

14 March 2016 [Revised 03 May 2017]

MEMORANDUM

From: COLIN MACKILLOP, AIA LEED AP CDT

To: MIKE HENRY -- SI OFEO

RE: **NASM BUILDING EXTERIOR ENVELOPE STUDY AND HVAC REPLACEMENT
WASHINGTON, DC
SI 1206101
QEA 31301800**

Subject: 22 February 2016 Consulting Parties Presentation
Time: 10:00am to 12:00pm

Attendees: NCP: Lucy Kempf, Jennifer Hirsch, Vivian Lee, Matt Flis
CFA: Thomas Luebke, Sarah Batcheler
DC SHPO: Andrew Lewis
DCPL: Rebecca Miller
NPS: Catherine Dewey
NASM: Rick Flansburg
SI-OPDC: Ann Trowbridge, Michael Henry, Jane Passman, Michelle Spofford
SI-OPDC-AHHP: Sharon Park, Amy Ballard
QEA: Larry Barr, Colin MacKillop
AECOM: Roger Courtenay, Claire Bedat, Reid Fellenbaum

1. Introduction

A. Ms. Lee introduction

- i. Today's meeting will provide an update of the proposed revitalization of the National Air and Space Museum Mall Building.
- ii. The previous public presentation of this proposal was the Public Scoping meeting held on 12 November, 2014
- iii. The information being provided today is offered for feedback.
- iv. The presentation will be videotaped.

B. Ms. Park introduction

- i. The presentation provides a review of the relevant historic resources.
- ii. The architects will present the design proposal.
- iii. SI will review next steps and the project development timeline.

2. Project Background and Components Summary

A. Ms. Trowbridge provided a description of the building context and milestones to date with a summary of the proposed project component.

B. Context: Site is located at the southeast end of the Mall and occupies two city blocks.

C. Historical Milestones of Existing Building

- i. 1958 – planned location authorized by President Eisenhower
- ii. 1971 – Congress appropriated \$41 million for building's construction
- iii. 1972-1973 – design by Hellmuth, Obata & Kassabaum (HOK)
- iv. 1976 – opened to the public on July 1 as part of Nation's Bicentennial
- v. 1995-1997 – last previous major work on stone facade. First indication the thinness of the stone was an issue
- vi. 1997-2001 – skylight & window wall replacement

D. Background

- i. The building contributes to the National Mall Historic District, but is not yet listed on the National Register of Historic Places as it is less than 50 years old.
- ii. Entry on Axis with National Gallery of Art West Building and has same exterior cladding.
- iii. Stone facade is the exclusive weather barrier.



- iv. Mechanical systems were installed during the original building construction.
 - v. Curtain wall technology has advanced to allow the glazing to be replaced with a system that protects the exhibits and increases visibility from the Mall.
 - E. Master Plan Recommended Projects
 - i. Complete replacement of building systems and cladding as they have exceeded their usable life.
 - ii. Entry Revitalization – provide expanded vestibules and add canopies to improve security and improve visitor experience.
 - iii. Terrace Revitalization – including landscape, storm water management, and accessibility improvements as part of replacing the existing plaza waterproofing.
 - F. Project Components Summary
 - i. Cladding
 - a. Project team focusing on natural stone replacement in keeping with existing character of building.
 - b. Among the potential adverse affects being avoided would be to change the clean volume of the building.
 - c. Replacement of the existing stone cladding may create an adverse effect to be mitigated.
 - ii. Vestibules
 - a. Previous air lock to be enhanced to improve security.
 - b. Adverse affect be managed with the agencies.
 - iii. Site
 - a. Building ground relationship will not change while increasing accessibility.
 - G. Project Scope and goals
 - i. Replace building systems to provide a safe and appropriate environment for visitors, staff, and artifacts.
 - ii. Reduce carbon emissions and energy consumption.
 - iii. Improve access, queuing and security screening conditions by revitalizing the terraces, entrances and improve overall visitor experience.
 - iv. Long lines in the summer to be addressed with the provision of shading.
- 3. Project Components Description
 - A. Mr. Barr presented the proposed cladding and glazing replacement.
 - B. Cladding Replacement
 - i. There is no secondary means of thermal or moisture building enclosure beyond spray foam insulation.
 - ii. The existing building envelope is beyond its usable life.
 - iii. Materials
 - a. Man-made cladding was considered and dismissed as they do not offer the characteristics of existing stone.
 - b. Tennessee pink marble includes the risk regarding the timely procurement of the quantity of stone required for the building.
 - C. Glazing Replacement
 - i. The original architect Gyo Obata wanted to establish a view from the Mall to the interior.
 - ii. The glazing replacement installed in 2001 has proven unsuitable for exhibits, creating a push for darker glass. However resulting reduction in visible light transmittance blocks the view from Mall and darkens view of the sky above from within the atriums.
 - iii. Included within the design intent of the proposed replacement is to lighten the skylight and curtain wall in fairly significant manner, without returning to the clear glass of the original.
 - iv. Project goal of the glazing replacement is to protect the exhibits better than they are now.
- 4. Terrace and Perimeter Security Improvement
 - A. Mr. Courtenay presented the proposed landscape architectural components of the project.
 - B. Proposed changes relative to existing



- i. Existing
 - 1. The existing terrace occupies 80% of site with basement below.
 - 2. The existing waterproofing is to be replaced as it is failing, creating an opportunity to address existing deficiencies in accessibility and visibility.
 - 3. The existing site is deficient in the accessible routes to the building and the visual relationship from the Mall
 - 4. Some corner entrances only serve western edge.
 - 5. The existing fountain and Delta Solar sculpture are sequestered behind security and are difficult to access.
 - 6. Limited ramps provide ADA accessibility, and are not clearly identified as entrances.
 - 7. Grove on west side has memorial function as represented with a few trees.
 - ii. Proposed
 - 1. Proposed improvements create access to western part of grounds.
 - 2. The architectural intent is to properly frame and present the building,
 - 3. Create a welcome area at each of 4 corners,
 - 4. Incorporate ramps with the stairs at the entrances,
 - 5. Create revitalized entrance with Delta Solar and fountain.
 - 6. All planting in plaza to be replaced due to the replacement of the waterproofing throughout the plaza.
 - 7. Lift tree canopy height for views of building and back to Mall.
- C. Accessibility
 - i. Open circumference of ground for programming and access.
 - ii. Ramp at Southeast will be clear and straight forward.
 - iii. Redevelop stairway at Northeast corner as entrance onto the grounds.
 - iv. Gentle walkways at entrances carry people to the main entrances.
- D. Proposal renderings
 - i. Northwest – clear view to building, opening with bollards
 - ii. North entrance – visitors offered choice of stair or sloped walkway with clear sightlines, landscape follows up the path, signage recreates existing
 - iii. Northeast corner – lower planters and recreate entrance
 - iv. Southeast corner -- welcome mat entrance
 - v. South entrance – ramps integrated with stairway system
 - vi. Southwest – more dramatic recreation of fountain for more significant placement of sculpture, reintegrated with the public realm. Function as secure perimeter with low wet wall. Eliminate perimeter security expression in front of fountain
 - vii. Corners are where perimeter security barrier location is revised to create a more welcoming entrance opportunity.
 - viii. Perimeter security remains as existing at north and south entrances as perimeter walls are recreated.
- 5. Expanded Vestibules and Canopies
 - A. Mr. Barr presented the proposed vestibule expansion and canopy additions.
 - i. There is a strong desire to improve the visitor experience.
 - ii. The museum is a victim of its own success as the annual visitor count exceeds the anticipated amount.
 - iii. The wait time to enter the building during on summer weekends can often exceed 30 minutes with over 300 people in the queue.
 - iv. 75% of visitors have walked through the prime exhibit area before becoming reoriented due to the placement of security equipment within the Milestone of Flight gallery.
 - B. Master Plan Recommendations
 - i. Four lanes on the Mall side, three on the south. The proposed Eisenhower Memorial may affect entrance numbers and locations when it is opened.
 - ii. There is a strong desire to protect visitor waiting outside the building with shade.



- C. “Flight” Vestibule Alternative
 - i. Design proposal is evocative of the mission of the museum: “to commemorate, educate, and inspire.”
 - ii. Proposed canopy has a PTFE tensile fabric roof, a lightweight and durable material that was developed for space suits.
 - iii. Glass more transparent than what is proposed for the existing atriums because the vestibule interior is as not conditioned as much as galleries, providing a transition into the building.
 - iv. South canopy is the similar form to the north canopy, but adjusted to accommodate the limited available exterior space. The enclosed vestibule projects into the footprint of the existing building with security located within due to the lack of area to accommodate the program space on the plaza.
 - D. “Glass Box” Vestibule Alternative
 - i. Proposed design is based on the architectonic language of the existing building.
 - ii. Greater transparency of the new glass marks the distinction of new from old.
 - E. Museum has strong preference for the “Flight” vestibule alternative.
6. Solar Panels
- A. Mr. Barr presented the proposed solar panel additions.
 - B. There are approximately 1,300 photovoltaic panels proposed on the roof which could generate approximately 630,000 KWh/yr -- equivalent of roughly 7% to 10% of electrical load of revitalized building.
 - C. Building integrated photovoltaics (BIPV’s) were considered and dismissed because they created an adverse affect on the character of the building with a demanding maintenance regimen. Number of studies are being conducted to ensure roof mounted PV’s are not visible, with ongoing efforts to lower them further.
 - D. The recommended alternative incorporates flexible thin film photovoltaics that are integrated into the south canopy of the “Flight” vestibule alternative, providing a demonstrative installation that is evocative of the mission of the museum.
7. Next steps
- A. Ms. Trowbridge briefly reviewed the environmental assessment report (EA) schedule.
 - i. The EA is anticipated to be issued in June 2016. This will include an assessment of adverse effects.
 - ii. The CFA concept update hearing and the NCPC concept hearing will be held in May or June.
 - iii. The NCPC preliminary presentation will follow later this year if not early next year.
 - iv. The overall project is approaching completion of the 35% design stage with design development documents underway.
 - B. Comments from consulting parties regarding this presentation can be provided verbally today or written and sent to Ms. Lee at NCPC at the addressed provided.
8. Discussion of Effects
- A. Ms. Park asked if there are any questions regarding this project, schedule, or related efforts.
 - B. Mr. Lewis said some consulting parties may not be aware of how the stone options which will affect appearance.
 - i. Ms. Park said there is a risk assessment that is currently underway. This includes the review of 30 different stones. The existing Tennessee (TN) pink has a visually warm tone with fine horizontal pattern. Variability is an important issue with the use of a natural stone, which omits the use of a man made material as a replacement. TN Pink is sedimentary stone, like limestone, but with a rosy or warm tone. All alternative stone options have positive and negatives like TN pink due to the required thickness of the panel. The increase from the original thickness of 1.25” to 2.5” or 3” will increase the overall size of building.



- ii. Ms. Park added that the proposed options will be limited to three different types for next meeting: TN pink and 2 others.
- C. Ms. Dewey asked if the area of potential of effect has been established.
 - i. Ms. Park clarified that it had, spanning from 14 Street on the west to the Capitol Building on the east.
 - ii. Ms. Dewey said there is a need longer range views from the Capital building and along 14th Street.
 - iii. Ms. Park said the requested views will be provided.
- D. Ms. Batcheler said it is worth noting that the positive and negative aspects of all stone options, including TN Pink.
 - i. Ms. Park said TN pink is preferred per historic preservation objectives. She added that there is recognition that it is an adverse effect if TN pink is not selected, thus the ongoing work to mitigate this impact.
 - ii. Ms. Batcheler said a change of plane in the new exterior stone and the existing interior stone cladding at the return walls where it interfaces with the glazing enclosure would be an issue, not expanding the building by 2". Ms. Batcheler said asked if there is still an offset in the planar alignment.
 - iii. Ms. Park said the intent is to provide a smooth transition from existing to new. The details are being developed to resolve this transition without an adverse effect. The condition of the glazing may need to be adjusted. Full size mockups will be developed for review to help solve this challenge.
 - iv. Mr. Lewis commended SI for sharing the study of how to match the existing stone, however the cumulative effect of all changes will be an adverse effect.
 - v. Mr. Luebke said that he appreciates the presented approach as it addresses different problems than in the 1970's when the building was designed and built: perimeter security and availability of stone. The greatest concern of effect on the building is the change in the setting of the building and the height of the site walls. However he said he thinks there is not enough information in this presentation to properly review the proposed change, thus there is a need more information required to mark the height of the walls. He added that he believes the proposed two-dimensional planar security barrier and the five foot high site walls push the limit of what is acceptable, noting that this has been brought up previously and needs to be addressed.
 - vi. Ms. Trowbridge said that the project team feels that the proposed condition will be more humane than the existing and will provide more information to communicate that at the next agency staff consultation.
 - vii. Mr. Luebke said the development of the design should be an iterative process. If there is additional documentation, they look forward to seeing it.
 - viii. Ms. Park said that the project team is working that way.
 - ix. Ms. Batcheler said that since some site walls are higher than others, there is a need to understand impact of changes in height which should be clearly documented.
 - x. Mr. Courtenay said that all that documentation has been developed very clearly which the design team looks forward to sharing.
- E. Ms. Batcheler said that she understands SI has a strong preference for Flight, however it may contribute to a cumulative adverse effect. She then asked if either of the vestibule alternatives is more concerning.
 - i. Mr. Lewis said he finds the Glass Box vestibule alternative to be more sympathetic to the existing building, however Flight is more clearly new. While he cannot deny the adverse affect because it is new, there may be a programmatic question of shade, thus he is not sure if one is better than another, as there would be a change character regardless. Although the Glass Box may have with cleaner lines, he asked if one vestibule alternative offers more programmatic advantages than the other.
 - ii. Mr. Barr said Flight offers more programmatic advantages with the provision of shade. Neither the north or south Glass Box vestibules is as effective on this basis. He added that both alternatives provide the same security function within the proposed vestibules.



- F. Ms. Park said there is still more work to do regarding the heights of the site walls, and that the project team will look to reduce number of bollards, add renderings from greater distance, and view sheds for the roof solar that clearly show the willingness to avoid a negative visual effect. She added that the glazing selection for the curtain wall and curtain wall will be available when the process is advanced to that point.
 - i. Ms. Batcheler asked if there is a view from the Capital that shows the roof PV's.
 - ii. Mr. Barr said that such a view will be provided.
 - iii. Ms. Miller said a view should be added from the top of the Washington Monument as well.
 - iv. Ms. Park said the roof PV's have a regular pattern, similar to NMAAHC.
- G. Ms. Park thanked the team for their hard work to put the presentation together, with ongoing collaboration with NASM (noting Rick Flansburg is present in representing the Museum), and the great team from OPDC.
- H. Ms. Lee said the next agency staff consultation meeting is scheduled for March 22nd and will include a review of perimeter security.
 - i. Ms. Batcheler said she hopes the presentation will include wall studies.

ACTION ITEMS

1. A/E to add views studies of the proposed revitalization design as seen from the Capitol, further along Independence Ave, and the top of the Washington Monument.
2. A/E to include perimeter security wall studies in the March 22nd agency staff consultation presentation.

Any discrepancies or disagreements with the author's interpretation of this meeting should be brought to the attention of Quinn Evans Architects in writing.

END OF MEMORANDUM