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Velcome, Christopher W Seckman Solicitation Response(SR) Dept: 0603	ID: ESR0324250000005656 Ver.: 1 Function: Nev	Procurement   Budgeting   Accounts Receivable   Accounts Payable       Modified by batch , 03/25/2025
Header () 1 General Information Contact Defa	ault Values Discount Document Information Clarifi	cation Request
Procurement Folder: Procurement Type: Vendor ID: Legal Name: Alias/DBA: Total Bid: Response Date: Response Time:	1644514 Central Purchase Order VC0000110293 AFFILIATED ENGINEERS INC S0.00 03/24/2025	SO Doc Code: CEOI SO Dept: 0603 SO Doc ID: ADJ2500000019 Published Date: 3/10/25 Close Date: 3/25/25 Close Time: 13:30 Status: Closed Solicitation Description: Martinsburg Readiness Center Design
Responded By User ID: First Name: Last Name: Email:	cgreaney@aeieng.	Total of All Attachments: 1 Total of All Attachments: 1
Phone:	3018161949	



Department of Administration Purchasing Division 2019 Washington Street East Post Office Box 50130 Charleston, WV 25305-0130

#### State of West Virginia **Solicitation Response**

Proc Folder:	1644514				
Solicitation Description:	Martinsburg Readiness Center Design Commissioning Services				
Proc Type:	Central Purchase Order				
Solicitation Closes		Solicitation Response	Version		
2025-03-25 13:30		SR 0603 ESR03242500000005656	1		

VENDOR					
VC0000110293 AFFILIATED ENGINEERS INC					
Solicitation Number:	CEOI 0603 ADJ2500000019				
Total Bid:	0	Response Date:	2025-03-24	Response Time:	16:38:53
Comments:					

FOR INFORMATION CONTACT THE BUYER David H Pauline 304-558-0067 david.h.pauline@wv.gov			
Vendor Signature X	FEIN#	DATE	

ct to all terms and conditions contained in this solicitation All otters subj

Line	Comm Ln Desc		Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount	
1 Martinsburg Readiness Center Design Commissioning Services					0.00		
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811015	08						

#### Commodity Line Comments: Hello -

Thank you for the opportunity to respond to this Centralized Expression of Interest for the Martinsburg Readiness Center Design Commissioning Services solicitation. Attached please find the response from Affiliated Engineers (AEI). Contact me at (301) 816-1949 or via email at cgreaney@aeieng.com with any questions. --Chris Greaney

#### **Extended Description:**

Provide professional architectural and engineering design services per the attached documentation.

# **State of West Virginia**

AEI RESPONSE Centralized Expression of Interest Martinsburg Readiness Center Design Commissioning Services

Solicitation Number: CEOI 0603 ADJ2500000019 Solicitation Date and Time: 2025-03-25 13:30

Submitted by: Affiliated Engineers, Inc. 12300 Twinbrook Parkway, Ste 600 Rockville, Maryland 20852 Point of Contact: Jeff Steffensen, Project Manager (jsteffensen@aeieng.com)





Affiliated Engineers, Inc. 12300 Twinbrook Parkway, Suite 600 Rockville, MD 20852 Tel 301.468.7766 • Fax 301.468.7787 www.aeieng.com

March 25, 2025

David Pauline Department Of Administration, Purchasing Division 2019 Washington Street East Charleston, WV 25305

#### RE: Martinsburg Readiness Center Design Commissioning Services

Dear David,

Affiliated Engineers Inc. (AEI) is honored to be considered to provide commissioning services for the Readiness Center Design Commissioning Services project in Martinsburg, West Virginia. Over 40 years ago, AEI created our commissioning practice specifically to support project teams that bring complex facilities to life. Our reputation for working as collaborative members of the project delivery team, while acting in our quality assurance role for owners, has gained us broad respect across the life science and research community among owners, users, designers, and construction teams.

**The Right Team.** The AEI Team brings national perspective and proven execution, blended with local client service, for the most comprehensive team to execute this project. We will be versatile, thorough, innovative, and engaged for the long-term execution of this project. Our team is hands-on and will help facilitate project delivery by performing installation verification and testing (IV/OV/PV) activities with our own qualified staff. This approach frees specialized contractor startup and programming staff to work on completion activities while acceptance activities begin on completed systems and areas. We take great pride in fulfilling our obligation to all the stakeholders in meeting the critical measures of cost, schedule, and quality. The team we bring to your project has commissioned similar projects for the Environmental Protection Agency in Wheeling, West Virginia, the National Institutes of Health, the University of Virginia, US Pharmacopea, and Horizon Therapeutics, as well as provided commissioning, qualification, and validation consulting services for these and many other clients.

**Best-in-Class Execution.** AEI assesses, defines, plans, designs, and commissions high-performance engineered systems. Organized for collaborative achievement, we integrate the work of more than 900+ professionals, with 70+ dedicated commissioning professionals across 21 offices in the United States into a single technical knowledge community and culture of high intellectual standards. AEI emphasizes sustainability and environmental stewardship in our work as implicit priorities of high-performance design for reducing the risk of MEP system failure in the event of a disaster scale event.

**Depth of Experience.** Our 70+ dedicated commissioning professionals have successfully completed over 1,700 commissioning projects nationwide. Our experts specialize exclusively in commissioning a wide variety of technically complex systems and facilities. By collaborating with AEI's internal design engineering team, our commissioning group remains focused solely on commissioning services, ensuring a highly specialized, expert-driven approach to each project. This commitment allows us to provide unmatched attention to detail and expertise that surpasses typical engineering firms. With a deep understanding of complex systems, we bring extensive experience to every phase—from design to final system performance—ensuring optimal results.

Our AEI proposed team is excited about the possibility of partnering with the State of West Virginia on this project and we look forward to hearing from you soon. Please do not hesitate to contact us with any questions.

Sincerel

Scott Spangenberg, PE, LEED AP Principal-In-Charge (d) 301.816.1947 | (m) 240.483.2333 | sspangenberg@aeieng.com

Jeff Steffensen, BCxP, LEED AP BD+C Project Manager (m) 919-695-6962 | jsteffensen@aeieng.com



Department of Administration Purchasing Division 2019 Washington Street East Post Office Box 50130 Charleston, WV 25305-0130

#### State of West Virginia Centralized Expression of Interest

Proc Folder:	1644514		Reason for Modification:
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BID RECEIVING LOCATION			
BID CLERK			
DEPARTMENT OF ADMINISTRATION			
PURCHASING DIVISION			
2019 WASHINGTON ST E			
CHARLESTON WV 25305			
US			
VENDOR			
Vendor Customer Code: VC0000110293			
Vendor Name : Affiliated Engineers, Inc.			
Address :			
Street: 12300 Twinbrook Parkway, Ste	600, Rockville, MD 20852		
City : Rockville			
State : Maryland	Country : United States	<b>Zip</b> : 20852	
Principal Contact : Scott Spangenberg, PE	E, LEED AP		
Vendor Contact Phone: 301-816-1947	Extension:		
FOR INFORMATION CONTACT THE BUYER			

David H Pauline 304-558-0067 david.h.pauline@wv.gov Vendor Signature X FEIN# 39-2044182 DATE March25, 2025 All offers subject to all terms and conditions contained in this solicitation

Date Printed: Mar 10, 2025

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Affiliated Engineers, Inc.

**STATE OF WEST VIRGINIA** | Martinsburg Readiness Center Design Commissioning Services / 1

### O1. EXECUTIVE SUMMARY

### Our passion is bringing complex facilities to life.

Name of Firm: Affiliated Engineers, Inc.

**Location of principal and branch offices:** AEI will be performing the work out of our Rockville office. We can also draw upon the support of 20 other offices nationwide, listed in the below map.

Current workload and capacity for this project: If awarded

the project, AEI will dedicate the named staff throughout the project's duration. AEI has the capacity and is available immediately to start on this project.





Affiliated Engineers, Inc.

STATE OF WEST VIRGINIA | Martinsburg Readiness Center Design Commissioning Services / 3

### O2. key project personnel / staffing plan

Our team's deep analysis experience and work with projects similar in scope and complexity to the Martinsburg Readiness Center project informs how we work—it allows us to identify and address key issues early in the design process and bring resolution in the most innovative and cost-effective manner. As industry leaders, we are consistently taking a fresh approach on design solutions by bringing forth new ideas for the entire team to discuss.

The forward-looking leadership our team offers is committed to developing and delivering information allowing the State of West Virginia to make informed decisions in a timely manner. Our continuous efforts to educate and mentor other team members make us a valued partner.

We have assembled a deep and experienced project team who stand ready to "leave no stone unturned" as we work

with you to develop a plan that will provide the framework to guide stakeholder investments in a resilient, reliable, efficient, sustainable and flexible facility. Our project team is small which will allow each individual to be intimately involved throughout the process. If needed, our personnel will readily ask for consult from others in AEI's 900+ community of engineers and technical experts which includes 70+ commissioning personnel.

Below, we have included our organization chart for the project. We have identified the roles and reporting relationships of our project team. Each person's responsibilities are denoted on their resumes.

As Project Manager, Jeff Steffensen will be the key contact for this project. His contact information is listed on his resume.





PROJECT ROLE Principal-in-Charge

#### EDUCATION

Master of Business Administration, University of St. Thomas, St. Paul, MN, 1996 Bachelor of Science, Mechanical Engineering, University of Maryland, 1986

#### REGISTRATION/ CERTIFICATION

Professional Engineer: Maryland (#19581), Virginia (#0402041620), Washington (#PE906522), Pennsylvania (#PE078629) LEED® Accredited Professional

#### PROFESSIONAL ASSOCIATIONS

Member - American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Member - Chesapeake Area Society of Healthcare Engineering (CASHE)

### SCOTT SPANGENBERG PE, LEED AP | PRINCIPAL

Scott is a registered professional engineer with more than 35 years of diverse project experience including higher education, healthcare, research, office, central utility, and government facilities. He has extensive project management and design experience in comprehensive HVAC system design, performance and direction of mechanical design, feasibility studies, construction specification and document production, and on-site inspections. In his role, Scott is responsible for overall project management, design oversight, quality assurance, and client interaction within the MEP Studio of the Metro DC AEI office.

#### RELEVANT EXPERIENCE

#### National Institute of Standards and Technology - Program of Requirements for Building 101 Lower Levels Renovation and Addition, Gaithersburg, MD

Principal-in-Charge for the renovation of the lower levels and a new low-rise addition to Building 101. AEI performed investigations and analyses of the existing building and site and developed a comprehensive requirements package including space program and room data sheets, building specific requirements, performance specifications, calculations, cost estimate, and project execution schedule.

#### National Institute of Standards and Technology - Program of Requirements B101 Tower Floor Renovations, Gaithersburg, MD

Principal-in-Charge for the development of a Program of Requirements (POR) for Building 101, which includes renovations to tower floors 3 through 11. As the tallest structure and the most iconic building on the campus, Building 101 consists of an 11-story administrative office tower and basement level totaling 345,785 sf. This POR includes a comprehensive requirements package that documents and communicates the square footage required with space types, mechanical, electrical, and plumbing loads and criteria, structural requirements and criteria, digital IT infrastructure, voice, fire alarm, security, site infrastructure, hardscapes, landscapes, and signage that are required for renovations to floors 3 through 11 of the B101 administrative tower.

## National Institute of Standards and Technology - Building 230 Volume Laboratory Renovation PCAS, Gaithersburg, MD

Principal-in-Charge for the modernization of the Volume Laboratory, a specialized facility essential for precise volumetric measurement and calibration. AEI is providing comprehensive support, including reviewing submittals, addressing RFIs, coordinating concrete testing and inspection services, conducting field inspections, and managing project closeout activities such as punch list preparation. By ensuring seamless communication through virtual construction meetings and responsive site visits, AEI will help facilitate the successful delivery of this mission-critical renovation.

#### National Institute of Standards and Technology - Advanced Measurement Laboratory (AML) Victaulic Fittings Replacement, Gaithersburg, MD

Principal-in-Charge for the design of replacement of Victaulic fittings throughout the Advanced Measurement Laboratory (AML) at the NIST Gaithersburg campus. The AML building was built in 2000, and it was found over time and operations, there was a deficiency with the type of victuallic fittings that were specified. AEI served as Engineer of Record, and implemented the project in several phases to minimize system shut-downs. There were five major heating systems that could be isolated. AEI added isolation valves each system to assist with micro-phasing and additionally implemented expansion loops to ensure higher reliability with longevity of the system.

## Horizon Therapeutics - Horizon Therapeutics Rockville Project - Commissioning, Rockville, MD

Principal-in-Charge for commissioning services during this project where Horizon is designing and building out the interior of a leased building that will serve as their new east coast headquarters. The facility will include R&D laboratories, supporting office space, and reception/conferencing space totaling approximately 192,000 SF, spanning six floors. Amenities will include a fitness center, café/kitchen, and coffee/juice bar, among others. Horizon, the tenant, is redesigning the base building HVAC system in a pending agreement with the landlord. During this project, AEI will be performing commissioning services on building mechanical, electrical, fire alarm, fire protection and low voltage systems.



PROJECT ROLE Project Manager

#### EDUCATION

Bachelor of Science, Architectural Studies, University of Utah, 2004

#### REGISTRATION/ CERTIFICATION

ASHRAE Building Commissioning Professional (#8184292)

LEED Accredited Professional® Building Design + Construction

OSHA 10-Hour Construction Safety and Health

#### PROFESSIONAL ASSOCIATIONS

ASHRAE, Member

### JEFF STEFFENSEN BCXP, LEED AP® BD+C

Jeff has over 19 years of experience as a multi-discipline engineer. His expertise includes an in-depth knowledge of new and existing building commissioning with a wide range of project types. Jeff excels at integrating technology into process optimization. He continues to be a leader in the commissioning of higher education research and laboratory facilities. Jeff's extensive background includes biocontainment facilities commissioning an re-commissioning; laboratory retro-commissioning; building automation systems audits and replacements; building automation system optimization; critical systems field services; functional performance testing; and integrated systems testing. He is a detail-oriented leader in the field through all phases of the commissioning process. Jeff's facility experience includes laboratory and pharmaceutical, vivaria, central utility plants, data centers, and healthcare facilities.

#### RELEVANT EXPERIENCE

## US Environmental Protection Agency - EPA Region 3 Wheeling Field Office Cx, Wheeling, West Virginia

Project Manager for for commissioning services for the U.S. Environmental Protection Agency (EPA) Region 3 Wheeling Field Office renovation. This project includes design review and commissioning of mechanical, electrical, plumbing, controls, and laboratory systems to ensure compliance with EPA health and safety requirements. AEI's scope includes reviewing design documents, overseeing functional performance testing, validating system integration, and conducting post-occupancy evaluations. Through our expertise, AEI is ensuring the efficient and reliable operation of EPA's office and laboratory spaces.

#### City of Phoenix - Phoenix Sky Harbor International Airport Command Center Modernization/ Expansion/Relocation Design Services, Phoenix, AZ

Mechanical Designer for a study and the associated design for the relocation of the Airport Command Center facility, which includes an Operations Communication Center, combined maintenance and technology work order center, and an Emergency Operations Center. Scope includes assessment programming, site selection, mechanical/electrical/ piping/plumbing design, construction administration and inspection services.

#### Truist Bank - Primary Data Center Commissioning, Zebulon, NC

Commisionig Agent for reviewing and providing comments and recommendations on two energy conservation studies that were performed in 2019 and 2020. The reports identified options to improve energy efficiency in the 1405 Research Boulevard building and provided rough order of magnitude, cost, and some level of payback. Due to the varying direction of the recommendations, AEI was contracted to provide a recommended path forward and with high-priority or high-impact improvements to reduce energy consumption. AEI also reviewed the existing control system and chilled and condenser water systems to provide recommendations on system operation, especially given the age of the equipment. for a new 150,000 sf data center that houses four MW of Critical IT load. This data center is located in Zebulon on a greenfield site and serves as the primary data center. The program includes a secured and access controlled site, hardened data center shell, two data halls of approximately 20,000 sf each, redundant fiber service entrance rooms, the critical power capacity of 2MW per data hall, Tier III+ supporting MEP infrastructure, operational support staff office space, technology control center, operational and maintenance workshop and storage space, business continuity workroom, protected outdoor equipment courtyard, and outdoor employee amenities.

#### Alexandria Real Estate Equities, Inc. - Medical Center Drive Commissioning, Rockville, MD

Project Manager for commissioning services during the new 95,400 SF four-story shell building which comprises three stories over a grade level parking area with a small grade level core. The lower level parking area does not meet "open" air requirements and requires ventilation. The building is planned to accommodate multiple lab/ office tenants with a 50-50 mix of office to lab area for the future tenant floors and pilot scale manufacturing for some or all of the other floor. The labs will have a moderate level of chemical fume hoods; one 6-foot hood per two lab modules. The project is designed to achieve LEED® certification (Silver minimum).

#### University of Virginia Health System - Pinn Addition Controls Upgrade Commissioning, Charlottesville, VA

Project Manager for the programming of new JCI controllers in an existing laboratory exhaust system located within a 150,000 SF medical research building. The project includes commissioning of new controls for the existing lab and vivarium AHUs, programming and commissioning of existing glycol/preheat system, and programming supply temperature reset for existing AHUs 1-4 and 6-8.



**PROJECT ROLE** Senior Commissioning Engineer

#### EDUCATION

Bachelor of Science, Mechanical Engineering, Cornell University, 1991

#### REGISTRATION/ CERTIFICATION

OSHA 10-Hour Construction Safety and Health

### KEVIN DUKES

Kevin has 31 years of industry experience including 25 years of hands-on commissioning experience including taking readings of electrical and mechanical equipment with hand-held instruments to compare with project requirements and previous contractor reports. He is well versed in reviewing design documentation, specifications, sequences, drawings, and controls to developing commissioning tests and planning for large construction projects. Kevin's responsibilities have included reviewing documents and providing estimated hours and costs, providing schedules with precedents, and working with other project parties to coordinate the start-up, testing and integrated systems tests required to fully commission projects. He excels at working with clients to understand and achieve their requirements, and works with contractors and subcontractors to set goals early and track them regularly to ensure that they are achieved without unnecessary delays.

#### **RELEVANT EXPERIENCE**

## National Institutes of Health - Replace Clinical Research Center BAS, Building 10, Bethesda, MD

Commissioning Specialist for the replacement of the Building Automation System (BAS) of the NIH Bethesda Campus Clinical Research Center (CRC), excluding the ACRF and Old Building 10. The existing BAS of the CRC has several major deficiencies. The CRC BAS is potentially vulnerable to cybersecurity intrusions as the current system does not meet modern information system security standards. In addition, the CRC BAS is no longer supported by Johnson Controls, Inc., exposing the CRC to increasing risk and could lead to the inability to maintain and provide building utilities and environmental room requirements, putting patient, pharmaceutical product, and staff safety at risk. It is anticipated that NIH will issue the bridging documents along with the RFP to procure services of Design-Build entity to complete design and construction of the facility.

#### National Institutes of Health - Professional Support Aseptic Facilities, Bethesda, MD

Commissioning Specialist for the requested Professional Support for Aseptic Processing Facilities at the Bethesda campus. NIH is in the midst of constructing several Aseptic Processing Facilities. The facilities are designed and built to meet Current Good Manufacturing Practices (CGMP) or U.S Pharmacopeia standards to meet the functional requirements of the facilities. AEI's role was primarily an extension of the NIH technical personnel to provide professional support during construction, commissioning and close-out of these facilities. The range of services and support required varied based on the status of each project. For three of the four projects identified as part of the contract, AEI has provided pre-design support services and had a sound understanding of the project requirements.

#### Alexandria Real Estate Equities, Inc. - Medical Center Drive Commissioning, Rockville, MD

Commissioning Specialist for commissioning services during the new 95,400 SF four-story shell building which comprises three stories over a grade level parking area with a small grade level core. The lower level parking area does not meet "open" air requirements and requires ventilation. The building is planned to accommodate multiple lab/ office tenants with a 50-50 mix of office to lab area for the future tenant floors and pilot scale manufacturing for some or all of the other floor. The labs will have a moderate level of chemical fume hoods; one 6-foot hood per two lab modules. The project is designed to achieve LEED® certification (Silver minimum).

## University of Pittsburgh - Design & Construction Phase Building Enclosure and MEP Commissioning Services For Crawford Hall Renovation, Pittsburgh, PA

Commissioning Agent for BECx and MEPCx services during the phased renovation of Crawford Hall. The six-story 1960s era structure consists of an office, wet lab and vivarium space. The project's goal is to commission facilities to guarantee that all MEP, fire, life safety, laboratory and cleanroom systems are installed and operating to achieve optimum service. BECx services are part of the building commissioning process being completed for this project. MEPCx and BECx services will be provided in accordance with the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Guidelines 0-2013, The Commissioning Process; National Institute of Building Science (NIBS) Guideline 3-2012, Building Enclosure Commissioning Process BECx, and the Building Commissioning Association (BCA) Handbook. Work will be performed in accordance with LEED certification requirements.



PROJECT ROLE Commissioning Engineer

#### EDUCATION

Network Specialist - Completed class or course DeVry University

#### REGISTRATION/ CERTIFICATION

Certified Commisioning Authority (#922-2054)

OSHA 10-Hour Construction Safety and Health

### SEAN MCGOVERN CXA

With nine years of dedicated experience in building commissioning and building automation, Sean has honed his expertise in third-party control integrations and meticulous auditing of building automation programming. His project portfolio spans diverse sectors, including laboratories, higher education, government, hospitals, SCIF, museums, and historic facilities, providing him with a comprehensive understanding of complex environments. Sean's approach involves leveraging his knowledge and experience from similar commissioning projects to enhance the success of each assigned project, ensuring tailored solutions and optimized outcomes.

#### RELEVANT EXPERIENCE

## National Institutes of Health - Replace Clinical Research Center BAS, Building 10, Bethesda, MD

Commissioning Specialist for the replacement of the Building Automation System (BAS) of the NIH Bethesda Campus Clinical Research Center (CRC), excluding the ACRF and Old Building 10. The existing BAS of the CRC has several major deficiencies. The CRC BAS is potentially vulnerable to cybersecurity intrusions as the current system does not meet modern information system security standards. In addition, the CRC BAS is no longer supported by Johnson Controls, Inc., exposing the CRC to increasing risk and could lead to the inability to maintain and provide building utilities and environmental room requirements, putting patient, pharmaceutical product, and staff safety at risk. It is anticipated that NIH will issue the bridging documents along with the RFP to procure services of Design-Build entity to complete design and construction of the facility.

#### U.S. Pharmacopeia - CDL/RSL Renovations Commissioning, Rockville, MD

Commissioning Specialist for the U.S. Pharmacopeia CDL/RSL 1st Floor renovation project. AEI provided construction phase commissioning services throughout the 16,000 SF space. The commissioning scope included mechanical systems (basic services) such as air terminals, fan filter units, laboratory controls and space pressurization. AEI also performed commissioning services on electrical systems associated with mechanical equipment (basic services) including normal power (distribution) and emergency/standby power (distribution).

#### U.S. Pharmacopeia - TB2 Penthouse Commissioning, Rockville, MD

Commissioning Specialist for design, construction, and acceptance phase commissioning services for replacement heating hot water and chilled water generation Systems. Heating hot water includes upgrading to efficient condensing boilers as well as a lower turndown modular air cooled chilled water system. Commissioning services include review of base building distribution TAB as well as an Integrated Systems 'Blackout' Test.

#### Alexandria Real Estate Equities, Inc. - Medical Center Drive Commissioning, Rockville, MD

Senior Commissioning Agent for commissioning services during the new 95,400 SF four-story shell building which comprises three stories over a grade level parking area with a small grade level core. The lower level parking area does not meet "open" air requirements and requires ventilation. The building is planned to accommodate multiple lab/ office tenants with a 50-50 mix of office to lab area for the future tenant floors and pilot scale manufacturing for some or all of the other floor. The labs will have a moderate level of chemical fume hoods; one 6-foot hood per two lab modules. The project is designed to achieve LEED® certification (Silver minimum).

#### University of Pittsburgh - Retrocommissioning Benedum Hall, Pittsburgh, PA

Commissioning Specialist for the Benedum Hall Retrocommissioning project that consists of providing existing commissioning services for the 13-story, 474,000 SF building which will serve as the School of Engineering. In addition, with the installation and implementation of a demand control ventilation system, the project will also include commissioning services for a new aircuity system serving laboratories and other critical spaces throughout the building. Key equipment involved in this project includes energy recovery system; strobic exhaust sans; rooftop 100% outside air handling, mixed air handling, and terminal units; glycol and HW/CHW pumps; steam-to-hot water convertors; fin tube hot water perimeter radiation systems; and ceiling radiant panels. All equipment is being monitored and controlled via an existing automated log control building automation system.



PROJECT ROLE Commissioning Engineer

#### EDUCATION

Bachelor of Science Environmental Engineering University of Vermont, 2023

### ALEX GREER

Alex joined AEI following her graduation from the University of Vermont with a degree in Environmental Engineering. She launched her engineering and commissioning career through a year-long internship with a commissioning/engineering consulting firm in Burlington, Vermont, which ignited her passion for the industry. At AEI, Alex has rapidly expanded her commissioning expertise, contributing to diverse projects in higher education and research facilities. Her skills encompass mechanical and electrical functional performance testing, retrocommissioning, lighting level calculations and design, heating and cooling load calculations, LEED® energy modeling, investment grade energy audits, life cycle cost analysis, and capital needs assessments.

#### RELEVANT EXPERIENCE

#### Alexandria Real Estate Equities, Inc. - Medical Center Drive Commissioning, Rockville, MD

Commissioning Engineer for commissioning services during the new 95,400 SF four-story shell building which comprises three stories over a grade level parking area with a small grade level core. The lower level parking area does not meet "open" air requirements and requires ventilation. The building is planned to accommodate multiple lab/ office tenants with a 50-50 mix of office to lab area for the future tenant floors and pilot scale manufacturing for some or all of the other floor. The labs will have a moderate level of chemical fume hoods; one 6-foot hood per two lab modules. The project is designed to achieve LEED® certification (Silver minimum).

#### Alexandria Real Estate Equities, Inc. - 9808 Medical Center Drive Tenant Fit-Outs Commissioning, Rockville, MD

Commissioning Engineer for construction phase commissioning services of Spec Labs Phase 1 (24,738 sf), Phase 2 (21,591 sf), ST Cube (13,056 sf), and Trillium (8,750 sf) in the 9808 Medical Center Drive facility.

#### University of Virginia - Clark Hall Recommissioning, Charlottesville, VA

Commissioning Engineer for the recommissioning of the existing building's mechanical air and hydronic systems and developing optimization logic for the existing Johnson Controls building automation system.

#### University of Virginia - Memorial Gymnasium Infrastructure & Accessibility Renewal, Charlottesville, VA

Commissioning Engineer for the infrastructure and accessibility renewal project at the UVA Memorial Gymnasium. The Memorial Gym was originally constructed in 1924 in memory of the 80 alumni who lost their lives during World War I. The University holds approximately 50 academic courses in the facility semester which also supports the University's Kinesiology program in the School of Education and Human Development, the volleyball and wrestling teams, intramural and recreational sports, and major events. The project's goal is to holistically address the building infrastructure by replacing the domestic water and sanitary sewer lines, installing ADA-compliant restrooms, modernizing the HVAC system to provide conditioned air throughout the building and eliminate window A/C units, repairing all windows, installing fire suppression throughout the facility, upgrading electrical and lighting systems, replacing the Emmet Street sidewalk to improve accessibility and usability of the main gymnasium space, and enhancing ADA accessibility to entrances and the streetscape.

#### University of Virginia Rice Hall Retrocommissioning, Charlottesville, VA

Commissioning Engineer for the review of basic operational functionality of the existing building systems. The project required documentation of findings including all potential issues. Energy conservation measures related to the findings of the equipment were generated and included in the final report. AEI also performed new space by space ventilation calculations based on current ASHRAE 62.1 to identify space minimums and generate new outside air (OSA) minimums for associated AHUs. Along with the ventilation calculations, energy conservation measures were developed with potential annual savings for reduced OSA.

### STAFF CERTIFICATIONS





#### Affiliated Engineers, Inc.

**STATE OF WEST VIRGINIA** | Martinsburg Readiness Center Design Commissioning Services / 11

## **I** Commissioning Experience

AEI builds its national commissioning services on the primary disciplines of mechanical, controls, and industrial engineering. With a reputation for excellence in leadership, collaboration, and project coordination, our skilled and talented group of field engineers provides comprehensive support to achieve client goals.

For over 40 years, AEI's Commissioning practice has been supporting clients with comprehensive facility and building system assessments, from design to construction and post-occupancy monitoring. Consistently ranked as a top commissioning firm by Consulting-Specifying Engineer, our proven reputation for excellence and passion brings complex facilities to life.

Comprising experts in engineering, controls, testing and balance, energy services, facility operations, and project management — our project work includes technically complex facilities and building systems of varying size and scale.

We act as objective verifiers and critical advocates throughout design, construction, and turnover, reducing requests for information, change orders, and warranty callbacks. Our team-focused approach includes building operators early in the process, invites facility managers to functional testing, and enhances training for facility staff through user-friendly documentation.

Our relevant experience is detailed on the following pages.

1,700+

commissioning projects

250+

annual commissioning projects

40+

years of commissioning experience

\$10M

annual commissioning revenue

#### **COMMISSIONING SERVICES**

Whole Building Commissioning Existing Building Commissioning Building Envelope Commissioning Building Energy Analysis Building Data Analytics Monitoring Based Commissioning Energy Performance Contract Overview Integrated Project Start-up Ongoing Commissioning

#### CERTIFICATIONS

Certified Building Commissioning Firm (CBCF) Commissioning Process Management Professional (CPMP) BCA Certified Commissioning Firm Certified Commissioning Firm (CCF) Certified Commissioning Professionals (CCP) LEED Accredited Professionals (LEED AP®) WELL Accredited Professionals AEE Certified Commissioning Firm

#### **MEMBER ORGANIZATIONS**

Building Commissioning Association (BCxA) The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) The American Society for Health Care Engineering (ASHE) The Association for Energy Engineers (AEE) U.S. Green Building Council (USGBC) International WELL Building Institute California Commissioning Collaborative International Society for Pharmaceutical Engineering (ISPE)



#### **Project Goals & Solutions**

The primary objective of this project was to deliver a highly resilient and adaptable corporate data center capable of supporting the entire network's branch facilities, R&D, and training operations. Located on a greenfield site, the facility was designed with fault tolerance, compartmentalization, and weather adaptability at its core to ensure uninterrupted operations under all conditions.

To achieve these goals, AEI provided commissioning services and collaborated with BB&T to develop an interactive Critical Operations Manual (COM). This integrated solution enhanced asset management by incorporating detailed operational procedures, including Methods of Procedure (MOPs), Emergency Operating Procedures (EOPs), Sequences of Operation (SOOs), and equipment status protocols for both normal and emergency scenarios. Key solutions implemented within the facility include:

- » MV Intelligent Switchgear Ensured reliable power distribution and seamless switching capabilities.
- » Fault-Tolerant UPS System Provided continuous, uninterruptible power to critical loads.
- » MV Generator Plant with Redundant Fuel Systems Guaranteed long-term backup power with redundant fuel transport and storage.
- » Permanent Loadbanking System Facilitated ongoing system testing to maintain operational readiness.
- » Central Plant with Thermal Storage Enhanced cooling efficiency and energy resilience.
- » Concurrently Maintainable CRAH Cooling Supported continuous operation by allowing maintenance without downtime.
- » VESDA / Pre-Action Sprinkler System Delivered advanced fire detection and suppression Integrated Asset Management System – Improved tracking, maintenance, and
  - operational efficiency.
- » Electronic Security Systems Strengthened facility protection and access control

This comprehensive approach resulted in a high-performance data center with scalable expansion capabilities, ensuring long-term operational integrity and reliability.

#### **OWNER CONTACT**

Frank Doyle Chief Engineer 919-887-3093work 206-790-9810mobile frank.doyle@truist.com

**PROJECT COST** 

\$100,000,000

COMPLETION DATE

May 2016

**RELEVANCE TO THIS PROJECT** Data Center space



Affiliated Engineers, Inc. (AEI) is providing comprehensive commissioning (Cx) services for the U.S. Environmental Protection Agency (EPA) Region 3 Wheeling Field Office (WFO) renovation project. **The project goal is to transform an existing GSA-leased space into a state-of-the-art office and laboratory facility.** The project includes 3,723 square feet of office space and 2,541 square feet of sample preparation laboratory space, supporting scientific functions such as Benthic Macro

AEI's commissioning scope ensures the facility meets EPA health and safety requirements through the following key services:

Sample Prep and Fish Sample Prep, both

#### **Design Phase Support**

equipped with fume hoods.

- » Conducting detailed design reviews at 75%, 95%, and 100% completion stages for mechanical, electrical, plumbing, controls, and architectural systems.
- » Providing expert analysis of the Basis of Design, Testing and Balancing (TAB) Plan, commissioning protocols, and Building Automation System (BAS) operations.
- » Reviewing and commenting on the Building Airflow Management Plan (BAMP) and Change Bulletins.
- » Participating in design review meetings with the Owner and design team.

#### **Construction Phase Commissioning**

» Leading the commissioning process, including a "Kick-Off" meeting and schedule coordination with the general contractor.

- Reviewing pre-functional checklists, mechanical/electrical submittals, controls submittals, and the TAB plan.
- » Conducting Functional Performance Tests (FPT) and coordinating Testing and Balancing (TAB) verification.
- » Overseeing system integration and ensuring compliance with EPA standards through issue tracking and resolution.

#### Acceptance and Post-Acceptance Services

- » Validating final system performance, reviewing the TAB report, and recommending system acceptance to the EPA.
- » Reviewing and coordinating training for facility personnel and finalizing the Building Airflow Management Plan (BAMP).
- » Performing opposite-season testing and trend analysis to verify ongoing system functionality
- » Conducting an end-of-warranty site visit to assess long-term system performance.

AEI will provide on-site verification as required. Through AEI's systematic commissioning approach, the EPA's new office and laboratory spaces will achieve operational efficiency, regulatory compliance, and optimal performance.

#### **OWNER CONTACT**

Kevin Yoo Booz Allen Hamilton 8283 Greensboro Dr McLean, Virginia 22102 703-902-5000 phone Yoo\_kevin@bah.com

#### **PROJECT COST**

N/A

#### **COMPLETION DATE**

June 2026 lestimated)

#### **RELEVANCE TO THIS PROJECT**

Commissioning project in West Virginia



AEI supported U.S. Pharmacopeia in achieving a fully functional and reliable laboratory environment by providing construction phase commissioning services for the 16,000 SF CDL and RSL Renovations project in Rockville, MD. The project aimed to enhance system performance, ensure compliance with regulatory standards, and maintain uninterrupted campus operations throughout the renovation.

To meet these goals, AEI delivered design solutions for mechanical, plumbing, fire protection, electrical, and fire alarm/control systems. During commissioning, AEI ensured the seamless integration and functionality of critical systems within the 1st-floor lab, including:

- » **Mechanical Systems:** Verified performance and efficiency, with 100% testing of air terminals and fan filter units to maintain precise environmental control.
- » Laboratory Controls & Space Pressurization: Ensured proper airflow management to support safety and research integrity.
- » **Electrical Systems:** Validated power distribution for both normal and emergency/ standby operations, ensuring reliability for mission-critical lab functions.

All work was conducted while the U.S. Pharmacopeia campus remained fully occupied and operational, minimizing disruptions and maintaining business continuity.

#### **OWNER CONTACT**

Travis L. Kowalke I Sr. Director, Global Facilities Phone: 301-692-3492 Mobile: 678-517-7627 12601 Twinbrook Parkway Rockville, MD 20852

#### **PROJECT COST**

Confidential

#### **COMPLETION DATE**

June 2021

#### **RELEVANCE TO THIS PROJECT**

As a major testing facility the understanding of the systems and controls required for the laboratory areas are relevant to this project. Additionally access control and controlled substance containment were also a part of this project.



AEI is supporting the National Institutes of Health (NIH) in enhancing the security, reliability, and functionality of the Building Automation System (BAS) at the Clinical Research Center (CRC) on the Bethesda Campus. The CRC, a 1.8 million SF specialized research facility, conducts patient-focused clinical studies in a controlled hospital setting. Ensuring the integrity of building systems is critical to maintaining patient safety, pharmaceutical stability, and research continuity.

The project's goal is to replace the outdated BAS, which no longer meets modern information system security standards and is unsupported by the manufacturer, Johnson Controls, Inc. The existing system's vulnerabilities pose increasing risks, including potential cyber threats and disruptions to building utilities and environmental controls.

To address these challenges, AEI is providing commissioning services to verify the performance, integration, and reliability of the new BAS throughout the CRC. By ensuring a seamless transition to a secure and fully operational system, AEI is helping NIH mitigate risk, enhance system resilience, and support uninterrupted clinical research in this highly specialized facility.

#### **OWNER CONTACT**

Michael Oppelt | Project Oficer National Institutes of Health 301.435.7827 work 301-767-7132 mobile michael.oppelt@nih.gov

#### **PROJECT COST**

Confidential

#### COMPLETION DATE

April 2023

#### **RELEVANCE TO THIS PROJECT**

The ability to verify and troubleshoot laboratory controls at scale is imperative to ensuring continuity of controls systems in any laboratory construction project.



Medical Center Drive Commissioning | Rockville, MD

AEI is providing commissioning services for the Medical Center Drive project, a new 95,400 SF, four-story warm core and shell lab building designed to support flexible laboratory and office spaces. The facility, built over a grade-level parking area, is planned to accommodate multiple tenants, with a 50-50 office-to-lab ratio on future tenant floors and potential pilot-scale manufacturing on select levels.

The project's goals include delivering a high-performance, adaptable research environment while ensuring compliance with sustainability and life safety standards. AEI's commissioning services focus on verifying the functionality and efficiency of the building's core systems, including mechanical, electrical, and plumbing infrastructure, as well as the life safety generator installation.

By ensuring that base building services are optimized to support future tenants, AEI is helping the project meet its operational and environmental objectives, including achieving LEED® Silver certification.

#### **OWNER CONTACT**

Ari Hoffman | Senior Project Manager Alexandria Real Estate Equities, Inc. 1700 Owens St, Ste 590 San Francisco, CA 94158 ahoffman@are.com 628.233.4662

#### **PROJECT COST**

\$51.979.511

**COMPLETION DATE** 

Core & Shell September 2023

#### **RELEVANCE TO THIS PROJECT**

Building optimization, adaptable space, new construction, similar sized project.



#### AEI is providing Building Enclosure (BECx) and Building Systems (MEPCx) commissioning services to support the phased renovation of Crawford Hall, a sixstory, 90,000 SF research facility originally constructed in the 1960s. The project aims to modernize the building's office, wet lab, vivarium, and BSL-3 suite spaces by replacing aging infrastructure and reconfiguring floors to meet contemporary laboratory standards.

The commissioning program is focused on ensuring that all mechanical, electrical, plumbing, building automation, fire and life safety, and laboratory systems—along with their connections to the existing campus infrastructure—are properly installed and fully operational to meet the Owner's Project Requirements.

Key solutions include:

 » Building Enclosure Commissioning (BECx): Enhancing the building envelope to support the integration of chilled beams, improving energy efficiency, and maintaining environmental integrity

- » Mechanical, Electrical, and Plumbing Commissioning (MEPCx): Replacing pneumatic controls with direct digital controls (DDC), transitioning constant volume systems to variable volume, and optimizing lab pressurization with tracking pairs
- » System Optimization: Manifolding non-specialty lab exhaust to reduce the number of fans and improve reliability while addressing space constraints by reducing ductwork size.

All commissioning services adhere to ASHRAE, NIBS, and BCA standards and support the project's goal of achieving LEED certification. By ensuring system performance and efficiency, AEI is helping to create a state-of-the-art research environment within an updated, highperforming facility.

#### **OWNER CONTACT**

Tawanda Stamps University of Pittsburgh 3400 Forbes Ave Eureka Building Pittsburgh, PA 15213 412-624-4141 phone tmsst58@pitt.edu

#### PROJECT COST

Estimated \$30,000,000 (project is still in design)

#### COMPLETION DATE

December 2025 (estimated)

#### **RELEVANCE TO THIS PROJECT**

State-of-the-art, high-performance facility

SMARTLABS SSF2 COMMISSIONING 750 GATEWAY | AFFILIATED ENGINEERS, INC.



AEI provided construction phase commissioning services for the renovation of 20400 Century Boulevard, an 80,000 SF facility designed to support multiple life science tenants with lab, cleanroom, and office spaces. The project aimed to enhance system reliability, maintain critical environmental controls, and ensure flexibility for tenantspecific operational needs.

To achieve these goals, AEI conducted functional testing of key building systems, including:

- » HVAC Systems: Dedicated outdoor air units, lab and fume hood exhaust systems, and air terminal units with electric reheat to maintain precise lab conditions.
- » Environmental Controls: Lab pressurization verification to support safety and containment requirements.
- » Building Automation System (BAS): Reviewed system operation to ensure seamless integration and optimal performance.

A key solution implemented during the project was the installation of dedicated air handling and exhaust systems per tenant, with individual lab and office air handling units. This configuration minimizes service disruptions, accommodates varied operational requirements, and allows for scheduled office area operation—enhancing both energy efficiency and tenant flexibility.

#### **OWNER CONTACT**

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#### **PROJECT COST**

Confidential

COMPLETION DATE

July 2023

#### **RELEVANCE TO THIS PROJECT**

The 20400 Century Boulevard project was a buildout of labs and offices that included dedicated lab ventilation systems and tracking VAV Terminal Units to maintain pressure relationships and maximum flexibility for the user in the design of the various lab spaces. The project was fast-paced with multiple lab suites testing at the same time.



Affiliated Engineers, Inc.

## 06. why aei / references

## Why AEI?



## THE RIGHT TEAM

The AEI Team brings national perspective and proven execution, blended with local client service, for the most comprehensive team to execute this project. Our team is hands-on and will help facilitate project delivery by performing installation verification and testing (IV/OV/PV) activities with our own qualified staff. This approach frees specialized contractor startup and programming staff to work on completion activities while acceptance activities begin on completed systems and areas.



## **BEST-IN-CLASS EXECUTION**

AEI'S Commissioning Practice assesses, plans, designs, and functionally tests highperformance engineered systems. Organized for collaborative achievement, we integrate the work of more than 900 professionals across 21 offices in the United States into a single technical knowledge community and culture of high intellectual standards.



## **DEPTH OF EXPERIENCE**

The team we bring to your project has commissioned biotech projects for the National Institutes of Health, US Pharmacopea, and Horizon Therapeutics, as well as provided commissioning, qualification, and validation consulting services for these and many other clients.

## References

Travis L. Kowalke Sr. Director, Global Facilities US Pharmacopeia 12601 Twinbrook Parkway Rockville, MD 20852 Phone: 301-692-3492 Mobile: 678-517-7627 Blythe Shannon University of Virginia Senior Construction Administration Manager 1003 West Main Street Charlottesville 22903 434-981-0088 bks4d@virginia.edu Al Agostinelli Senior Manager for Building Systems and Commission University of Pittsburgh 3400 Fornes Avenue Eureka Building Pittsburgh, PA 15213 412-624-0190 al.agostinelli@pitt.edu



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