EXPRESSION OF INTEREST

To Provide Professional Architecture/Engineering Services:
Assessment of WV State Laboratory Testing Facilities

CEOI GSD2200000006
April 27, 2022

ZMM ARCHITECTS ENGINEERS
CANNONDESIGN

April 27, 2022

Ms. Melissa Pettrey, Senior Buyer
Department of Administration, Purchasing Division
2019 Washington Street East
Charleston, WV 25305-0130

ZMM
ARCHITECTS
ENGINEERS

Subject: Expression of Interest to Provide Professional Architecture/Engineering Services: Assessment of West Virginia State Laboratory Testing Facilities
CEOI GSD2200000006

Ms. Pettrey:

ZMM Architects and Engineers is pleased to submit the attached information to demonstrate our experience and our qualifications to provide professional architectural and engineering services for the proposed Assessment of West Virginia State Laboratory Testing Facilities project. Established in 1959, ZMM is a West Virginia based full service A/E firm, and is noted for design excellence and client focus. Our integrated design approach makes ZMM unique among design firms in West Virginia, and will help to ensure the quality of the services that we will provide.

We are partnering with CannonDesign, nationally recognized leaders in the planning and design of science, technology, and laboratory facilities. CannonDesign is an expert in laboratory design and has designed 40M + square feet of science and technology facilities, recognized with numerous laboratory design awards including 3 international laboratories of the year awards, and has completed over $5B worth of laboratory projects. The ZMM/CannonDesign team combines a trusted local resource with the nation's leading experts in the design of laboratory facilities.

In addition to the laboratory design experience highlighted above, CannonDesign has significant experience programming and planning millions of square feet of laboratory facilities including a complete strategic master planning effort for MD Anderson in Texas. The MD Anderson effort included a review of approximately 4M square feet of existing laboratory and office facilities for development of a future space and building plan for this medical research institute. CannonDesign developed the program and plan for the Oak Ridge National Laboratory's Second Target Station project that includes a campus of 11 separate buildings totaling more than 400,000 GSF, for which they are now developing the next phases of the design. Additionally, members of the CannonDesign team have extensive experience working with similar state laboratories for North Carolina, Maryland, Washington DC, Vermont, and federal laboratories including the National Cancer Institute, the National Institutes of Health, Oak Ridge National Laboratory and more.

ZMM/CannonDesign has a strong track record of working together having been selected (in 2018) by the West Virginia Department of Agriculture (WVDA) to collaborate with them to evaluate their facilities at their main campus in Guthrie. The task was to assess their needs and develop the best approach to modernizing, updating, and expanding their facilities to meet their current space and technology needs as well as to provide space for expansion. The ZMM/CannonDesign team also recently assisted the West Virginia School of Osteopathic Medicine (WVSOM) with a planning effort to explore various options to expand and update the Frederic W. Smith Science Building.

In addition to our lab planning experience with the WVDA, ZMM Architects and Engineers has a long-standing relationship with other State Departments including the West Virginia State Police. Over the past year ZMM has been working with the State Police to develop the scope for various improvements to the Headquarters, including updating and reconfiguring the existing lab facilities. ZMM also

assisted the West Virginia Division of Labor (in 2016) with a variety of improvements to the State Measurement Laboratory in St. Albans to ensure that the facility met the requirements for continued certification. The project included building envelope and HVAC improvements required to address humidity control in the facility.

While undertaking the lab projects for the WVDA, WVSP, and WVDOL our team observed many of the deficiencies that were identified in the Performance Evaluation & Research Division's (PERD) Special Report: Review of the State's Laboratory Facilities. Our team understands the primary objective of the current project is to "determine the best approach for the State of West Virginia to take in addressing recently examined deficiencies in the operations of testing laboratories operated by various State agencies, with a specific focus on assessing the feasibility of consolidating and/or co-locating such services." The ZMM/CannonDesign team will utilize a planning team that is both experienced working with the State of West Virginia and in the programming and design of similar laboratory facilities across the country. This team provides a unified project approach that knits together the strategic planning efforts of space programming and concept design with the asset analysis and facility evaluation to provide a holistic assessment of each planning scenario.

The Expression of Interest also requests "special consideration" for existing facilities located at the West Virginia Regional Technology Park (WVRTP). The ZMM/CannonDesign team was selected (in 2015) by the West Virginia Higher Education Policy Commission (HEPC) to undertake a planning and design process to renovate Building 770 to accommodate many of the lab functions that are identified in the PERD report. Unfortunately, HEPC did not move forward with the project. One of the reasons that our team was selected was due to our familiarity with and experience providing design services at the WVRTP. This experience includes the design of the new NOAA/NWS Building, as well as assessment, planning, and design experience in Building 2000, Building 770, Building 740, Building 727, and Building 704.

Thank you for taking the time to review the attached expression of interest that has been formatted as requested. Additionally, please visit our websites at zmm.com and cannondesign.com to see the full range of projects that we have designed, and to learn about working with our team from a client's perspective. We appreciate your consideration for this important endeavor.

Respectfully submitted,

ZMM Architects and Engineers

Adam R. Krason, AIA, NCARB, LEED-AP
Principal

TABLE OF CONTENTS

ZMM ARCHITECTS ENGINEERS

PROJECT UNDERSTANDING AND APPROACH

PROJECT UNDERSTANDING

ZMM Architects and Engineers and the ZMM/CannonDesign team has had the opportunity to undertake investigative, planning, and design services of several testing laboratories operated by various State agencies in West Virginia. This experience includes work with:

West Virginia Department of Agriculture (2018-2021)

The team of ZMM/CannonDesign was selected by the West Virginia Department of Agriculture (WVDA) to collaborate with them to evaluate their facilities at their main campus in Guthrie. The task was to determine their needs and project the best approach to modernizing, updating, and expanding their facilities to meet their current space and technology needs as well as to provide space for expansion.

The team provided a thorough analysis of the existing campus, the existing programs and evaluated multiple locations for possible facilities ranging from renovated existing buildings to all new facilities. Factors for site selection included: access to critical facilities, available infrastructure, sufficient buffer to residential communities, adjacency to remaining WVDA facilities, budget (no property acquisition), and staff input.

The project included the development of plans for a new facility to include the following labs:

- Bacteriology
- Serology
- Microbiology
- Virology
- 2 Bio-Safety Level 3 (BSL-3) Labs
- Dairy
- Food
- Fertilizer
- Plant
- Seed
- Pesticide
- Hemp
- Training Labs

ZMM ARCHITECTS ENGINEERS / CANNONDESIGN

West Virginia State Police (2021)

ZMM Architects and Engineers has a long-standing relationship with the West Virginia State Police. We have designed detachments in Kanawha City and Beckley and assisted with the conversion of the former Medical Examiner's Office (originally Kyle Elementary School) into the Information Services Center on the WVSP's Headquarters in South Charleston. Over the past year ZMM has been working with the State Police to develop the scope for various improvements to the Headquarters, including updating and reconfiguring the existing lab facilities.

West Virginia Division of Labor's State Measurement Laboratory (2016)

ZMM Architects and Engineers assisted the West Virginia Division of Labor with a variety of improvements to the State Measurement Laboratory in St. Albans to ensure that the facility met the requirements for continued certification. The project included building envelope and HVAC improvements required to address humidity control in the facility.

While undertaking these projects our team observed many of the deficiencies that were identified in the Performance Evaluation & Research Division's (PERD) Special Report: Review of the State's Laboratory Facilities. The goal of the current project is to "determine the best approach for the State of West Virginia to take in addressing recently examined deficiencies in the operations of testing laboratories operated by various State agencies, with a specific focus on assessing the feasibility of consolidating and/or co-locating such services."

↓ WV Department of Agriculture

The Expression of Interest also requests "special consideration" for existing facilities located at the **West Virginia Regional Technology Park (WVRTP)**. The ZMM/CannonDesign team was selected by the Higher Education Policy Commission in 2015 to undertake a design process to renovate Building 770 to accommodate many of the lab functions that are identified in the PERD report. Unfortunately, HEPC did not move forward with the project. One of the reason's that our team was selected for the project was due to our familiarity with and experience providing design services at the WVRTP. This experience includes:

- Design of the new NOAA/ NWS Building
- Completion of the BridgeValley Campus Development Plan
- Completion of the Nursing Program Expansion (Building 2000, 3rd Floor North-Wing Renovation) for BridgeValley
- Assessment of Building 770 for MATRIC
- Assessment of Building 727 for the WVRTP
- Building 740 Steam Plant and HVAC Improvements for the WVRTP
- Building 704 Renovation for BridgeValley
- Study of Campus Energy Utilization (Decommissioned Central Steam Plant) for WVRTP
- Entry Roadway and Parking Lot Lighting Study for WVRTP

We are confident that our team's experience with many of the laboratories that will be addressed in the Needs Assessment Project, our experience providing assessment and design services at the WVRTP, as well as CannonDesign's experience planning/programming consolidated lab facilities demonstrates that our team possesses the experience and expertise to ensure the success of the project for the State of West Virginia. Our detailed approach to meeting the goals and objectives identified in the EOI are outlined below.

↑ ORNL, Second Target Station

PROJECT APPROACH

The ZMM/CannonDesign team will utilize a planning team that is both experienced working with the State of West Virginia and in the programming and design of similar laboratory facilities across the country. This team provides a unified project approach that knits together the strategic planning efforts of space programming and concept design with the asset analysis and facility evaluation to provide a holistic assessment of each planning scenario.

The ZMM/CannonDesign team will form a partnership in which CannonDesign focuses on the laboratory

programming and scenario test fits, while ZMM focuses upon the facility analysis, assessment, and feasibility of each site. Our in-house, fully integrated design team, including architects, lab planners, all engineering disciplines and cost estimators will quickly work with the State's leadership to define the most functional and cost-effective options to achieve project success.

Goal/Objective 1: Develop Facility Needs

Members of the planning team will gather information about the operations and needs of each of the defined State Agencies - Laboratory Testing Facilities to develop a program of spaces including technical and general facility requirements. Information will be gathered using multiple techniques including:

- Kick-off meeting and overview of the process
- Review of available plans and reports for the existing facilities
- Facility questionnaires
- On-site observations of existing facilities and operations
- Interviews with laboratory personnel and leadership

The result of this project phase will include a program of spaces and requirements for each of the defined State Agencies. The program of spaces will include both current space and a projection for future space needs. General, non-laboratory, spaces and functions will be identified to determine the potential reduction of space through consolidation of these spaces and requirements.

Relevant Experience:
CannonDesign has the experience of programming and planning millions of square feet of laboratory facilities including a complete strategic master planning effort for MD Anderson in Texas. The MD Anderson effort included a review of approximately 4M square feet of existing laboratory and office facilities for development of a future space and building plan for this medical research institute. Our team has also developed the program and plan for the Oak Ridge National Laboratory's Second Target Station project that includes a campus of 11 separate buildings with totaling more than 400,000 GSF. Additionally, members of our team have extensive experience working with similar state laboratories for North Carolina, Maryland,

Washington DC, Vermont, and federal laboratories including the National Cancer Institute, the National Institutes of Health, Oak Ridge National Laboratory and more.

Goal/Objective 2: Current Facility Assessment

The team will visit each of the existing state laboratory testing facilities to perform an assessment of the existing conditions of laboratory and non-laboratory spaces. These assessments will be focused on the feasibility of the existing buildings for the current needs as well as the ability to support the future requirements of each of the proposed state laboratory testing programs. The process for this assessment effort include the following:

- Kick-off meeting and overview of the process
- Review of available plans and reports for the existing facilities
- On-site observations of existing facilities and operations
- Interviews with building facility managers
- Perform optional testing of building systems to determine current utility loads and capacities (optional)
- Identification deficiencies and the need for repairs and upgrades to accommodate the program of spaces and requirements established in Goal/Objective 1
- Perform a test-fit of the existing buildings to determine the feasibility of accommodating the program of spaces and requirements established in Goal/Objective 1 and determine the need for additional building space
- Prepare an order of magnitude cost estimate to retrofit and upgrade the existing facilities

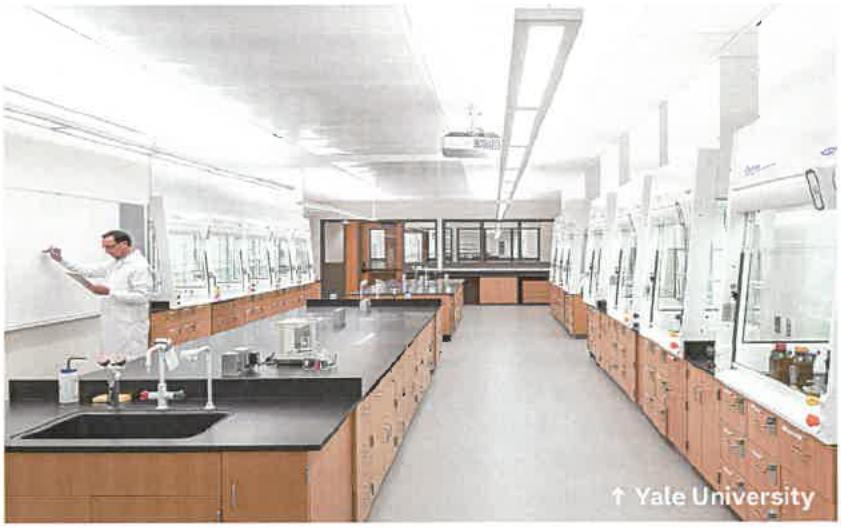
Relevant Experience: ZMM has experience assessing facilities throughout the Kanawha Valley. This experience includes the assessment of Buildings 727 and 770 at the West Virginia Regional Technology Park. ZMM also recently assisted the West Virginia Supreme Court by providing an assessment of City Center East prior to ascertain the condition of the building prior to acquisition. Our experience also includes the assessment of laboratory facilities for the West Virginia State Police, the West Virginia Division of Labor, the West Virginia School of Osteopathic Medicine, several local hospitals, and private clients, including Covestro.

Goal/Objective 3: Assessment of Alternates

In collaboration with the State's leadership, and considering the information developed in Goal/Objectives 1 and 2 above, the team will identify several alternate facilities and/or sites for the potential relocation and consolidation of state laboratory testing facilities. Following confirmation of the alternate sites, we recommend an assessment and analysis for these alternate sites in a manner similar to Goal/Objectives 1 and 2 as follows:

- Kick-off meeting to confirm the sites and assessment/analysis process
- Gather and review available data for any existing buildings and sites being considered
- Perform site observations and assessment of any existing buildings to identify any deficiencies and the need for repairs and upgrades
- Perform test fits of existing buildings and concept layouts for new construction, based on programs of spaces and requirements identified in Goal/Objective 1
- Prepare an order of magnitude cost estimate to retrofit for each alternate

Relevant Experience: CannonDesign has performed site analysis and adaptive re-use studies of existing buildings for numerous laboratory facilities for clients including Oak Ridge National Laboratory, University of Maryland, Yale University,



↑ Yale University

Brookhaven National Laboratory, and more. We recently completed the analysis of four different options for a confidential healthcare client in Philadelphia. This client was seeking to design and build a new 350,000 sf medical research facility with cost and speed to market as key drivers. We analyzed four options that included a vertical expansion of an existing building, renovation and expansion of an existing building, vertical expansion over an existing parking structure below grade, and a new ground up building. The analysis included assessment of each existing building, a series of test fit options to validate that the program fits successfully, and development of cost estimates for each option. The client decided to build a new 15-floor research building over top of the existing garage and we are currently in the design development phase of the project.

Goal Objective 4: Summary Report and Recommendations

In this final phase of the assessment, we will consolidate the data developed in each of the first three phases into one comprehensive report. The report will include both individual analysis, as well as a comparison across the multiple options. We will develop the comparison rating criteria jointly with State leadership establishing criteria weighting according to the State's priorities. This process will result in a clearly justifiable recommendation for implementation by the State.

Relevant Experience:
CannonDesign is experienced in the development assessments and strategic planning reports regularly used by our clients in their decision making process. Our

↑ Confidential Research Facility

experience includes preparation of reports and presentation of assessments and concept design options for academic, government, healthcare and commercial clients. We are experienced in presenting our findings and design concepts both in public settings and for internal organization leadership settings including Johns Hopkins University, Oak Ridge National Laboratory, West Virginia Department of Agriculture, Children's Hospital of Philadelphia, and many other clients.

Project Schedule

We anticipate a six (6) month duration to complete our proposed assessment process, upon receiving formal authorization to proceed, dependent on confirmation of the extent of assessment desired and the number of options that will be evaluated.

Cost Estimating

The team includes CannonDesign's internal cost estimating team. ZMM/ CannonDesign understands the importance of reliable cost estimating for both decision-making and capital project funding, and we reference the most recent cost data and trends available in the industry. CannonDesign maintains one of the industry's largest in-house cost estimating resources, a LEED-accredited, multidisciplinary team responsible for estimating more than $4 billion in construction value annually. CannonDesign has a proven track record delivering projects on time and on budget. During the process, options are developed with cost scenarios so educated decisions can be made.

Quality Assurance / Control

Quality starts with listening to our clients. To achieve an outcome of high quality it is essential for us to have a deep understanding of the basic nature of what our clients seek to achieve with a project and the underlying value priorities including quality, program, time and cost. Together we integrate these factors into a decision-making and design and delivery process that establishes a methodology for a high-quality experience and outcome.

Quality is a firm-wide initiative that is equally and voluntarily pursued by all members of our team. As a part of that goal, our Quality Program represents not a simple system of checks-and-balances, but a culture of quality that is supported by everyone on the team. This means striving to find

ways to improve our performance in all areas of the product and process. This devotion to quality translates into increased benefits for our clients in a variety of ways, such as improved service, responsiveness, minimization of construction errors, schedule efficiency, and improved quality of the final design product.

Our Quality Assurance plan for the Assessment of West Virginia State Laboratory Testing Facilities will include frequent document reviews inclusive of the following process:

Project Quality Process:

1. A Project Pull Plan — indicating deadlines that work back to milestones.
2. A Quality Management Plan (QMP) identifying external quality determinants including project specific requirements, scope, program, cost objectives and customer quality objectives.
3. A Quality Control Plan (QCP) appropriate to the size and complexity of the project, identifying at a minimum responsible internal reviewers and milestone reviews.
4. A BIM (Building Information Model) Plan, defining how BIM is used in the project;
5. A Sustainability Plan, identifying the project's sustainability goals, externally as set by Client, internally as set by CannonDesign.
6. A staffing plan with signoff from all Discipline Leaders.
7. Code Review to identify and review appropriate codes, standards and guidelines for the project as conceptual designs and test fits are being developed.

Proposed Staffing Plan

The assessment of multiple state laboratory facilities in several different locations poses a number of challenges that requires specialize laboratory expertise for a wide range of laboratory functions, deep experience working with State agencies, and knowledge of local design and construction codes and techniques.

A Strong State Laboratory Focus – Our team is built around ZMM and CannonDesign staff and leaders with extensive state laboratory planning and design experience. A major objective of our approach is to strongly connect the lessons we have learned from our state laboratory projects with the local experience and knowledge to this new laboratory facility. Members of our team have designed laboratory facilities for federal government agencies and state laboratories including the following sample clients:

- North Carolina Public Health Laboratory and Medical Examiner Office
- Vermont Department of Agriculture
- West Virginia Department of Health
- Maryland Public Health Laboratory
- The National Cancer Institute
- The National Institutes of Health
- Oak Ridge National Laboratory
- Washington Public Health Annex

Trusted Local Presence and the Nation's Leading Lab Planning Experts – The partnership of ZMM and CannonDesign provides our team the unique opportunity to have a top-notch local presence who understands the local climate and can navigate the local politics with a team from CannonDesign comprised of leaders with extensive state laboratory planning and design experience. This partnership allows us to strongly connect the lessons learned in past projects locally and around the country and world to this new state of the art laboratory facility.

A Commitment to Team Integration and Integrated Delivery – An integrated design and delivery team is the primary attribute of the ZMM and CannonDesign project model. ZMM/CannonDesign have extensive knowledge of the lab program type and have assembled a team of experts from our network that will best serve the project.

CannonDesign will operate on a global scale using their unique Single Firm Multi Office (SFMO) practice methodology. Utilizing the most advanced virtual technologies to fully integrate design and lab experts from all their offices into a single unified firm without walls, offering WV access to the full resources of the entire organization, enabling the project to remain in contact motion across multiple time zones, sharing new ideas and best practices, enhancing quality, and accelerating the speed of delivery.

The project team presented is committed to this project and excited to see this assessment effort through to completion.

ABOUT
ZMM ARCHITECTS & ENGINEERS

ZMM was founded in 1959 in Charleston, West Virginia by Ray Zando, Ken Martin, and Monty Milstead. Since the inception of the firm, ZMM has been dedicated to providing an integrated approach to building design for our clients.

ZMM delivers this integrated approach by providing all building related design services, including architecture, engineering (civil, structural, mechanical, and electrical), interior design, and construction administration with our in-house team. Our integrated design approach makes ZMM unique among architecture/engineering firms, and helps to ensure the quality of our design solutions by providing more thoroughly coordinated construction documents.

ZMM has maintained a diverse portfolio since the founding of the firm. Early commissions included higher education projects for West Virginia University and Concord College, State Office Buildings 5, 6, & 7 on the State of West Virginia Capitol Campus, and armories for the West Virginia Army National Guard.

Maintaining a diverse practice for over 60 years has provided ZMM with extensive experience in a variety of building types, including educational facilities, governmental facilities (military, justice, correctional), healthcare facilities, recreation facilities, commercial office space, light industrial facilities, and multi-unit residential buildings.

The original partners transferred ownership of the firm to Robert Doeffinger, PE and Steve Branner in 1986. Mr. Doeffinger and Mr. Branner helped guide and expand the firm to its present size of 35 people. Over the past 20 years David Ferguson, AIA, and Adam Krason, AIA, LEED-AP joined in ownership of the firm. In 2020, Randy Jones also joined in ownership of the firm when ZMM acquired Blacksburg-based OWPR Architects & Engineers to create a regional design firm that employs more than 50 highly-skilled professionals.

ZMM has become a leader in sustainable / energy-efficient design, and a trusted resource on complex renovation projects. ZMM's unique renovation project approach and ability to

ZMM ARCHITECTS ENGINEERS

About ZMM Architects & Engineers (cont.)

provide comprehensive design services has also led the firm to be selected to improve landmark buildings, including the Charleston Coliseum & Convention Center, the Clay Center for the Arts and Sciences, the State of West Virginia Culture Center, and the West Virginia State Capitol Building. Additional significant projects designed by the firm include the Explorer Academy (Cabell County Schools), the Logan-Mingo Readiness Center, the Manassas Park Community Center and Natatorium, the design of the Fourth High School (Frederick County Public Schools), the new Harrington Waddell Elementary School (Lexington City Schools), CAMC Teays Valley ICU, and Ridgeview Elementary School (Raleigh County Schools). ZMM has also provided design services on more than 300 school projects throughout the region.

ZMM's building-related design services include:

Pre-Design

- Educational Facility Planning
- Existing Building Evaluation
- Space Planning
- Master Planning
- Programming
- Feasibility Studies
- Site Evaluation and Analysis
- Construction Cost Estimating

Design

- Architectural Design
- Interior Design
- Lighting Design
- Sustainable Design
- Landscape Architecture

Engineering

- Civil Engineering
- Mechanical Engineering
- Energy Consumption Analysis
- Structural Engineering
- Electrical Engineering
- Net Zero Buildings

Post-Design

- Construction Administration
- Life Cycle Cost Analysis
- Value Engineering
- Post-Occupancy Evaluation

As ZMM looks to the future, we remain committed to the ideal of providing high-quality, client-focused design solutions that meet budget and schedule requirements. We listen, we respond promptly with innovative and efficient solutions, and we deliver quality projects and develop lasting relationships. You see us in **YOUR** community every day.

ABOUT CANNONDESIGN

CannonDesign is an award-winning architectural, engineering, lab planning, and interior design firm. In practice since 1945, they have an international reputation for design excellence, technological innovation, and unsurpassed client service.

CannonDesign has been recognized with over 650 awards for design excellence, technological innovation, and imaginative thought leadership. Having won R&D Magazine's Lab of the Year Awards in 2017 and 2018, they are nationally recognized for their contributions to the development of science and technology facilities across the nation.

CannonDesign designs laboratories for the science of today and tomorrow, creating flexible, highly interactive spaces that maximize researchers' freedom and promote physical and mental well-being. Our practice is ranked in the top 10 globally for science and technology according to World Architecture. As a leading design firm, they operate on a global scale using a unique Single Firm Multi Office (SFMO) practice methodology, utilizing their 18 offices and more than 1,000 employees, with the Arlington, Virginia office taking the lead on the WVDA Lab Evaluation Assessment Project.

As a leading design firm, they operate on a global scale using a unique Single Firm Multi Office (SFMO) practice methodology, utilizing their 18 offices and more than 1,000 employees, with the Arlington, Virginia office taking the lead on the WVDA Lab Evaluation Assessment Project.

About CANNONDESIGN (cont.)

Our integrated services span the full lifecycle of an organization's transformation — allowing us to help clients develop new strategies for their future, and design and build the solutions to get there.

Architecture

Consulting & Planning
Change Management
Equipment Planning & Procurement
Experiential Design
Master Planning
Operations Design
Predictive Analytics
Space Programming
Transition Planning
Workplace Strategy

Construction Delivery Services
Construction Management
Cost Estimating
In-house Design-Build
Modular Design and Construction
Pre-construction Services
Program Management
Public-private Partnerships

Engineering
Commissioning
Electrical
Mechanical
Structural
Plumbing
Technology

Environmental Graphics

Facility Optimization

Interior Design

Lighting Design

Sustainable & Resilient Design

At CannonDesign, we provide nearly every facility-related design service in-house, believing integrated design is key to achieving the outcomes and value our clients seek. We look at each project from a holistic perspective and collaborate across markets and expertise to determine how best to bring disparate components together to make an ideal whole.

WEST VIRGINIA DEPARTMENT OF AGRICULTURE

LOCATION	SIZE	COMPLETION	COST
CHARLESTON, WV	18,647 SF	2020	$120,000

Lab Facility Programming, Feasibility Study, and Concept Design

The West Virginia Department of Agriculture (WVDA) provides vision and strategic planning to ensure (1) the continuation of an adequate, safe, and wholesome food supply for the citizens of West Virginia, and (2) compliance with legislative mandates to protect and promote the state's agriculture industry.

CannonDesign and ZMM Architects & Engineers provided lab facility programming, a feasibility study, and concept design for WVDA's existing laboratory facilities. The project began with an analysis of existing WVDA laboratories, including programs and facilities. On the Guthrie site, the lab programs housed within outdated facilities include the:

- Regulatory and Environmental Affairs Division – Investigative labs focused upon safeguarding the food supply.

- Animal Health Division –Diagnostic labs dedicated to controlling and eradicating animal diseases and zoonotic diseases affecting humans.

- Plant Industries – Investigative labs focused upon protecting West Virginia's farms and forests.

ZMM ARCHITECTS ENGINEERS

CANNONDESIGN

West Virginia Department of Agriculture (cont.)

Each of these lab programs is currently located in separate wood structured buildings, nearly six decades old, that were not originally intended to house testing lab facilities. The deficiencies of these conditions include limited utility services, constrained material flow processes, life safety challenges, lab pressurization and isolation limitations, and grossly inadequate laboratory space for benchwork and equipment. Additionally, the finishes in most of the interior lab environments, including lab casework, flooring, walls, and ceiling finishes, have exceeded their life expectancies. The current lab programs are expanding in their capacities and workflows through additional grants while being greatly constrained by the limitations of the lab spaces listed above.

Next, the A/E team investigated multiple sites in the Kanawha Valley to determine potential buildings or spaces for relocation, renovation, or new facility. The new lab building on the Guthrie Site was selected as the most viable option for two main reasons: The property is owned by WVDA, leading to a one-time capital expenditure. (For all other options, construction costs would be similar.)

1. The property is owned by WVDA, leading to a one-time capital expenditure. (For all other options, construction costs would be similar.)

2. The site includes a secure perimeter with no immediate neighbors. Air entrainment will not be an issue.

The goals for the Consolidated Research Lab on the Guthrie Site are as follows:

Continue WVDA's mission to ensure an adequate and safe food supply for the citizens of West Virginia.

Create modular, flexible laboratories that are future-proofed to accommodate ever-evolving changes in lab and testing technology and to add a BSL-3 lab.

Add educational and inspection components to the existing infrastructure.

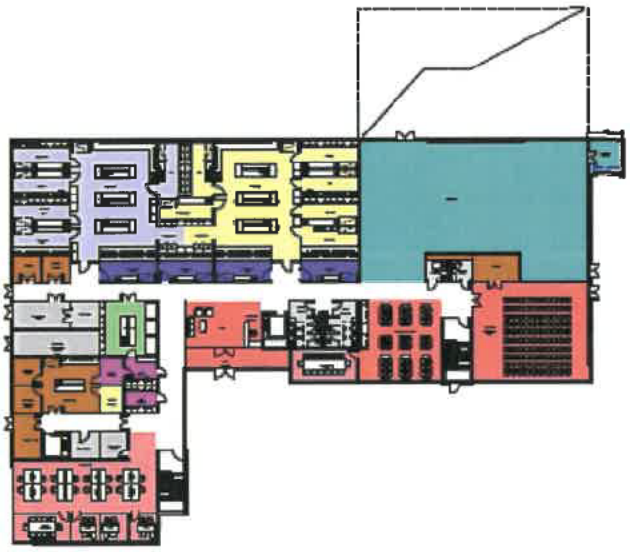
Consolidate and maintain division identity within the department.

Resolve existing storage challenges.

Resolve parking and delivery challenges while providing on-site security.

Enhance overall working conditions in laboratories and offices as well as provide space for meals and breaks.

Provide an educational component with a multipurpose room to provide opportunities for training regional, state, and national organizations, such as vet service labs, select agent training, and field training.



ZMM ARCHITECTS ENGINEERS

CANNONDESIGN

NOVARTIS INSTITUTES FOR BIOMEDICAL RESEARCH (CAMBRIDGE CAMPUS)

LOCATION
CAMBRIDGE, MA

SIZE
824,000 SF

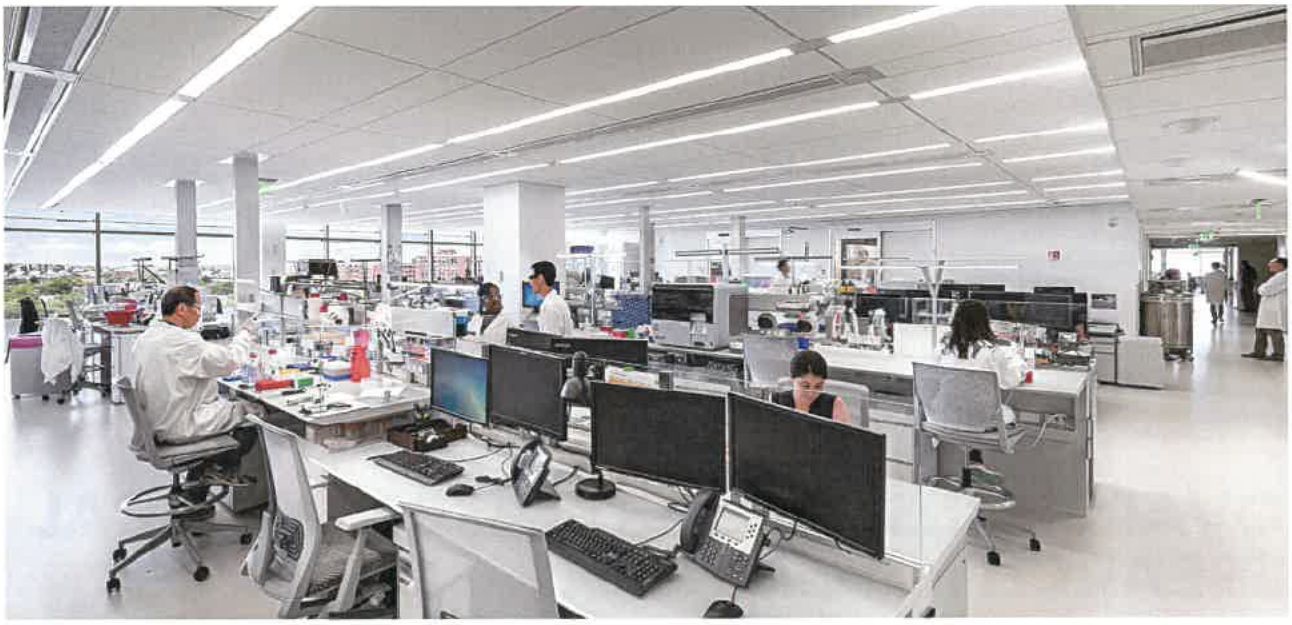
COMPLETION
2016

Transforming Biomedical Research through Collaboration

Teamed with Maya Lin Studio and Toshiko Mori, CannonDesign provided extensive A/E services for Novartis's new $600M, 800,000-sf life science research campus in Cambridge, Massachusetts. Across the street from existing Novartis facilities, the laboratory complex, which Novartis refers to as its "innovation engine," is designed to promote the intense level of collaboration and shared technology required to support the development of life-changing treatments for many disorders—from cancer to degenerative diseases. The laboratory design connects multiple disciplines and disease specialty areas by pairing highly flexible, open, wet laboratory spaces with directly adjacent support spaces (i.e., informal meeting rooms and dry labs). This new scientific workplace breaks down walls between disciplines, both figurative and literal, blurs boundaries between discovery and commercialization, bridges geographies, and ultimately transforms researchers' approach to science by providing boundless opportunities to collaborate. In addition to research laboratories, the facility features core instrumentation labs, a 350-seat auditorium, a conference center, retail tenant space, a health clinic, a daycare facility, bicycle parking, a three-story underground garage, and a central utility plant.

CannonDesign was the Architect and Engineer of Record for the project, while Lin and Mori were the Design Architects, each designing one building. Landscape architect Michael Van Valkenburgh designed the surrounding landscape and a 1.35-acre courtyard. A 30,000-sf historic building on the site was renovated, with conceptual design by Single Speed Design, to house research support and child care.

Novartis Institutes for Biomedical Research (cont.)



NEW RIVER HEALTH CLINIC

LOCATION	SIZE	COMPLETION	COST
FAYETTEVILLE, WV	95,440 SF	EST. 2022	$14M

This project involves renovation of a former retail store into a multi-use community health and outreach facility.

A new main entrance and drop-off canopy punctuates the exterior renovations, which include updates and modernizations for a clean, new look for NRHA. The renovations include new HVAC, plumbing, electrical, and sprinklers. It will receive an all-new roof with upgraded insulation, as well as insulation added to the perimeter walls to make the building even more energy efficient.

The building is 95,440 SF on one level, not including the former storage mezzanine, which is being removed as it would be too costly to bring up to code for this new use. As a former retail facility, there is more than ample parking, as well as on-grade access around 80 percent of the perimeter.

The project includes an urgent care, a multi-discipline clinic, medical imaging, rehabilitation gym for cardiac rehab, physical and chiropractic therapy, full-retail pharmacy with drive-through, dietary/healthy lifestyle training facility, retail lab, a community event and conference center, retail café, a large daycare facility, and space for a retail gym. It will also house the new main corporate administrative offices and boardroom for NRHA.

The multi-discipline clinic includes spaces for several general practitioners, as well as audiology, optometry, podiatry, behavioral health/MAT,

ZMM ARCHITECTS ENGINEERS

New River Health Clinic (cont.)

dentistry, visiting clinicians, and possible tele-med. The convention center has a large gathering/banquet space that can be subdivided into four smaller facilities, as well as multiple other conference rooms of varying size. It is also equipped with a full catering kitchen. The grand entrance is created by renovating the former retail vestibule and canopy, behind which is created a large-gathering/pre-function/welcoming lobby hall.

The new daycare facility will serve children from infants up through school age. The brightly daylit rooms will utilize windows and doors directly off their new playground of nearly 9,000 SF, which was the former exterior fenced garden center. The proximity of this daycare will be a major convenience for parents who need to have medical treatment, but also need short-term childcare.

OAK RIDGE NATIONAL LABORATORY
SECOND TARGET STATION

LOCATION	SIZE	COMPLETION	COST
OAK RIDGE, TN	400,000 - 600,000 SF	2028 est.	$400M+

Expansion of Accelerator-Based Neutron Source for International Research

The Oak Ridge National Laboratory Spallation Neutron Source (SNS) is a major DOE accelerator-based neutron source facility that provides the most intense pulsed neutron beams in the world for an international user community. The facility currently operates at a maximum energy level of approx. 1 GeV. The Second Target Station (STS) and related Proton Power Upgrade (PPU) project will increase the energy level to 1.4 GeV and double the experimental beamline capacity of the facility. The STS is a 400,000- to 500,000-sf project encompassing 11 buildings over 14 acres.

The project includes an extension of the existing proton beamline and earth-shielded underground tunnel enclosure, a new target building, 22 neutron beamlines, multiple experimental buildings, central utility plant, central exhaust facility and a new laboratory/office research building. The complex occupies approximately 14 acres and will require extensive site and utility infrastructure development. Radiological levels associated with the accelerator, target and beamline systems will require earth, steel and high-density concrete shielding, impacting planning and design for much of the project.

Programming, Technical Design Studies, and Conceptual Design Report

Working through an IDIQ task order, CannonDesign collaborated with the STS experimental and conventional facilities team to prepare the STS Conceptual Design Report, which incorporates the results of previous programming and technical design studies also undertaken by CannonDesign.

Oak Ridge National Laboratory (cont.)

For the CDR, CannonDesign provided project management, architecture, structural engineering, MEP/FP engineering, and cost estimating supported by geotechnical and civil engineering consultants.

Full Design

In May 2021, ORNL selected CannonDesign as the Architect of Record for the detailed design of the Second Target Station. Services for the detailed design began with program verification and a site configuration study. Release of the site improvement package is anticipated in summer 2022 and will be followed by separate procurement packages for each of the multiple facilities that make up the target station complex. Project completion and target station activation are anticipated in 2028.

WV HEALTH RIGHT

LOCATION	SIZE	COMPLETION	COST
CHARLESTON, WV	31,200 SF	TBD	TBD

ZMM is currently in design to renovate and expand the existing WV Health Right medical facility in Charleston, West Virginia.

The renovation of the existing two-story, 14,400 SF facility will include work on both floors and a full roof replacement. On the first floor, the existing pharmacy and behavioral health services will be increased and a new laboratory will be constructed. On the second floor, several existing departments will be expanded, including the dental clinic, eye clinic, patient education, and information technology, along with new fitness and activity rooms. The expansion will consist of a three-story, 16,800 SF, steel-framed addition with deep foundations and a new elevator. The first floor will include a large entrance lobby and waiting area, along with several medical exam rooms, triage stations, support offices, and a private employee entrance. The second floor will be constructed as an expansion space, with the third floor dedicated to executive offices and a large 60-person board room.

The exterior of the addition will embrace the brick veneer, EIFS banding, and window patterning from the existing facility, to provide a cohesive exterior design. A new porte cochère will be built outside the new entrance lobby, highlighting the main entrance with new branding signage. Along with work on the building, site work will include an increase in parking spaces, underground stormwater detention, and new utility upgrades, including a full-building generator.

ZMM
ARCHITECTS
ENGINEERS

THE UNIVERSITY OF TEXAS MD ANDERSON CANCER CENTER

LOCATION	SIZE	COMPLETION	COST
HOUSTON, TX	16,000,000 SF	2021	$4.9M

2030 Institutional Facilities Master Plan

MD Anderson engaged CannonDesign to create a master facilities framework for its multiple campuses including the Texas Medical Center (TMC) and its clinical sites in League City, West Houston, and The Woodlands. Our mission is to develop a comprehensive framework that layers the vision of the clinical, research, and education entities within MD Anderson so they integrate appropriately, use real estate intentionally and efficiently, support the varied and changing workstyles of their staff, researchers, and educators, and provide their cutting edge cancer care in the right locations on campus and in the community.

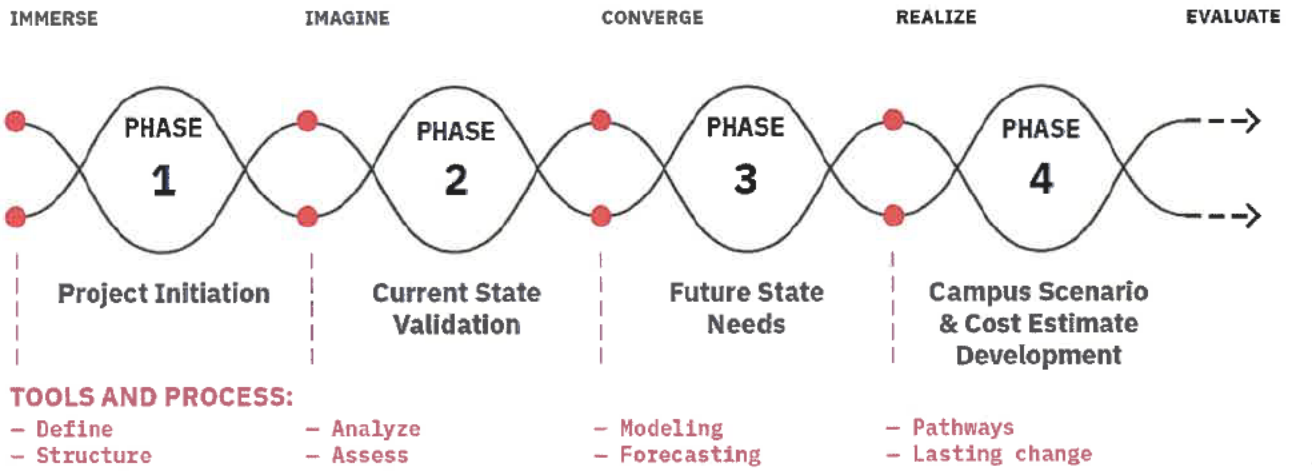
The final product of the Master Framework will not be a static book, but a parametric data driven tool that will allow MDA to adjust assumptions, markets, volumes, and other key data, which will dynamically predict space needs for the future. The Framework of the campus plan identifies major circulation, urban and clinical aspects, and building volumes that are fungible to allow for changes in strategy, clinical delivery and market to occur.

Our proposed master framework will support their strategic mission for the next 10 years including care delivery and growth goals. Our process is informed by rich data collected from the client and then cut and analyzed to drive insights beyond market share and into how people collaborate and scenarios for strategy and growth.

The University of Texas MD (cont.)

We have created the Project Data Warehouse that connects MD Anderson's internal data sources to our work constantly enhancing the data analytics and visualization for insight informed decision making. The data analytics, operational analysis and planning process considered the current facility use and condition and future programmatic needs for the entire organization with the goal of evaluating the distribution of functions across the multiple campuses, the feasibility of continuing growth on the main medical campus, and the possibility of shifting services off campus.

The planning also included introducing a new workplace strategy by identifying work-styles and metrics for increasing efficiency and quality of office space. The overall master plan is focused on creating a 30-year plan to improve the patient experience and staff efficiency and productivity across all the campuses.



CHARLESTON AREA MEDICAL CENTER (CAMC) PROJECTS

LOCATION
CHARLESTON, WV

COMPLETION
2012 - PRESENT

Charleston Area Medical Center (CAMC) is the primary medical facility for the city of Charleston, West Virginia and the surrounding region.

CAMC is a complex of nonprofit medical facilities consisting of four primary locations: Memorial Hospital, General Hospital, Women and Children's Hospital, and Teays Valley Hospital. ZMM began assisting CAMC on projects throughout their system in 2012. Since that time, ZMM has completed a variety of projects at CAMC facilities, including diagnostic, surgical, and clinical facilities, as well as critical infrastructure. A representative list of our experience collaborating with CAMC includes:

CAMC Memorial Hospital

- 48-Bed Intensive Care Unit
- Airborne Infection Isolation Rooms
- Elevator Expansion Study
- Boilers Heart/Vascular
- Helipad Structural Study
- Imaging Center RTU
- Laboratory Renovation
- Laundry and Laundry HVAC
- Mast Lift
- Medical Vacuum Pumps

ZMM ARCHITECTS ENGINEERS

Charleston Area Medical Center (CAMC) Projects (cont.)

- Sanitary System Investment
- Surgery Cooling Tower Replacement

CAMC General Hospital
- Hybrid Operating Room
- Cardiac Diagnostic Lab Evaluation
- Negative Isolation Rooms
- Biodecks Free Steps
- C Suite Renovation
- Chiller Plan One-Line and Chiller Replacement
- Cooling Tower Piping and Supports
- OR Air Handler Upgrade
- Smoke Evacuation Systems

CAMC Teays Valley Hospital
- Angio Room Renovation
- Hyperbaric Chamber Addition
- Intensive Care Unit Addition
- Neurology Office Renovations
- Ortho X-Ray
- Post Op Expansion
- Cysto Room
- TB Isolation Room
- Clinic
- Life Safety Plans
- Patient Admitting Area
- Steris Washer Consultation
- Surgery Suite Renovation

Miscellaneous
- Primary Care/Urology Clinic
- Doctor Park Building Renovation
- Master Service Contract Agreement
- Highland Hospital
- Women and Children's Structural Evaluation

OAK RIDGE NATIONAL LABORATORY
VARIOUS PROGRAMMING & PLANNING PROJECTS

LOCATION	SIZE	COMPLETION	COST
OAK RIDGE, TN	Varies	Ongoing	Varies

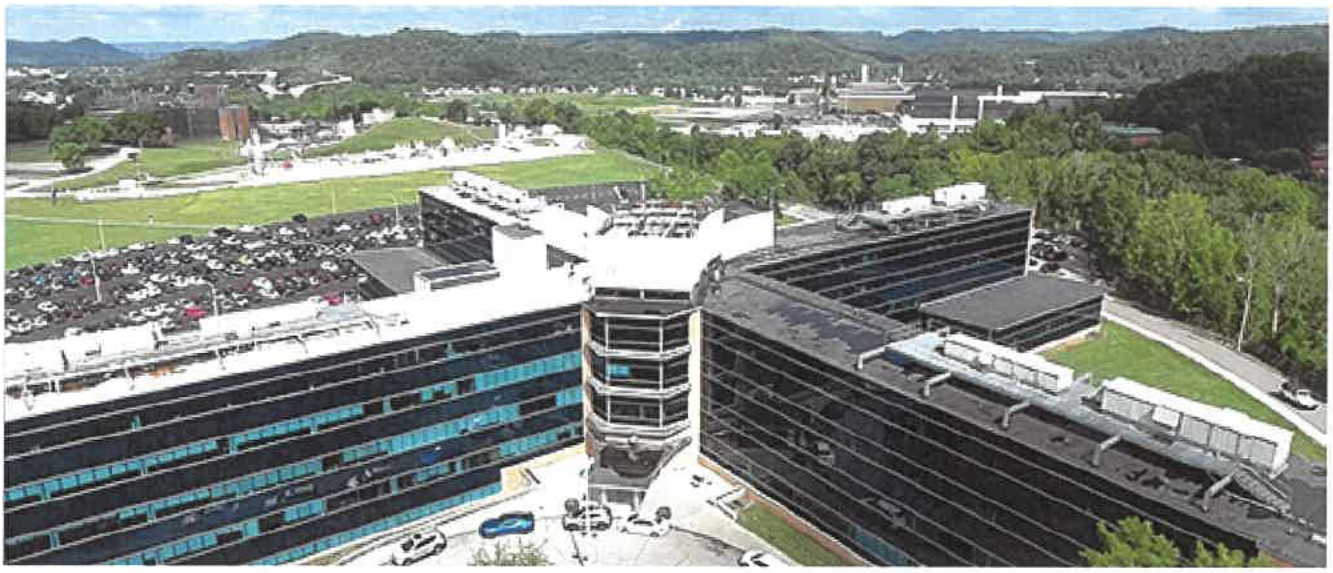
A Trusted Partnership with a National Lab

Continuing an ongoing, trusted relationship, CannonDesign is currently working Oak Ridge National Laboratory (ORNL) facilities staff to perform multitask IDIQ design services. Working jointly with the ORNL project manager, users and technical experts, the CannonDesign project team assists the Laboratory in developing preliminary scope, design approach, schedule and budget for tasks that include site assessment, programming, conceptual design, preliminary design, final design and construction phase services. All work is undertaken in compliance with federal and DOE regulations regarding sustainable design, safety and environmental protection.

Each project undergoes a quality control review by senior CannonDesign discipline leaders prior to milestone submissions to the Laboratory. Additional comment and response reviews ensure ORNL staff and user involvement throughout project development. Regulatory and campus standards as appropriate are employed for both design and documentation. Active tasks are monitored on a monthly basis by ORNL and CannonDesign management to ensure schedule and budgetary conformance.

To date, projects have included:

Building 3500 Renovation
Building 4500N Window Renovation
Leadership Imaging Facility - Site Selection
Leadership Imaging Facility - Conceptual Design
RTBT Stub - Conceptual Design
RTBT Stub - Final Design
Second Target Station - Programming and Elevation Studies
Translational Research - Capability Site Selection Study
Translational Research - Capability Concept Design
Klystron Gallery Upgrades for the Proton Power Upgrade
Building 4501/4505 Assessment
Building 4501/4505 Long Term Master Plan
Building 4501 High Bay Renovation Conceptual Design
Building 4508 Conceptual Study
7600 Area Master Plan Update
National Historical Park Master Plan
Stable Isotope Production and Research Center - Conceptual Design



WEST VIRGINIA REGIONAL TECHNOLOGY PARK

LOCATION	SIZE	COMPLETION	COST
CHARLESTON, WV	Varies	Ongoing	Varies

The ZMM/CannonDesign team was selected (in 2015) by the West Virginia Higher Education Policy Commission (HEPC) to undertake a planning and design process to renovate Building 770 to accommodate many of the lab functions that are identified in the PERD report. Unfortunately, HEPC did not move forward with the project. One of the reasons that our team was selected was due to our familiarity with and experience providing design services at the WVRTP. This experience includes the design of the new NOAA/NWS Building, as well as assessment, planning, and design experience in Building 2000, Building 770, Building 740, Building 727, and Building 704.

Building 770 The 4-story building is a single use laboratory building with executive offices. The 122,180 SF laboratory building constructed in 1959, consists of 44,880 SF of laboratories, 22,800 SF of laboratory office space, 8,200 SF of executive office space, and 46,300 SF of service and utility space. A 2,500 SF laboratory annex with 2-story walk-in fume hoods was constructed in 1995. The building has a steel frame structure with a brick and curtain wall veneer with one fume hood in each lab. A typical laboratory suite consists of labs and offices on a double loaded corridor. There are approximately 100 individual labs. The wall between the corridor and the laboratory is a non-rated Hauserman (demountable) partition. Each lab is served by a chase that contains the following utilities: CW, HW, steam, air, vacuum, and nitrogen. Aside from minor renovations to enclose the monumental stairway in the lobby, the executive office suite improvements can be limited to ceilings, lighting, finishes, and improved data access. It may be desirable to replace that HVAC system although the existing system is serviceable. Major building improvements are required in the laboratory areas.

ZMM ARCHITECTS ENGINEERS

THE UNIVERSITY OF TEXAS MEDICAL BRANCH

LOCATION
GALVESTON, TX

SIZE
10,000,000 SF

COMPLETION
2023 EST.

System-Wide Facilities Master Plan

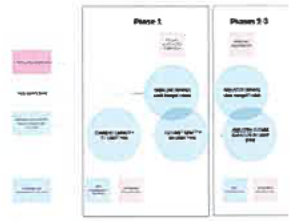
The client engaged CannonDesign to develop a create a facilities master plan for the academic medical center, across multiple campuses, in response to tremendous growth of the organization. The scope of work includes the assessment of sites and facilities and the determination of future needs for all missions: Clinical, Education and Research. The project began with an alignment of the strategic plan and project vision among key stakeholders through interviews and a series of visioning sessions, which lead to the development of guiding principles that will inform each campus. Site-specific master planning includes a current state assessment of the facilities, operations, infrastructure, site and parking conditions. This assessment will inform opportunities for future site development, and the refinement of volume and space projections for each campus,. Future-state facilities options will be evaluated according to the guiding principles set at the start of the project.

The project emphasizes key stakeholder buy-in and participation, through a work group structure to engage both mission leadership and facilities teams for input, feedback and decision-making. The end-deliverable will provide the client with a flexible roadmap for short-, medium- and long-term campus development.

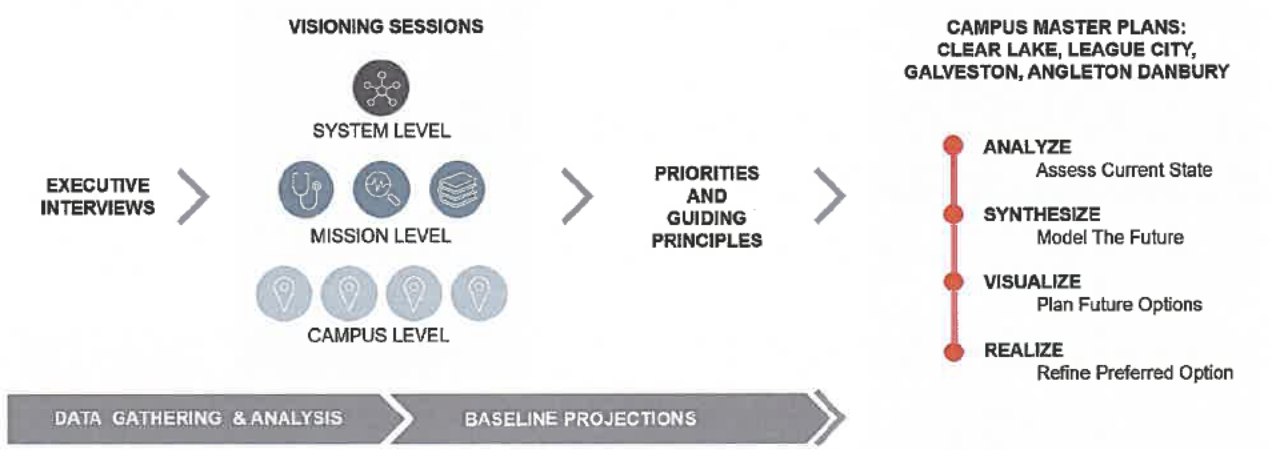
The University of Texas Medical Branch (cont.)

Education Mission
Projections Methodology

Research Mission
Projections Methodology



Clinical Mission
Bed Need Projections Methodology



CAMC TEAYS VALLEY HOSPITAL ICU

LOCATION	SIZE	COMPLETION	COST
HURRICANE, WV	8,215 SF	2013	$3.5M

ZMM provided design services for the state-of-the-art Intensive Care Unit (ICU) addition to the existing CAMC Teays Valley Hospital.

The facility consists of 8,215 SF and houses ten private patient rooms and marks the latest addition to the hospital's expansion effort. The addition has a host of features that the staff and administration had desired during the planning effort. These features include direct access to the helipad, a nutrition services station for meal preparation, a true isolation room, and two more specially-equipped rooms for dialysis patients.

The patient rooms line the outside walls along two long, central nurses stations. The ICU has a 2-to-1 nurse to patient ratio at all times. The patient rooms have a full-glass front with sliding doors for ease of access to the rooms, which also allows the nursing staff a view of every patient all of the time. The private patient rooms allow for the families to stay with the patient 24/7 and is also much quieter, which helps with the healing process and allows the patient the rest they need. The design of the facility also allows the ICU to keep all of their beds open. The design of the single private rooms greatly decreases risk of spreading infection to other patients.

The facility hosts all required support spaces, such as a visitor waiting room, storage rooms, restrooms, doctor dictation areas, areas for equipment and supplies, staff lounge, and locker area for the nurses.

ZMM ARCHITECTS ENGINEERS

APPALACHIAN REGIONAL HEALTHCARE (ARH) PROJECTS

LOCATION
WEST VIRGINIA & KENTUCKY (VARIOUS LOCATIONS)

COMPLETION
2016 - PRESENT

Appalachian Regional Healthcare (ARH) is a not-for-profit health system serving 350,000 residents across Eastern Kentucky and Southern West Virginia.

ARH operates 11 hospitals, multi-specialty physician practices, home health agencies, HomeCare Stores and retail pharmacies. ZMM began assisting ARH on projects throughout their system in 2016. Since that time, ZMM has completed a variety of projects at the hospitals in Beckley, Whitesburg, Summers County, and Tug Valley. A full outline of our experience collaborating with ARH includes:

ARH Beckley
Construction/Production Projects:

- ICU Air Handling Unit and HVAC Upgrades
- ICU Casework
- Kitchen Exhaust/Make-Up Air HVAC Upgrades
- Chemotherapy/Infusion Suite
- Endoscopy Suite HVAC Upgrades
- Life Safety Drawings
- Psychiatric Department Toilet Room Upgrades

ZMM ARCHITECTS ENGINEERS

Appalachian Regional Healthcare (ARH) Projects (cont.)

Design/Review/Consultation Projects:
- Central Sterile Storage Upgrades
- Pharmacy USP 797/800 Upgrades
- Operating Room AHU Selection
- Boiler Deaerator Tank Replacement
- Clinical Building Allocation Assessment
- ER Psychiatric Emergency Room Life Safety Evaluation
- Beckley Medical Mall Clinic Remodel

ARH Whitesburg
Construction/Production Projects:
- Laboratory AHU and HVAC Upgrades
- Endoscopy Suite Upgrades
- MRI

Design/Review/Consultation Projects:
- Central Sterile Storage Upgrades
- ER/OR Tab Review and Report
- MRI Water Damage Inspection

ARH Summers County
Construction/Production Projects:
- Electrical One Line Drawings

Design/Review/Consultation Projects:
- Mechanical Systems Assessment and Report
- Chiller Replacement

ARH Tug Valley
Design/Review/Consultation Projects:
- Chiller Replacement, Chilled Water Plant Upgrades
- CT Scan Room Relocation

ZMM has also been assisting senior leadership at ARH with developing strategies to improve energy efficiency as well as long-term planning for maintaining the quality of their facilities and infrastructure.

WV SCHOOL OF OSTEOPATHIC MEDICINE TESTING CENTER

LOCATION	SIZE	COMPLETION	COST
LEWISBURG, WV	33,600 SF	EST. 2021	$5.75M

ZMM is currently assisting the West Virginia School of Osteopathic Medicine (WVSOM) with the design of a Testing Center to accommodate 220 students.

The Testing Center will connect the Center for Technology and Rural Medicine (Tech Center) and the Clinical Evaluation Center (CEC). The main Testing Center space is being designed to support student achievement by limiting visual and auditory distractions. The interior environment is also designed to create a calming or contemplative space for WVSOM students. The Testing Center has two entry vestibules on either side of a registration desk, which is separated from the proctor area by a technology room. Private testing and conference room spaces are also provided to support the Testing Center. High capacity toilet facilities are included to accommodate a large number of students immediately before and/or after testing.

The Testing Center was designed to connect the Tech Center to the CEC. Renovations in those facilities are limited. The project includes reconfiguring office space in the Tech Center for Pre-Clinical Education and Information Technology, while the addition provides expansion office space for Information Technology and new offices for the Exam Center.

ZMM ARCHITECTS ENGINEERS

WV STATE POLICE INFORMATION SERVICES CENTER

LOCATION	SIZE	COMPLETION	COST
SOUTH CHARLESTON, WV	18,000 SF	2013	$2.5M

The West Virginia State Police renovated a structure that previously served as the State Medical Examiner's Office, and prior to that, an elementary school.

The building is located adjacent to the state police's main campus in South Charleston, WV. The building underwent extensive renovation to transform it into an Information Services Center. The divisions were previously housed in the main state police headquarters building.

The scope of the work included a complete renovation to the 14,000 SF, two-story main building, along with a new 4,000 SF, one-story addition on the back. The old exterior masonry façade was enveloped with a thin-brick veneer facing Jefferson Road and an exterior insulation and finish system in the rear of the facility. New aluminum windows, high-performance glazing, and new single-ply roof membrane completed the exterior. The interior was converted into professional office space on both floors, to house their Communications Division, Criminal Records Division, and Traffic Records Division. The space was maximized by utilizing the wide corridors as office space and creating new, appropriately-scaled corridors in a loop pattern through the previous classrooms.

ZMM ARCHITECTS ENGINEERS

AWARD WINNING DESIGN

2020

AIA West Virginia Chapter: Merit Award
Achievement in Architecture for New Construction
Mountain Valley Elementary School
Bluefield, West Virginia

AIA West Virginia Chapter: Merit Award
Achievement in Architecture
Ridgeview Elementary School
Crab Orchard, West Virginia

2019

AIA West Virginia Chapter: Honor Award
AIA West Virginia Chapter: Citation Award
AIA West Virginia Chapter: People's Choice Award
Charleston Coliseum & Convention Center
Charleston, West Virginia

2018

AIA West Virginia Chapter: Citation Award
Unbuilt Project
Charleston EDGE
Charleston, West Virginia

2017

AIA West Virginia Chapter: Merit Award
Achievement in Architecture
Explorer Academy
Huntington, West Virginia

AIA West Virginia Chapter: Merit Award
Achievement in Sustainability
Logan - Mingo Readiness Center
Holden, West Virginia

2016

AIA West Virginia Chapter: Merit Award
Achievement in Architecture in Interior Design
Christ Church United Methodist
Charleston, West Virginia

ZMM
ARCHITECTS
ENGINEERS

AWARD WINNING DESIGN

AIA West Virginia Chapter: Merit Award
Achievement in Architecture
Gauley River Elementary School
Craigsville, West Virginia

2015

AIA West Virginia Chapter: Honor Award
Achievement in Architecture in Sustainable Design
Edgewood Elementary School
Charleston, West Virginia

AIA West Virginia Chapter: Merit Award
Achievement in Architecture
Kenna Pk-5 School
Kenna, West Virginia

2014

AIA West Virginia Chapter: Merit Award
Achievement in Architecture in Sustainable Design
Huntington East Middle School
Huntington, West Virginia

AIA West Virginia Chapter: Merit Award
Achievement in Architecture
Southern West Virginia Community & Technical College
Williamson, West Virginia

AIA West Virginia Chapter: Merit Award
Achievement in Architecture in Interiors/Graphics
Girl Scouts of Black Diamond Council
Charleston, West Virginia

2012

AIA West Virginia Chapter: Honor Award
Excellence in Architecture
West Virginia Housing Development Fund Building
Charleston, West Virginia

2011

AIA West Virginia Chapter: Honor Award
Excellence in Architecture in Historical Preservation
Southside Elementary/Huntington Middle School
Huntington, West Virginia

ZMM
ARCHITECTS
ENGINEERS

AWARD WINNING DESIGN

RANKINGS

#4

University Architecture Firm

—Building Design + Construction, Giants

#8

Engineering Firm World-wide

—Building Design, World Architecture 100

#9

Science Design Firm World-wide

—Building Design, World Architecture 100

Top Green Architecture Firm

—Building Design + Construction, Giants

Top Science + Technology Architecture Firm

—Building Design + Construction, Giants

METRICS

500+

Science + Technology Projects Completed

40M+

square feet of Science + Technology Facilities Designed

1000+ designers

LAB OF THE YEAR WINNING PROJECTS

CJ Corporation, CJ Blossom Park

—2018 *R&D Magazine's* Lab of the Year Award

Novartis, Institutes for BioMedical Research

—2017 *R&D Magazine's* Laboratory of the Year, Special Recognition for Innovative Systems

Novartis, University of Pennsylvania, The Center for Advanced Cellular Therapeutics

—2017 International Society for Pharmaceutical Engineering (ISPE), Facility of the Year

Texas Children's Hospital, Feigin Center

—2010 *R&D Magazine's* Laboratory of the Year, Honorable Mention

CannonDesign has created a seamless collaborative environment where innovation transcends boundaries... It will be a consistently high performing engaging workplace for scientists that stimulates entrepreneurialism, creative discovery and product improvement across all aspects of our business.

—Nicholas (Keunsoo) Jin
Team Leader, Manager, CJ Corporation

CANNONDESIGN

Adam R. Krason, AIA, LEED AP, ALEP

ZMM ARCHITECTS ENGINEERS

Role
Principal-in-Charge

Professional Registrations
Registered Architect (WV, OH, KY, VA, MD, NJ)
LEED Accredited Professional
Accredited Learning Environment Professional
NCARB [redacted]
Construction Specifications Institute (CSI)
Construction Documents Technician (CDT)

Mr. Krason has served in the capacity of Architect and Project Manager for a variety of projects at ZMM. This experience includes Military, Educational (K-12 and Higher Education), Office, Justice (Courthouses, Correctional, Justice Centers), and Multi-Unit Residential projects. Mr. Krason's responsibilities include programming, design, documentation, coordination of the architectural and engineering team, as well as construction administration. Mr. Krason began his career in 1998, working on a variety of educational, commercial office, and correctional projects throughout Ohio, West Virginia, and North Carolina.

Mr. Krason has been an advocate of sustainable design in West Virginia, participating in a variety of sustainable design seminars throughout the State, and serving on the West Virginia School Building Authority Green Schools Sub-Committee. Recently, Mr. Krason helped coordinate the "Making the Business Case for Sustainability" conference at the University of Charleston that included speakers from Armstrong Industries, American Electric Power, CB Richard Ellis, and Interface Raise. Mr. Krason also assisted Habitat for Humanity Kanawha and Putnam County develop a commercial recycling program to fill a void in the sustainable design infrastructure in West Virginia. Mr. Krason has noted that, "I became a LEED Accredited Professional because I believe that good design has value, and the ability to impact our daily lives. Sustainable design showcases the value of design through demonstrated improvements in the performance of the students and employees who occupy our buildings." In addition to his design and project management responsibilities, Mr. Krason serves on the Board of Directors and is responsible for business development at ZMM.

Project Experience
WV Health Right Medical Facility, Charleston,WV
Mr. Krason is currently the project manager for the renovations to the WV Health Right Medical Facility. The project involves

Education
Bachelor of Architecture, The Catholic University of America, 1998

Bachelor of Civil Engineering, The Catholic University of America, 1997

Employment History
2007 - Present, Principal, ZMM
2007 - Present, Board of Directors, ZMM
2003 - Present, Architect, Project Manager, ZMM
1998 - 2003, Architect, Project Manager, Charleston Area Architectural Firm

Civic Affiliations
- WV American Institute of Architects, President
- Habitat for Humanity Kanawha & Putnam County, Board of Directors 2011 - 2014
- WV Qualification Based Selections Council, President, 2012/2013
- Leadership WV 2010 - 2012
- Charleston Rotary
- West Side Main Street, Board of Directors 2008 - 2014
- City of Charleston Land Trust 2008 - 2014

creating three joined patient care units that are capable of being utilized for either Critical Care Units or Med-Surge Units; utilizing the more stringent requirements of each. The 37,700 square foot buildout on the 6th floor of Memorial Hospital includes state-of-the-art patient rooms that are equipped with overhead rails for patient lifts as well as headwalls with dialysis boxes.

CAMC Teays Valley ICU Addition, Teays Valley, WV
Mr. Krason was the Project Architect for the new Intensive Care Unit (ICU) Addition to the existing hospital. The new facility consists of 8,215 SF and houses ten large private patient rooms and marks the latest addition to the hospitals expansion effort. The new features include: direct access to the heli-pad, a nutrition services station for meal preparation, a true Isolation Room and two more specially equipped rooms for dialysis patients. The new Facility also hosts all required support spaces such as a Visitor Waiting Room, Storage Rooms, Rest Rooms, Doctor Dictation Areas, areas for equipment and supplies along with a Staff Lounge and Locker Area for the nurses. CAMC is very proud of their new facility and hopes that this is a start of expanding their services and health care at this hospital.

WVSOM Tech Building Expansion (Testing Center), Lewisburg, WV
Mr. Krason is currently the project architect on the design of the new testing center at WVSOM. The new testing center was designed to connect to the Tech Building to the CEC and will accommodate 220 students. The Testing Center does not have exterior windows, features from both buildings including masonry banding and natural stone elements were used to provide human scale, while natural lighting is introduced in the concourse and pre-function space.

Charleston Coliseum & Convention Center, Charleston, WV
Mr. Krason served as principal-in-charge of the expansion and renovation to the Charleston Civic Center. The $75M, 283,000 SF design-build project is being completed as a collaboration with tvsdesign and BBL Carlton. Mr. Krason was responsible for the overall management of the design team, coordination with the client, and also has input critical project management decisions. The design commenced in the spring of 2015, and construction was complete in 2018.

Bridgemont Community and Technical College - Davis Hall Renovation and Master Plan, Montgomery, WV Mr. Krason led an architectural and engineering investigation into the condition of Davis Hall to help Bridgemont Community and Technical College to develop a scope for the current renovation project, as well as a plan to undertake deferred maintenance at the facility. The project scope included remedying several life safety deficiencies, as well as improvements to the building envelope.

Participated on the team that won the following awards and acknowledgements:
2020 WV SIS Merit Award Mountain Valley Elementary School, Green Valley, WV
2019 WV AIA Honor Award Charleston Coliseum & Convention Center, Charleston, WV
2018 WV AIA Citation Award Charleston EDGE, Charleston, WV
2017 WV AIA Merit Award Logan-Mingo Readiness Center, Holden, WV
2016 WV AIA Merit Award Christ Church United Methodist, Charleston, WV
2015 WV AIA Merit Award Edgewood Elementary School, Charleston, WV
2014 WV AIA Merit Award Girl Scouts of Black Diamond Council, Charleston, WV
2011 WV AIA Honor Award Joint Interagency Training and Education Center (JITEC), Kingwood, WV
2011 AIA Honor Award State Office Building #5, 10th Floor Renovation, Charleston, WV
2009 AIA Merit Award WVARNG Construction and Facilities Management Office, Charleston, WV

Stephen Blair, PE

CANNONDESIGN

Role
Science and Technology Director

Professional Registrations
Professional Engineer (PA)
LEED AP

Stephen Blair brings 30 years of brings deep experience at the intersection of management, technology and project delivery. An accomplished project leader and engineer, Stephen has spent his career focused on the design of complex, high-performance facilities. His creative approach to integrate of all aspects of design enables him to maximize client value across the life and physical sciences in the higher education, government, and corporate sectors. Stephen understands the importance of early involvement of the engineers in the collaboration and development of successful engineering and science facilities.

Project Experience

West Virginia Department of Agriculture, Programming, Feasibility Study, and Concept Design
Programming, feasibility study, and concept design for the Department's existing laboratory facilities. Analysis of multiple sites in the Kanawha Valley determined that a new lab building on the Guthrie site was a more viable option than relocation or renovation. New building will feature modular, flexible laboratories that accommodate industry changes in lab and testing technology, as well as a BSL-3 lab.

State of Maryland, New Public Health Laboratory, Baltimore, MD*
$116M, 232,000-sf laboratory building. A major catalyst for urban revitalization, bringing jobs to East Baltimore while navigating issues of security, pedestrian access, and public image. The facility includes open and closed laboratories, a secure holding dock, training facilities, and an All Hazards Receipt Facility.

District of Columbia, Public Health Annex, Washington, DC*
Engineering and lab planning services in support of the DC Department of Health's procurement of a temporary, standalone, modular Public Health Laboratory containing 8,000 gsf of BSL- 2 and BSL-3 laboratory and lab support program.

Education
Bachelor of Science/Mechanical Engineering, Drexel University

Civic Affiliations
- International Association of Pharmaceutical Engineers

N.C. Department of Health & Human Services, State Public Health Laboratory and OCME, Raleigh, NC*
New, state-of-the-art Public Health Laboratory co-locating the State Laboratory of Public Health and the Office of the Chief Medical Examiner. Relocated both branches into new facility, finding opportunities for shared spaces while maintaining separate identities for each group.

Oak Ridge National Laboratory, Second Target Station, Conceptual Design, Oak Ridge, TN
The project will increase the facility's energy level to 1.4 GeV and double its experimental beamline capacity. The STS is a 300,000-gsf, $400M+ facility comprised of an extension of the existing proton beamline and earth-shielded underground tunnel enclosure, a new target building, 22 neutron beamlines, multiple experimental buildings, a central utility plant, a central exhaust facility and a new laboratory/office research building.

*Work in prior practice

Michael M. Phillips, AIA, LEED AP

Role
Project Manager

Professional Registrations
Registered Architect (WV)
LEED AP Accredited Professional
NCARB Certified

Mr. Phillips has served in the capacity of Architect, Project Manager and Senior Project Architect on a variety of project types throughout his career. This experience includes Healthcare, Educational (PK-12), Higher Educational, Corporate Office, Retail, Military, Hospitality and Correctional. Mr. Phillips responsibilities include Programming, Design, Documentation, and Construction Administration.

Mr. Phillips began his career in West Virginia and continued to work throughout his career on a broad range of project in Pennsylvania, Virginia, Florida, and Tennessee.

Relevant Project Experience

Appalachian Regional Healthcare
Beckley, WV multiple projects – Primary Pharmacy renovation and expansion to meet new USP 797 and 800 requirements, new Chemotherapy Infusion suite, ICU nurse station modernization and replacement, HVAC replacement, psychiatric emergency room bays for the existing hospital, psychiatric emergency room addition and the preliminary design of the medical mall doctors suite.

Summers County, Hinton, WV - Pharmacy Design Options
Whitesburg, KY multiple projects - Central Sterile renovation, MRI replacement coordination, and a laboratory HVAC modernization.

Mountain State Oral Surgeons, Charleston, WV
New 2-Story 9,000 SF Oral Surgery Center
Renovation if a 5,000 SF Medical Office

- CAMC Teays Valley Hospital, Teays Valley, WV
- CAMC Hurricane Urology Clinic, Hurricane, WV
- Jackson General Hospital, Ripley, WV
- Rainelle Medical Center, Rainelle, WV
- WV Department of Agriculture - Lab, Charleston, WV

Education
Bachelor of Architecture, University of Tennessee School of Architecure

Employment History
2016 - Present, Project Architect, ZMM
2011 - 2016, Senior Architect, Charleston Architecture Firm
2001 - 2011, Senior Architect, Charleston Architecture Firm

Civic Affiliations
- West Virginia Chapter, American Institute of Architects, Member

Previous Work Experience

Boone Memorial Hospital, Boone, WV
75,000 SF Critical Access Hospital with 25 private rooms,
Emergency Room, E.D., 2 Operating Rooms, MRI, CT, Xray, Imaging, Pharmacy, Physical Therapy, Cardiac Rehab.

St. Mary's Medical Center New Entrances Canopies, Hybrid O.R.'s, School of Physical Therapy, New Central Boiler Plant Building, Endoscopy Expansion, Outpatient Therapy

Kings Daughter's Medical Center
New Cath Center, Pharmacy Upgrades and a new Remote Kiosk, Elevator Addition, Ambulance Access Renovations, Cystology Renovations, Laboratory Facilities Upgrades.

St. Agnes School, Charleston, WV
Exterior building envelope modernization upgrade. Project cost $1.1M

Sacred Heart Early Learning Center, Charleston, WV
Child Care and Multi-School Gymnasium facility Project cost $1.8M

Yeager Airport, Charleston, WV
Gate evaluation and optimization for new flights. Additional renovations included: the terminal, new pedestrian bridge, elevator, as well as the lobby that connected the garage to the terminals. The project cost was $2.25M.

Buckhannon Readiness Center, Buckhannon, WV
Design Charrette and a comprehensive feasibility study for 4 buildings and the campus. The project cost was $53M est.

Lewis County Courthouse, Weston, WV
Performed a feasibility and space planning study for the Judicial Annex Addition. Project Cost was $7M est.

Jeff Murray

CANNONDESIGN

Role
Project Principal

Professional Registrations
Registered Architect (PA)

Jeff has been providing client facing experiential and technical design leadership for complex projects supporting research and education work throughout his three-decade career. He is an excellent communicator, able to explain complex concepts and design issues to stakeholders and clients. Jeff has pioneered iterative and collaborative design processes that engage stakeholders as active participants in the design process. He is a member of the College of Fellows of the American Institute of Architects (FAIA) recognized for his leadership and innovation in the design of research facilities for a wide spectrum of scientific disciplines.

Project Experience

Oak Ridge National Laboratory, Second Target Station, Conceptual Design, Oak Ridge, TN
The project will increase the facility's energy level to 1.4 GeV and double its experimental beamline capacity. The STS is a 300,000-gsf, $400M+ facility comprised of an extension of the existing proton beamline and earth-shielded underground tunnel enclosure, a new target building, 22 neutron beamlines, multiple experimental buildings, a central utility plant, a central exhaust facility and a new laboratory/office research building.

KTA-Tator, Inc., Headquarters and Lab Design, Pittsburgh, PA
Sole sourced design project for design builder. 45,000 sf lab and HQ for KTA, an employee owned, nationally known testing and consulting firm supporting infrastructure and building construction, with a range of laboratories.

Battelle, Multiple Projects / SCIF Facilities, Chantilly, VA
Multiple projects under a Master Service Agreement including both design and owner's representative project management services. Projects include specialized lab spaces, secure SCIF spaces, and office workplace for multiple business units across the country.

Education
Bachelor of Architecture, University of Notre Dame

Master of Architecture, Ohio State University

Civic Affiliations
- College of Fellows of the American Institute of Architects (FAIA), Member

City of Columbus, Water Quality Laboratory,Columbus OH*
Led concept design effort for full renovation and revitalization of the existing 12,000 SF central water quality lab. Worked closely with ch2m water experts and HVAC engineers from the west coast and Columbus based project management teams, as well as lab users and other City of Columbus stakeholders. Extensively used 3D models of labs,to visualize lab spaces; aiding their ability to accept more open and flexible lab solutions.

Defense Threat Reduction Agency (DTRA), Bio-Containment Facility, Tbilisi, GA*
Prototype labs and performed site assessment for multiple locations as well as an assessment of a constructed BSL-3 high security containment lab that is not currently functional. Initial scope included conducting a gap analysis and needs assessment, planning transition activities to phase out the incumbent contractor and begin role as an integrating contractor, and conducting an alternatives analysis for renovation versus new-build options for two facilities integrating into TADR network.

*Work in prior practice

Rodney Pauley, AIA

ZMM ARCHITECTS ENGINEERS

Role
Project Architect

Professional Registrations
Registered Architect (WV)

Mr. Pauley is responsible for overseeing the daily design and production of the building, working in conjunction with in-house architectural, interiors and engineering staff to ensure the building not only meets the program requirements and budget, but meet the long-term needs of the owner. He also works directly with project principals to manage contracts, staffing and project deliverables. Mr. Pauley has a broad knowledge of building materials and services, building codes, and construction techniques, along with extensive experience in architectural detailing.

Mr. Pauley began his career in 1992 with an architectural firm in Atlanta, Georgia, and for the next 12 years rose to the Associate level by designing and managing a wide variety of project types including educational, retail, historic renovation, medical, and entertainment, specializing in office and speculative office design.

From 2005 through 2010, he worked at a number of Atlanta firms designing and managing office, high-rise condominium, and hotel projects. In 2010, Mr. Pauley moved back to Charleston, WV, to take a project management position with ZMM where he supervises the design and production of military, correctional and higher education projects.

Project Experience

Valley Health Systems, Wayne, WV
Mr. Pauley was the project manager on the new health clinic in Wayne, WV. ZMM prepared construction documents for a new, one-story medical building operated by Valley Health Systems of Huntington, WV. The building is 15,580SF on a 2-acre site including approximately 100 parking spaces. Valley Health Systems provides primary and preventative care to the medically underserved population of southern West Virginia. The new building will replace an existing undersized facility.

Pipestem Resort State Park Lodge, Pipestem, WV
Mr. Pauley is currently the project manager on the renovations to 88 guestrooms on first floor, bathroom expansions on the 7th

Education
Bachelor of Architecture, University of Tennessee, 1992

Associate of Science, West Virginia Institute of Technology, 1986

Employment History
2010 - Present, Project Manager, ZMM
2008 - 2010, Project Manager, GA Firm
2006 - 2008, Project Manager, GA Firm
2005 - 2006, Sr. Project Architect, GA Firm
Jan. 2005 - Aug. 2005, Project Architect, VA Firm

Civic Affiliations
- American Institute of Architects, Member

floor, renovations to the dining area with a bar addition, renovations to all conference rooms, finish renovations in the lobby. ZMM will be replacing the ceilings and lightings in all public spaces and guestroom corridors in the main McKeever lodge building. Mountain creek lodge that sits below McKeever Lodge will receive a new roofing on the guestroom buildings and restroom will be renovated in the main tram building. The newly renovated lodge is set to open this summer 2021.

Charleston Coliseum & Convention Center, Charleston, WV
Mr. Pauley served as project manager on the expansion and renovation to the Charleston Civic Center. The $75M, 283,000 SF design-build project was completed as a collaboration with tvsdesign and BBL Carlton. The design commenced in the spring of 2015, and construction was completed in the fall 2018.

BridgeValley Community and Technical College - Master Plan, Montgomery, WV
As part of an effort to provide overall Master Plan services to BridgeValley CTC, ZMM worked with various stakeholders to develop a Master Plan for BridgeValley's current and future facilities at the Tech Park. The Master Plan incorporated the need to develop a consistency between BridgeValley's Montgomery and South Charleston campuses, while also integrating the brand into the Park. The final design included planning for a new classroom and laboratory building adjacent to Building 704, across from the Advanced Technology Center. Signage, site circulation, parking, and campus amenities were also included in this planning process.

BridgeValley Community and Technical College (Davis Hall, Building 704), Montgomery, WV Mr. Pauley was the project manager for a design team that is currently preparing construction documents for the renovation to an existing 7-story, 77,000 SF educational building. The project scope includes remedying several engineering and life safety deficiencies, as well as architectural improvements to the building envelope.

Beech Fork State Park, Lavalette, WV (unbuilt)
Mr. Pauley was the project manager for new lodge and conference center at Beech Fork State Park. The facility will include guestrooms and other guest-only facilities in one area and public functions such as the restaurant, lounge, gift shop, and conference rooms in another area. All guestrooms offer a lake view, a 2-story atrium opens up each end of the lobby with curtain-wall glazing, and an indoor pool provides a transparent connection to the outdoors. A high-performance envelope was designed to eliminate thermal bridging and the potential for condensation.

WVSOM Tech Building Expansion (Testing Center), Lewisburg, WV
Mr. Pauley is currently the project manager on the design of the new testing center at WVSOM. The new testing center was designed to connect to the Tech Building to the CEC and will accommodate 220 students. The Testing Center does not have exterior windows, features from both buildings including masonry banding and natural stone elements were used to provide human scale, while natural lighting is introduced in the concourse and pre-function space.

WV Lottery Headquarters, Charleston, WV
Mr. Pauley was the project manager and prepared construction documents for renovations to the existing WV Lottery Headquarters complex in Charleston, WV. Renovations to the existing 12-story office building include the demolition and reconstruction of three floors of tenant space and demolition and replacement of the existing roof along with various minor renovations throughout the office tower. The existing 5-story parking deck had extensive structural renovations. Renovations included: replacing bearing pads, patch & repair of concrete members and the addition of waterproofing protection. The existing warehouse under the parking deck was enlarged to provide additional storage space.

Kristy Venrick

CANNONDESIGN

Role
Senior Lab Planner

Having more than 23 years' experience, Kristy is an architectural professional who specializes in all aspects of laboratory and pharmacy design for many client types, including healthcare, medical research, R&D, government, and higher education. Her expertise includes clinical labs and pharmacies, cleanroom (USP and cGMP) and focuses on lean optimization, operational efficiencies, and flexible space solutions. A strong project leader, she enjoys collaborating with clients and helping them consider long-term goals and how to achieve them, as well as participating in industry conferences and firm-wide knowledge sharing.

Project Experience

WV Department of Agriculture, Laboratory Engineering/Evaluation and Assessment, Charleston, WV
Programming, feasibility study, and concept design for the Department's existing laboratory facilities, including investigative and diagnostic labs. Analysis of multiple sites in the Kanawha Valley determined that a new lab building on the Guthrie site was a more viable option than relocation or renovation. New building will feature modular, flexible laboratories that accommodate industry changes in lab and testing technology, as well as a BSL-3 lab.

Blanchard Valley Health System, Clinical Lab Feasibility Study, Findlay, OH*
Feasibility study to right-size and provide proper adjacencies for a new 16,500 SF Clinical Laboratory. The master plan study was to consolidate and right size their future operations and account for clinical lab unknowns, flexibility, and growth. The largest considerations were the flow of specimens and tissues, departmental adjacencies, and staffing efficiencies, especially during off shifts. This outcome will allow the hospital to plan for future market changes with a more efficient workflow, functional space, and updated technology.

The Ohio State University Wexner Medical Center, Molecular Pathology Department Renovation*
The project involved the expansion and improvements in the laboratory areas to increase efficiency and optimize flow in the pathology processes. Design services also included new layouts for the office spaces on the first and second floors and

Education
Bachelor of Architecture: Ball State University

Bachelor of Science/Environmental Design: Ball State University

Publications

"How Simulation Studies Assist with Pharmacy Consolidation and Workflow", April 2018

"Clinical Labs: Planning for the Future", 2017

"Expedited Laboratory Design and Construction: A Success Story", October 2019

"Optimizing Laboratory Workflow While Maintaining Operations", November 2018

"The Future of Laboratories", October2017

"Clinical Pharmacies: a USP <800> Primer", August 2017

ancillary renovations and audits of freezer storage. 16,500 SF.

Medical College of Wisconsin, Cancer Research Building, Milwaukee, WI
New cancer research building on the Milwaukee regional medical campus for Medical College of Wisconsin. The building will consist of wet and dry lab research space, administrative offices, conferencing, and community space. The new CRB will be located and connected to adjacent buildings at MCW and become a part of the campus fabric.

*Work in prior practice

Carly Chapman

Role
Interior Designer

Mrs. Chapman serves as the Interior Designer at ZMM. Mrs. Chapman takes pride in her work's originality and always strives to help the client's vision and intent come alive in the design process. Her experience at ZMM includes Education, Municipal, Residential, Healthcare, and Hospitality projects. In her past position she focused on both Corporate and Healthcare design. Mrs. Chapman's responsibilities include conducting design proposals and presentations, as well as producing design documents and specifications relating to all aspects of interior design.

Mrs. Chapman has served as the interior designer for a variety of projects. Projects range from renovations to new construction and is comprised of every industry. Her responsibilities include design concept, presentation, documentation, specification writing, and architectural drafting.

Relevant Project Experience
CAMC General Division (C Suite), Charleston, WV
CAMC Memorial Hospital (6th Floor Critical Care Unit), Charleston, WV
CAMC Hurricane Urology Clinic, Hurricane, WV
Rainelle Medical Center, Rainelle, WV
Valley Health, Wayne, WV
Valley Health, Milton, WV
Mountain State Oral Surgeons, Charleston, WV

Appalachian Regional Hospital, Beckley, WV
This project was a renovation of a hospital wing redesigned for optimal health and wellness for patients undergoing chemotherapy treatment. Both aesthetics and general sanitary design requirements were crucial to making this project successful.

CAMC Post Op, Teays Valley, WV
This project was a renovation of a hospital wing to be redesigned for recovery of Post Operation patients. This project included patient rooms, nurse's stations, and designing the space for optimal health and wellbeing.

*** Clarksburg, Richmond, Huntington, Salem VA Hospitals**
During previous employment, Mrs. Chapman was heavily involved with renovations to various VA hospitals. Renovations

Education
Bachelor of Interior Design, University of Charleston, 2012

Employment History
2016 - Present, Interior Designer, ZMM
2012 - 2016, Project Manager/Interior Designer, Contemporary Galleries, Inc.
2010 - 2012, Interior Design Intern, ZMM

included redesign implementing DIRTT wall systems, renovations to nurse, admirative and patient areas, as well as common's areas.

Pipestem Resort State Park Lodge, Pipestem, WV
Mrs. Chapman is currently the interior designer on the renovations to 88 guestrooms on first floor, bathroom expansions on the 7th floor, renovations to the dining area with a bar addition, renovations to all conference rooms, finish selections and renovations in the lobby. ZMM will be replacing the ceilings and lightings in all public spaces and guestroom corridors in the main McKeever lodge building. Mountain creek lodge that sits below McKeever Lodge will receive a new roofing on the guestroom buildings and restroom will be renovated in the main tram building. The newly renovated lodge is set to open this summer 2021.

Charleston Coliseum & Convention Center, Charleston, WV
Mrs. Chapman assisted in the construction administration and interiors of the expansion and renovation to the Charleston Civic Center. The $75M, 283,000 SF design-build project is being completed as a collaboration with tvsdesign and BBL Carlton. Construction was complete in October 2018.

Valley Park Community Center, Hurricane, WV
The new community center replaced an existing structure that was recently demolished earlier this year. The new building houses a commercial kitchen, administration wing, ballroom, and a locker room complex with administration quarters for the attached Wave Pool.

Bluefield Primary School, Bluefield, WV
The new school is the result of a consolidation of two local schools in the Bluefield area. The county wanted to bring in architectural elements from both of the former schools. This was accomplished by oval vaulted ceilings and circular windows throughout the building. The school will house Pre-k-2nd grade students. Keeping the Bluefield Beavers in mind, the school colors are found throughout the design with the addition of complimentary colors to creates a colorful learning environment for the students. No school can be designed without a little fun in mind... A large dry erase mural spans the length of the media center allowing students to express their imaginations.

Ravenswood Middle School, Ravenswood, WV
Ravenswood Middle School is an addition to Ravenswood Highschool. The project allows for both schools to share one cafeteria and improve the exterior of the existing high school with the new entrance of the middle school. The interiors were clean and pattern filled using the school colors, insuring an easy transition from one school to the other.

New River Primary/Oak Hill Middle School, Oak Hill, WV
These schools were designed as separate schools sharing the same site and are connected by a mechanical wing. This building called for a challenging design concept. The schools each had their own unique design theme, but were delicately connected in small aspects of color or architectural techniques, allowing the interiors to flow seamlessly. The PK-2 is community driven in the design. House facades and custom glass adorn the halls drawing the eye to the exposed structure above. The ceilings reflect the sky and are divided by clouds. Collins Middle also was design with the environment in mind. Using biophilic design, wood planked feature walls are found in the entrance corridor and expand to the open structure above.

Williamstown Elementary School, Williamstown, WV
When designing a new school built on tradition, the initial thought of school colors and clean lines comes to mind. This was not the case with the new Williamstown Elementary School. Using the school colors as our basis of design, the county was open to adding complimentary colors to entice the students for a bright and exciting learning environment. Colorful floor pattern adorns the corridors, using the tile for wayfinding and structure for students. In the media center you will find a custom designed tree, dripping in lights mimicking fireflies and a perfect campfire setting for storytelling. The tradition is kept alive with the pops of Maroon and Gold throughout the cafeteria and gym.

* Previous Employer

Maria Michilini, AAIA

CANNONDESIGN

Role
Programmer

Maria is a highly skilled and productive architectural designer with a deep portfolio of science and technology projects ranging from small scale renovations to major national laboratory master plans. Her design, graphic and presentation skills have been employed to support all phases of programming and design activities, leading to the clear communication of ideas and focused, productive decision making by project stakeholder team members.

Project Experience

Oak Ridge National Laboratory, Second Target Station, Conceptual Design, Oak Ridge, TN
The project will increase the facility's energy level to 1.4 GeV and double its experimental beamline capacity. The STS is a 300,000-gsf, $400M+ facility comprised of an extension of the existing proton beamline and earth-shielded underground tunnel enclosure, a new target building, 22 neutron beamlines, multiple experimental buildings, a central utility plant, a central exhaust facility and a new laboratory/office research building.

Oak Ridge National Laboratory, Central Campus National Park Master Plan Update, Oak Ridge, TN
CannonDesign is working with Oak Ridge National Laboratory (ORNL) to develop a Master Plan for the 3000 Area in the ORNL Bethel Valley Campus. This area is the legacy core of the original ORNL campus and location of the historic Graphite Reactor. Most of this area is located within the ORNL Historic District.

Oak Ridge National Laboratory, Translational Research Capability, Conceptual Design, Oak Ridge, TN
The Translational Research Capability project is a 90,000 GSF, $60M interdisciplinary research facility that will provide ORNL with a highly collaborative, next generation research environment capable of supporting rapidly shifting national science and technology priorities. The design program includes high-bay, multi-purpose laboratories, material science laboratories supporting long term creep, stress and tensile analysis, laser/quantum computing laboratories and supporting workspace.

Education
Bachelor of Architecture, Universidad American

Civic Affiliations
Associate AIA Member

Oak Ridge National Laboratory, Stable Isotope Production and Research-Center, Conceptual Design, Oak Ridge, TN
A new $43M, 54,000 GSF facility that will house independent production lines for stable isotopes with administrative facilities for staff. Functions within the building will include production rooms, a high-bay space with overhead crane coverage and lab support spaces including a 1000-level clean room.

Robert Doeffinger, PE

ZMM ARCHITECTS ENGINEERS

Role
Engineering Principal

Professional Registrations
Professional Engineer (WV, VA, PA, OH, TN, KY, NY, NH, ME, NC, SC, FL, NJ, GA)

As ZMM's Principal Engineer, Mr. Doeffinger is in charge of the engineering disciplines, it is his responsibility to ensure that the mechanical and electrical engineering components of ZMM's design are coordinated and integrated into the final product.

After graduate school in Architectural Engineering, Mr. Doeffinger joined ZMM. He has over 35 years design experience in mechanical and electrical systems for buildings. He has a broad range of engineering experience in education, industrial and manufacturing facilities, large retail, correctional and jails, office buildings, and military facilities.

Mr. Doeffinger is responsible for new design and retrofit of chilled water systems for all building types including large regional shopping malls. He is involved daily with the firm's selection of appropriate systems for all building types and performs life-cycle cost analysis and energy studies.

Mr. Doeffinger is a member of the American Society of Heating, Ventilation and Air-Conditioning Engineers. He is the current national Chairman of the Technical Committee on Heating and Air-Conditioning Load Calculation. He is involved in writing the National Standard on the Method of Calculation, which will shape the nature of the future building energy use for the nation.

Project Experience

Appalachian Regional Hospital, Beckley, WV
Mr. Doeffinger is the mechanical project engineer currently working with the hospital on multiple renovations. The ICU and OR departments will undergo Mechanical and Architectural upgrades in a multiphase project while the hospital remains operational. The existing kitchen will receive a new make-up air unit, and fan coil units to improve pressure and air balance relationships within the hospital. A dedicated HVAC unit was provided for the endoscopy suite to improve thermal comfort and provide code-required ventilation, air-changes and humidity.

Education
Master of Science Architectural Engineering, Pennsylvania State University, 1976

Bachelor of Science Mechanical Engineering, West Virginia University, 1973

Employment History
2005 - Present, President, ZMM
1976 - 2005, Vice President and Engineering Principal, ZMM

Civic Affiliations
- ASHRAE – Member of the Technical Committee Load Calculations Data and Procedures for 15 years, serving as chairman. Presently Chairman of the Research Subcommittee
- Advisory Board for the Department of Electrical Engineering Technology, Bridgemont Community and Technical College
- City of Pt. Pleasant, WV – 2nd Ward Councilman for 20 years

USP 797 / 800 Pharmacy, Beckley ARH Hospital, Beckley, WV
Mr. Doeffinger was the lead mechanical project engineer for the new USP 797 / 800 Pharmacy at the Beckley ARH Hospital in Beckley, WV. The United States Pharmacopeia (USP) issued new 797 and 800 Guidelines for production, compounding and packaging of hazardous drugs, primarily related to chemotherapy. The guidelines set forth strict requirements for air change rates, temperature, humidity, and differential pressure control. The three new primary rooms had to be created from existing spaces within the hospital and included an ANTE room, Non-Hazardous Buffer Room, and the Hazardous Drug Buffer Room. The mechanical design included a variable air volume (VAV) air handling unit (AHU) with electric pre-heat, steam humidifier, split-DX cooling, hot water reheat, MERV-13 filters, variable speed plenum fan, and UV-C lights which was installed atop a structural steel platform above the existing roof. VAV Terminal Units with hot water reheat coils, and stainless steel, ceiling mounted HEPA supply diffusers were provided for each space. These ISO Class 7 buffer areas (clean rooms) required a minimum of 30 air changes per hour, a temperature range of 66-68°F, and a relative humidity range of 35-60%. Recirculating, HEPA filtered, Laminar Air Flow Workbench (LAFW) hoods were provided in Non-HD, while Compounding Aseptic Containment Isolator (CACI) hoods requiring 100% exhaust were provided in the HD room. The plumbing design included a stainless steel, hand's free sink with an integral emergency eyewash. ZMM collaborated with SonicU, the Owner's preferred vendor, on the design and installation of all temperature, humidity, and differential pressure sensors required for monitoring, trending, and reporting of space conditions for Pharmacy Board documentation.

Charleston Coliseum & Convention Center, Charleston, WV
Mr. Doeffinger was the lead mechanical project engineer on the expansion and renovation to the Charleston Coliseum and Convention Center. The $100M, 530,000 SF project included 154,000 SF of new meeting room, kitchen, and support spaces. The project achieved LEED Silver with 22 out of 50 credit points related to energy and water conservation. Over $143,000 in electric utility rebates were achieved for the Owner. The mechanical design reduced the total electrical usage by 26% when compared to an ASHRAE 90.1-2007 baseline building and reduced it by over 45% when compared to pre-construction demand; natural gas bills were reduced by over 35%. The heart of the new mechanical system was the main central plant which included (3) 1000-ton chillers (N+1), and (3) 8,000 Mbh condensing boilers (N+1), (2) 1250-ton stainless steel cooling towers, and a 130-ton heat recovery chiller. Additional energy conservation measure included increased wall/roof insulation, fret spandrel glass with low U-value and SHGC, variable speed air distribution, 16°F ΔT coil design, economizer cooling, kitchen hoods with variable speed exhaust and makeup air, all LED lighting, daylighting, and EPA WaterSense low-flow plumbing fixtures which reduced water consumption by 45% when compared to an ASHRAE 90.1-2007 baseline building. Over 90%+ of all mechanical systems were replaced or upgraded for the project. Construction had to be performed in phases to allow the facility to remain operational. The design-build project commenced in the spring of 2015 and was completed in October 2018. This project is an excellent example of how ZMM effectively collaborates with companies that share our commitment to quality, such as tvsdesign, BBL Carlton and Nitro Construction Services.

NGK Oxygen Sensor and Spark Plug Plant, Sissonville, WV Mr. Doeffinger was in charge of engineering design of the 250,000 SF NGK facility. The most recent 130,000 SF expansion moved NGK's spark plug production for the west coast to West Virginia. For both the oxygen sensor plant and spark plug plant Mr. Doeffinger designed a cycle water system for the manufacturing equipment.

The Plaza at King of Prussia, Pittsburgh, PA One of the largest retail centers in the east. Mr. Doeffinger has performed engineering services for the past 20 years. The project consists of a 5,000 -ton chilled water plant and 1,500,000 cfm variable volume system for tenants and constant volume air system for common areas and an engineered smoke control system. The most recent project is a 2011, 100,000 square foot expansion of tenant spaces, a renovation of the food court, and a 1,250-ton chiller addition to the central chilled water plant.

Marc McManus, PE

CANNONDESIGN

Role
MEP Engineering Lead

Professional Registrations
Professional Engineer (PA, FL, IA, IL, IN, KS, MN, MO, TN)

Marc has more than 24 years of experience in building design and energy efficiency for many building types in the science and technology, healthcare, higher education, manufacturing, and commercial industries with significant expertise in HVAC, plumbing, utilities, building automation and central plants. Marc is also engineering manager for CannonDesign's St. Louis MEP/FP/S engineering operation. Marc is a professional engineer (PE), is licensed in several states and is an NCEES council record holder. Marc's roles on projects include project manager, project engineer, lead mechanical engineer, and client manager.

Project Experience

Oak Ridge National Laboratory, Second Target Station, Conceptual Design, Oak Ridge, TN
The project will increase the facility's energy level to 1.4 GeV and double its experimental beamline capacity. The STS is a 300,000-gsf, $400M+ facility comprised of an extension of the existing proton beamline and earth-shielded underground tunnel enclosure, a new target building, 22 neutron beamlines, multiple experimental buildings, a central utility plant, a central exhaust facility and a new laboratory/office research building.

Oak Ridge National Laboratory, Translational Research Capability Conceptual Design Report, Oak Ridge, TN
The Translational Research Capability project is a 90,000 GSF, $60M interdisciplinary research facility that will provide ORNL with a highly collaborative, next generation research environment capable of supporting rapidly shifting national science and technology priorities.

North Dakota State University, Veterinary Diagnostics Laboratory, Fargo, ND
New 27,000 sf Veterinary Diagnostic Laboratory houses a 4,000 gsf, high-bay necropsy suite, testing and diagnostics labs, a BSL-3 laboratory and offices. The facility is also supported with an overhead crane system and a carcass incinerator. In association with Zerr Berg Architects.

Education
Bachelor of Science/Mechanical Engineering, Missouri University of Science and Technology

Civic Affiliations
- Member of American Society of Heating, Refrigeration, and Air Conditioning
- Engineers NCEES Council Record Verified

PFIZER, Chesterfield, MO*
State-of-the-art cGMP pharma biologics plant for Phase I, II, and III clinical trials incorporating microbial and mammalian tissue culture. Responsibilities included HVAC and utility system design; heating and cooling load calculations; equipment sizing, selection, bid evaluation, and layout; air distribution design; HVAC plans/sections/details; process airflow diagrams; engineering and construction specifications; and construction support.

*Work in prior practice

John Pruett, PE, LEED AP

Role
Senior Mechanical Engineer

Professional Registrations
Professional Engineer (WV, VA, IN)
LEED Accredited Professional

Mr. Pruett is responsible for overseeing the design of the HVAC systems, ensuring that the HVAC systems not only meet the program requirements, but meet the long-term needs of the owner. He performs heating and cooling load calculations and recommends the type of systems to be incorporated into the building. He coordinates with the other disciplines in order to integrate the HVAC systems into the building. Mr. Pruett has participated on several LEED registered projects; one of his key contributions to these projects is conducting energy analyses and recommending energy use reduction alternatives.

Mr. Pruett began his career in engineering with a manufacturing company in 1994. In 1998, he made a career change and joined an engineering consulting firm as an HVAC design engineer. He has a broad range of experience in HVAC systems design, including K-12 schools, higher education facilities, office buildings, libraries, hotels, restaurants, a convention center and several natatoriums. Having served in the Marines for 14 years, Mr. Pruett also led a design team for a "virtual memorial" for the birthplace of the U.S. Marine Corps.

Project Experience

Valley Health Systems, Wayne, WV
Mr. Pruett was the mechanical engineer on the new health clinic in Wayne, WV. ZMM prepared construction documents for a new, one-story medical building operated by Valley Health Systems of Huntington, WV. The building is 15,580SF on a 2-acre site including approximately 100 parking spaces. Valley Health Systems provides primary and preventative care to the medically underserved population of southern West Virginia. The new building will replace an existing undersized facility.

Wood County Justice Center, Parkersburg, WV Mr. Pruett was responsible for the HVAC systems design for the LEED Silver project comprised of the judicial courts, Sheriff's department and holding cell area. The project utilizes high-efficiency custom air handling units, including an energy recovery unit for the holding cell area, which has helped reduce energy consumption on the project by 18% compared to a

Education
Bachelor of Science, Purdue University, West Lafayette, IN, 1993

Employment History
2021- Present, Board of Directors, ZMM
2010 - Present, Project Engineer, ZMM
2007 - 2009, Sr. Mechanical Engineer, IN
2003 - 2007, Mechanical Engineer, IN
1999-2003, Project Engineer, Fort Lauderdale, FL

Civic Affiliations
- American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), Member
- United States Marine Corps – 14 Years

baseline analysis.

Tucker County Courthouse Annex, Parsons, WV
Mr. Pruett was the Mechanical Engineer for the Courthouse Annex renovation project and responsible for the HVAC systems. The Annex is a 4-story, 21,000 Square Foot building that is adjacent to the Tucker County Courthouse. The annex will house spaces for the Circuit Court, Circuit Clerk, Family Court, Magistrate Court, Prosecuting Attorney, County Commission, County Clerk, Community Corrections, and Probation Office.

Huntington East Middle School, Huntington, WV Mr. Pruett was responsible for the HVAC systems design. This school features numerous sustainable features, including an air monitoring system for verifiable indoor air quality, variable refrigerant flow (VRF) systems for portions of the school that will operate year-round, preheating of the domestic hot water with the heating hot water return. Mr. Pruett also conducted an extensive energy analysis of the building and all of its systems to maximize the effect of each component, resulting in a projected reduction in energy consumption of 32% compared to a baseline analysis.

Edgewood Elementary School, Charleston, WV Mr. Pruett was the mechanical engineer on the new Kanawha County Elementary School on Charleston's West Side and responsible for the HVAC systems design. The school is being designed as a 21st Century Learning Environment, with a focus on integrating technology into the delivery of the curriculum. Instructional areas will be located off of an open 'exploratorium' that is being designed to function like a children's museum, providing a variety of learning opportunities, and flexible educational spaces. The school will also visibly integrate sustainable design principles to serve as a teaching tool for the students.

Cabell County Schools
Barboursville Middle School - Additions and Renovations
Huntington East Middle School
Huntington High School - Controls system replacement for
Explorer Academy
Cabell County Bus Garage
Southside Elementary/Huntington Middle School
Huntington High School – Cooling tower replacement
Cabell Midland High School - Cooling tower replacement
Martha Elementary School- Addition
Salt Rock Elementary Renovations
Cabell County Career & Technical Center – HVAC Replacement
Huntington High School Wrestling Room Addition
Milton PK - Additions and Renovations

Fayette County Schools
New River Primary / Oak Hill Middle School
Valley High School - Gym addition
Oak Hill High School – Renovations
Fayetteville PK-8 - Renovations
Midland Trail High School - Renovations
Valley PK-8 - Renovations
Meadow Bridge Elementary - Renovations
Divide Elementary - Additions and Renovations

Putnam County Schools
Hurricane High School - Renovations
Putnam Career & Technical Center – Welding Shop

Erik Terry

CANNONDESIGN

Role
Public Health Subject Matter Expert

Professional Registrations
LEED AP

Erik's professional efforts are focused on laboratory planning projects for a diverse base of clients, including higher education, government, institutional, pharmaceutical and biotech companies. As a Principal and Laboratory Planner, Erik has a broad range of experience developing strategic/master planning initiatives, as well as providing programming and planning services for laboratory and vivarium design projects. As a lead planner, he works with end-users, designers and engineers to develop innovative solutions for the ever-changing research environment.

Project Experience

NJEDA International Center for Public Health, Newark, NJ*
190,000-sf biomedical research facility housing the Public Health Research Institute, the NJ Medical School's National Tuberculosis Center and Department of Microbiology and Molecular Genetics. Co-locates clinicians, epidemiologists, and laboratory scientists working on basic and clinical investigations. Features clinics, laboratories, educational facilities, BSL-2/BSL-3 lab modules, and a multi-species vertebrate vivarium.

Boston University, Boston Medical Center (NEIDL), Boston, MA
Design and construction of 194,000-sf National Biocontainment Laboratories. Supports team of scientists developing diagnostic drugs, vaccines and treatments to prevent and cure life threatening infectious diseases. Houses BSL-2 and BSL-3 laboratories, as well as a BSL-4 laboratory that operates at the highest level of containment.

U.S. Army Public Health Command, Replacement Laboratory Facility, Edgewood Area, Aberdeen Proving Ground, MD
New, 259,000 gsf, $173M replacement laboratory facility. Consolidates diagnostic and testing activities into a single, integrated public health laboratory focused on the health and well being of warfighters and their families. Programmed to optimize public health surveillance missions of the PHC (P).

Education
Bachelor of Science/Historic Preservation Planning, Roger Williams University

Civic Affiliations

- Scientific Equipment and Furniture
- Association American Association for Laboratory Animal Science
- International Society for Pharmaceutical Engineering
- LEED Accredited Professional

HFPA-Department of Homeland Security, National Biodefense Analysis & Countermeasures Center Feasibility and Planning Study, Fort Detrick, MD
Includes bioforensics, as well as traditional and scientific biomedical characterization techniques at BSL-2, BSL-3 and BSL-4 levels. Result of initial effort was a 270,000-gsf conceptual design including: BSL-2, BSL-3, and BSL-4 laboratories; ABSL-2 and ABSL-3 vivarium; forensic research; and building support.

*Work in prior practice

David Gunnoe, PE, CAP

Role
Electrical Engineer

Professional Registrations
Professional Engineer (WV, MI, VA, TX, MN)
ISA Certified Automation Profession (CPA)

Mr. Gunnoe has over 12 years of experience in power generation, material handling, and petrochemical process control. His technical expertise is in industrial electrical design with particular focus on industrial controls, automation, and instrumentation. He has been involved in every aspect of project completion from pre-planning, frontend design, detailed design, bidding, construction, and inspection all the way to final programming, system tuning, troubleshooting, commissioning, and long-term support.

Mr. Gunnoe now serves as an Electrical Engineer with ZMM and is responsible for all aspects of the electrical design process including interior and exterior lighting, power distribution, lightning protection, network system design, security systems, safety systems and fire alarms, low voltage control and automation systems, and equipment specifications. He also performs electrical inspections and assessments during construction and can consult and participate in troubleshooting efforts to remedy existing electrical issues.

Project Experience

- WV School of Osteopathic Medicine – New Testing Center Expansion, Lewisburg, WV
- WV School of Osteopathic Medicine – Community Health Center, Lewisburg, WV
- Williamson Health and Wellness Clinic, Williamson, WV
- Kanawha County Schools – The New Clendenin Elementary School, Clendenin, WV
- The Keith-Albee Theater Electrical and Life-Safety Upgrades
- Roane-Jackson Technical Center Plumbing and Electrical Renovations

Education
Bachelor of Science in Electrical Engineering, West Virginia University Institute of Technology, 2009

Employment History
2021 - Present, Electrical Engineer, ZMM
2014 – 2021, Control Systems Engineer, CDI Corporation, Charleston, WV
2012 – 2014, Control Automation Engineer, Nitro, WV
2010 – 2012, Department of Defense, Dalgren, VA
2008 – 2010, American Electric Power, Brillian, OH

Ronnie L. Burdette, PE

Role
Structural Engineer

Professional Registrations
Professional Engineer (WV)

Mr. Burdette serves as a Structural Engineer at ZMM. His experience he has gained while at ZMM includes Educational (Additions/Renovation to existing structures and Construction of new structures), Municipal (Community Centers), and Residential projects. Mr. Burdette's responsibilities include design and analysis of structural systems and documentation of design results.

Project Experience
Mr. Burdette has served as Structural Engineer on a variety of projects. His responsibilities included analysis and design of multiple building materials (Steel, Timber, & Concrete) and production of structural drawing sets.

Capitol Guard House, Charleston, WV
WVDOH Webster County HQ, Webster Springs, WV
Tomblin Wildlife Viewing Tower, HQ, and Visitor's Center, Logan, WV
Valley Health Clinic, Milton, WV

New River Primary / Oak Hill Middle School, Oak Hill, WV
This project included two separate projects located on the same site. Both buildings were designed to be ICF and steel construction.

Valley Park Community Center, Hurricane, WV
This new community center replaced an existing one at the Valley Park Wave Pool. It was designed to be constructed from masonry, steel, and timber. The exterior design concept plays off the existing Commons Building which incorporates stone accents, wood siding and multi-sloped roofing around a floor plan that emphasizes the internal components. The Community Center entrance is highlighted by a large, exposed wood truss bearing on tall, battered stone columns. These wood beams are featured at all entrances and carry into the meeting room prefunction to provide a fully-exposed, open wood structure.

Charleston EDGE, Charleston, WV
The Charleston Edge renovation project included many different structural materials. The existing building is brick and

Education
Bachelor of Science in Civil Engineering, West Virginia University, 2015

Master of Business Administration, University of Charleston (WV), 2016

Employment History
January 2017 – Present, Structural Engineer, ZMM
May 2016 – Dec 2016, Civil/Structural EIT, Jacobs Engineering
May 2015 – Dec 2015, Civil/Structural EIT, CDI Corporation

masonry construction. Construction plans included the design of a new roof-top addition that was supported by structural steel.

Multiple Residential Renovations and Additions
The majority of residential work in the area consists of timber and masonry construction. Mr. Burdette has been involved in residential projects that range from analysis of a 3-story wooden deck to the design of a new addition to an existing timber and masonry house.

William Grill

CANNONDESIGN

Role
Cost Estimator

Professional Registrations
LEED AP BD+C, CEP

Bill is the director of our in-house cost estimating group, a team of interdisciplinary professionals maintaining a robust cost database refined over the past forty years. Bill and his team provide ongoing database support to ensure all local, regional, national, and global economic conditions are reflected. Bill has experience in all markets for projects ranging from small renovations to major $1B+ new construction. As an integral point of leadership and guidance, Bill ensures that all of our cost data is up to date, controlled for quality, and that long-term market/local conditions are understood and predicted for the benefit of all cost data users.

Project Experience

Oak Ridge National Laboratory, Second Target Station, Conceptual Design, Oak Ridge, TN
The project will increase the facility's energy level to 1.4 GeV and double its experimental beamline capacity. The STS is a 300,000-gsf, $400M+ facility comprised of an extension of the existing proton beamline and earth-shielded underground tunnel enclosure, a new target building, 22 neutron beamlines, multiple experimental buildings, a central utility plant, a central exhaust facility and a new laboratory/office research building.

Argonne National Laboratory, Sensing and Imaging at Argonne
(SIA) Conceptual Design Study, Lemont, IL
Conceptual design study to provide ANL with a state-of-the art laboratory capable of supporting the most advanced levels of electron microscopy currently conducted in the international research community. The Study includes the evaluation of two alternative sites and the development of two alternative space need programs with corresponding design solutions and cost estimates for construction.

Johns Hopkins University, Applied Physics Laboratory, Design of Building 201, Laurel, MD
Building 201 is a new, 263,000-gsf, interdisciplinary research facility that will house over 500 staff in a highly collaborative environment including electrical engineering, mechanical

Education
Bachelor of Science/Mechanical Engineering, Alfred University

Civic Affiliations
- U.S. Green Building Council LEED® Accredited Professional, Building Design & Construction (LEED® AP BD+C)
- Certified Estimating Professional (CEP)

engineering, biological sciences/engineering, microelectronics/microsystems, multifunctional materials and nanostructure prototyping laboratories supported by a readily adaptable utility infrastructure and provide the Research and Exploratory Development (RED) Mission Area with flexible, open laboratories in a highly collaborative, open workplace environment.

Oak Ridge National Laboratory, Stable Isotope Production and Research Center, Oak Ridge, TN
Conceptual Design Report (CDR) for the Stable Isotope Production and Research Center (SIPRC). The SIPRC is a new $43M, 54,000 GSF facility that will provide Oak Ridge with state-of-the art isotope production capabilities.

CLIENT REFERENCES

Dr. Angie Settle, CEO, Executive Director
WV Health Right
1520 Washington Street, E.
Charleston, WV 25311
304.414.5931

Mr. David Childers, Corporate Director of Construction Services
CAMC Memorial Hospital
3101 MacCorkle Avenue, SE
Charleston, WV 25304
304.388.4930

Mr. Matt Ballard, CEO, Executive Director
WV Regional Technology Park
1740 Union Carbide Drive
South Charleston, WV 25303
304.365.3165

Mr. Norman Bailey, Chief of Staff
WV Department of Agriculture
1900 Kanawha Boulevard, East
Charleston, WV 25305
304.558.3200
nbailey@wvda.us

	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** **Architect/Engr**

Proc Folder: 1029735 **Doc Description:** EOI: Assessment of WV State Laboratory Testing Facilities **Proc Type:** Central Contract - Fixed Amt			**Reason for Modification:**
Date Issued	**Solicitation Closes**	**Solicitation No**	**Version**
2022-04-11	2022-04-27 13:30	CEOI 0211 GSD2200000006	1

BID RECEIVING LOCATION

BID CLERK
DEPARTMENT OF ADMINISTRATION
PURCHASING DIVISION
2019 WASHINGTON ST E
CHARLESTON WV 25305
US

VENDOR

Vendor Customer Code:

Vendor Name : ZMM Architects & Engineers

Address : 222 Lee Street, West

Street :

City : Charleston

State : WV **Country :** USA **Zip :** 25302

Principal Contact : Adam Krason

Vendor Contact Phone: 304.342.0159 **Extension:** 234

FOR INFORMATION CONTACT THE BUYER
Melissa Pettrey
(304) 558-0094
melissa.k.pettrey@wv.gov

Vendor Signature X AG RK **FEIN#** 550676608 **DATE** April 27, 2022

All offers subject to all terms and conditions contained in this solicitation

RFQ No. GSD22222226

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

MANDATE: Under W. Va. Code §5A-3-10a, no contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and: (1) the debt owed is an amount greater than one thousand dollars in the aggregate; or (2) the debtor is in employer default.

EXCEPTION: The prohibition listed above does not apply where a vendor has contested any tax administered pursuant to chapter eleven of the W. Va. Code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

DEFINITIONS:

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Employer default" means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers' compensation self-insured employer. An employer is not in employer default if it has entered into a repayment agreement with the Insurance Commissioner and remains in compliance with the obligations under the repayment agreement.

"Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceed five percent of the total contract amount.

AFFIRMATION: By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (*W. Va. Code* §61-5-3) that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

WITNESS THE FOLLOWING SIGNATURE:

Vendor's Name: ZMM Architects and Engineers

Authorized Signature: _____ Date: 4/27/22

State of West Virginia

County of Kanawha, to-wit:

Taken, subscribed, and sworn to before me this 27 day of April, 2022.

My Commission expires April 16, 2023.

AFFIX SEAL HERE

Official Seal
Notary Public, State of West Virginia
Jessica Wolfe
501 Washington Street
St. Albans, WV 25177
My Commission Expires April 16, 2023

NOTARY PUBLIC _____

DESIGNATED CONTACT: Vendor appoints the individual identified in this Section as the Contract Administrator and the initial point of contact for matters relating to this Contract.

(Name, Title) AG RK

(Printed Name and Title) Adam Krason, Principal

(Address) 222 Lee Street, West, Charleston, WV 25302

(Phone Number) / (Fax Number) (304) 342.0159 (304) 345.8144

(email address) ark@zmm.com

CERTIFICATION AND SIGNATURE: By signing below, or submitting documentation through *wv*OASIS, I certify that: I have reviewed this Solicitation/Contract in its entirety; that I understand the requirements, terms and conditions, and other information contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation/Contract for that product or service, unless otherwise stated herein; that the Vendor accepts the terms and conditions contained in the Solicitation, unless otherwise stated herein; that I am submitting this bid, offer or proposal for review and consideration; that I am authorized by the vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration.

By signing below, I further certify that I understand this Contract is subject to the provisions of West Virginia Code § 5A-3-62, which automatically voids certain contract clauses that violate State law; and that pursuant to W. Va. Code 5A-3-63, the entity entering into this contract is prohibited from engaging in a boycott against Israel.

ZMM Architects and Engineers

(Company)

AG RK

(Authorized Signature) (Representative Name, Title)

Adam Krason, Principal (April 27, 2022)

(Printed Name and Title of Authorized Representative) (Date)

(304) 342.0159 (304) 345.8144

(Phone Number) (Fax Number)

ark@zmm.com

(Email Address)