



INSPECTOR GENERAL

The Architect of the Capitol Lacked Sufficient Oversight of the Cannon Caucus Room Renovations

Report No. OIG-AUD-2023-06

MISSION

The OIG promotes efficiency and effectiveness to deter and prevent fraud, waste and mismanagement in AOC operations and programs. Through value added, transparent and independent audits, evaluations and investigations, we strive to positively affect the AOC and benefit the taxpayer while keeping the AOC and Congress fully informed.

VISION

The OIG is a high-performing team, promoting positive change and striving for continuous improvement in AOC management and operations. We foster an environment that inspires AOC workforce trust and confidence in our work.



Results in Brief

The Architect of the Capitol Lacked Sufficient Oversight of the Cannon Caucus Room Renovations

September 06, 2023

Objective

Construction and contract audits are included in the Architect of the Capitol (AOC) Office of Inspector General (OIG) audit and evaluation plan. As such, the AOC OIG contracted with Cotton & Company Assurance and Advisory, LLC (Cotton) to conduct a performance audit of the Cannon House Office Building Renewal (CHOB_r) Project's Caucus Room renovations. Cotton evaluated whether the Caucus Room renovations were constructed and commissioned in accordance with the design, contract documents and contract terms and conditions within the approved budget.

Cotton's policy requires that it obtain a management representation letter associated with the issuance of a performance audit. It requested a management representation letter from the AOC on July 25, 2023, a copy of which is included in Appendix C. AOC management refused to sign the management representation letter that was provided and instead provided a letter, included as Appendix D, stating that the information provided for the audit was complete and accurate.

Findings

Overall, the AOC did not provide sufficient oversight of the Caucus Room renovations. We determined that certain portions of the Caucus Room were not fully constructed and commissioned in accordance with the design, contract documents and contract terms and conditions within the approved budget. We identified areas where the AOC should consider updating its internal controls and commissioning requirements to ensure final deliverables provided by its contractors meet the AOC expectations.

Findings (Cont'd)

Specifically, we noted that the AOC failed to properly implement the CHOB_r Project's Building Information Modeling (BIM) Project Execution Plan.

The CHOB_r Project did not ensure that the requirements prescribed within the BIM Project Execution Plan were followed. We requested as-built drawings from the Construction Manager as Constructor (CMc) and the AOC Construction Division (CD) to determine if their scope of work was constructed in accordance with the design and contract documents. However, the documentation provided by both entities did not meet the requirements prescribed in the BIM Project Execution Plan. The AOC informed us that it was aware of the requirements in the BIM Project Execution Plan; however, the AOC was unable to enforce the requirements due to divisions within the agency requiring deliverables in different formats. The AOC's failure to enforce the requirements in the BIM Project Execution Plan limited our ability to fully assess whether the Caucus Room was constructed in accordance with the final contract design. It also increased the risk of incurring future costs, which could have been avoided had the AOC enforced the requirements.

Additionally, we determined that the Heating, Ventilation and Air Conditioning (HVAC) system for the Caucus Room was not installed in accordance with contract requirements and industry standards, and the commissioning process was ineffective.

We were informed of stakeholders' complaints related to the excessive noise, vibrations, and air



Results in Brief

The Architect of the Capitol Lacked Sufficient Oversight of the Cannon Caucus Room Renovations

drafts from the HVAC system. The House's Office of the Chief Administrative Officer incurred additional costs (approximately \$45,000) outside the CHOBr Project to determine the cause of the excessive noise and vibrations. The CHOBr Project team commissioned the HVAC system without obtaining a final Testing, Adjusting and Balance report required under contract specifications. In addition, there were no requirements for the HVAC system sound testing prior to commissioning, and there were no sound-level design goals set for the Caucus Room. However, contract specifications did not require the CMc to test for noise levels.

Finally, the AOC incurred increased costs due to the CMc's failure to maintain a watertight roof on the building. The AOC's CD incurred \$29,324 to repair water damage in the Caucus Room and identified an additional \$1,168,827 of work that has yet to be completed to repair remaining water damage in the Caucus Room.

Recommendations

We made 10 recommendations to address the identified areas of improvement. We recommend the AOC perform the following:

1. Ensure the Construction Manager as Constructor complies with the contractual requirements outlined in the Cannon House Office Building Renewal Project's Building Information Modeling Project Execution Plan.
2. Ensure the final as-built model of the Caucus Room includes all work performed in the room, regardless of which organization performed the work.
3. Develop and adopt agencywide requirements for its Building Information Modeling Project Execution Plan to ensure contractors are informed and capable of meeting the required contractual deliverables.
4. Require the CMc to submit a final Testing, Adjusting and Balancing report. If the CMc is unable to do so, the AOC should assess a credit against the CMc for failing to properly complete its contractual obligations.
5. Identify any other incomplete or incorrect work pertaining to the Heating, Ventilation and Air Conditioning system in the Caucus Room. The AOC should require the CMc to complete the work in accordance with the contractual specifications or assess credits against the CMc for failing to properly complete its contractual obligations.
6. Review its commissioning process and implement internal controls to ensure the commissioning agent properly completes all required steps prior to commissioning work.
7. Add steps to the commissioning process that require the commissioning agent to test Heating, Ventilation and Air Conditioning systems for acceptable sound levels in all rooms deemed to be sensitive to elevated noise.
8. Ensure design specifications clearly identify sound design A-weighted decibels goals for all rooms deemed to be sensitive to elevated noise.
9. Ensure the supply diffusers near the Caucus Room ceiling are adjusted or replaced so they do not interfere with the use of the projector screen.
10. Require the CMc to either address the damages resulting from the incorrect or improper work that the CMc performed during Phase 1 or recover the costs that the AOC incurs to remediate the damages. If feasible, the AOC should recover the costs it has already incurred for the repairs to date (\$29,324).



Results in Brief

The Architect of the Capitol Lacked Sufficient Oversight of the Cannon Caucus Room Renovations

Management Comments

The AOC was provided an opportunity to comment in response to this report.

The AOC provided comments on August 14, 2023, see Appendix E. The AOC management agreed with our overall conclusion that it did not provide sufficient oversight of the Caucus Room renovations. We determined that certain portions of the Caucus Room were not fully constructed and commissioned in accordance with the design, contract documents, and contract terms and conditions within the approved budget. The report identified areas where the AOC can improve its oversight of construction of the Caucus Room and similar projects. The AOC management concurred with the AOC OIG's ten recommendations.

Please refer to the Recommendations Table on the following page.

Recommendations Table

Management	Recommendations Unresolved	Recommendations Resolved	Recommendations Closed
Office of the Chief Engineer	None	1, 2, 3, 4, 5, 6, 7, 8, 9 and 10	None

The following categories are used to describe agency management’s comments to individual recommendations:

- **Unresolved** – Management has not agreed to implement the recommendation or has not proposed actions that will address the recommendation.
- **Resolved** – Management agreed to implement the recommendation or has proposed actions that will address the underlying finding that generated the recommendation.
- **Closed** – The AOC OIG verified that the agreed upon corrective actions were implemented.



Office of Inspector General
Fairchild Bldg.
499 S. Capitol ST., SW, Suite 518
Washington, D.C. 20515
202.593.1948

www.aoc.gov

UNITED STATES GOVERNMENT

MEMORANDUM

DATE: September 06, 2023

TO: Chere Rexroat, RA
Acting Architect of the Capitol

FROM: Christopher P. Failla, CIG 
Inspector General

SUBJECT: The Architect of the Capitol (AOC) Lacked Sufficient Oversight of the Cannon Caucus Room Renovations (Report No. OIG-AUD-2023-06)

The AOC Office of Inspector General (OIG) is transmitting the Cotton & Company Assurance and Advisory, LLC's (Cotton's) final report on the Cannon House Office Building Renewal (CHOBr) Project's Caucus Room (OIG-AUD-2023-06). Under contract AOCSSB22A0007 monitored by my office, Cotton, an independent public accounting firm, performed the audit in accordance with *Generally Accepted Government Auditing Standards (GAGAS)*. In connection with the contract, we reviewed Cotton's report and related documentation. Our review disclosed no instances where Cotton did not comply with GAGAS.

Our report concluded that overall, the AOC did not provide sufficient oversight of the Caucus Room renovations. We determined that certain portions of the Caucus Room were not fully constructed and commissioned in accordance with the design, contract documents and contract terms and conditions within the approved budget. This report includes three findings and 10 recommendations – includes cost recovery of \$29,324 – that identified areas where the AOC can improve its oversight of the Caucus Room and similar construction projects.

In response to our report findings, the AOC provided their comments and proposed corrective actions, see *Appendix E Management Comments*. The AOC agreed with our report findings and recommendations, and we find the proposed corrective actions meet the intent of our recommendations. The next step in the audit resolution process is for AOC management to issue a Notice of Final Action outlining the actions taken to implement the agreed upon recommendations. This notice is due one year from the date of this report, September 06, 2024.



Office of Inspector General
Fairchild Bldg.
499 S. Capitol ST., SW, Suite 518
Washington, D.C. 20515
202.593.1948

www.aoc.gov

UNITED STATES GOVERNMENT

MEMORANDUM

We appreciate the courtesies extended to the staff during the audit. Please direct questions to Nikki Robinson, Senior Auditor, at 202.437.5324 or Nikki.Robinson@aoc.gov.

Distribution List:

Hajira Shariff, Chief of Staff, Point of Contact
Thomas Costello, Acting Deputy Chief Engineer
Joseph DiPietro, Chief of Operations
Kirk Nelson, Supervisory Engineer, Superintendent House Office Buildings
Angela Freedman, Acting General Counsel
Jerrod Whittington, Chief, Acquisition of Architectural, Engineering and
Construction Services Division
Stephen Titus, Project Executive, Liaison to the OIG

Contents

RESULTS IN BRIEF	IV
OBJECTIVE	I
FINDINGS.....	I
RECOMMENDATIONS	II
MANAGEMENT COMMENTS	III
RECOMMENDATIONS TABLE	IV
INTRODUCTION	1
OBJECTIVE	1
BACKGROUND.....	2
INTERNAL CONTROLS.....	3
CRITERIA.....	4
AUDIT RESULTS	5
FINDING A	7
CONCLUSION	10
RECOMMENDATIONS	11
FINDING B	13
CONCLUSION	17
RECOMMENDATIONS	17
FINDING C	22
CONCLUSION	23
RECOMMENDATION	23
APPENDIX A	25
SCOPE AND METHODOLOGY	25
REVIEW OF INTERNAL CONTROLS	25
USE OF COMPUTER-PROCESSED DATA	26
APPENDIX B	27
ANNOUNCEMENT MEMORANDUM	27
APPENDIX C	28
COTTON & COMPANY’S MANAGEMENT REPRESENTATION LETTER.....	28
APPENDIX D	30
AOC’S MANAGEMENT REPRESENTATION LETTER	30
APPENDIX E	31
MANAGEMENT COMMENTS.....	31
ACRONYMS AND ABBREVIATIONS	35

Introduction

Objective

This report presents the results of Cotton & Company Assurance and Advisory, LLC's (Cotton's) performance audit of the construction and commissioning of the Caucus Room, which was performed as part of the Architect of the Capitol's (AOC's) Cannon House Office Building Renewal (CHOBr) Project. The objective of this audit was to determine if the Caucus Room was constructed and commissioned in accordance with the design, contract documents and contract terms and conditions within the approved budget. To accomplish this objective, we obtained an understanding of the contract design and scope for the Caucus Room as well as the AOC's processes for reviewing and approving construction and for commissioning work under the project. We also determined whether the AOC properly completed the construction work and commissioning process in accordance with contract requirements, properly allocated and expended the approved budget and any cost modifications for the Caucus Room and managed and completed the punchlist items and warranty work for the Caucus Room in accordance with contract requirements. Lastly, we identified the scope of work and budgets that the AOC's Construction Division (CD) set for constructing and commissioning the Caucus Room.

We conducted this performance audit in Washington, DC, from October 2022 through April 2023, in accordance with generally accepted government auditing standards (GAGAS) (per the 2018 revision of the Government Accountability Office's [GAO's] *Government Auditing Standards*). These standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective.

We required the AOC to provide a management representation letter associated with the issuance of a performance audit report citing GAGAS. The letter is intended to confirm representations, both oral and written, made to us during the audit. We requested a management representation letter from the AOC on July 25, 2023. A copy of this letter is included in Appendix C. AOC management refused to sign the management representation letter that was provided and instead provided a letter, included as Appendix D, stating that the information provided for the audit was complete and accurate.

See Appendix A for a discussion of our scope and methodology and review of internal controls.

Background

The AOC awarded the Construction Manager as Constructor (CMc) contract for the CHOBr Project on October 25, 2012. The CHOBr Project is broken into five distinct phases (0 through 4). The CMc completed all work originally planned for the Caucus Room during Phase 1. This effort included all services required for the basic shell of the room, including items like electrical, painting, mechanical systems, and finishes. However, congressional leadership subsequently decided to convert the Caucus Room from a multipurpose room to a hearing room. As a result, the AOC modified the CMc's contract to remove minor services. Specifically, the CMc was to provide all the services included under the original scope of its contract except those related to information technology (IT) and the American Systems Corporation (TASC) cable work. The CMc completed its main scope of work in March 2019 and addressed the relevant items on the owner's punchlist by June 2019.

The House Office Buildings contracted the AOC CD to complete the redesign and construction activities needed to convert the Caucus Room from a multipurpose room into a hearing room. The AOC CD took over the Caucus Room project in August 2019.

The AOC CD consists of AOC employees that provide construction management, logistics, procurement, trades, and materials on assigned projects across the nine jurisdictions and the Supreme Court Buildings and Grounds. As an alternative to the contracting process, the AOC occasionally deploys the AOC CD as a quick-reaction force for many types of construction activities. The AOC chose to assign this project to the AOC CD because of the quick turnaround required—the House of Representatives (House) leadership requested the AOC to complete the Caucus Room before the 2022 congressional session ended—and because the AOC CD gained extensive relevant experience by performing the hearing room modernization project for the House Office Buildings.

Once the AOC's House Office Buildings team and the CD completed the initial design for the revised Caucus Room, the House Office Buildings team worked with the AOC CD to outline the scope of work and arrange funding for the project. Although the AOC CD consists of AOC employees, their work is funded on a project-by-project basis by the requestor. The AOC CD began the funding process for the Caucus Room project by creating a cost estimate based on the Caucus Room drawings and specifications. Once the House Office Building leadership approved the cost estimate, the House Office Buildings submitted a request to the House of Representatives Chief Administrative Officer (House CAO) to reallocate funds from its existing accounts. The House Appropriations Committee approved the

reallocation, the majority of which was reallocated from the House Modernization Program budget.

The scope of work for converting the Caucus Room from a multipurpose room to a hearing room included adding a dais,¹ a projector, a projector screen, parameter lighting, a light-dimming system, camera lights, infrastructure for the rack room, Wi-Fi speakers and cameras. It also included performing electrical upgrades and sprinkler work, adding seating for members and their staff, and making acoustical improvements. During its work, the AOC CD encountered damage from water leaks in the ceiling. Although the AOC CD did not cause the water leaks, the AOC CD decided to remedy the damage already caused by the leaks and perform waterproofing services to protect the Caucus Room's infrastructure. The AOC CD tracked costs related to these repairs through change orders and absorbed costs for some of the minor work through its initial funding. The AOC CD spent a total of \$29,324 to remediate damage caused by water leaks.

The AOC CD did not have a formal punchlist process in place for the project. Instead, it met with the House Office Buildings team and other stakeholders on a weekly basis to discuss topics like schedule, costs, change orders and other items as they arose. In addition to these weekly meetings, the AOC CD provided a site superintendent who oversaw the work as it was performed and coordinated with the House Office Buildings team to address issues. The AOC CD has completed its scope of the work for the Caucus Room; however, the House Office Buildings leadership intends to obtain the AOC CD's assistance in addressing additional work related to the water leaks. This planned additional work is currently on hold, and the AOC CD will likely perform remediation during a House recess period.

Internal Controls

We reviewed the contract and technical specifications to gain a better understanding of the requirements in place for the construction of the Caucus Room. We also interviewed personnel from the AOC CD, CMc, CHOBr Project team and Construction Manager as Agent (CMA) to gain a better understanding of the policies and procedures in place while the CMc and AOC CD were performing construction on the Caucus Room. We also interviewed personnel from the AOC House Office Buildings and House CAO to gain a better understanding of prior complaints made regarding the Caucus Room's construction and any actions taken to address these complaints.

¹ A dais is a raised platform in a large room or hall that people stand on when performing or speaking to an audience.

Overall, we determined that the internal controls relevant to our objectives were not effective. Specifically, the AOC did not provide proper oversight of the CMc, which resulted in two main findings: (1) the AOC did not require the CMc or AOC CD to adhere to the requirements of the CHOBr Project’s Building Information Modeling (BIM) Project Execution Plan and (2) the Caucus Room’s Heating, Ventilation and Air Conditioning (HVAC) system was not installed in accordance with contract requirements and industry standards, and the commissioning process—which was one of the project’s internal controls designed to ensure quality—was ineffective.

Criteria

To determine if the AOC constructed and commissioned the Caucus Room in accordance with the design, contract documents, and contract terms and conditions within the approved budget, we relied on relevant criteria from the following sources:

- Contract No. AOC13C2002, awarded to the CMc for the Cannon House Office Building Renewal Project, issued October 25, 2012
- Cannon House Office Building Renewal, Building Information Modeling Project Execution Plan, issued April 10, 2013
- AOC Project No. 020245, Cannon House Office Building Renewal, Specifications, Phase 1 for Construction, dated May 6, 2016
- AOC Project No. 020245, Cannon House Office Building Renewal, Specifications, Phase 1-4 100% CD, dated December 4, 2015
- CHOBr Project Phase 1 Mechanical, Electrical, and Plumbing Commissioning Submittals

Audit Results

Overall, the AOC did not provide sufficient oversight of the Caucus Room renovations. We determined that certain portions of the Caucus Room were not fully constructed and commissioned in accordance with the design, contract documents and contract terms and conditions within the approved budget. Specifically, (1) the CHOBr Project's BIM Project Execution Plan was not properly executed, (2) the Caucus Room's HVAC system was not installed in accordance with contract requirements and industry standards, and the commissioning process was ineffective, and (3) the AOC continues to incur increased costs due to the CMc's failure to prevent water damage in the Caucus Room.

During our review, we interviewed personnel from the CHOBr Project, AOC CD, House Office Buildings and House CAO and reviewed project documentation to gain an understanding of the scope of work completed by the CMc during Phase 1 of the CHOBr Project, the work completed by AOC CD after the Caucus Room was redesigned and the construction of the Caucus Room. In addition, we worked with subject matter experts (SMEs) to determine whether the scope of work completed by the CMc and AOC CD complied with the contractual requirements.

We determined the following:

- The CMc or AOC CD did not adhere to the requirements of the CHOBr Project's BIM Project Execution Plan. The scope included performing close-out requirements for as-built construction (as-builts) and collecting facility data to fulfill Construction Operations Building information exchange (COBie) requirements. This limited our ability to fully assess whether the Caucus Room was constructed in accordance with the final approved design plans.
- The CMc did not submit the final Testing, Adjusting and Balancing (TAB) report; there were no requirements for HVAC system sound testing prior to commissioning; and there were no sound level design goals set for the Caucus Room.
- The AOC incurred \$29,324 and may incur additional costs currently estimated at \$1,168,827 resulting from the CMc's failure to prevent water damage in the Caucus Room.

Due to the AOC's failure to ensure work was completed in compliance with requirements in the CMc contract, there is a risk of incurring increased costs related to facility maintenance and future construction projects as well as the risk of lost product and warranty data resulting in potential safety issues. Additionally, the completed Caucus Room HVAC system did not function optimally for a hearing room, which has impacted the quality of the high-profile televised hearings the Caucus Room has hosted since the AOC completed the commissioning process. Finally, the AOC has incurred costs and may continue to incur additional costs resulting from damage caused by the CMc.

As such, we have made 10 recommendations to improve the AOC's oversight of construction for the Caucus Room and similar projects.

Finding A

Design: CHOBr Project's BIM Project Execution Plan was Not Properly Executed

The AOC did not require the CMc or AOC CD to adhere to the requirements of the CHOBr Project's BIM Project Execution Plan, which limited our ability to fully assess whether the Caucus Room was constructed in accordance with the final approved design plans. At the time the AOC awarded the CMc contract, the AOC was still in the process of completing the CHOBr BIM Project Execution Plan and finalizing it for agencywide use; however, the CMc contract noted that the CMc should familiarize itself with the standards and other guidelines required under the CHOBr BIM Project Execution Plan and carry out the roles and responsibilities defined within the plan.

BIM is the digital representation of the physical and functional characteristics of the project. The BIM Project Execution Plan allows parties involved in the project to clearly document specific requirements related to the BIM, such as software requirements, modeling protocols, and when and how the model files will be updated. Once the AOC obtained final approval for the CHOBr BIM Project Execution Plan, the CMc was responsible for carrying out the roles and responsibilities defined in the document throughout the project's pre-construction, construction, and close-out periods. The CMc contract specifically noted that the scope of the CHOBr BIM Project Execution Plan included performing close-out requirements for as-builts and collecting facility data to fulfill COBie requirements.

The AOC and CMA issued the CHOBr BIM Project Execution Plan on April 10, 2013. The goals of the BIM Project Execution Plan included, but were not limited to:²

- Optimizing facility management and construction processes using BIM.
- Providing for uninterrupted facility missions and minimizing campus impact.
- Optimizing stakeholders' abilities to review the design and construction processes.

² CHOBR BIM Project Execution Plan, page 1.

To achieve these goals, the CMc and AOC CD were responsible for different deliverables and assigned requirements under the BIM Project Execution Plan. One of the CMc's responsibilities was to "Implement *requirements* set forth in the BIM Project Execution Plan" [emphasis added]. Additionally, the CMc was responsible for developing the as-built model using its fabrication models,³ which detail the conditions required to progress from the fabrication stage to the completion stage.

Under the CMc contract, the CMc was required to provide construction services in five distinct phases (0 through 4). Phase 1 of the project involved renovating the Caucus Room to be a multipurpose room; however, Congressional leadership subsequently decided to change the Caucus Room to a hearing room. The House Office Buildings contracted with the AOC CD to complete the redesign and construction efforts needed to convert the Caucus Room to a hearing room. As a result of these changes, both the CMc and AOC CD completed work in the Caucus Room, and each prepared separate as-built drawings.

An objective of the audit was to determine whether the Caucus Room was constructed and commissioned in accordance with the design. To accomplish this portion of the objective, we requested the CMc's final as-built drawing deliverables for Phase 1. The CMc provided a set of as-built PDF drawings; however, we determined that these drawings did not comply with the requirements outlined in the CHOBr BIM Project Execution Plan. The execution plan states that the plan should "create an accurate, valuable, and reusable [BIM] that assists with not only the design and construction process but optimizes the operations of the facility." The BIM documents include attributes of the mechanical, electrical, and/or plumbing systems installed, including the model number, serial number, warranty and other information. The CMc was required to use its fabrication models to develop an as-built model that included the COBie data collected during the construction phase. However, the as-built drawings the CMc provided during our audit did not include either the required fabrication models or COBie data.

Additionally, we reviewed the AOC CD's as-built documents, including the document titled "AOC Red-lined Design Drawings for As-builts." Instead of

³ A fabrication model can be defined as software used to represent the physical form of a building or structure in a digital format. The CMc was responsible for developing a fabrication model at the Level of Development 400 (*CHOBr BIM Project Execution Plan*). At this level different elements of the building are represented as a specific system, object, or assembly within terms of size, shape, location, quantity and orientation with detailing, fabrication, assembly, and installation information. Nongraphical information can also be attached to each element in the model (*American Institute of Architects (AIA) Document G202-2013*).

containing data to fulfill COBie requirements, these files were limited to PDFs and various photographs. The PDFs included handwritten redlines that often referenced other PDFs with little to no specificity. We do not consider these to be an as-built document, and we found no evidence that the CMc incorporated these handwritten redlines into its as-built PDF drawings. Further, the AOC CD did not incorporate the CMc's work into its own as-built drawings. Additionally, the AOC CD's as-built drawings did not meet either the standard of care⁴ required for as-built documentation or the requirements of the CHOBr BIM Project Execution Plan.

The AOC informed us that it was aware of the contractual requirements; however, the differing instructions that the various AOC divisions provided to the CMc have made it difficult to enforce these requirements. The deliverables outlined in the CHOBr BIM Project Execution Plan are meant to apply to all stakeholders; however, the AOC has not yet developed uniform guidance/requirements for deliverables across its various divisions. As a result, the divisions request deliverables in different formats. This lack of uniformity limits the AOC's ability to hold contractors to the deliverable requirements outlined in the CHOBr BIM Project Execution Plan.

Additionally, as previously mentioned, the AOC has not required either the CMc or AOC CD to incorporate the work that the other performed into their respective as-built drawings. As a result, the AOC does not have comprehensive as-built drawings that include all work performed on the Caucus Room.

The lack of agencywide directives outlining the requirements for as-built documentation and coordination between the as-built documents that the CMc and AOC CD produced have contributed to the inconsistencies in the Caucus Room as-built documentation.

In addition, the AOC intended to use the CHOBr BIM for—among other purposes—preventative maintenance scheduling using a computerized maintenance management system (CMMS) and asset management using computer-aided facilities management. The AOC could have obtained the COBie data from the BIM and populated the CMMS. However, the CMc and AOC CD did not provide as-built documentation that included the previously mentioned attributes in COBie format; therefore, the AOC cannot use the CHOBr BIM as originally intended. This could result in the following issues:

⁴ Standard of care is defined as the skill and care that a reasonably careful professional engineer would have used in similar circumstances (*Council of American Structural Engineers*).

- Suboptimization of facility management/preventative maintenance plans and associated increase of costs.
- An inaccurate BIM document that the AOC cannot rely on for future projects, resulting in increased costs on those projects due to the resources required to create or update the BIM.
- Potential lost product/warranty information that may result in safety-related issues.

An example of a situation in which a safety-related issue might occur would be if the AOC obtained approval to install a motor in a mechanical unit that differed from the motor included in the design drawings document, and the AOC did not document this change in the BIM/COBie data. If this motor was later recalled by the manufacturer, the AOC and/or facility management would be unable to accurately determine whether any of the as-built units included the recalled motor. This could result in a motor failure and potential safety issues. Conversely, if the AOC properly documented the attributes for all the units, it would be able to identify whether any of the units used the recalled motor by performing a search of the COBie data. The AOC and/or facility management would then be able to easily locate the appropriate unit(s) and quickly install replacements.

Conclusion

We found that the CHOBr BIM Project Execution Plan was not properly executed because the AOC did not require the CMc and AOC CD to adhere to the plan's requirements. The scope of the CHOBr BIM Project Execution Plan included performing close-out requirements for as-builts and collecting facility data to fulfill the COBie requirements. We determined that as-built drawings from both the CMc and AOC CD did not comply with the CHOBr BIM Project Execution Plan requirements; therefore, we were unable to fully assess whether the Caucus Room was constructed in accordance with the final approved design plans.

Lastly, while we provided an example of a potential safety-related issue, without proper final as-builts drawings and the COBie data, we are unable to assess the potential future costs that the AOC could incur. However, we can assert that, if the AOC fails to enforce compliance, there is an increased risk of incurring future costs, which would result in wasted government funds.

Recommendations

Recommendation 1

We recommend the Architect of the Capitol (AOC) ensure the Construction Manager as Constructor complies with the contractual requirements outlined in the Cannon House Office Building Renewal Project's Building Information Modeling Project Execution Plan.

Recommendation 1 – AOC Comment

We concur. The AOC will work with the [CMc] to ensure compliance with the BIM Project Execution Plan.

Anticipated Completion: August 2024

Recommendation 1 – OIG Comment

We recognize the AOC's concurrence with the recommendation. The AOC will work with the CMc to ensure compliance with the BIM Project Execution Plan. The AOC's actions appear to be responsive to the recommendation. Therefore, the recommendation is considered resolved but open. The recommendation will be closed upon completion and verification of the proposed actions.

Recommendation 2

We recommend the Architect of the Capitol (AOC) ensure the final as-built model of the Caucus Room includes all work performed in the room, regardless of which organization performed the work.

Recommendation 2 – AOC Comment

We concur. The AOC will ensure that the Caucus Room has a complete set of as-built documents.

Anticipated Completion: August 2024

Recommendation 2 – OIG Comment

We recognize the AOC's concurrence with the recommendation. The AOC will ensure that the Caucus Room has a complete set of as-built documents. The AOC's actions appear to be responsive to the recommendation. Therefore, the recommendation is considered resolved but open. The recommendation will be closed upon completion and verification of the proposed actions.

Recommendation 3

We recommend the Architect of the Capitol (AOC) develop and adopt agencywide requirements for its Building Information Modeling Project Execution Plan to ensure contractors are informed and capable of meeting the required contractual deliverables.

Recommendation 3 – AOC Comment

We concur. The AOC is in the process of updating the Architectural/Engineering (A/E) Design Manual and Computer-aided drafting standards, which will reference this report and recommendation. The agencywide BIM execution plan will need to be developed and will be a separate document that can be included in future projects requiring BIM execution.

Anticipated Completion: August 2024

Recommendation 3 – OIG Comment

We recognize the AOC's concurrence with the recommendation. The AOC will update the A/E Design Manual and Computer-aided drafting standards and develop an agencywide BIM execution plan for future projects requiring BIM execution. The AOC's actions appear to be responsive to the recommendation. Therefore, the recommendation is considered resolved but open. The recommendation will be closed upon completion and verification of the proposed actions.

Finding B

Constructed and Commissioned: Caucus Room's HVAC System Was Not Installed in Accordance with Contract Requirements and Industry Standards and the Commissioning Process Was Ineffective

The Caucus Room's HVAC system was not properly installed in accordance with contractual requirements and industry standards, and the commissioning process was ineffective. We were informed of stakeholders' complaints related to the excessive noise, vibrations, and air drafts from the HVAC system, which affected hearings in the Caucus Room. During our review, we determined that (1) the CMc did not submit the final TAB report, (2) there were no requirements for HVAC system sound testing prior to commissioning and (3) there were no sound-level design goals set for the Caucus Room.

In accordance with contract clause Federal Acquisition Regulation 52.242-14, "Suspension of Work," the AOC requested that the CMc stop all work related to IT and TASC cable service in the Caucus Room via a Stop Work Order dated September 17, 2018. The CMc completed its remaining scope of work for the Caucus Room on March 30, 2019, and the CHOB Project team and CMA accepted the last of the CMc's punchlist items on July 3, 2019. The AOC's commissioning agent accepted and commissioned these mechanical systems in March 2019.

The AOC CD began completing their Caucus Room scope of work in August 2019. After the AOC CD completed its scope of work, the AOC turned over the Caucus Room to the House Recording Studios for the installation of audio and video recording systems. During the installation and testing of these systems, excessive noise and vibrations from the HVAC system were identified. The House CAO, in conjunction with AOC's House Office Buildings, hired a third-party contractor to determine the root cause for the excessive noise and vibrations. Shortly after the third-party contractor's initial visit in March 2022, the House Office Buildings also requested another third-party to recommission the HVAC units. The recommissioning was performed to evaluate system performance, identify potential commissioning issues, identify opportunities to enhance performance and develop recommendations.

The third-party contractor issued a report dated May 27, 2022, that identified various issues in the Caucus Room. However, the CHOBr Project team was not made aware of this report, or the specific issues identified in it until our audit.

Improper HVAC System Installation Resulted in Excessive Noise, Vibration and Air Drafts

The third-party contractor's report identified unacceptable noise from the air handling unit (AHU) systems serving the Caucus Room. The report stated that sound engineers tested the sound levels from the AHU systems in three different positions in the Caucus Room. In the first two positions, the sound levels ranged from 43-46 A-weighted decibels (dBA); however, in the third position, the sound levels ranged from 45-48 dBA. The report noted that the original design goal was 40 dBA; however, it did not cite the source for the "40 dBA design goal." We reviewed the contract specifications and confirmed that they did not contain a design goal for HVAC system sound in the Caucus Room. However, the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) handbook, *HVAC Applications*, Chapter 49, "Noise and Vibration Control," lists the appropriate design level for office building rooms designed for amplified speech as 40 dBA. For every 3 dBA, the sound power doubles. For example, 43 dBA has twice the sound power of 40 dBA, while 46 dBA has four times the sound power of 40 dBA (i.e., it is approximately four times as loud to the human ear).

The report included an attachment entitled "Issues Log and Recommendations" that described 18 HVAC system issues. We reviewed these issues and identified six that would contribute to the increased sound level:

- **Issue No. 6:** "Floor vibration in steel grating in Mech Rm."
- **Issue No. 7:** "Sound attenuator missing in branch duct for each AHU. Mechanical service provider shall provide sound attenuators per design intent."
- **Issue No. 9:** "Vibration isolators for SF-21 & SF-23 appear to be improperly set and possibly damaged. Mechanical service provider shall replace damaged vibration isolators."
- **Issue No. 10:** "Vibration isolator for RF-21 appears to be improperly set in contact with steel support below. Mechanical service provider shall replace damaged vibration isolators."

- **Issue No. 13:** “The duct static pressure switches associated with AHU-21 & 23 do not appear to be properly calibrated and set. Switches should be calibrated, set, and tested to the appropriate duct construction standards.”
- **Issue No. 14:** “The airflow measuring stations (AFMSs) are velocity pressure transducer type. These stations appear to incorrectly report airflow rate to the BAS [Building Automation System], with some stations exceeding 40% error between field readings and BAS calculated values. The AFMSs should be calibrated, set, and [tested] by a controls contractor and balancing provider to ensure accurate airflow rate values reported in the BAS.”

Of these issues, the missing sound attenuator in the branch ducts—which was required per the contract specifications—would likely have the greatest impact on the sound level.

The report also noted that the air pattern controllers for the supply diffusers near the Caucus Room ceiling were improperly set, resulting in drafts that caused the projector screen to move. Although this is not an uncommon issue, the CHOBr Project team stated that the screen was not part of the original design, so the original commissioning would not have included testing for this issue. This appears to be a design issue that could be fixed by adjusting the diffusers or installing a different type of diffuser.

After reviewing the contract requirements, commissioning documents, and third-party contractor report, we identified the following noncompliance and missing requirements that may have contributed to the improper installation and commissioning of the HVAC system.

(1) Missing Final TAB Report

The CHOBr Project contract requires the CMc to submit a TAB report, and the AOC commissioning documents require the commissioning agent to confirm that the contractor has completed the TAB report and obtained approval from the AOC prior to commissioning the HVAC system. A TAB report verifies appropriate temperatures, airflow, and other characteristics of the HVAC system.

After reviewing the third-party contractor’s report and the AOC’s commissioning documents, we requested the TAB report to determine whether some of the issues identified in the third-party contractor’s report were present at the time of the installation or whether the issues developed after. The CMc submitted a TAB report,

which was rejected by the AOC on December 16, 2020. The individual who reviewed and rejected the report, noted that, although the report was “Final” and “Certified,” each page was labeled “preliminary.” They also noted that comments from prior reviews were still not addressed and that many of the units tested in the report had issues or no readings at all. The reviewer stated that the report was “loaded with similar issues” and the “quality of this report does not reflect a product that I would want my name associated with.”

The CMC did not submit a final TAB report that was approved by the AOC in accordance with the contract and specifications or with the commissioning documents. Had the CMC completed the TAB report as required, the AOC might have been able to identify and correct some of the issues identified in the third-party contractor’s report before it turned the Caucus Room over to House Office Buildings.

(2) No Requirement for HVAC System Sound Testing Prior to Commissioning

During our review of the AOC commissioning documents, we noted that the documents did not require the commissioning agent to test the HVAC system’s sound levels prior to commissioning. Had the agent tested the sound levels, they may have identified the elevated sound level in the room, which could have led the AOC to discover the issues later identified in the third-party contractor’s report. However, the commissioning agent is only expected to follow the steps required by the commissioning documents.

In response to the missing sound attenuator noted in the third-party report, the CHOBr Project team explained that this work was completed near or after the planned end of Phase 1. The space where the missing attenuator would have been, was covered up by insulation by the time the system was commissioned, and it would not have been possible to observe its absence. The inability to review each part of the system as part of the commissioning process further supports the need to include overall sound testing as a commissioning requirement to ensure the system meets the owner’s needs. Without this step, the process is not effective for ensuring that the system being commissioned will meet the owner’s requirements.

(3) No Sound-Level Design Goals for Caucus Room

As previously noted, the third-party contractor’s report stated that the sound levels recorded from the HVAC units exceeded the original design goal of 40 dBA. Although 40 dBA corresponds to the design goal for a hearing room (i.e., an office building room designed for amplified speech) per the ASHRAE handbook, the

contract and design specifications for the Caucus Room HVAC system did not specify a sound-level design goal for each unit or the system as a whole. Although the original design for the Caucus Room was a multipurpose room and not a hearing room, speech amplification was included in the original design sufficient to support events and hearings. Therefore, the industry standard of 40 dBA identified by the ASHRAE handbook would have applied to the original design as well as the redesign.

Had the AOC included this design goal in the contract specifications, the CMc might have implemented further testing to ensure the system met the stated goal.

Conclusion

As mentioned, the CMc did not properly install the Caucus Room’s HVAC system in accordance with contractual requirements and industry standards, and the commissioning process for the system was ineffective. As a result, the HVAC system produced elevated noise levels, vibrations, and air drafts that moved the projector screen while operating.

The AOC compensated the CMc for work that was not properly completed. Further, the House CAO incurred additional costs of approximately \$45,000—in conjunction with the AOC—for outside contractors to identify these issues and the parties responsible for the issues as well as for staff labor hours incurred to investigate the complaints.

Last, this issue caused the CHOB Project to turn the Caucus Room over to the House Office Buildings before the Caucus Room HVAC system had the optimal functionality for a hearing room. This outcome impacted the quality of the high-profile televised hearings the Caucus Room has hosted since the AOC completed the commissioning process.

Recommendations

Recommendation 4

We recommend the Architect of the Capitol (AOC) require the Construction Manager as Constructor (CMc) to submit a final Testing, Adjusting and Balancing report. If the CMc is unable to do so, the AOC should assess a credit against the CMc for failing to properly complete its contractual obligations.

Recommendation 4 – AOC Comment

We concur. As the Caucus Room is occupied, the AOC will work with House Office Buildings and all stakeholders to determine the best available dates to complete the necessary testing.

Anticipated Completion: August 2024

Recommendation 4 – OIG Comment

We recognize the AOC's concurrence with the recommendation. The AOC will work with House Office Buildings and all stakeholders to complete the testing. The AOC's actions appear to be responsive to the recommendation. Therefore, the recommendation is considered resolved but open. The recommendation will be closed upon completion and verification of the proposed actions.

Recommendation 5

We recommend the Architect of the Capitol (AOC) identify any other incomplete or incorrect work pertaining to the Heating, Ventilation and Air Conditioning (HVAC) system in the Caucus Room. The AOC should require the Construction Manager as Constructor (CMc) to complete the work in accordance with the contractual specifications or assess credits against the CMc for failing to properly complete its contractual obligations.

Recommendation 5 – AOC Comment

We concur. As the Caucus Room is occupied, the AOC will work with House Office Buildings and all stakeholders to determine the best available dates to complete the necessary HVAC scope.

Anticipated Completion: August 2024

Recommendation 5 – OIG Comment

We recognize the AOC's concurrence with the recommendation. The AOC will work with House Office Buildings and all stakeholders to identify and complete the necessary HVAC scope of work. The AOC's actions appear to be responsive to the recommendation. Therefore, the recommendation is considered resolved but open. The recommendation will be closed upon completion and verification of the proposed actions.

Recommendation 6

We recommend the Architect of the Capitol (AOC) review its commissioning process and implement internal controls to ensure that the commissioning agent properly completes all required steps prior to commissioning work.

Recommendation 6 – AOC Comment

We concur. We will review existing processes and contract requirements related to commissioning and implement any necessary improvements to related controls for CHOBr Phase 4.

Anticipated Completion: December 2023

Recommendation 6 – OIG Comment

We recognize the AOC's concurrence with the recommendation. The AOC will review existing processes and contract requirements related to commissioning and implement any necessary improvements to related controls for CHOBr Phase 4. The AOC's actions appear to be responsive to the recommendation. Therefore, the recommendation is considered resolved but open. The recommendation will be closed upon completion and verification of the proposed actions.

Recommendation 7

We recommend the Architect of the Capitol (AOC) add steps to the commissioning process that require the commissioning agent to test Heating, Ventilation and Air Conditioning systems for acceptable sound levels in all rooms deemed to be sensitive to elevated noise.

Recommendation 7 – AOC Comment

We concur. For rooms where the design and/or specification dictates the need for sensitivity to elevated noise, and that require a sound level for a specific room configuration, the AOC will add steps to the commissioning process to test for the sound requirement.

Anticipated Completion: December 2023

Recommendation 7 – OIG Comment

We recognize the AOC’s concurrence with the recommendation. The AOC will add steps to the commissioning process to test for the sound requirement where design and/or specification dictates the need for sensitivity to elevated noise, and that require a sound level for a specific room configuration. The AOC’s actions appear to be responsive to the recommendation. Therefore, the recommendation is considered resolved but open. The recommendation will be closed upon completion and verification of the proposed actions.

Recommendation 8

We recommend the Architect of the Capitol (AOC) ensure design specifications clearly identify sound design A-weighted decibels goals for all rooms deemed to be sensitive to elevated noise.

Recommendation 8 – AOC Comment

We concur. [The AOC] will review specifications and other contract requirements related to sound and implement any necessary improvements to meet industry standards where applicable.

Anticipated Completion: December 2023

Recommendation 8 – OIG Comment

We recognize the AOC’s concurrence with the recommendation. The AOC will review specifications and other contract requirements related to sound and implement any necessary improvements to meet industry standards where applicable. The AOC’s actions appear to be responsive to the recommendation. Therefore, the recommendation is considered resolved but open. The recommendation will be closed upon completion and verification of the proposed actions.

Recommendation 9

We recommend the Architect of the Capitol (AOC) ensure the supply diffusers near the Caucus Room ceiling are adjusted or replaced so they do not interfere with the use of the projector screen.

Recommendation 9 – AOC Comment

We concur. As the Caucus Room is occupied, the AOC will work with House Office Buildings and all stakeholders to determine the best available dates to complete the necessary scope.

Anticipated Completion: August 2024

Recommendation 9 – OIG Comment

We recognize the AOC's concurrence with the recommendation. The AOC will work with House Office Buildings and all stakeholders to complete necessary scope of work, which is to ensure the supply diffusers near the Caucus Room ceiling are adjusted or replaced so they do not interfere with the use of the projector screen. The AOC's actions appear to be responsive to the recommendation. Therefore, the recommendation is considered resolved but open. The recommendation will be closed upon completion and verification of the proposed actions.

Finding C

Approved Budget: AOC Incurs Increased Costs Due to CMC's Failure to Prevent Caucus Room's Water Damage

The AOC has incurred \$29,324 in additional costs and will continue to incur additional costs, which are currently estimated at \$1,168,827, due to the CMC's failure to prevent water damage in the Caucus Room. As part of our audit, we interviewed stakeholders in the House Office Buildings and Office of the Chief Administrator (OCAO) and reviewed documentation related to their complaints and concerns regarding the quality of the Caucus Room's construction. Specifically, the stakeholders expressed concerns regarding water leaks which impacted the Caucus Room.

Before the CMC began its construction activities, there were already water leaks in the Caucus Room in the southwest corner where a wall had separated at the ceiling joint; however, the CMC performed ceiling repairs and waterproofing to address the issue. Shortly after the CMC began work, more than a dozen water leaks appeared in the northeast and southeast corners. It took more than a year to determine the cause of the water leaks and how the water was migrating through the walls. It was eventually determined that the water leaks that impacted the Caucus Room occurred because the CMC did not tie the water drains down on the roof of the building. As a result, the water damaged plaster, ornate rosettes and items in the rack room. The leaks temporarily stopped once the CMC completed piping for the room and tied down the roof drains.

The CMC completed its scope of work for the Caucus Room in March 2019; however, the AOC CD discovered additional leaks once it began renovations in August 2019. Instead of recalling the CMC to address the leak issues, the AOC CD addressed the issues as part of its renovations, expending at least \$29,324 in non-CHOBr Project funds to address the damage caused by the leaks. The AOC CD subsequently identified additional damage due to the water leaks in the Caucus Room, which the AOC has not yet addressed. The AOC CD prepared an initial Rough Order of Magnitude⁵ (ROM) for the repairs and estimated the cost of the

⁵ A ROM is an estimate of the effort and cost needed to complete a project. This estimate is typically done during the planning stages of the project and is typically refined and updated as more information becomes available.

repairs to be \$1,168,827. The AOC plans to perform the repairs once funding is approved and there is access to the room.

After discovering the extent of the damage, the AOC CD did not request that the CHOBr Project team require the CMc to fulfill its obligations in the Caucus Room to repair the damage. This was not done, at least in part, because the AOC required a proper investigation of the issue to determine the root cause of the water leaks.

In response to our audit requests, all the relevant parties—including the AOC CD, House Office Buildings, CMA and CHOBr Project team—noted that the CMc’s failure to mitigate the water infiltration from the roof led to the water damage in the Caucus Room. Now that the AOC CD has prepared an estimate for the repairs, it should provide the CMc with an opportunity to address the damages resulting from the CMc’s incorrect or incomplete work. Should the CMc fail to address the issues, the AOC should recover the cost of the repair work from the CMc.

Conclusion

We found that the CMc’s failure to properly maintain a watertight roof resulted in damage to the Caucus Room. To date, the AOC CD has incurred \$29,324 in repair costs to address the water damage in the Caucus Room and estimates an additional \$1,168,827 to address the remaining damage.

Recommendation

Recommendation 10

We recommend the Architect of the Capitol (AOC) require the Construction Manager as Constructor (CMc) to either address the damages resulting from the incorrect or improper work that the CMc performed during Phase 1 or recover the costs that the AOC incurs to remediate the damages. If feasible, the AOC should recover the costs it has already incurred for the repairs to date (\$29,324).

Recommendation 10 – AOC Comment

We concur. The AOC will work with the CMc to either remediate the damages themselves or to recover the costs incurred by the AOC. The AOC will also work to recover the identified costs already incurred if legally and administratively possible.

Anticipated Completion: August 2024

Recommendation 10 – OIG Comment

We recognize the AOC's concurrence with the recommendation. The AOC will work with the CMC to either remediate the damages themselves or to recover the costs incurred by the AOC. The AOC will also work to recover the identified costs already incurred if legally and administratively possible. The AOC's actions appear to be responsive to the recommendation. Therefore, the recommendation is considered resolved but open. The recommendation will be closed upon completion and verification of the proposed actions.

COTTON & COMPANY ASSURANCE AND ADVISORY LLC

A handwritten signature in black ink, appearing to read 'J. Boberg', with a stylized flourish at the end.

Jason Boberg, CPA, CFE

Partner

September 6, 2023

Appendix A

Scope and Methodology

The scope of this performance audit was to determine if the CHOBBr Project's Caucus Room was constructed and commissioned in accordance with the design, contract documents and contract terms and conditions within the approved budget. To accomplish the audit objectives, we obtained an understanding of the contract design and scope for the Caucus Room as well as the process for reviewing and approving construction and commissioning. We worked with SMEs to determine whether the Caucus Room was constructed and commissioned in accordance with the design, contract documents, and contract terms and conditions. We conducted this performance audit in Washington, D.C. from October 2022 through April 2023, in accordance with GAGAS (per the 2018 revision of GAO's *Government Auditing Standards*). These standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective.

Review of Internal Controls

Government Auditing Standards requires auditors to obtain an understanding of internal controls that are significant within the context of the audit objectives. For internal controls deemed significant within the context of the audit objectives, auditors should assess whether the internal control has been properly designed and implemented as well as perform procedures designed to obtain sufficient and appropriate evidence to support their assessment regarding the effectiveness of those controls. Information system controls are often an integral part of an entity's internal control. The effectiveness of significant internal controls is frequently dependent on the effectiveness of information system controls. Thus, when obtaining an understanding of internal controls significant to the audit objectives, auditors should also determine whether it is necessary to evaluate information system controls.

We reviewed the contract and technical specifications to gain a better understanding of the requirements in place for the construction of the Caucus Room. We also interviewed personnel from the AOC CD, CMc, CHOBBr Project team and CMA to gain a better understanding of the policies and procedures that were in place while the AOC CD and CMc were performing construction on the Caucus Room. Additionally, we interviewed personnel from the OCAO and House Office Buildings to gain a

better understanding of prior complaints made regarding the Caucus Room’s construction and any actions taken to address these complaints. Our review of the relevant internal controls resulted in two findings, outlined in Findings A and B. Specifically, the AOC did not properly oversee the CMc, which resulted in the following findings: (1) the AOC did not require the CMc or AOC CD to adhere to the requirements of the CHOBr Project’s BIM Project Execution Plan and (2) the Caucus Room’s HVAC system was not installed in accordance with contract requirements and industry standards, and the commissioning process, which was one of the project’s internal controls designed to ensure quality, was ineffective.

Use of Computer-Processed Data

We did not use a material amount of computer-processed data to perform this audit.

Appendix B

Announcement Memorandum



Office of Inspector General
Fairchild Bldg.
499 S. Capitol St., SW, Suite 518
Washington, D.C. 20515
202.593.1948
www.aoc.gov

United States Government
MEMORANDUM

DATE: September 27, 2022

TO: J. Brett Blanton
Architect of the Capitol

FROM: Christopher P. Failla, CIG 
Inspector General

SUBJECT: Announcement Memorandum for the Audit of the Cannon House Office Building
Renewal (CHOBr) Project's Caucus Room Project No. 2022-AUD-010-A

This memorandum serves as notification that the Office of the Inspector General is working with the independent audit and accounting firm, Cotton & Company Assurance and Advisory LLC, to initiate a construction audit of the CHOBr Project's Caucus Room. The objective of the audit is to determine if the CHOBr Project's Caucus Room was constructed and commissioned in accordance with the design, contract documents, and contract terms and conditions within the approved budget. If we determine the scope of review for the Caucus Room is limited, we will extend the scope to include the Veterans' Affairs Hearing Room.

We will contact your office to set up an audit entrance conference in the next few weeks. If you have any questions, please contact Nikki Robinson, Auditor at 202.437.5324 or nikki.robinson@aoc.gov.

Distribution List:

Peter Bahm, Chief of Staff
Mary Jean Pajak, Deputy Chief of Staff
Chere Brown-Rexroat, Chief Engineer
Antonio Edmonds, Acting Chief of Operations
David Wilder, Superintendent, House Office Buildings
Stephen Titus, Project Executive

Appendix C

Cotton & Company's Management Representation Letter

Insert AOC letterhead

[Date of Report and Completion of the Performance Audit]

Christopher P. Failla
 Inspector General
 Architect of the Capitol
 Office of Inspector General
 499 S Capitol St. SW, Suite 518
 Washington, DC 20515

Attention: Mr. Failla

We are providing this representation letter in connection with Cotton & Company Assurance and Advisory, LLC's (Cotton's), performance audit of the Architect of the Capitol (AOC) Cannon House Office Building Renewal (CHOBBr) Project's construction and commissioning of the Caucus Room.

Certain representations in this letter are described as being limited to matters that are significant. Significance is defined as the relative importance of a matter within the context in which it is being considered, including quantitative and qualitative factors. Such factors include the magnitude of the matter in relation to the subject matter of the audit, the nature and effect of the matter, the relevance of the matter, the needs and interests of an objective third party with knowledge of the relevant information, and the impact of the matter to the audited program or activity. Items are considered significant regardless of size if they involve an omission or misstatement of information that, in the light of surrounding circumstances, makes it probable that the judgment of a reasonable person relying on the information would be changed or influenced by the omission or misstatement. The term "significant" is comparable to the term "material" as used in the context of financial statement engagements.

We confirm that, to the best of our knowledge and belief, having made such inquiries as we considered necessary for the purpose of appropriately informing ourselves, as of [date of report]:

Our Responsibilities¹

- We acknowledge our responsibility for the sufficiency of the subject matter in achieving its objectives. Specifically, management is responsible for ensuring that the CHOBBr Project's Caucus Room was constructed and commissioned in accordance with the design, contract documents, and contract terms and conditions within the approved budget.

Information Provided

- We assert that the information provided to you for this audit is complete and accurate to the best of our knowledge.
- We assert that we have no knowledge of any information regarding fraud, instances of noncompliance with laws or regulations, or any pending or threatened litigation related to the construction and commissioning of the Caucus Room.
- We assert that we are not aware of any matters that it believes would invalidate our conclusions.

¹ The responsibilities discussed in this section are based on the responsibilities included in our representation letter for financial audits, as GAGAS includes little discussion of management's responsibilities related to performance audits. The responsibilities discussed in this section also include language from Office of Management and Budget (OMB) Bulletin 19-03, even though that Bulletin applies only to financial statement audits.

- Upon information and belief all known deficiencies in the design or operation of internal controls were disclosed to you by management.

[Responsible Party and Title]
Architect of the Capitol

[Responsible Party and Title]
Architect of the Capitol

cc: Jason Boberg, Cotton

Appendix D

AOC's Management Representation Letter



Architect of the Capitol
U.S. Capitol, Room SB-16
Washington, DC 20515
202.228.1793
www.aoc.gov

August 28, 2023

Christopher P. Failla
Inspector General
Architect of the Capitol
Office of Inspector General
499 S Capitol St. SW, Suite 518
Washington, DC 20515

Attention: Mr. Failla

The Architect of the Capitol is providing this letter as requested concerning the Office of the Inspector General's audit of the Cannon Caucus Room (Project No. 2022-AUD-010-A).

The information provided by the AOC as part of this audit is complete and accurate to the best of its knowledge.

Sincerely,

Thomas M. Costello II
Acting Deputy Chief Engineer

Appendix E

Management Comments

	<p>Architect of the Capitol U.S. Capitol, Room SB-16 Washington, DC 20515 202.228.1793 www.aoc.gov</p>	<p>United States Government MEMORANDUM</p>
---	---	--

DATE: August 15, 2023

TO: Christopher P. Failla
 Inspector General

FROM: Chere Rexroat, RA 
 Acting Architect of the Capitol

SUBJECT: Office of Inspector General's Audit of the Cannon House Office Building
 Renewal Project's Caucus Room Project No. 2022-AUD-010-A

Thank you for the opportunity to review and comment on the Office of Inspector General's (OIG) Audit of the Cannon House Office Building Renewal (CHOBr) Project's Caucus Room.

The Architect of the Capitol (AOC) appreciates that the OIG identified areas for improvement in the Commissioning and Building Information Modeling (BIM) processes. Additionally, the AOC is working with the relevant parties to repair damage from water leaks in the Caucus Room. The following comments concerning the OIG's recommendations are provided.

Recommendation 1

Ensure the Construction Management as Constructor complies with the contractual requirements outlined in the Cannon House Office Building Renewal Project's Building Information Modeling Project Execution Plan.

AOC Response

We concur. The AOC will work with the Construction Management as Constructor (CMc) to ensure compliance with the BIM Project Execution Plan.

Anticipated Completion: August 2024

Recommendation 2

Ensure the final as-built model of the Caucus Room includes all work performed in the room, regardless of which organization performed the work.

AOC Response

We concur. The AOC will ensure that the Caucus Room has a complete set of as-built documents.

Anticipated Completion: August 2024

Recommendation 3

Develop and adopt agencywide requirements for its Building Information Modeling Project Execution Plan to ensure contractors are informed and capable of meeting the required contractual deliverables.

AOC Response

We concur. The AOC is in the process of updating the Architectural/Engineering (A/E) Design Manual and Computer-aided drafting standards, which will reference this report and recommendation. The agencywide BIM execution plan will need to be developed and will be a separate document that can be included in future projects requiring BIM execution.

Anticipated Completion: August 2024

Recommendation 4

Require the CMc to submit a final Testing, Adjusting and Balancing report. If the CMc is unable to do so, the AOC should assess a credit against the CMc for failing to properly complete its contractual obligations.

AOC Response

We concur. As the Caucus Room is occupied, the AOC will work with House Office Buildings and all stakeholders to determine the best available dates to complete the necessary testing.

Anticipated Completion: August 2024

Recommendation 5

Identify any other incomplete or incorrect work pertaining to the Heating, Ventilation and Air Conditioning system in the Caucus Room. The AOC should require the CMc to complete the work in accordance with the contractual specifications or assess credits against the CMc for failing to properly complete its contractual obligations.

AOC Response

We concur. As the Caucus Room is occupied, the AOC will work with House Office Buildings and all stakeholders to determine the best available dates to complete the necessary heating, ventilation and air conditioning (HVAC) scope.

Anticipated Completion: August 2024

Recommendation 6

Review its commissioning process and implement internal controls to ensure the commissioning agent properly completes all required steps prior to commissioning work.

AOC Response

We concur. We will review existing processes and contract requirements related to commissioning and implement any necessary improvements to related controls for CHOBr Phase 4.

Anticipated Completion: December 2023

Recommendation 7

Add steps to the commissioning process that require the commissioning agent to test Heating, Ventilation and Air Conditioning systems for acceptable sound levels in all rooms deemed to be sensitive to elevated noise.

AOC Response

We concur. For rooms where the design and/or specification dictates the need for sensitivity to elevated noise, and that require a sound level for a specific room configuration, the AOC will add steps to the commissioning process to test for the sound requirement.

Anticipated Completion: December 2023

Recommendation 8

Ensure design specifications clearly identify sound design A-weighted decibels goals for all rooms deemed to be sensitive to elevated noise.

AOC Response

We concur. We will review specifications and other contract requirements related to sound and implement any necessary improvements to meet industry standards where applicable.

Anticipated Completion: December 2023

Recommendation 9

Ensure the supply diffusers near the Caucus Room ceiling are adjusted or replaced so they do not interfere with the use of the projector screen.

AOC Response

We concur. As the Caucus Room is occupied, the AOC will work with House Office Buildings and all stakeholders to determine the best available dates to complete the necessary scope.

Anticipated Completion: August 2024

Recommendation 10

Require the CMc to either address the damages resulting from the incorrect or improper work that the CMc performed during Phase 1 or recover the costs that the AOC incurs to remediate the damages. If feasible, the AOC should recover the costs it has already incurred for the repairs to date (\$29,324).

AOC Response

We concur. The AOC will work with the CMc to either remediate the damages themselves or to recover the costs incurred by the AOC. The AOC will also work to recover the identified costs already incurred if legally and administratively possible.

Anticipated Completion: August 2024

Doc. No. 230802-18-01

Acronyms and Abbreviations

A/E	Architectural/Engineering
AFMS	Airflow measuring station
AHU	Air handling unit
AOC	Architect of the Capitol
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers
BAS	Building Automation System
BIM	Building Information Modeling
CAO	Chief Administrative Officer
CD	Construction Division
CHOBr	Cannon House Office Building Renewal
CMA	Construction Manager as Agent
CMc	Construction Manager as Constructor
CMMS	Computerized maintenance management system
COBie	Construction Operations Building information exchange
Cotton	Cotton & Company Assurance and Advisory, LLC
dBA	A-weighted decibels
GAGAS	Generally accepted government auditing standards
GAO	Government Accountability Office
House	House of Representatives
HVAC	Heating, Ventilation, and Air Conditioning
IT	Information Technology
OCAO	Office of the Chief Administrative Officer
OIG	Office of Inspector General
ROM	Rough Order of Magnitude
SME	Subject matter expert
TAB	Testing, Adjusting and Balance
TASC	the American Systems Corporation



OFFICE ON THE INSPECTOR GENERAL

Fairchild Building, Suite 518
499 South Capitol Street, SW
Washington, DC 20515
202.593.1948
hotline@aoc-oig.org