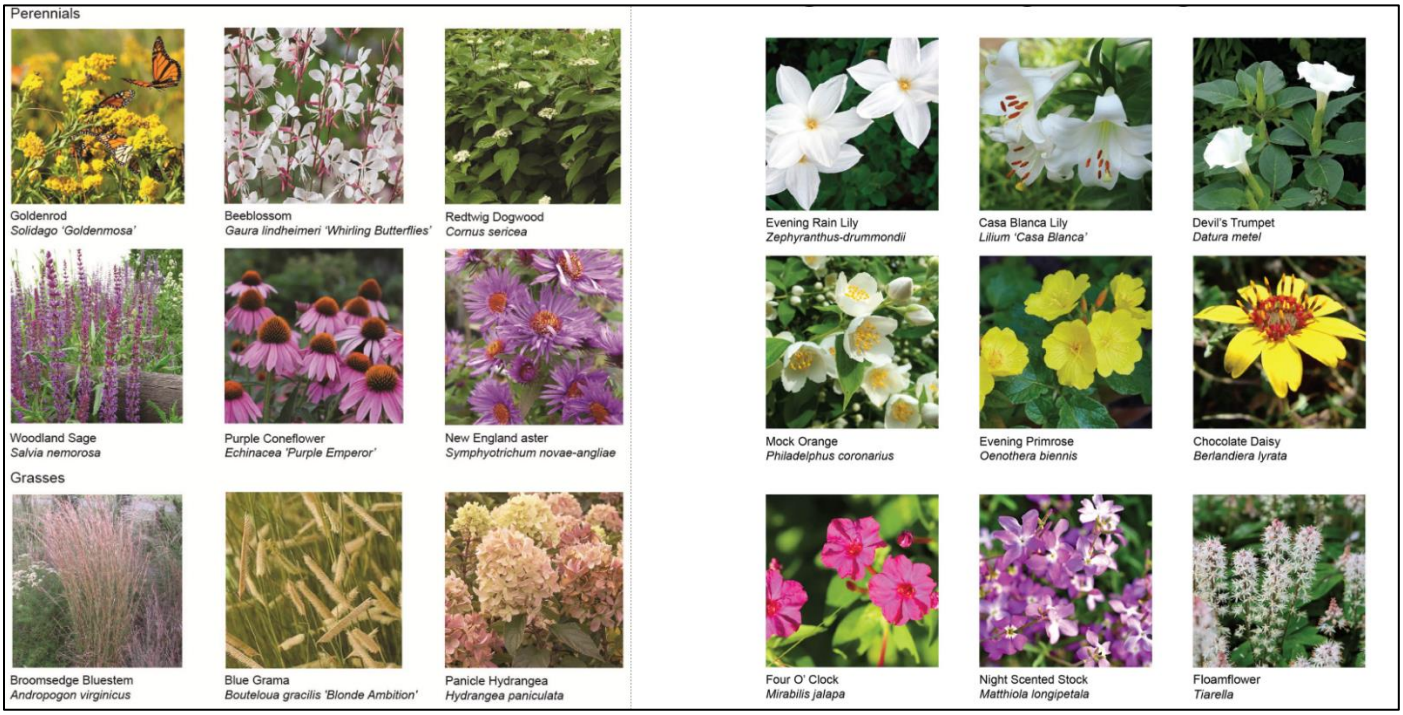
Top Left: Accent A: Sandblast; Top Right: Accent B: Sandblast; Bottom: Existing Field Concrete Pavers (Perkins&Will, 2024)

Left: Coldspring Agate Granite with diamond 10 finish; Center: Coldspring Rainbow granite with diamond 8 finish; Right: Coldspring Agate Granite with diamond 8 finish. Samples are laid against the Colonial Rose that will be used in the site walls to match the larger NASM site. (EHT Traceries, 2024)

Proposed hardscape pattern diagram – Light Grey: Concrete field, finish to match existing NASM site; Dark Grey: Sandblasting treatment to concrete (Accent A); Red Circles: Sandblast treatment to concrete (Accent B). (Perkins&Will, 2024)



Native perennials included in the new planting plan. (Perkins&Will, 2024)



Prairie plants (left) and night-blooming plants (right) included within the planting plan. (Perkins&Will, 2024)

Proposed Effect Determination – No Adverse Effect

National Air and Space Museum	
Feature/Action	**Design Details**
Cumulative Impacts	-This undertaking, along with the previous Revitalization project, will result in a cumulative impact and adverse effect on NASM. Continued changes and alterations, such as materials, additions, access, and landscape have a cumulative adverse effect on the potential for the resource to be individually listed in the National Register of Historic Places. However, all the Undertakings have been executed with compatible and sensitive

	designs that have enhanced the ability of NASM to display their significant collections and increase education to a broader public, minimizing those adverse effects.
Images	

Rendering of the proposed BLC in context with the new entrance canopy on the façade. (Perkins&Will, 2024)

Proposed Effect Determination – Adverse Effect

Other Historic Resources within the APE

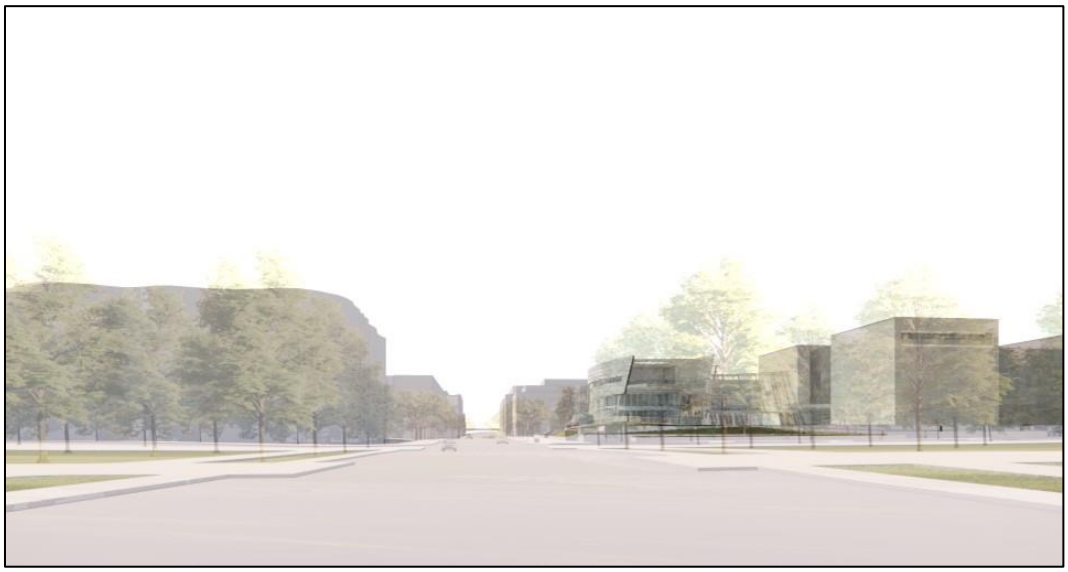
National Mall Historic District	
Resource/Action	**Design Details[6]**
New construction within the National Mall Historic District	-The National Mall consists of a wide, east-west oriented lawn flanked by paired rows of American elm trees, most of which are sixty to eighty feet in height. This creates a visual screen between the central lawn and the buildings along Jefferson and Madison Drives. The building rooflines and monumental massing form the backdrop setting for the Mall's association with Criterion A. While the maximum height of the addition is seventy-two feet, and the elm trees will largely obscure the addition's visibility from the National Mall, the new construction will alter the setting and will result in an adverse effect. -Both the BLC and Haas Observatory will be directly adjacent to the character-defining Fourth Street, SW, vista within the National Mall Historic District; however, the Haas Observatory, located further east than the BLC, respects the setback from Fourth Street, SW. Its setting will only be altered nominally with slight changes to the retaining walls, tiered terraces, and planting beds along Fourth Street, SW, and none of the changes intrude into the Fourth Street right-of-way. In accordance with the PA design framework the design respects the Fourth Street, SW, vista and therefore will minimize adverse effect. -There is no precedent on the National Mall for the proposed integrated façade lighting, especially at night, which could result in light pollution on the Mall interrupting its formal setting. Further studies will be conducted to evaluate the potential effects to the National Mall.

[6] This analysis will be updated as the design develops.

	-These adverse effects will be minimized with the carefully conceived design of the new addition, as well adherence and respect for all setbacks and viewsheds. The spiral form, massing, and complementary landscaping will be compatible with the monumental and significant museums and other federal buildings that line the Mall. The design is contemporary and distinctive from the neo-classical buildings, the modern era museums, and even the contemporary buildings like the National Museum of the American Indian and National Museum of African American History and Culture. This is in keeping with the Smithsonian's building collection, in which the design of each facility reflects prevailing architectural styles of the period. -The proposed PPG Titanium finished cladding panels are a complementary color to the yellow and beige tones of adjacent buildings including the National Museum of the American Indian, LBJ Building, and the Eisenhower Memorial, minimizing adverse effect. -Cumulative impacts from this Undertaking, along with the previous Revitalization project, will result in a cumulative adverse effect on the National Mall. Continued changes and alterations, such as the new entrance at Jefferson Drive, SW, and dynamic façade lighting of the BLC, will have a cumulative adverse effect on the formal setting of the National Mall.
Images	

Night-time rendering of the addition's façade, looking south. (Perkins&Will, 2024)

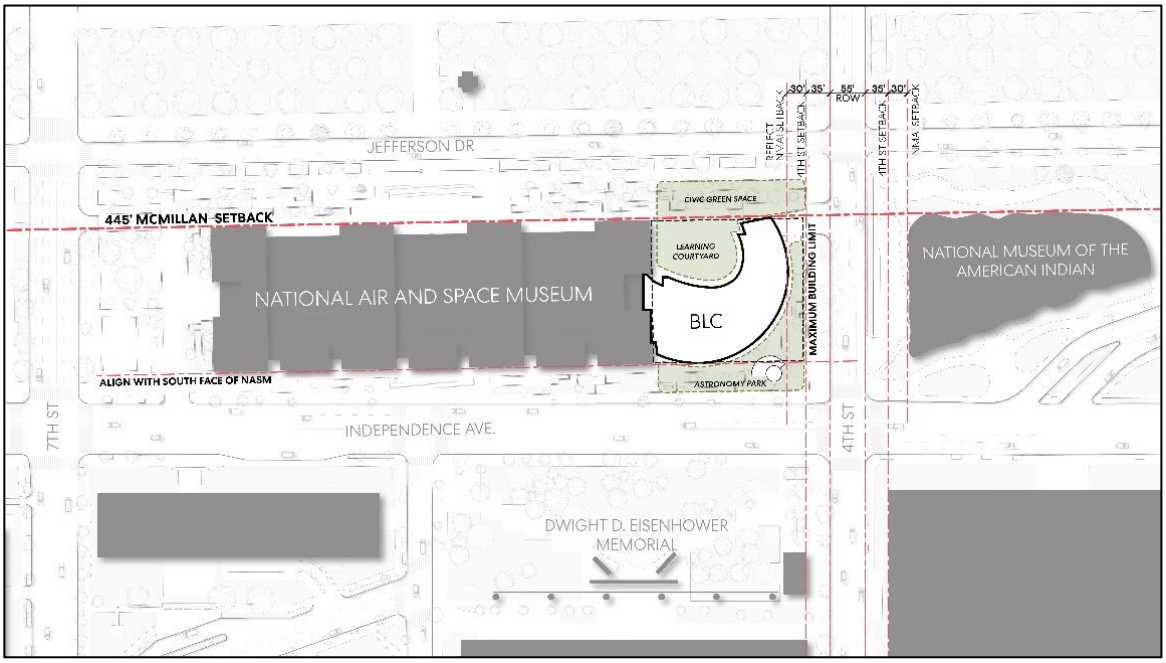

Left: Current view of Fourth Street, SW, looking south. Right: Current view of the corner of Fourth Street and Independence Avenue, SW, looking north. (EHT Traceries, 2023)

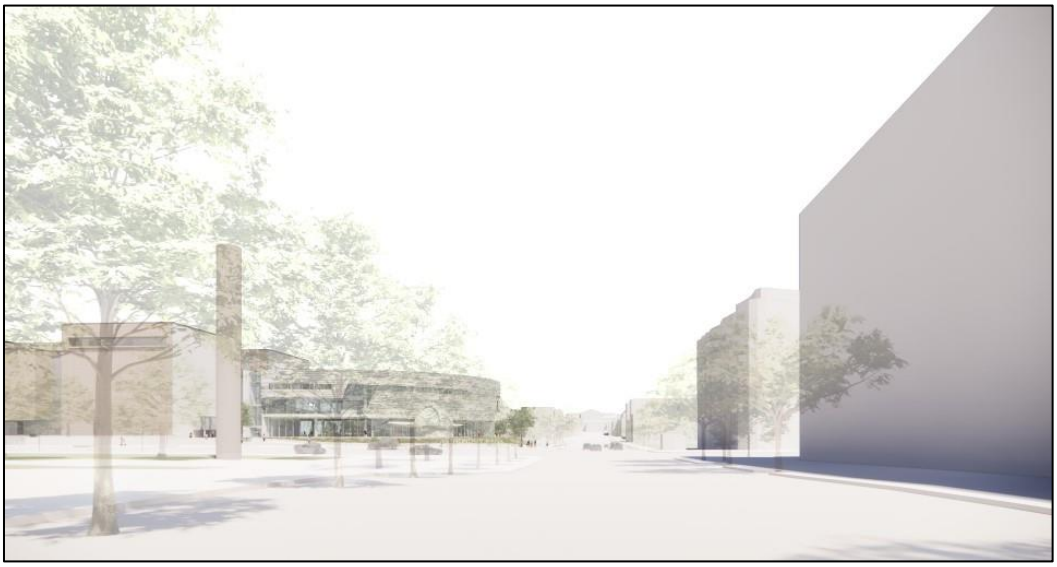


Proposed view of Fourth Street, SW, looking south with the new construction resulting in an adverse effect. (Perkins&Will, 2024)

Proposed Effect Determination – Adverse Effect

L'Enfant's Plan for the City of Washington	
Feature/Action	**Design Details**
New construction within L'Enfant's Plan for the City of Washington	-The Undertaking follows the McMillan set back 445 feet to the north, as well as the setbacks along Fourth Street, SW; however, the Haas Observatory does fall below NASM's south elevation along Independence Avenue, SW. Despite the location of the Haas observatory, there will be no interruption of the historic street grid, and no interruption of the views along the Plan of the City of Washington. There will be no adverse effect to L'Enfant's Plan for the City of Washington. -The Undertaking respects the street grid of L'Enfant's Plan in accordance with the PA design framework.

Images
 *Diagram showing the addition following all setbacks. (Perkins&Will, 2023)*
Proposed Effect Determination – No Adverse Effect

Lyndon B Johnson Department of Education	
Feature/Action	**Design Details**
New construction near to the LBJ Building	-The historic setting of the LBJ Building was previously altered with the demolition of its historic landscape and the insertion of the Eisenhower Memorial. The Undertaking will not further erode the setting. The building retains its association with adjacent federal buildings to the east and west.
Images	
 *Proposed view of the new addition from Fourth Street, SW, directly adjacent to the LBJ Building. (Perkins&Will, 2024)*	
Proposed Effect Determination – No Adverse Effect	

Social Security Administration	
Feature/Action	**Design Details**
New construction near the Social Security Administration	-The building will retain its setting, feeling, and association on Independence Avenue, SW, among neighboring federal, museum, and institutional buildings.
Images	

Proposed view of the new addition from Independence Avenue, SW, looking west. (Perkins&Will, 2024)

Proposed Effect Determination – No Adverse Effect

US Capitol and Grounds and Grant Memorial	
Feature/Action	**Design Details**
New construction within View of US Capitol and Grounds, Ulysses S. Grant Memorial, and US Botanic Gardens	-The Undertaking will be minimally visible from the US Capitol steps, Grant Memorial, and Botanic Gardens. -Visibility of the BLC is minimized through its setbacks and by respecting the canopy of the American elm trees on the National Mall. -The character defining views and visual relationships of the Capitol and the National Mall will be maintained. Although the Undertaking will be minimally visible, all historic resources will retain their settings, feelings, and association with the US Capitol Grounds and National Mall.
Images	

Proposed view of the new addition the US Capitol steps, the addition will be visible. (Perkins&Will, 2024)

Proposed Effect Determination – No Adverse Effect

National Gallery of Art East and West Wings	
Feature/Action	**Design Details**
New construction Near the National Gallery of Art East and West Wings	-The buildings will retain their setting, feeling, and association within the National Mall and the visual connection of the West Wing to NASM will not be altered. -The new addition will not impact the Sixth Street vista between the main NASM building and the National Gallery of Art West Wing, resulting in no adverse effect. The axial and architectural relationship of NASM and the National Gallery of Art will be maintained. -The axial and architectural relationship of NASM and the National Gallery of Art will be maintained as the new addition is located to the east of NASM, opposite the open plaza between the East and West Galleries. The limited height of the new addition, below the height of the elm trees, allows the east ends of NASM and National Gallery of Art to still be understood as the same size and massing (in other words, the new addition will not give the perception of the historic NASM extending out to Fourth Street, being a larger mass than the National Gallery of Art, maintaining architectural balance on the National Mall). -The Undertaking respects NASM's balanced, architectural relationship with the National Gallery of Art and the Sixth Street axis in accordance with the PA design framework.
Proposed Effect Determination – No Adverse Effect	

Remaining Resources within the APE	
Feature/Action	**Design Details**
Mary E. Switzer Federal Building, Terminal Refrigerating & Warehousing Co, U.S. Botanic Gardens, Bulfinch Gatehouses and Gateposts, Natural History Museum, National Museum of American History, US Department of Agriculture, Freer Gallery, Smithsonian Castle, Arts and Industries Building, Hirshhorn Museum, and Orville and Wilber Wright Federal Buildings.	The Undertaking will not have an adverse effect on any of the remaining historic resources within the APE. There will be no impact on the location, design, setting, materials, workmanship, feeling, or association of any of the remaining historic resources.
Proposed Effect Determination – No Adverse Effect	

Construct Integrated Bezos Learning Center **October 2024**
Draft Assessment of Effects on Historic Resources

Summary Determination of Effect

	Resource	Adverse Effect	Item/Feature	Resolution
National Air and Space Museum	Design and Form	Potential Adverse Effect	Dynamic integrated façade lighting	
	Solid/Void Pattern	No Adverse Effect	N/A	N/A
	Recessed Glazed Openings/Marble Wall Panels	Adverse Effect	Partially obscures the east elevation	Minimized by glazed hyphen and skylight, allowing the east elevation to remain visible.
	Inscriptions	No Adverse Effect	N/A	N/A
	Signage	No Adverse Effect	N/A	N/A
	Terraces/Planting Beds/Retaining Walls	Adverse Effect	Further loss of terraces, planting beds, and retaining walls flanking garage and along Fourth Street, SW	Minimized by only impacting the very east end of the NASM site.
	Garage Openings	Adverse Effect	Alter original feel of the ramps by diminishing their size	
	Interior	No Adverse Effect	N/A	N/A
	Landscape	No Adverse Effect	N/A	N/A
	Cumulative Impacts	Adverse Effect		Minimized by enhancing NASM's ability to display their collections and further education.
National Mall Historic District	New Construction	Adverse Effect	Alteration to the setting and addition of dynamic façade lighting	Minimized by the distinctive and carefully conceived design.
	Viewsheds and Vistas	No Adverse Effect	N/A	N/A
	Cumulative Impacts	Adverse Effect	Continued changes to the setting and impacts from light pollution at night	
L'Enfant's Plan	New Construction	No Adverse Effect	N/A	N/A
Lyndon B. Johnson Building	Adjacent New Construction	No Adverse Effect	N/A	N/A
Social Security Building	Adjacent New Construction	No Adverse Effect	N/A	N/A
US Capitol and Grounds and Grant Memorial	Adjacent New Construction	No Adverse Effect	N/A	N/A
National Gallery of Art East and West Wings	Adjacent New Construction	No Adverse Effect	N/A	N/A
Remaining Resources within the APE	Adjacent New Construction	No Adverse Effect	N/A	N/A

Attachment A: Other Identified Historic Resources

Historic Resources	Significance
Plan of the City of Washington	The Plan of the City of Washington (L'Enfant Plan; McMillan Plan) is the sole American example of comprehensive Baroque city planning in the United States. The plan consists of a coordinated system of radiating avenues, parks, and vistas overlaid on an orthogonal street grid. Significant views and vistas with the APE that contribute to the Plan of the City of Washington are east and west views along Jefferson Drive, SW, and Madison Drive, NW, north and south views on Third, Fourth, Seventh, and Twelfth streets, NW/SW, and axial views on Pennsylvania Avenue, NW, Maryland Avenue, SW. The Plan for the City of Washington was first listed in the DC Inventory of Historic Sites (DC Inventory) in 1964 and expanded in 1997. It was listed in the National Register of Historic Places (NRHP) in 1997.
National Mall Historic District	The National Mall Historic District encompasses some of the oldest and most iconic public lands in our nation. Its development reflects two seminal historic plans for the federal city - the plan designed by Maj. Peter (Pierre) Charles L'Enfant in 1791 and the 1901-02 McMillan (Senate Park) Commission Plan - and represents significant contributions to the design heritage of our national capital. As the nation's foremost commemorative landscape, the National Mall's monuments and memorials symbolize the country's collective values and ideals. Its open spaces define the setting of the executive and legislative branches of our federal government and provide essential civic space for historic events of national significance. The National Mall Historic District was listed in the DC Inventory in 1964 and administratively in the NRHP in 1966 as a historic site encompassing the formal greensward and museum buildings between the U.S. Capitol Grounds and 14th Street, NW-SW. The National Mall Historic District was formally designated in the NRHP in 1981, and in 2016, the NRHP boundaries were expanded.
Pennsylvania Avenue National Historic Site	Roughly bound by Third Street, NW, to the east, Constitution Avenue to the south, East Executive Avenue to the east, and E and F streets, NW to the north, the Pennsylvania Avenue National Historic Site is significant as the national ceremonial route that spans from the White House to the U.S. Capitol. It has been the site of inaugural parades and civic processions. It is also significant as the commercial heart of Washington, DC. The National Historic Site consists of approximately 160 resources ranging from monumental civic buildings to smaller commercial structures that date from c. 1791-1960. The Pennsylvania Avenue National Historic Site was designated in the NRHP in 1966 and in the DC Inventory in 1973. The NRHP documentation was amended in 2007.
Lyndon B. Johnson Department of Education	Federal Office Building No. 6 (now the Lyndon Baines Johnson Department of Education Building) was the first of fifteen office buildings erected by the newly created General Services Administration under a 1956 master plan for expanding federal facilities. Its Modernist design initiated a dramatic change in the federal government's image as expressed through buildings. The project was envisioned as the employment center for a redeveloped Southwest neighborhood,

	advancing the Southwest Urban Renewal Plan while also enabling the removal of wartime "tempos" from the Mall. Completed in 1961, Federal Office Building No. 6 was first occupied by NASA and the Department of Health, Education and Welfare. The building is now occupied by the US Department of Education. The building was designed in the DC Inventory and the NRHP in 2017 under National Register Criteria A and C.
Social Security Administration	The Social Security Administration Building (Wilbur J. Cohen Building) was one of the last buildings constructed under a major building campaign to accommodate the growing number of federal employees during the 1930s.[1] The building was built for the Social Security Board (established 1935) and is associated with the establishment of a nationwide pension program, one of the most enduring accomplishments of the New Deal. The building illustrates the expansion of the McMillan Plan recommendations to Southwest Washington and was jointly planned with the Railroad Retirement Building. The building was constructed between 1939 and 1940 in the Stripped Classical style of architecture. The building was designed by Charles Z. Klauder (1872-1938), consulting architect under the supervision of then Supervising Architect of the Treasury, Louis A. Simon (1867-1958). The building features exterior relief sculptures designed by Henry Kreis and Emma Lou Davis. The interior of the building, which features Art Deco features, features interior murals.[2] The building was listed in the DC Inventory and the NRHP in 2007 under National Register Criteria A and C.
Mary E. Switzer Federal Building	The Mary E. Switzer Building (formerly the Railroad Retirement Building) was one of the last buildings constructed under a major building campaign to accommodate the growing number of federal employees during the 1930s.[3] Built between 1939 and 1940, the building was designed by Charles Z. Klauder, who served as Consulting Architect and implemented by Louis A. Simon, Supervising Architect of Public Buildings Administration, Federal Works Agency. The finished building, in addition to its unusual "fishbone" plan, had elements of both Streamline Moderne and Egyptian Revival in its façade. Although intended for the Railroad Retirement Board, its first occupant was to the United States Department of War. The building was renamed as the Mary E. Switzer Memorial Building on October 21, 1972, thereby becoming the first federal building named for a woman.[4]

[1] National Register of Historic Places, Social Security's Administration Building, Washington, DC, National Register #07000639.
[2] DC Historic Preservation Office, *DC Inventory of Historic Sites*, accessed May 9, 2024, https://planning.dc.gov/sites/default/files/dc/sites/op/publication/attachments/Inventory%202009%200%20Alpha%20Version%2003%2011.pdf.
[3] National Register of Historic Places, Railroad Retirement Board Building, Washington, DC, National Register #07000638.
[4] DC Historic Preservation Office, *DC Inventory of Historic Sites*, accessed May 9, 2024, https://planning.dc.gov/sites/default/files/dc/sites/op/publication/attachments/Inventory%202009%200%20Alpha%20Version%2003%2011.pdf.

	The building was listed in the DC Inventory and in the NRHP in 2007 under National Register Criteria A and C.
Terminal Refrigerating and Warehousing Company	The building was constructed in 1932 and designed in the Neoclassical style by prominent Washington architect Appleton P. Clark, Jr. An unusual and monumental example of an urban cold storage warehouse and ice plant, the structure is a rare surviving specimen of a particular type of industrial building that became central to the social and economic function of the twentieth-century city.[5] The building was listed in the DC Inventory and in the NRHP in 2014 under Criteria A and C.
U.S. Botanic Gardens	The idea for establishing a United States Botanic Garden was first contemplated in the late eighteenth century by George Washington, Thomas Jefferson, and James Madison. A botanic garden was established in 1820; however, its operations ceased in 1837. In 1842, the U.S. Botanic Garden was re-established in greenhouses located behind the Old Patent Office Building, and in 1850, the institution moved to a greenhouse that had previously been occupied by the Columbian Institute's garden. The Botanic gardens moved to its present location in 1933. The Garden includes the Conservatory (renovated between 1997 and 2001), the National Garden (opened in 2006), and Bartholdi Park (created in 1932).[6] The U.S. Botanic Gardens was listed in the DC Inventory in 1964. It is also a contributing resource to the National Mall Historic District.
Ulysses S. Grant Memorial	Located at the eastern edge of the National Mall near the base of the Capitol Building, this memorial pays tribute to American Civil War General and 18th U.S. President Ulysses S. Grant. At 252 feet long by 71 feet wide by 44 feet high, the Ulysses S. Grant Memorial is the largest equestrian monument in the United States. The statue was erected under an act passed by Congress in 1901. It was designed by sculptor Henry Merwin Shrady. The memorial was dedicated on the centennial of Grant's birthday – April 27, 1922.[7] The Grant Memorial is considered a contributing resource to the Civil War Monuments, which was listed in the NRHP in 1978 and in the DC Inventory in 1979.
U.S. Capitol	The U.S. Capitol is the centerpiece of L'Enfant's federal city and is the seat of government and the symbol of the United States. The U.S. Capitol has been occupied continuously by Congress since 1800 and until 1935 it housed the Supreme Court as well. The Capitol has been associated with nearly all of the nation's political leaders. Its legislative chambers have been the site of innumerable debates that have altered the course of history, and the place where presidents, military commanders, and international leaders have addressed the nation. The east and west fronts of the Capitol have been the traditional location of

[5] DC Historic Preservation Office, "Terminal Refrigerating and Warehouse Company," *DC Inventory of Historic Sites: FY 2014 Landmarks Update,* accessed May 9, 2024, https://planning.dc.gov/sites/default/files/dc/sites/op/publication/attachments/FY%202014%20Landmarks%20Update.pdf.
[6] DC Preservation League, "United States Botanic Garden," *DC Historic Sites,* accessed May 9, 2024, https://historicsites.dcpreservation.org/items/show/619.
[7] National Register of Historic Places, Civil War Monuments in Washington, DC, Washington, DC, National Register #78000257.

	presidential inaugurations. Since the assassination of Lincoln, every president who has died in office has lain in state in the rotunda. The compass rose at the center of the rotunda floor marks the original prime meridian for the country, and is the measuring point for the layout of the city and boundaries of several states. It is the first major example in America of the Federal architectural style derived from English Neoclassicism, and exhibits numerous efforts at developing an indigenous style of architecture and decorative art drawn from the American environment and reflective of American character and ideals. Its major spaces include unsurpassed Federal and Greek Revival era rooms, and it houses notable examples of American statuary, artwork, decorative arts, and craftsmanship, including the most opulent mid-Victorian interiors in America. Its extraordinary double-shelled and trussed cast iron dome is a significant and innovative engineering achievement. Seeing the dome as symbolic of the Union, Lincoln pushed ahead with construction in the midst of the war, and the year he began with the Emancipation Proclamation ended with the raising of Freedom over the Capitol. The U.S. Capitol was designated as a National Historic Landmark in 1960. It was listed in the DC Inventory in 1964 and is exempt from listing in the National Register. The Capitol Grounds are within a L'Enfant Plan reservation.[8]
Capitol Grounds	The Capitol Grounds were designed by Frederick Law Olmstead and laid out in an extended project implemented between 1874 and 1892. The Capitol Grounds were listed in the DC Inventory in 1964 and are exempt from listing in the National Register. The Capitol Grounds are within a L'Enfant Plan reservation.[9]
National Gallery of Art East Wing	The East Wing of the National Gallery of Art was constructed in 1978 to the Modernist design of I.M. Pei. In 1981, it received a National Honor Award from the American Institute of Architects.[10] The East Wing is not individually designated. It is a contributing resource to the National Mall Historic District.
National Gallery of Art West Wing	The West Wing of the National Gallery of Art was constructed in 1941. The Neoclassical style building was designed by John Russell Pope and serves the United States' national art museum. The institution was established in 1937 via an Act of Congress using funds donated by Andrew W. Mellon. At the time of the building's completion, it was the largest marble structure in the world.[11]

[8] DC Historic Preservation Office, *DC Inventory of Historic Sites*, accessed May 9, 2024, https://planning.dc.gov/sites/default/files/dc/sites/op/publication/attachments/Inventory%202009%200%20Alpha%20Version%2003%2011.pdf.
[9] DC Historic Preservation Office, *DC Inventory of Historic Sites*, accessed May 9, 2024, https://planning.dc.gov/sites/default/files/dc/sites/op/publication/attachments/Inventory%202009%200%20Alpha%20Version%2003%2011.pdf.
[10] DC Preservation League, "National Gallery of Art," *DC Historic Sites*, accessed May 9, 2024, https://historicsites.dcpreservation.org/items/show/413.
[11] DC Preservation League, "National Gallery of Art," *DC Historic Sites*, accessed May 9, 2024, https://historicsites.dcpreservation.org/items/show/413.

	The building was listed in the DC Inventory in 1968. It is a contributing resource to the National Mall Historic District.
Bulfinch Gatehouses and Gateposts	The former gate structures of the Capitol, built after 1814 at the foot of the west Capitol grounds, were part of the reconstruction of the Capitol after the War of 1812. They are generally attributed to Charles Bulfinch, the architect in charge of the restoration. The gatehouses and posts were removed in 1874 and reconstructed at their present locations in 1880; they were restored in 1940. The two one-room gatehouses of rusticated Aquia sandstone were designed to harmonize with the building's basement story. Their classical facades are in the style of Roman Triumphal arches with Doric columns, arched doorways, a guilloche frieze, and heavily foliated scroll of acanthus leaves and rosettes. The four rusticated gateposts are similar, topped with acanthus motifs and volutes.[12] The Bulfinch Gatehouses and Gateposts were listed in the DC Inventory in 1964 and in the NRHP in 1973 under National Register Criterion C. The Bulfinch Gatehouses and Gateposts are within the L'Enfant Plan Reservation and is within the National Mall Historic District.
National Museum of Natural History	The National Museum of Natural History, which opened in 1910 as the United States National Museum, is a large Neoclassical Style building that was designed by the local architectural firm of Hornblower & Marshall along with Charles F. McKim and Daniel H. Burnham. The building was built to house the Smithsonian's growing collections. In 1964, the Museum of History and Technology (National Museum of American History) opened next door, followed by the National Museum of American Art-National Portrait Gallery in the Old Patent Office five years later. With these collections in new quarters, in 1969, the building became the National Museum of Natural History. East and west wings, designed by Mills, Petticord and Mills, were added to the original building in 1961-65, with additional changes to the building in the 1970s and 1990s.[13] The National Museum of Natural History was listed in the DC Inventory in 1964 and was amended in 2023. The building was listed in the NRHP in 2023. The building is also a contributing resource to the National Mall Historic District.
National Museum of American History	The National Museum of American History opened in January 1964 as the National Museum of History and Technology. It was one of the last buildings to be designed by the renowned architectural firm of McKim Mead & White. The building's exterior was designed in the New Formalist style, which incorporated Classical formal elements such as symmetrical façade composition and monumental scale. The hallmarks of New Formalism also included the use of a podium, abstracted Classical elements such as repetitive column bays and cornices, and planar wall surfaces adorned in high-quality, traditional building materials such as marble. In 1980, the building was renamed to the

[12] DC Historic Preservation Office, *DC Inventory of Historic Sites*, accessed May 9, 2024, https://planning.dc.gov/sites/default/files/dc/sites/op/publication/attachments/Inventory%202009%200%20Alpha%20Version%2003%2011.pdf.

[13] DC Preservation League, "National Museum of Natural History," *DC Historic Sites*, accessed May 10, 2024, https://historicsites.dcpreservation.org/items/show/422.

	National Museum of American History to better reflect the collections housed within. The National Museum of American History is not individually designated in either the DC Inventory or the NRHP. The building is a contributing resource to the National Mall Historic District.
U.S. Department of Agriculture	The Department of Agriculture Administration Building is an extremely long building of white marble located on the National Mall. When it was built, it became one of the first government buildings to use reinforced concrete. The significance of the building derives from its Neoclassical architecture. The building is one of many examples of this type of civic architecture that characterizes much of modern Washington. The main portion of the building was designed by Rankin, Kellogg & Crane and built between 1904 and 1908; a central section was added in 1930.[14] The U.S. Department of Agriculture (Administration Building) was listed in the DC Inventory in 1964 and in the NRHP in 1974. The building is also within the boundaries of the National Mall Historic District.
Freer Gallery	The Freer Gallery of Art was designed by Charles Adams Platt and built in 1923. The building was designed to house Charles L. Freer's personal collection of American and Asian art. Freer donated his collection and an endowment for the construction of a building, which were accepted by the Smithsonian in 1906. Construction on the Italian Renaissance Revival-style building lasted from 1916 to 1923. Designed by architect Charles Adams Platt, the building's exterior is clad in pink granite, with a prominent interior courtyard clad in white marble. A major renovation completed in 1993 connected the Freer Gallery to the Quad buildings and expanded the underground storage areas. The Freer Gallery was listed in the DC Inventory in 1964 and in the NRHP in 1969 under National Register Criterion C. The building is also a contributing resource to the National Mall Historic District.
Smithsonian Castle	The Smithsonian Institution Building, also known as "The Castle", was designed by architect James Renwick, Jr. The building is constructed of red sandstone and was designed in the Norman style. Completed in 1855, the Castle became the anchor for the National Mall as additional museums and government buildings were constructed around it. Over the years several reconstructions have taken place. The first followed a disastrous fire on January 24, 1865, which destroyed the upper story of the main segment and the north and south towers. In 1883, the east wing was fireproofed and enlarged to accommodate more offices. Major rehabilitation projects undertaken in the 1910s and 1960s modernized the building and converted existing galleries into offices. The Castle served as a home and office for Joseph Henry, the first Secretary of the Smithsonian. Until the National Museum (now the Arts and Industries Building) was erected in 1881, the Castle housed all aspects of Smithsonian operations, including research and administrative offices; lecture halls; exhibit halls; a library and reading room; chemical laboratories; storage areas for specimens; and living

[14] DC Preservation League, "Department of Agriculture (Administration Building)," *DC Historic Sites*, accessed May 10, 2024, https://historicsites.dcpreservation.org/items/show/145.

	quarters for the Secretary, his family, and visiting scientists. In the late 1880s, the Castle's south yard became home to the fledgling National Zoological Park. Today, the Castle houses the Institution's central administrative offices, the Office of the Secretary, and the Smithsonian Information Center. The building was listed in the DC Inventory in 1964, designated as a National Historic Landmark in 1965, and listed in the NRHP in 1966. The building is also a contributing resource to the National Mall Historic District.
Arts and Industries Building	Constructed between 1879 and 1881,the Arts and Industries Building is the nation's best-preserved example of nineteenth-century world's fair or exposition-type architecture. Built to house the international exhibits left over from the Philadelphia Centennial Exhibition of 1876, it reflects the three principal requirements of this architectural type: to enclose a very large area, to present a tasteful, dramatic, and pleasing exterior, and to employ inexpensive construction technology. The architects were Cluss & Schulze. The building was listed in the DC Inventory in 1964. It was listed in the NRHP and designated as a National Historic Landmark in 1971 under National Register Criteria A and C. It is also a contributing resource to the National Mall Historic District.
Hirshhorn Museum and Sculpture Garden	The modernist-style Hirshhorn Museum and Sculpture Garden opened to the public in 1974. First comprised of the remarkable modern and contemporary art collection of Joseph H. Hirshhorn, the museum was chartered by Congress in 1966, which accepted Hirshhorn's gift and appropriated funds for the construction of a museum on the National Mall. The building was designed by architect Gordon Bunshaft, who conceived the museum as a "large piece of functional sculpture." The hollow, elevated drum floats above several acres of landscaped grounds for sculpture. Curved galleries and exhibit spaces are located along the drum's perimeter. The building is clad in precast concrete aggregate and contains some 197,000 square feet of total exhibition space, indoors and outdoors, with 60,000 square feet of exhibition space on three floors and 2.7 acres around and under the building. The Sculpture Garden contains 1.3 acres sunken six to fourteen feet below street level, encased by concrete retaining walls. The Sculpture Garden was redesigned and renovated in 1981, implementing new accessibility features. The Hirshhorn has been determined eligible for designation under National Register Criteria A and C. The HIrshhorn Museum and Sculpture Garden is also a contributing resource to the National Mall Historic District.
Orville and Wilbur Wright Federal Buildings	The Orville Wright Federal Building (FOB 10A) and the Wilbur Wright Federal Building (FOB 10B) were designed by Holabird & Root & Burgee, and Carroll, Grisdale & Van Alen between 1957 and 1960 for the General Services Administration (GSA). They were two of four buildings that were constructed by GSA under the Southwest Urban Renewal program. The buildings are successful examples of the adaptation of the Internal Style to its context and to the needs of the federal office

	building. For instance, while modern in style, the marble clad exterior rendered the building consistent with other buildings that lined the National Mall.[15] The Orville and Wilbur Wright Federal Buildings were listed in the NRHP in October 2024.

[15] "Federal Office Building 10B; Wilbur Wright Building", DC State Historic Preservation Office Determination of Eligibility Form.