



# Coordinating Historic Requirements with Modern Performance

*The West Addition Building on St. Elizabeths Campus in Washington, D.C.*

Construction projects that must meet historic or landmark status requirements present unique challenges, which only increase when blending modern performance expectations that respect the area's historic look. Such was the case for the Building 54 West Addition of the St. Elizabeths Campus in west Washington, D.C.

*“Once you have experienced the work involved, the hands-on labor, and the multiple steps to produce one piece of terracotta, you gain a better appreciation and understanding of price, lead times, and quality of the products being fabricated and assembled.”*



Photo credit: Shalom Baranes Associates

*The addition sits on a 176-acre District of Columbia Landmark and is listed on the National Register of Historic Places, making attention to historic detail and materials particularly crucial. In addition, because the building houses components of the U.S. Department of Homeland Security (DHS) as of its completion in September 2019, security above- and below-grade was a priority. And to top it all off, the project owner, U.S. General Services Administration (GSA), added sustainability to the top of its requirements list, targeting LEED Gold certification. With this many critical details at stake, GSA turned to AFG Group, Inc. (AFG) to ensure all of the pieces came together.*

## Coordinating Every Detail

The new building's location is on a sloping site at the transition between existing historic buildings (Center Building and Creamery) on the upper plateau, the newly constructed U.S. Coast Guard Headquarters at the Munro Building on the lower plateau, and two active streets. Its four floors of program space were designed to provide flexibility for tenants seeking a modern high-tech office space balanced with full compliance of life safety, security and accessibility requirements. The below-grade connections of the West Addition provide secure access to the DHS Operations Center (DOC), Multi-Utility Tunnel (MUT), and Central Utility Plant (CUP). Also incorporated with the program design were pedestrian bridges providing access to the Center Building at three different levels.

AFG served as a facilitator between GSA and project architect Shalom Baranes Associates, design build contractor Grunley Construction Co. Inc., trades and consultants, ensuring that GSA deliverables and DHS Program of Requirements (POR) on scope, schedule, budget, quality and other definable features of work were incorporated into the project and were adhered to. That meant company representatives were engaged at every step to ensure each product, system and installation were code compliant, performance verified, and followed the design intent to the highest standards.

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For example, early on AFG was tasked with ensuring the project mimicked the natural brick, terracotta and stone façades of the surrounding buildings and contribute to the “pastoral” flow of the campus. The design architect specified a terracotta sunscreen design to achieve this look and enhance the shading that would help earn LEED points for Light Pollution Reduction; and Minimum Energy Performance. The façade also had to receive approvals from GSA, DHS, Consulting Parties (CP), National Capital Planning Commission (NCPC), Commission of Fine Arts (CFA), Office of Planning and Design Quality (OPDQ), and State Historic Preservation Office (SHPO) agencies / organizations. This laborious process took several months with multiple renderings and proposals until the final materials and design elements were acceptable to all parties and stakeholders.

“There are three manufacturers in the world that produce this specific type of sunscreen vertically-fastened terracotta systems,” explains Kai Goodrich, CCM, LEED AP, CHC, Project Director for AFG.



To ensure this pivotal design element would meet all expectations, Mr. Goodrich visited the manufacturing plant site in Emmerich, Germany, to perform a quality assurance inspection. Traveling with representatives from the architecture firm, general contractor, and curtainwall contractor, Mr. Goodrich followed the product from its earliest stages as a mix design, where the batch components, elements, and materials

precise trades coordination, and implementation of Building and Information Modeling (BIM).

For example, AFG maintained cost control by tracking the entire budget in real-time and closely coordinating potential impacts to the budget among all members of the project delivery team. The groups collaborated over weekly meetings

*“The fabrication process is very labor intensive,” Goodrich reveals. “There are many hands and eyes on each step of the way ... Once you have experienced the work involved, the hands-on labor, and the multiple steps to produce one piece of terracotta, you gain a better appreciation and understanding of price, lead times, and quality of the products being fabricated and assembled.”*

was combined to meet the pigment, texture and consistency in accordance with the design requirements. The newly created terracotta clay slabs of moldings were placed on racks for a period of five days to dry cure. Each individual piece was checked for cracks and imperfections before being sent to the kiln for final firing process and hardening. Multiple inspections were performed to ensure no imperfections or flaws occurred at any time along the entire fabrication process, as the shapes and components were completed, drilled for hardware, and carefully packaged for transportation to the project site.

### Collaborative Resolutions

Of course, the sunscreen was but one element of a massive project moving along a tight two-year timeline to occupancy. As one might expect, the key to keeping every aspect moving on schedule and budget was live tracking of materials, expedited responses regarding request for information, identifying long lead items, open lines of communication,

and specific scopes of work coordination sessions with contractors and vendors to ensure that schedules were met and costs remained in line with the project budget. This also allowed the team to recognize and prepare for recovery plans if any activities in the schedule fell behind.

During the design and construction phases, AFG directed bi-weekly project progress meetings and special coordination meetings, targeting specific scopes or activities, as needed to address project progress and resolve issues. Any items left on the minutes for more than two meetings were placed on the “Hot List” for immediate attention and resolution. Solutions to these Hot List items and other obstacles were often resolved in collaboration with all stakeholders.

The project was split into four major deliverable stages for the design submissions and reviews: Erosion and Sedimentation, Site Utilities, Core & Shell, and Tenant Buildout. Throughout each of the stages, the project team was tasked with meeting overlapping (and occasionally contradictory) requirements from GSA and DHS. Ensuring the project would meet all agency specific necessities demanded collaborative efforts from the design team, subject matter expert consultants, contractors, other major stakeholders, as well as leadership support. One small example of this during the Site Utilities Stage, was the reduction of outlets throughout the building to implement P100 energy savings. This was reviewed and determined that it conflicted with the DHS office environment guidelines. The implementation and compromise was to install energy efficient outlets tied to the light or room sensor devices to reduce energy costs, and keep redundant power sources for DHS.



Photo credit: Kai Goodrich

The net results was a cost impact of \$72k and having program requirements of both agencies fulfilled.

The team determined the requirements of Progressive Collapse Guidelines, during the Core & Shell design, needed to be clearly defined for the level of implementation at this campus and specifically on the West Addition building, incorporating the correct criteria needed to make the design compliant with agency regulations. After the design reviews conducted by AFG, GSA, the Design Architect, Engineer of Record (EOR), DHS, and OPDQ Engineers, the structural analysis and application studies determined the design met the requirements. The Chief Architect for DHS, Jane Engvall's memorandum specific to Structural Design Criteria at St. Elizabeths stated on the topic of progressive collapse, "We feel that the GSA requirements ... should be the governing

criteria." The result of that decision also provided a time savings impact of roughly 65 days on the original schedule and avoided financial impacts in the range of \$1.5 million.

### Simultaneous Phases

The Building 54 project tasks the Project Director and CM team with juggling a huge number of competing requirements. And yet, it's only one project of a much larger ongoing program. The DHS headquarters consolidation is the largest federal project since construction of the Pentagon in the 1940s. The combined construction program phases are estimated to run between \$3 and \$4 billion. It's a massive undertaking, which is why GSA entrusted AFG to manage all of the Phase II projects simultaneously.



Photo credit: General Services Administration



### ABOUT THE AUTHOR

Kai Goodrich, CCM, LEED AP, CHC, Project Director for AFG, brings over 30 years of experience in the construction industry and oversees the St. Elizabeths Campus West Phase II Program. He is also responsible for the delivery of other key federal government projects throughout the Washington DC Metro Area, and has completed projects within GSA Regions 3, 4, 6, and 11. Under Kai's leadership, his project teams have won three Construction Management Association of America (CMAA) awards, including a national Project of the Year Award in 2018 for the GSA Sydney Yates Federal Building Exterior Restoration Project in Washington, DC.

AFG Group, Inc. is a woman-owned firm focused on multi-disciplined program, construction, and relocation programs. We maintain a national portfolio of work in courthouses, government buildings, educational facilities, healthcare, and laboratories. With nearly 30 years of business acumen, AFG has earned a reputation for providing strong expertise, responsiveness, and project execution that helps owners navigate through complex design, procurement, construction, and activation processes. For additional information, visit [www.afgcm.com](http://www.afgcm.com).