ZMM
ARCHITECTS
ENGINEERS

222 Lee Street, West
Charleston, West Virginia 25302

11/14/23 10:36:01
W Purchasing Division

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ZMM ARCHITECTS ENGINEERS

CANNONDESIGN

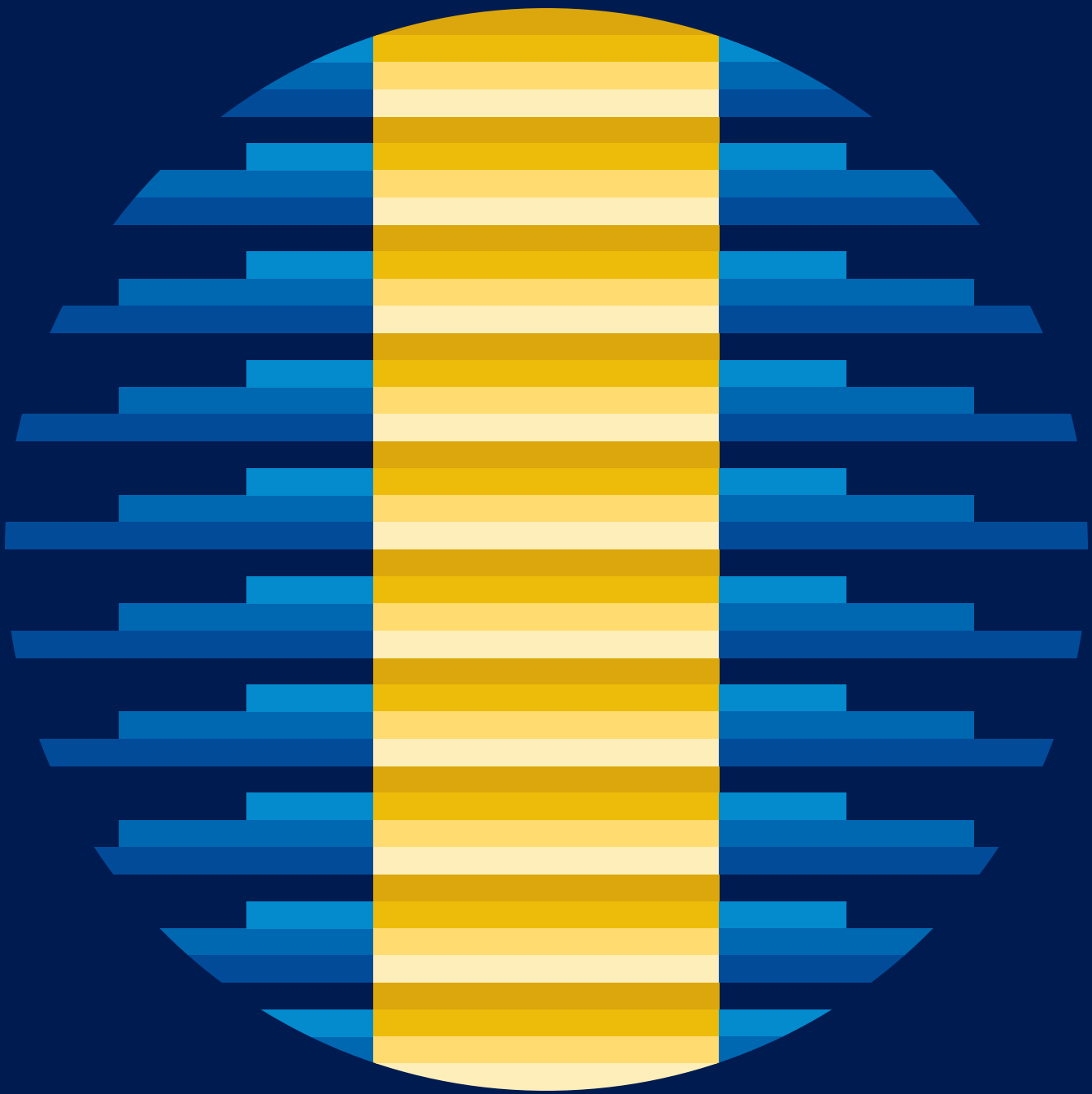
MWL
McClaren, Wilson & Lawrie, Inc.

State of West Virginia

New Consolidated State Laboratory Facility Project

CEOI 0211
GSD2400000002

2023 NOV 14



November 14, 2023

ZMM ARCHITECTS ENGINEERS

CANNONDESIGN

MWL
McClaren, Wilson & Lawrie, Inc.

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

Subject: Expression of Interest to Provide Professional Architecture/Engineering Services: New Consolidated State Laboratory Facility Project (CEOI GSD2400000002)

Dear Ms. Pettrey,

ZMM Architects and Engineers is pleased to submit the attached information to demonstrate our team's experience and qualifications to provide professional architectural and engineering services for the proposed New Consolidated State Laboratory Facility project.

Our team for this engagement, which includes nationally recognized lab designers CannonDesign and MWL, is the same team that successfully delivered the West Virginia State Laboratory Testing Facilities Assessment & Concept Design in 2022. The ZMM/CannonDesign/MWL team combines a trusted local resource with the nation's leading experts in the design of laboratory facilities.

Established in 1959, ZMM is a West Virginia based full service A/E firm, noted for design excellence and client focus. Our integrated design approach makes ZMM unique among design firms in West Virginia. **Our proximity to the project site (4 miles), experience delivering complex projects with budgets exceeding $100M in West Virginia, management of the planning and conceptual design effort for this project, as well as our experience assisting with projects at the West Virginia Regional Technology Park (WVRTP) demonstrates that we are the team most capable of ensuring the successful delivery of the project for the State of West Virginia.**

As noted above, ZMM's team for this project includes CannonDesign and MWL, both 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, been recognized with 4 laboratory of the year awards, and has completed over $5B worth of laboratory projects. MWL adds specialized expertise in forensics labs and medical examiner & forensic pathology facilities to the team.** Their exclusive focus on these facilities was invaluable during the initial planning phase and has resulted in the completion of nearly 450 highly technical facilities throughout the United States and Canada — including the Forensic Science Laboratory at WVU. CannonDesign and MWL's combined portfolio includes extensive experience working with similar laboratories for Michigan, Virginia, North Carolina, Maryland, Washington DC, Vermont, and federal laboratories including the National Cancer Institute, the National Institutes of Health, Oak Ridge National Laboratory, the Federal Bureau of Investigation and more.

The ZMM team also includes Potesta & Associates, Inc. **Potesta is a Charleston-based civil and environmental consulting firm that will be responsible for site investigation (survey and geotech), as well as site and civil design.** Their experience developing the Timberland site at the Tech Park, in conjunction with the City of South Charleston, positions our team to meet the State's goal to deliver the project expeditiously. In addition to Potesta's work on the proposed site, ZMM has extensive experience providing design services at the WVRTP. This experience includes the design of the adjacent NOAA/NWS Building, a current site lighting project, as well as assessment, planning, and design experience in Building 2000, Building 770, Building 740, Building 727, and Building 704.

The ZMM/CannonDesign/MWL team understands that the intent of the project is to co-locate State of West Virginia agencies' laboratory facilities into a single, newly constructed building, one which can also accommodate laboratory, research, and training opportunities for higher education and private sector entities. The proposed facility will be designed with a focus on functionality and operational needs, ensuring the judicious use of the State's resources. Drawing from our experience, we bring a pragmatic approach — recognizing that excellence should never be confused with luxury. Well-designed facilities function better, are less costly to operate, and adapt to changing demands over time with minimal expense.

During the initial phase of this project, the ZMM/CannonDesign/MWL team worked closely with the State of West Virginia General Services Division (GSD), Office of the Chief Medical Examiner (OCME), State Police Forensic Laboratory (WVSP), Department of Agriculture (WVDA), Department of Health and Human Resources (WVDHHR), Division of Labor's Weights and Measurement Laboratory (DOL), and the Department of Environmental Protection (DEP) to ensure we met the variegated needs of the specific stakeholders involved with this project, while developing a strategy to achieve operational synergies in a single facility. Our team also has experience working with both WVU and Marshall University (where ZMM recently assisted with the conceptual design of an IT/OT Secure Operations Center).

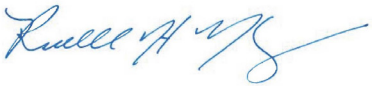
Although our team developed the Assessment & Concept Design in 2022, our history with the project goes much deeper. ZMM and CannonDesign were selected in 2015 to help complete the renovation of Building 770 at the WVRTP. At the time, many of the same tenants were involved with the project, including laboratory space for the WVDHHR, WVDA, and the OCME. Our team was again selected in 2020 to assist with WVDA lab assessment and planning. In 2021, ZMM began assisting the WVSP with improvements to their headquarters in South Charleston. The proposed work included improvements to WVSP labs (toxicology, biochem extraction, and DNA amp room). Additionally, the ZMM/CannonDesign team was selected by WVDHHR to assist in implementing improvements to the emerging pathogens laboratory. The project included converting 500 SF of existing BSL-2 laboratory space into a BSL-3 laboratory suite.

We recognize the importance of this project to the State of West Virginia agencies, the employees and technicians, students, and the public. For nearly a decade, our team has been working on various efforts to improve state laboratories in West Virginia and understands the tremendous opportunity that the current project presents. We appreciate your consideration for this important endeavor and look forward to continuing our collaborative effort to help deliver these critical facilities.

Respectfully submitted,

ZMM Architects and Engineers
Adam R. Krason, AIA, LEED AP
Principal

CannonDesign
Steve Blair, PE, LEED AP
Director, Science &
Technology Practice



McClaren, Wilson & Lawrie, Inc. (MWL)
Russell H. McElroy, AIA
Senior Principal

	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:	1274101	**Reason for Modification:**
Doc Description:	EOI: New Consolidated State Laboratory Facility Project	
Proc Type:	Central Contract - Fixed Amt	

Date Issued	Solicitation Closes	Solicitation No	Version
2023-10-18	2023-11-14 13:30	CEOI 0211 GSD2400000002	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 and Engineers

Address :

Street : 222 Lee Street West

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  **FEIN#** 550676608 **DATE** 11.13.23

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

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.

(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 this bid or offer was made without prior understanding, agreement, or connection with any entity submitting a bid or offer for the same material, supplies, equipment or services; that this bid or offer is in all respects fair and without collusion or fraud; that this Contract is accepted or entered into without any prior understanding, agreement, or connection to any other entity that could be considered a violation of law; 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 Inc. (DBA as ZMM Architects and Engineers)

(Signature of Authorized Representative)

Adam Krason, Principal

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

304.342.0159 / 304.345.8144

(Phone Number) (Fax Number)

ark@zmm.com

(Email Address)

	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:	1274101	**Reason for Modification:**
Doc Description:	EOI: New Consolidated State Laboratory Facility Project	Addendum No.1
Proc Type:	Central Contract - Fixed Amt	

Date Issued	Solicitation Closes	Solicitation No	Version
2023-11-07	2023-11-14 13:30	CEOI 0211 GSD2400000002	2

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 and Engineers

Address :

Street : 222 Lee Street West

City : Charleston

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

Principal Contact : Adam Krason, Principal

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 **FEIN#** 550676608 **DATE** 11/10/23

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

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: GSD2400000002

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:
(Check the box next to each addendum received)

☑ Addendum No. 1	☐ Addendum No. 6
☐ Addendum No. 2	☐ Addendum No. 7
☐ Addendum No. 3	☐ Addendum No. 8
☐ Addendum No. 4	☐ Addendum No. 9
☐ Addendum No. 5	☐ Addendum No. 10

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

ZMM Architects & Engineers
Company


Authorized Signature

November 13, 2023
Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.

Revised 11/1/2022

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A Project Understanding and Approach

Goals / Objectives

Anticipated Concepts and Methods of Approach

Project Understanding

The ZMM/CannonDesign/MWL team understands that the State of West Virginia intends to construct a New Consolidated State Laboratory Facility at the recently developed Timberland site at the West Virginia Regional Technology Park (WVRTP). The project intends to “co-locate State of West Virginia agencies’ laboratory facilities into a single, newly constructed building, one which can also accommodate laboratory, research and training opportunities for higher education and private sector entities.” As established during the preliminary planning phase of the project, co-location is “defined as stakeholder agencies maintaining operational independence while capitalizing on as many facility synergies as possible.” Our team understands that the State of West Virginia intends to be judicious with this significant investment — focusing on how to increase efficiency, improve functionality, and reduce operational costs.

ZMM/CannonDesign/MWL recently completed the study that supplements the Performance Evaluation & Research Division (PERD).

The PERD performed a review of six (6) existing Office of Laboratory Services (OLS) Testing Laboratories and determined that they have significant inadequacies and insufficiencies and recommended that a more detailed study be conducted to (1) determine the physical and spatial needs of each testing laboratory, and (2) evaluate the feasibility, estimated costs and potential benefits of a co-located facility. The PERD report noted that "State Laboratory Testing Facilities' Needs and Issues Are at Critical Points" and that "Most of West Virginia's Laboratory Facilities Are Relatively Old, Have Insufficient Space, and Were Not Constructed for Lab Purposes."

The "West Virginia State Laboratory Testing Facilities Assessment & Concept Design" was finalized in time for the 2023 legislative session and was used to help justify the ideal location and funding requirements for the proposed building. Our team worked closely with the State of West Virginia General Services Division (GSD), West Virginia Office of the Chief Medical Examiner (OCME), West Virginia State Police Forensic Laboratory (WVSP), West Virginia Department of Agriculture (WVDA), West Virginia Department of Health and Human Resources (WVDHHR), West Virginia Division of Labor's Weights and Measurement Laboratory (DOL), and the West Virginia Department of Environmental Protection (DEP) to develop multiple concept designs. Although the concepts are not intended as a "final design," they serve as a "proof of concept" to demonstrate the feasibility of a co-located facility that will provide up-to-date laboratory facilities that enable the state testing laboratories to better serve the people of West Virginia for the foreseeable future.

Although our team developed the Assessment & Concept Design in 2022 to supplement and support the PERD study, our history with the project is much deeper.

ZMM and CannonDesign were originally selected in 2015 to help complete the renovation of Building 770 at the WVRTP. At the time, many of the same tenants were involved with the project, including laboratory space for the WVDHHR, WVDA, and the OCME. Our team was again selected in 2020 to assist with the West Virginia Department of Agriculture (WVAG) lab assessment and planning. In 2021, ZMM began assisting the WVSP with improvements to their headquarters in South Charleston. The proposed work included improvements to existing WVSP labs (toxicology, biochem extraction, and DNA amp room). Additionally, ZMM and CannonDesign were selected by WVDHHR to assist in implementing improvements to the emerging pathogens laboratory. The project included converting 500 SF of existing BSL-2 laboratory space into a BSL-3 laboratory suite.

Since the completion of the Assessment & Concept Design, our team understands that there have been adjustments to the project. Specifically, it does not appear that the West Virginia Department of Agriculture will be included in the design, while space for West Virginia University and Marshall University are in the current plan as collaborative partners. The design will also include space for private industry labs to encourage research collaboration and partnerships. Although our team developed a concept that excluded the WVDA, the inclusion of space for these additional participants led us to further investigate how the preferred option (#2) from the Assessment & Concept Design could be modified to address this need. A modified version of Option #2 is provided at the end of the project approach. It was developed to provide the requested WVU, MU, and private lab collaborative space in a manner that does not compromise the independence or security of the agency labs.

We possess comprehensive knowledge about the site, program, and design — and have also recently facilitated the original planning effort with these same state agencies. Our team's experience with the Assessment & Concept Design, a vast portfolio of relevant and related projects, and the relationships developed with the various state agency labs through our recent planning effort best position our team to help successfully deliver this critical project for the State of West Virginia.

The following detailed project approach demonstrates how we will address your project goals and objectives.

Project Approach

The ZMM/CannonDesign/MWL team is ready to continue the work that we, together with the State of West Virginia and all its stakeholders, have begun with the previous study. We bring our previous team along with added depth and expertise to this important project. Our approach is anchored by the collaborative approach we've already started with the lab users, the agency administrations, the state's leadership, and the research park's management. Our previous work with your stakeholders provides a critical advantage, especially given the urgency to deliver an excellent project on an aggressive schedule. **With us, you will start several steps ahead.**

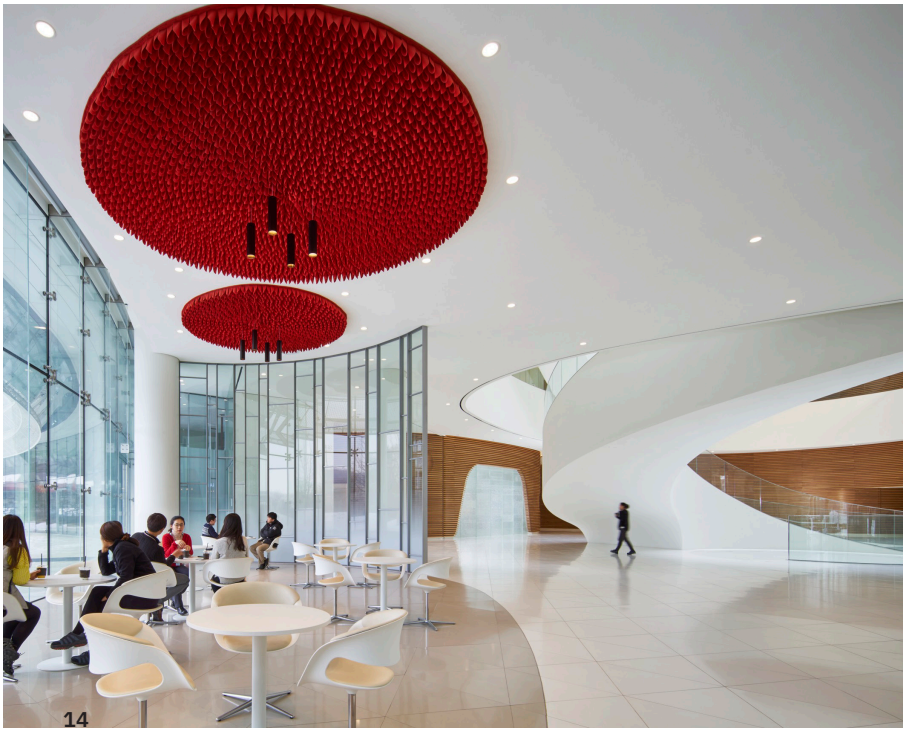
Another key component of our approach entails leading with our **deep design and engineering expertise for facilities that support specialized science like this one.** Our team includes industry-recognized architects and engineers who have designed many of the nation's public health laboratories, medical examiner facilities, and statewide police forensics laboratories. Beyond the specifics of our expertise, we bring extensive experience in a wide range of scientific facilities, supporting everything from particle physics to advanced biotech research and development facilities.

Equally important, our team's approach will draw on our **extensive experience working with local and state entities, including the research park**, based on long-term working relationships. We will engage all the relevant authorities and stakeholders early in the process, building consensus early to support the aggressive schedule milestones. Our thorough understanding of the site, the park, and the region will support our proactive approach to local and state-wide governmental involvement in the process.

The team includes local civil/environmental engineering firm, Potesta & Associates, Inc., who will provide support to the team for civil/environmental/geotechnical aspects of the project. In addition to having historical knowledge of the Timberland site, Potesta has provided the West Virginia Regional Technology Park and DOW with decades of engineering and environmental consulting services throughout the Park's properties. Potesta recently worked on the site's grading and its development as a borrow area for the fill material placed at the Park Place Retail Development site in South Charleston.

Our approach is centered on **deep and broad engagement with the testing agencies and the actual laboratory users**. Our expertise will pair well with the hands-on experience of the laboratory users to bring insights that are both industry-leading and locally informed. This approach, started during our study, is fundamental to our belief that users should be active participants in the design process, particularly for scientific facilities where specialized processes and activities take place to ensure the well-being of West Virginia's citizens.

Drawing from our extensive experience, we bring a pragmatic approach — recognizing that excellence should never be confused with luxury. Good design does not mean spending capriciously on flashy elements. Rather, good design means that **the needs of the users are thoughtfully considered, fostering a higher level of performance, well-being and safety in their day-to-day experience**. Well-designed facilities function better, are less costly to operate, and adapt to changing demands over time with minimal expense. We also recognize that a building of this scale is not mute — it speaks to the values of its stakeholders and for this reason, should embody the values of quality, excellence, efficiency, and modesty of the people of West Virginia. **We will embrace the project budget; our team thrives on the challenges of meeting budgets and exceeding expectations.**



Another key factor of our approach is a focus on **long-term flexibility and high performance**. Modern buildings are not static edifices; they are complex assemblies of specialized systems and spatial networks designed to support constantly evolving needs and changing circumstances. The work in this laboratory will constantly change and evolve, so our approach will not only focus on today's needs, but also plan for those of the future. Attempting to predict the future is a dubious activity; instead, we design for short-term adaptability and long-term flexibility to accommodate the changes we can't anticipate. High performance includes energy efficiency as well as reliability, resource conservation as well as resilience, user efficiency as well as user wellbeing.

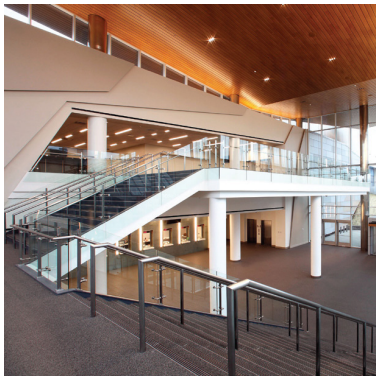
The foundation of our approach was well said by Thomas Edison: **to get a great idea, explore many**. We use iteration as a creative process in our search for great ideas, and that search is enhanced by our use of advanced digital and computational design tools.

Objective 1:
Team and Staff Experience on Projects of Similar Scale

The best way to demonstrate our relevant experience is to provide a list of relevant projects of similar scale that members of this team have delivered:

- State of Michigan, Public Health and Environmental Science Laboratory *(295,000 SF)*
- State of Maryland, New Public Health Laboratory* *(232,000 SF)*
- N.C. Department of Health & Human Services, State Public Health Laboratory* *(220,000 SF)*
- Minnesota Departments of Health and Agriculture, Public Health Facility Laboratory* *(178,000 SF)*
- Commonwealth of Virginia Central Medical Examiner and Forensic Laboratory *(278,000 SF)*
- Forensic Services & Coroners Complex in Toronto *(665,000 SF)*
- Federal Bureau of Investigation, Quantico *(507,000 SF)*
- Kansas Bureau of Investigation, Topeka *(105,000 SF)*
- Hennepin County Regional Medical Examiner-Minnetonka *(64,000 SF)*
- Maryland State Medical Examiner-Baltimore *(120,000 SF)*
- Broward County Forensic Services and Medical Examiner-Ft. Lauderdale *(178,000 SF)*
- South Carolina Law Enforcement Division *(+/-110,000 SF)*
- West Virginia University-Oglebay Hall Academic Forensic Science *(55,000 SF)*
- Marshall University, Weisberg Laboratory Building *(Varies)*
- Building 201 at Johns Hopkins Advanced Physics Laboratory *(+/- 250,000 SF)*
- Second Target Station at Oak Ridge National Laboratory *(+/- 350,000 SF)*

**Notes team members' individual experience*



We understand the critical importance of delivering a well-designed, highly functional facility within the budget and schedule established. To that end, our personnel — including the architectural, engineering, civil engineering, and forensics lab specialists — are already familiar with the project requirements.

In addition to these relevant projects of similar scale, **ZMM Architects and Engineers** has a demonstrated history of successfully delivering some of the largest and most complex projects in West Virginia. This experience includes the 529,000 SF Charleston Coliseum and Convention Center. This expansion and renovation was a transformational project for both the City of Charleston and West Virginia. ZMM's experience also includes the 283,000 SF Joint Interagency Training and Education Center (JITEC), an Army National Guard campus-style facility for training and operational mission support, which is located at Camp Dawson, near Kingwood, WV. Additionally, ZMM has assisted the West Virginia General Services Division with the phased improvements to the 550,000 SF State Office Buildings 5, 6, and 7.

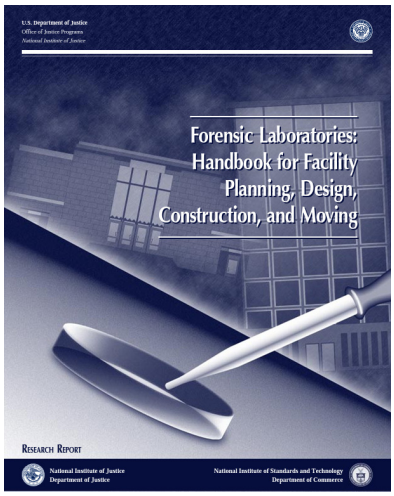
The team's civil engineering consultant, **Potesta & Associates, Inc.**, completed the design, permitting, and administration of the preferred site (Timberland site) for the new facility at the West Virginia Regional Technology Park. Potesta also brings a wealth of local experience to the team, having worked with Marshall University and West Virginia University, as well as numerous State agencies including the West Virginia Department of Highways, the West Virginia Department of Environmental Protection, the West Virginia Department of Commerce, and the West Virginia Department of Economic Development. Potesta is currently listed on 10 pre-qualified Consultant lists with the West Virginia Department of Highways to provide various engineering and environmental services for miscellaneous transportation projects throughout the State.

Potesta's previously completed services for the Timberland site included the design of a site plan resulting in the excavation and relocation of approximately 900,000 cubic yards of soil and rock material from the site. This material was processed and hauled to the Park Place Retail Development site in South Charleston and utilized as structural fill material to support the proposed development for the City of South Charleston. This effort resulted in the establishment of 10.4 level acres at the site for future development. Potesta has committed the same dedicated staff to support this project which brings a high level of familiarity and knowledge to the project with respect to the site, existing service utilities, and other elements. Potesta's working knowledge of the site, in addition to their geotechnical experience gained from other projects completed for the West Virginia Regional Technology Park and Dow, make Potesta an asset to the ZMM/CannonDesign/MWL team for this project. Additionally, Potesta and ZMM have previously collaborated on state funded projects throughout West Virginia and have an extensive understanding of the permitting and other relevant regulatory requirements. With Potesta's previous design and permitting experience on the site, our team anticipates a groundbreaking for an early site package in late April 2024. Potesta is experienced with fast-tracking a site development project to meet an accelerated schedule. Potesta prepared a site preparation plan and performed permitting services for the 8.5-acre Coldwater Creek Distribution Center which was constructed on a 65-acre undeveloped parcel of land near Parkersburg, West Virginia. The project had several difficult site constraints, which required excavation, an extensive stormwater collection and detention system, constructed wetlands, and other miscellaneous improvements. Potesta prepared the design and submitted the required permits for regulatory approvals resulting in the receipt of bids for the project in six weeks to accommodate the owner's aggressive construction schedule for the groundbreaking.

Members of the **CannonDesign** team have extensive experience working with similar state laboratories for North Carolina, Maryland, Washington DC, and Vermont, as well as federal laboratories including the National Cancer Institute, the National Institutes of Health, Oak Ridge National Laboratory and more. Cannon is currently designing a co-located testing facility for the State of Michigan.

While the portfolio of a firm's projects may "sell" the architecture firm to the owner/client, it is the experience of the individual design professionals that "do" the project. As one of the industry leaders in science & technology, CannonDesign has strategically recruited many of the industry leading designers and laboratory planners in Public Health labs from our competitors. So, while our competitors can show you the projects, CannonDesign can show you show you the design talent that executed those projects.

McClaren, Wilson & Lawrie, Inc. (MWL) brings deep expertise in the design of forensic laboratories and medical examiner facilities with more than 167 facilities in 42 of the 50 states. Over the past 35 years, MWL has focused on designing for public safety and was the first firm in the United States with this specialization including more than 325 police facilities. MWL is a pioneer with many "firsts" to their credit. They designed the first free standing crime lab in the U.S., the first purpose built DNA Lab, the first to implement bio-containment design in forensic labs, the first CDC/HIH verified BSL-3 autopsy suite in the U.S. and Canada (CL3), and was the first architecture firm to patent an all-new autopsy table.



MWL is the only architecture firm to develop forensic lab design standards used nationally, published initially in 1998 by the US DOJ and republished in 2012 by NIST. All of the staff members that did this work continue working with MWL and two of those members will be dedicated to this work.

Objective 2:
Experience Working with Government Agencies and Multiple Stakeholders

In addition to the design of numerous state laboratory facilities noted in Objective 1, our team has experience with numerous federal government agencies. These include federal agencies such as the National Institutes of Health, the United States Army Corps of Engineers (USACE), the Fermi National Accelerator Laboratory, and National Laboratories including Argonne, Brookhaven, Lawrence, and Oak Ridge, among others. Staff assigned to the project each have a breadth of experience working with various state agencies. **Most importantly, we have worked with the State of West Virginia and are familiar with your policies and procedures.**

The ZMM/CannonDesign/MWL team is the only team that has demonstrated our approach to **"consider variegated needs" of the specific stakeholders involved with this project while developing a strategy to achieve "operational synergies in a single facility."** That approach included conducting a project kickoff meeting where multiple user groups (state agencies) were given an overview of the process — and the opportunity to discuss their current conditions and overall goals and objectives in front of all stakeholders. This process provided an overview of the programming and design process, while also establishing each agency as part of a team within the larger project.

Following the initial meeting, the ZMM/CannonDesign/MWL team completed visual assessments of existing lab conditions and began the programming process. The programming process involved a detailed discussion with each agency to understand how they currently operate, how they would operate in an ideal environment, and what spaces are required for them to thrive.

Notable examples of previous projects that brought together separate, distinct departments include the State of Michigan Public Health and Environmental Sciences Lab, the Forensic Services and Coroner's Complex (serving the Province of Ontario, Canada) and the State of Utah Unified State Laboratory.

For the **State of Michigan**, the project brings together the infectious disease, chemistry and toxicology labs for the department of Health and Human Services; the Department of Environment, Great Lakes, and Energy; and the Department of Labor and Economic Opportunity. Each benefited from the co-location through economies of scale gained from the shared site and central building systems, yet they each remain a distinct entity — an important aspect for security, safety and efficiency of operations.

The **Forensic Services and Coroner's Complex** co-locates the Office of the Chief Coroner, the Ontario Forensic Pathology Service and the Centre of Forensic Sciences. Housing the three agencies on one site increased construction and operational efficiencies, allowing staff — who work closely during investigations — to collaborate and share resources.

The **State of Utah Unified State Laboratory** unites the facilities of the Medical Examiner, the Department of Agriculture and Food Laboratories, and the Department of Public Safety

Forensic Services Laboratories. The new facility enhanced each agency's capabilities — including allowing firearms testing on site (for unified forensic services) and improved workflows afforded by the state-of-the-art autopsy suite.

In each of these projects, our process was similar. Meetings and communications were structured for engagement with each unit separately to understand their unique needs and critical concerns. With this understanding, the establishment of priorities becomes critical — the design must account for everyone's "must-haves" and should include as much of the wants as the budget allows. Finding common ground is important, enabling efficient accommodation of individual needs. This is achieved through working sessions that include representatives from each department who can speak for their group, identifying opportunities for shared resources while preserving independence where needed. While this can lead to the sharing of certain infrastructure and spaces, we understand that maintaining independent operations and identities is an important consideration. As with those we have designed previously, this will be given a high priority for this facility.

The ability of our team to conduct this programming process simultaneously was aided by the fact that **we have multiple lab planners with unique expertise assisting with the projects** (CannonDesign: Public Health, BSL-3(E), Agriculture, Environmental; and MWL: Forensics and Medical Examiner). Simultaneous with the program development, the team reviewed a variety of sites and existing structures, ultimately determining the preferred site to be the West Virginia Regional Technology Park.

After the independent programming meetings, the overall stakeholder team was assembled to review the site and programming information. At this meeting, we discussed synergies, critical adjacencies, and the future operation of the facility. With this additional feedback, our team commenced the conceptual design (blocking and stacking). The team developed multiple overall massing solutions that addressed the defined operational and site constraints. Multiple solutions were further developed and presented to the overall stakeholder group. Following this effort, the preferred solution was further developed and utilized to help define the project budget. Once the budget was established, the ZMM/CannonDesign/MWL team met individually with each agency to assist with scope refinement and alignment. To meet the State's requirements, this detailed and iterative effort was completed in less than six months. This effort will be the foundation of the project as it progresses.

Our team has completed many other projects that required us to consider the individual needs of multiple stakeholders while co-locating them in one facility. These include:

- Durham Consolidated Courthouse: co-locates courts and other governmental functions.
- National Cancer Institute, Consolidated Research Laboratory: (governmental client, multiple research units)
- Washington University School of Medicine, Neuroscience Research Building: unites neurology, neuroscience, neurosurgery, psychiatry and anesthesiology, with collaborators in pediatrics, genetics, medicine, ophthalmology, otolaryngology, radiology and biomedical engineering.
- General Services Administration, Byron G. Rogers Federal Office Building Renovation: co-locates 11 federal agencies.
- Children's Hospital of Philadelphia, Schuylkill Avenue Research Building (SARB)
- National Institutes of Health, Building 29/29A Renovation

Objective 3:
Phased Project Delivery and Procurement of Specialized Equipment

Through the visual assessments that our team completed during the programming and planning phase of the project, we understand the need to get this facility up and running as soon as possible, and we know how to do it. We know that an early site package will be required to allow construction to begin in early 2024 and proceed expeditiously to completion. We are experienced in this approach, including projects where there was not a construction manager involved. We have found that issuing multiple packages increases risk — most notably for budget and cost control — since once early packages (such as for foundations and structural) are bid and awarded, the ability to react to shifts in the market is limited. While our team stays abreast of changes in the market, in recent years changes in market conditions have happened quickly — with radical and unforeseeable impacts due to a variety of factors. Recognizing that the State of West Virginia utilizes design/bid/build delivery without a construction manager, the best way to hit an aggressive schedule while controlling risk is to limit early packages to reasonably lower-risk items, such as an early site package, and bid the full building construction as soon as possible. Our team is uniquely positioned to do just that. Not only does our team benefit from our involvement in the study, but we have continued to advance development based on what we have read in the RFP. Refer to "Updated Concept Design" on page 26.

That being said, with appropriate risk management strategies, additional bid packages could be considered to expedite the overall project delivery.

An early foundations package might be prudent, allowing construction to continue at a steady pace once sitework is completed. Not only do the foundations lock in the footprint, they lock in the structural capabilities of the superstructure as well. It is critical to properly account for the structural requirements. Although a geotechnical report is not yet available, we anticipate from the extensive cut and fill at the site and the folded nature of rock formations commonly encountered in this area that a deep foundation system will be required. Aside from the requirements germane to any building, for a facility of this type, the vibration tolerances of specialized equipment are a crucial factor. Understanding and accounting for these needs early in the process would be critical to success, and our knowledge and experience work to mitigate the potential risks in coordinating these elements.

Depending on lead time for procurement and fabrication of the superstructure, an early structural package — either combined with or separate from the foundations — might be prudent as well. For this to be successful, it is not only essential to understand and carry forward the vibration criteria noted above, it is critical that coordination of the framing with other building elements (most notably the mechanical systems) be as thorough as possible. To this end, we leverage our experience from past projects to identify potential points of conflict, and plan accordingly in the conceptual phases. This approach synergizes with our focus on ensuring the building can adapt to changing needs over time without major investment, since the building — including the structure — must readily adapt to changing needs over time. Our in-house engineering staff is experienced in the critical design elements that ensure coordination as design proceeds.

A critical aspect of proceeding through design expeditiously — especially when early packages will be bid and awarded prior to completion of the balance of design documents — is to have **accurate cost estimates as development progresses**. Our in-house estimating team draws on a deep database of laboratory construction projects and has a history of accuracy — especially in the conceptual phase when the details of the project are not yet documented in detail. This ensures that the entire team stays in alignment with the budget throughout the design, enabling design to progress smoothly — even through the review periods at the end of each phase. These advantages not only save time in the design, but they ensure adherence to the budget.

One example of an expedited approach is the **Children's Hospital of Philadelphia Schuylkill Avenue Research Building.** The building is a new 14-story, 350,000-gsf research tower located on top of an existing three-level podium. The new tower will provide 120 lab bays, including eight floors of laboratory/office space, two floors for a rodent vivarium and vivarium support, administration spaces, conference rooms, and a 250-seat lecture hall. Currently in construction, it is scheduled for completion in August of 2025.

Project procurement occurred during the height of extreme volatility in the construction market. Prices were changing rapidly, and the availability of materials

and major equipment had been disrupted due to massive shock in the supply chain. In response, five bid packages were prepared to enable an early construction start and ensure long-lead items were procured in time so as not to cause delay. For the urban site, site preparation included demolition and construction of site utilities. These were packaged along with the structural deep foundations — a time-consuming element to construct, requiring careful coordination with other site elements. A structural steel package was issued, enabling the erection of the superstructure immediately following completion of the foundations. For this project, several long-lead items were identified, designed and bid early so as not to incur delays in construction. Critical head-end mechanical and electrical equipment, including the chillers, air handing units, emergency generators and electrical switchgear — traditionally long-lead items — were bid as a single, separate package. Additionally, fabrication lead times for aluminum curtainwall systems — which comprise the majority of the tower's exterior — were identified as having exceptionally long lead times due to recent market conditions stemming from the COVID pandemic, and an early package was issued for this element as well. The balance of the project was bid in a final package.

Designed to allow for the highest degree of collaboration and flexibility, the **Neuroscience Research Building at the Washington University School of Medicine** co-located related research disciplines that were previously scattered across the medical center campus. The facility unites many areas of study, including neurology, neuroscience, neurosurgery, psychiatry and anesthesiology, with collaborators in pediatrics, genetics, medicine, ophthalmology, otolaryngology, radiology and biomedical engineering — and provides room for future growth.

The project was fast-tracked, with eight separate bid packages aligned with the construction sequence: site prep and foundations, elevators, exterior shell, building systems (including long-lead mechanical equipment), two structural packages (one for the concrete below-grade construction and the other for the steel superstructure), and two interior fit-out packages.

A final example includes the **School of Nursing Expansion for Bridge Valley Community and Technical College at the West Virginia Regional Technology Park.** Requiring gut remodels of the first and third floors of Building 2000, this project received late notification of approval of federal grant funds through the West Virginia Higher Education Policy Commission, which required completion prior to August 26, 2022. ZMM's contract was signed, and the design process began January 20, 2022; on August 26, the owner occupied the new space and classes began. The project's duration of seven months included design, preparation and public bidding of construction documents, demo and construction — all during the height of the COVID pandemic in a fully occupied building.

From a project delivery perspective, early procurement of specialized equipment is an important consideration. Shocks to the global supply chain, induced by many "black swan" events, have resulted in a much higher degree of volatility impacting the availability of materials and equipment.

Recently, lead times for major equipment that are mission-critical for the construction schedule — most notably, electrical gear, but also air handling units, elevators, and even lab casework — have wrought havoc in the industry. While these lead times are currently showing signs of improvement, it will remain critically important that these are monitored, and if issues are identified, we adapt. **Our team brings both local and national market insights that enable us to stay abreast of changes and impacts from forces now impacting construction.** And we have a track record of agility — being able to pivot quickly to realign the design to mitigate this volatility.

A few of the projects completed in the past 2 years where early construction packages were issued to improve schedule:

- D'Youville University, Health Professions Building - Completed 2021, 59,600 GSF. Early Site and Structural.
- Mount Sinai Medical Center, Cancer Center - Completed 2021, 200,000 GSF. Early Site.
- California Institute of Technology, Resnick Sustainability Center - Completed 2022, 80,000 GSF. Early Site.
- Colorado State University, Nutrien Agricultural Sciences Building - Completed 2022, 83,000 GSF. Early Demolition.
- University of Maryland College Park, Human Performance and Academic Research Facility at Cole Field House - Completed 2021, 407,175 GSF. Early Demolition.
- University of Illinois at Urbana-Champaign, Carle Illinois College of Medicine Renovations - Completed 2021, 32,000 GSF. Early Demolition.

Objective 4:
Project Will Begin Immediately upon Award

Our team is committed to ensuring adequate staffing to achieve the project schedule. The specific team members who have been assigned to this project were the ones who have been involved all along — through the development of the study (and even prior). They each have ample capacity to meet the demands of the schedule, and are prepared to begin in earnest as soon as possible.

ZMM, CannonDesign, MWL, and Potesta are all well-staffed with deep benches to ensure they will have continued capacity throughout the duration of the project. ZMM has the largest team of professionals dedicated to the design of buildings in West Virginia. CannonDesign has a national presence of over 1,200 professionals who — like ZMM — are focused on buildings. MWL's proposed team has extensive experience with Forensic Science and Forensic Pathology facilities. With offices in Charleston, Morgantown, and Winchester, Virginia, Potesta has grown to a large firm with diverse expertise. Their registered professional engineers have over 300 years of experience among them and are supported by a capable team of engineers and designers.

Our team has never stopped working on this project. We continue to refine the design, reacting to the information in the RFP regarding changes to the program.

Below is a summary of our staffing capacity for each of the key team members noted in our proposal.

Staffing Plan / Available Capacity

PERSONNEL	2023 NOV	DEC	2024 JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
ZMM														
Adam Krason	30%	30%	30%	30%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%
Michael Phillips	30%	30%	40%	40%	50%	50%	60%	75%	75%	75%	75%	75%	75%	75%
Rodney Pauley	40%	50%	50%	50%	75%	75%	75%	90%	90%	90%	90%	90%	90%	90%
Robert Doefinger	30%	30%	40%	40%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
John Pruett	25%	40%	40%	40%	50%	50%	50%	60%	60%	60%	60%	60%	60%	60%
Frankie Kantsios	20%	25%	25%	25%	40%	40%	40%	60%	60%	60%	75%	75%	75%	75%
CannonDesign														
Stephen Blair	20%	30%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%
Jeff Murray	50%	50%	50%	50%	60%	60%	80%	80%	80%	80%	80%	80%	80%	80%
Chris Jahn	40%	80%	80%	80%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%
Roland Lemke	45%	50%	65%	65%	65%	75%	75%	60%	60%	70%	70%	70%	70%	70%
Scott Pegler	25%	40%	40%	50%	45%	45%	50%	60%	60%	60%	60%	60%	60%	60%
Erik Terry	20%	30%	50%	50%	55%	55%	55%	55%	30%	30%	30%	30%	30%	70%
Leslie Trevitt	20%	20%	20%	20%	20%	20%	90%	90%	90%	90%	90%	90%	90%	90%
MWL														
Russell McElroy	30%	30%	50%	50%	50%	60%	60%	60%	60%	60%	60%	60%	60%	60%
Bonnie Carver	40%	50%	65%	65%	65%	75%	75%	75%	75%	75%	75%	75%	75%	75%
Potesta														
Dana Burns	30%	30%	50%	50%	50%	50%	40%	40%	40%	40%	40%	40%	40%	40%
Christopher Grose	30%	75%	90%	90%	90%	90%	65%	50%	50%	50%	50%	50%	50%	50%

Objective 5:
Compliance with State of West Virginia Purchasing Regulations, Construction Administration

ZMM Architects and Engineers was established in Charleston in 1959. The majority of the work completed by our firm is for various governmental entities within West Virginia, many of which utilize the American Institute of Architects (AIA) general conditions, which are supplementally amended by the State of West Virginia to bring them into compliance with the WV State Code. ZMM principal architect Adam Krason sat on the committee that included the Contractors Association of West Virginia, various state agencies, and the Attorney General's office to assist with the development of the supplemental condition to both the 2007 and 2017 versions of the AIA Documents. Our recent experience includes work for the following State agencies that utilize these specific documents:

- West Virginia General Services Division (GSD)
- West Virginia Department of Health and Human Resources (DHHR)
- West Virginia Department of Environmental Protection (DEP)
- Marshall University
- West Virginia State Police (WVSP)
- West Virginia Department of Agriculture (WVDA)
- West Virginia Higher Education Policy Commission (HEPC)
- West Virginia Community & Technical College System (CTCS)
- West Virginia Department of Commerce/Division of Natural Resources (DNR)
- West Virginia Department of Education (WVDE)
- West Virginia Division of Highways/Department of Transportation (DOH/DOT)
- West Virginia Army National Guard (WVARNG)
- West Virginia Lottery
- West Virginia Supreme Court
- West Virginia Department of Veterans Assistance
- West Virginia School of Osteopathic Medicine (WVSOM)

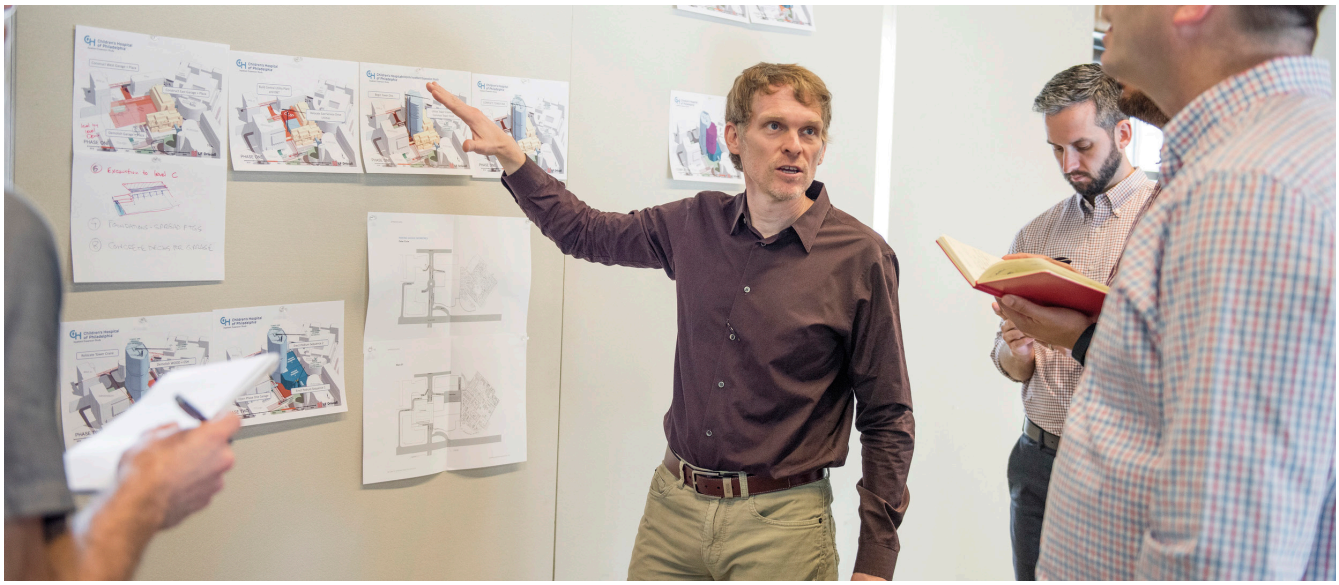
Once the documents have been approved, the ZMM/CannonDesign/MWL team will assist the State of West Virginia General Services Division with the bidding and construction phases of the project, including participation in a pre-bid meeting, developing any required addenda, responding to RFI's, reviewing submittals, and attending construction progress meetings. Our team strongly recommends that the procurement documents include pre-qualification of potential bidders to ensure that they have experience delivering complex laboratory projects. Our efforts will continue through substantial and final completion inspections and include an eleven-month warranty walk-through. Our goal throughout this process will be to act as part of the WVGSD team, with the objective of ensuring the seamless delivery of your project.

During the construction phase our team will provide additional resources to help manage a timely flow of information between all parties (Owner, Architect, and Contractor). The project manager (Rodney Pauley) will continue to serve as the primary representative of our team and will attend all construction progress meetings. Our team also employs in-house construction administrators (who will assist the project manager) and construction phase administrative staff who track all information (incoming and outgoing) during the construction phase to ensure that the design team is responsive to project needs. ZMM also utilizes ShareFile to provide all team members access to all project documentation. This information, as well as the design progress noted above, is reviewed at weekly internal coordination meetings to verify that we are meeting all expectations and deadlines.

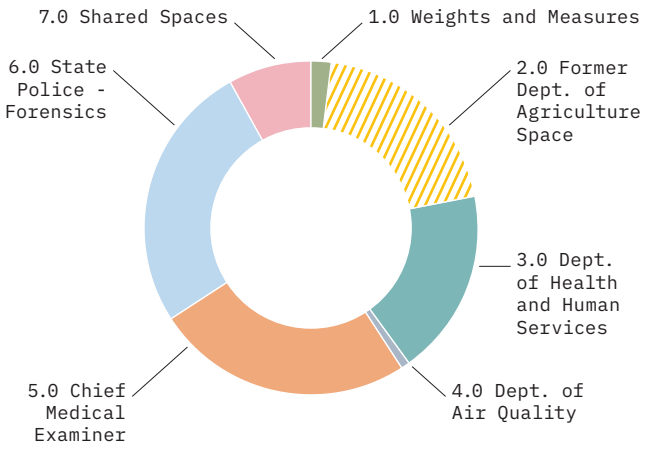
For a project of this size, the ZMM/CannonDesign/MWL team would recommend a full-time clerk-of-the works to represent the State on-site during construction. In many cases ZMM has employed the person in this position on behalf of the Owner. Additionally, CannonDesign and MWL will take an active role during the equipment procurement and installation phase to ensure a smooth transition to operation.

During project construction the design team will continue to be engaged in ensuring that the materials and systems being provided, and installed, comply with the design intent. Standard construction phase services include:

- Attending regularly scheduled construction progress meetings.
- Review and respond to shop drawings and submittals.
- Respond to RFI's generated during construction.
- Review and respond to change orders as needed.
- Participate as needed in weekly progress update conferences with the Owner.
- Make site visits to review construction progress and generate an inspection report for each visit.
- Assist with developing a punch-list of remaining work.
- Complete a substantial and final completion inspection.
- Assist as needed in the startup and project closeout process.

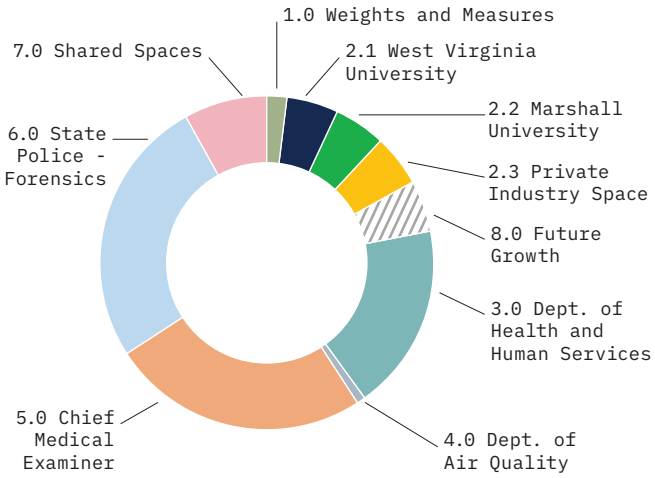


Program Space Distribution



Net Space Distribution (194,000 NSF)

Department	NSF	
1.0 Weights and Measures	3,890	2%
2.0 Former Dept. of Agriculture Space	39,334	20%
3.0 Dept. of Health and Human Services	35,271	18%
4.0 Dept. of Air Quality	2,010	1%
5.0 Chief Medical Examiner	48,240	25%
6.0 State Police - Forensics	49,643	26%
7.0 Shared Spaces	15,560	8%
Total	**193,948**	



Net Space Distribution (194,000 NSF)

Department	NSF	
1.0 Weights and Measures	3,890	2%
2.1 West Virginia University	9,834	5%
2.2 Marshall University	9,834	5%
2.3 Private Industry Space	9,834	5%
8.0 Future Growth	9,834	5%
3.0 Dept. of Health and Human Services	35,271	18%
4.0 Dept. of Air Quality	2,010	1%
5.0 Chief Medical Examiner	48,240	25%
6.0 State Police - Forensics	49,643	26%
7.0 Shared Spaces	15,560	8%
Total	**193,948**	

We understand from the RFP that space for the Department of Agriculture will not be included in this project, and space for Marshall University, West Virginia University and industry partners is now desired. In the study we completed, the Department of Agriculture — at 39,334 NSF — comprised roughly 20% of the preferred concept option ("Option 2"). If the building shell and core were to remain at roughly 194,000 SF, this space could be instead allocated to the new program elements, either in full or in part — reserving the balance for future growth or even reducing the overall building size.

For example, one scenario (illustrated here) might be that each of the three departments would be allocated 9,834 SF (25% of the former Department of Agriculture space), leaving an additional 9,834 SF as future expansion or even for reduction of the building footprint. Obviously there are many other options, and these would be among the first items to be discussed and vetted once the project starts. The benefit of our team is that we can immediately engage in these essential conversations.

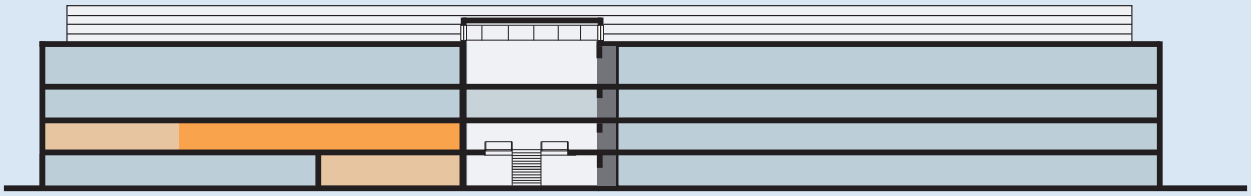
Updated Concept Design

The concepts included here are based on the work our team previously developed working closely with your stakeholders. The overall building footprint and spatial organization are similar while recognizing the changes in program that remove the West Virginia Department of Agriculture and replace it with space designated for Marshall University and West Virginia University, and possibly industry partners.

The building's shape takes advantage of the site, providing long views down to the valley beyond and catches natural light for the office spaces throughout the day. The north side is sheltered by the hill and creates a secure and relatively hidden space for the significant vehicular and service needs of the facility. The building is organized around two highly flexible wings with entry and public zones in the center. Each wing is designed to accommodate central circulation with offices oriented towards the front and laboratories oriented towards the back; however, the corridor can be offset depending on the needs of each particular agency and department. Both the lab and office spaces are laid out based on regular planning modules which lend short term adaptability and long term flexibility as needs evolve over time. The building systems are also planned for flexibility.

We have shown two of many possible ways that the universities can be incorporated into the building. One logical approach is to locate all of their space on the two lowest levels which makes it easier to secure the space and maintain a higher level of security on the upper levels. Another approach distributes the university space on all levels; security can be maintained for each of the wings but allow better adjacency between the university space and the agencies for training and collaboration. In this option it is easier to identify space for each school (Marshall would get two floors, and WVU would get two floors) if that is a priority. Many other options are possible, which demonstrates the flexibility of the space.

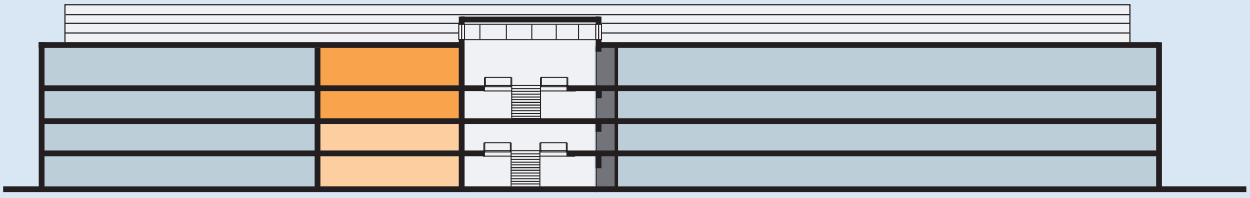
The exterior design indicates one of many possible solutions that is simple yet interesting; embodies high quality yet is cost conscious; and fits with the other campus architecture combining masonry and curtainwall — while expressing its own identity.



OPTION 1: Concentrated

Single two level atrium keeps university and industry partnership / public spaces concentrated on lower floors with the majority located on the level 2

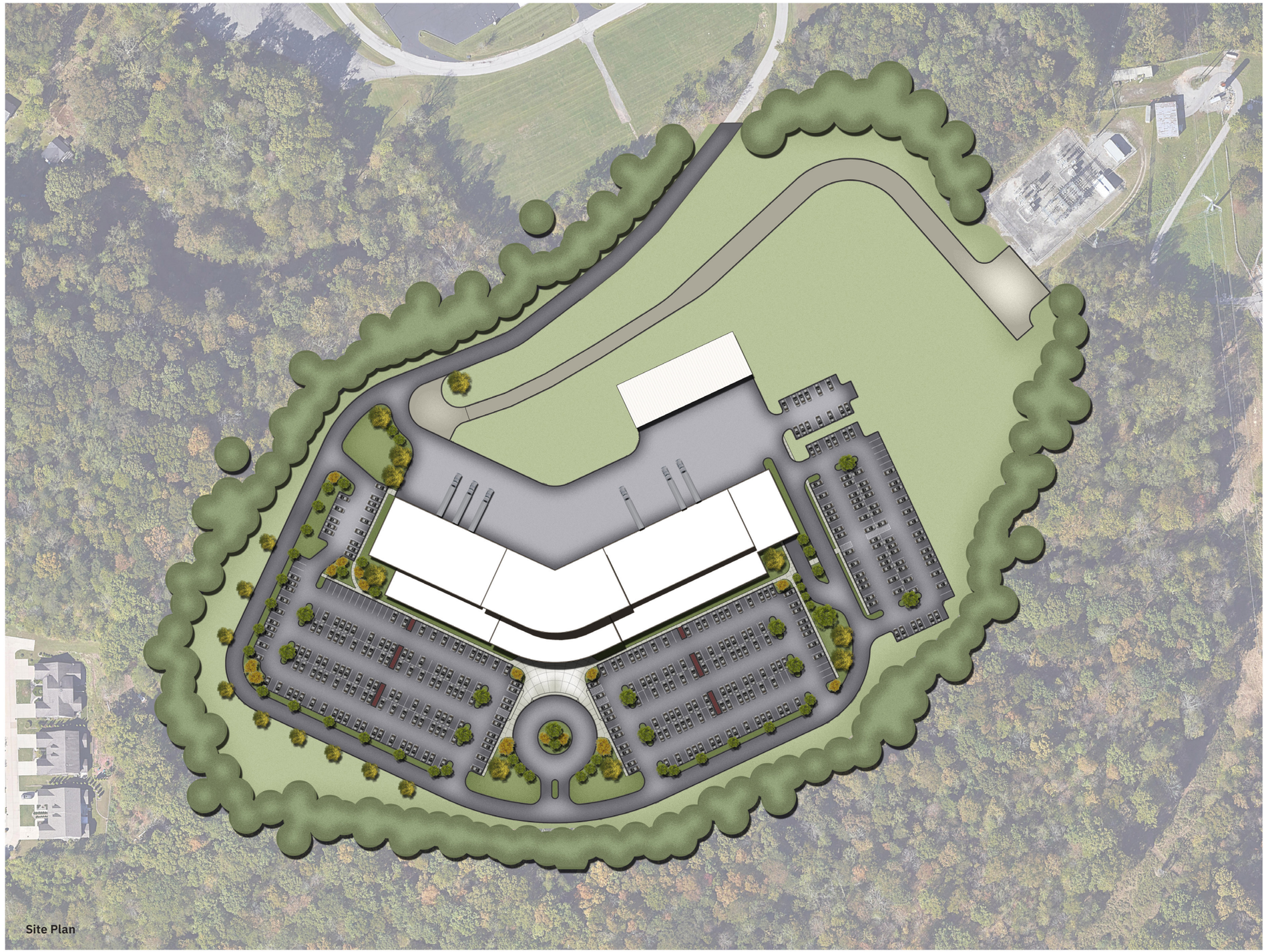
DEPARTMENTAL PROGRAM
MARSHALL / WVU / INDUSTRY PARTNERSHIPS



OPTION 2: Distributed

Double stacked two level atriums with university and industry partnership space distributed on each floor

DEPARTMENTAL PROGRAM
MARSHALL / WVU / INDUSTRY PARTNERSHIPS



Site Plan

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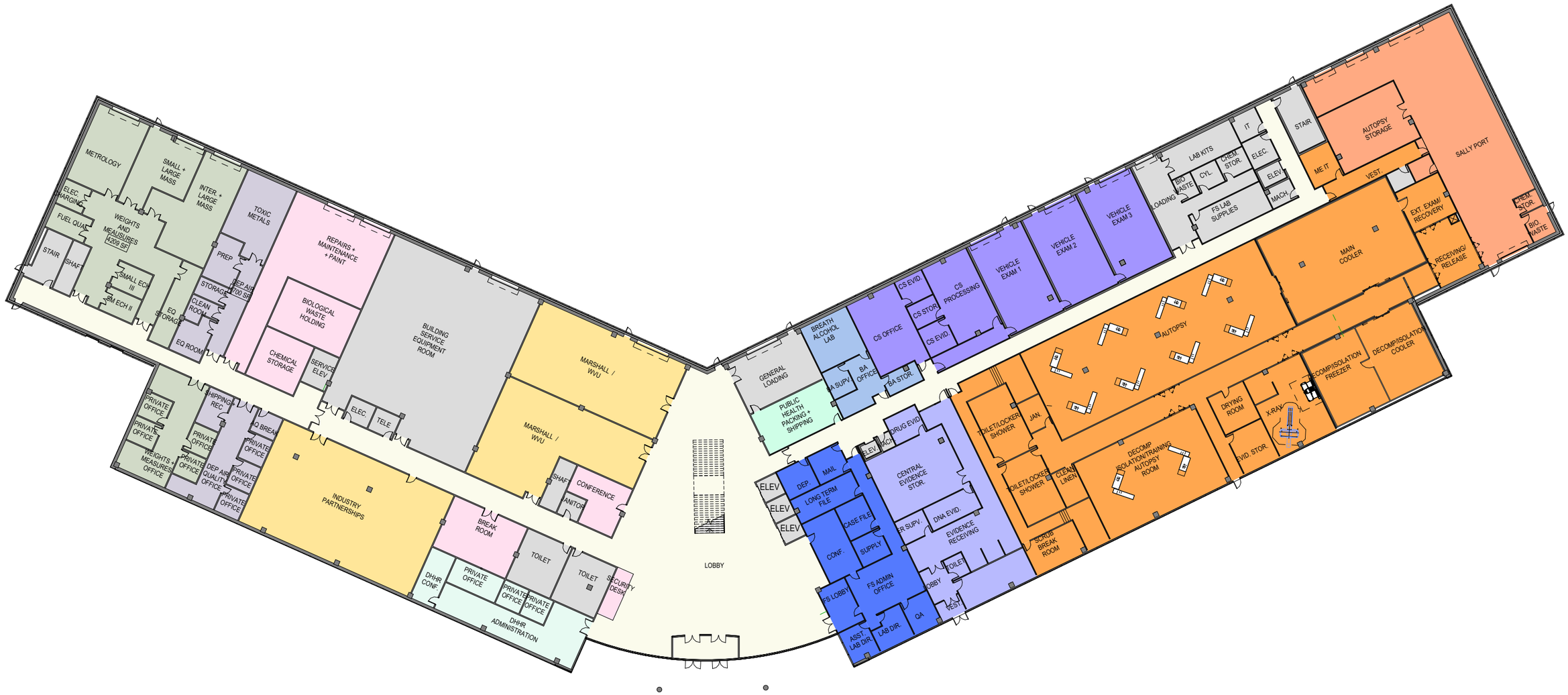
METROLOGY
SMALL + LARGE MASS
INTER. + LARGE MASS
ELEC. CHARGING
FUEL QUAL.
WEIGHTS AND MEASURES
4269 SF
STAIR
SHAF.
SMALL ECH III
LRM ECH II
EQ STORAGE
EQ ROOM
STORAGE
CLEAN ROOM
PREP
DEP AIR QUALITY
1100 SF
TOXIC METALS
REPAIRS + MAINTENANCE + PAINT
BIOLOGICAL WASTE HOLDING
CHEMICAL STORAGE
SERVICE ELEV.
BUILDING SERVICE EQUIPMENT ROOM
ELEC.
TELE
MARSHALL / WVU
MARSHALL / WVU
SHAF.
CONFERENCE
JANITOR
PRIVATE OFFICE
PRIVATE OFFICE
PRIVATE OFFICE
PRIVATE OFFICE
PRIVATE OFFICE
PRIVATE OFFICE
PRIVATE OFFICE
SHIPPING REC.
LD BREAK
DEP AIR QUALITY OFFICE
WEIGHTS + MEASURES OFFICE
INDUSTRY PARTNERSHIPS
BREAK ROOM
TOILET
TOILET
SECURITY DESK
DHHR CONF.
PRIVATE OFFICE
PRIVATE OFFICE
PRIVATE OFFICE
DHHR ADMINISTRATION
LOBBY
GENERAL LOADING
PUBLIC HEALTH PACKING + SHIPPING
BREATH ALCOHOL LAB
BA SUPV.
BA OFFICE
BA STOR.
CS OFFICE
CS EVID.
CS STOR.
CS EVID.
CS PROCESSING
VEHICLE EXAM 1
VEHICLE EXAM 2
VEHICLE EXAM 3
LOADING
LAB KITS
BIO WASTE
CYL.
CHEM. STOR.
ELEC.
IT
ELEV.
MACH.
FS LAB SUPPLIES
STAIR
AUTOPSY STORAGE
ME IT
VEST.
SALLY PORT
CHEM. STOR.
BIO WASTE
EXT. EXAM/ RECOVERY
RECEIVING/ RELEASE
MAIN COOLER
AUTOPSY
DECOMP/ISOLATION FREEZER
DECOMP/ISOLATION COOLER
DRYING ROOM
X-RAY
EVID. STOR.
TOILET/LOCKER/ SHOWER
JAN.
TOILET/LOCKER/ SHOWER
CLEAN LINEN
DECOMP ISOLATION/TRAINING AUTOPSY ROOM
SCRUB/ BREAK ROOM
ELEV.
MACH.
DRUG EVID.
CENTRAL EVIDENCE STOR.
DNA EVID.
EVIDENCE RECEIVING
TOILET
LOBBY
VEST.
ELEV
ELEV
ELEV
DEP.
MAIL
LONG TERM FILE
CASE FILE
CONF.
SUPPLY
FS ADMIN OFFICE
FS LOBBY
QA
ASST. LAB DIR
LAB DIR

1st Floor

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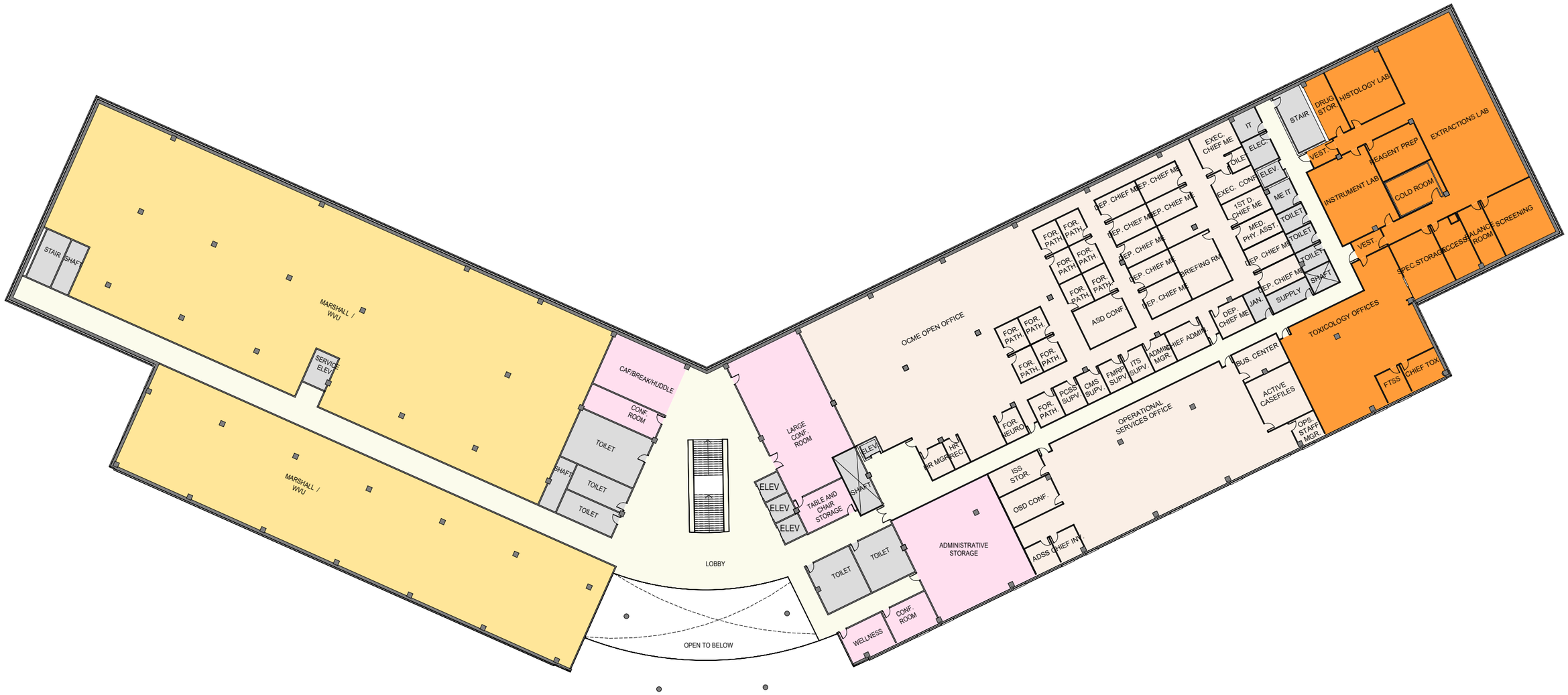
STAIR
SHAFT
MARSHALL / WVU
SERVICE ELEV.
MARSHALL / WVU
MARSHALL / WVU
CAF/BREAK/HUDDLE
CONF. ROOM
TOILET
SHAFT
TOILET
TOILET
LOBBY
OPEN TO BELOW
LARGE CONF. ROOM
ELEV
ELEV
ELEV
TABLE AND CHAIR STORAGE
SHAFT
ELEV.
OCME OPEN OFFICE
HR MGR
HR REC
FOR. PATH.
FOR. PATH.
FOR. PATH.
FOR. PATH.
FOR. PATH.
FOR. PATH.
FOR. PATH.
FOR. PATH.
FOR. NEURO
ASD CONF
DEP. CHIEF ME
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DEP. CHIEF ME
BRIEFING RM
EXEC. CHIEF ME
IT
TOILET
ELEC.
EXEC. CONF.
ELEV.
1ST D. CHIEF ME
ME IT
MED. PHY. ASST.
TOILET
TOILET
DEP. CHIEF ME
TOILET
DEP. CHIEF ME
SHAFT
DEP. CHIEF ME
JAN.
SUPPLY
STAIR
DRUG STOR.
HISTOLOGY LAB
VEST.
REAGENT PREP
EXTRACTIONS LAB
INSTRUMENT LAB
COLD ROOM
VEST.
SPEC.STORAGE
ACCESS
BALANCE SCREENING ROOM
TOXICOLOGY OFFICES
FTSS
CHIEF TOX
ADMIN. MGR.
CHIEF ADMIN
FMRP SUPV.
ITS SUPV.
CMS SUPV.
PCSS SUPV.
FOR. PATH.
OPERATIONAL SERVICES OFFICE
BUS. CENTER
ACTIVE CASEFILES
OPS. STAFF MGR.
ISS STOR.
OSD CONF.
ADSS
CHIEF IN
ADMINISTRATIVE STORAGE
TOILET
TOILET
WELLNESS
CONF. ROOM

2nd Floor

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CLINICAL MICROBIOLOGY
MOL. LAB
STAIR
SHAFT
STORAGE
DARK ROOM
BACTERIOLOGY
NECROPSY
WASTE HOLDING
REC. ROOM
EQ. ROOM
METAL ANALYSIS STORAGE
BALANCE LAB
ENVIRONMENTAL CHEMISTRY
METAL ANALYSIS
PREP LAB
SERVICE ELEV
NEWBORN SCREENING
MASS SPEC LAB
DIAGNOSTICS
ELEC
TELE
SAMPLE SORTING
PUBLIC HEALTH
REF.
MEDIA PREP
TOILET
SHAFT
PUBLIC HEALTH FUTURE EXPANSION
MEETING/ BREAK AREA
LOBBY
HUDDLE ROOMS
WELLNESS
CONFERENCE
HUDDLE ROOMS
CONFERENCE
LIBRARY + CONF.
PUBLIC HEALTH FUTURE EXPANSION
BIO TERRORISM
BIO TERRORISM
BIO TERRORISM SUPPLY STORAGE
ENV. MICROBIOLOGY
ENV. CHEM
ENV. MICROBIOLOGY
ENV. CHEM
ENV. MICROBIOLOGY
CHEM TERRORISM
CLINICAL MICROBIOLOGY
CLINICAL MICROBIOLOGY
CLINICAL MICROBIOLOGY
DIAGNOSTICS
DI RECORDS
CRIM TOX SUPPLY STOR.
CANNABIS
DHHR SHARED OPEN OFFICE
NEWBORN SCREENING
NEWBORN SCREENING
NEWBORN RECORDS
PH FILE ROOM + STORAGE
COPY / PRINT
PUBLIC HEALTH
PUBLIC HEALTH
PUBLIC HEALTH
PUBLIC HEALTH
PUBLIC HEALTH
PUBLIC HEALTH
PUBLIC HEALTH
PUBLIC HEALTH
PUBLIC HEALTH
PUBLIC HEALTH
LATENT PRINTS LAB
FIREARMS LAB
SEROLOGY LAB
DATABASE ACCESSIONING
IT
ELEC.
ELEV.
PUNCH
DATABASE STOR.
JAN.
TOILET
TOILET
TOILET
PCR SETUP
SHAFT
STAIR
QUANT
REAGENT PREP
LARGE ALS
PCR SETUP
DOWN
DATABASE AMP
DN
CASEWORK AMP
SMALL ALS
TEMP. EVID.
VEST.
CHG.
EXTRACTIONS
FA SUPV.
FA EVID STOR.
REF. COLLECTION
GSR/SNR
ALS 1
ALS 2
NIBIN
VEST.
ELEV.
SHAFT
ART/WORKSHOP
AMMO
RANGE
CUST.
ELEV
ELEV
ELEV
VEST.
LP EVID
FUTURE PROGRAM EXPANSION
FUTURE PROGRAM EXPANSION
LATENT PRINTS OFFICE
LP SUP.
EVID. STOR.
DIGITAL SERVER
AV
DIGI. SUPV.
PHOTOGRAPHY
DIGITAL CRIMES/ PHOTOGRAPHY
BIOLOGY OFFICE
T OFFICE
SUPV.
SUPV.
SUPV.

3rd Floor

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TERRORISM BSL 2
TERRORISM BSL 3 SUITE
TERRORISM TRAINING SUITE
STAIR
SHAFT
PUBLIC HEALTH BSL 3
PUBLIC HEALTH BSL 2
SHAFT
SAMPLE RECEIVING
HPLC LC/MS/MS
SAMPLE PREP
METAL LC/MS
ICP/MS
SAFE ROOM
GAS CYLINDER STORAGE
MEDICAL CANNABIS 793
SOLVENT EXTRACTION
EXTRACTION
CULTURE ROOM
STORAGE
GC/MS
SHOWER
SERVICE ELEV
CHEMICAL TERRORISM
SAMPLE PREP + EQUIPMENT
ELEC
TELE
EQUIPMENT ROOM
CLEAN MEDIA + LAB PREP
ENVIRONMENTAL MICROBIOLOGY 880
FUTURE PROGRAM EXPANSION
LEGIONELLA TESTING LAB
SHAFT
JANITOR
TOILET
TOILET
CONFERENCE / HUDDLE
LOBBY
CONFERENCE
SEM PREP
TRACE
SEM
TOXICOLOGY
TRACE SUPV.
TOX. SUPV.
DRUG SUPV.
DRUG/TOX./TRACE OFFICES
VEST
TOX. INSTRUMENT
ELEV
ELEV
ELEV
ELEV
VEST/VID. STOR.
SHAFT
DRUG ANALYSIS LAB
DRUG INSTRUMENT
LARGE CASE
VEST
IT
ELEC
ELEC
JAN.
TOILET
TOILET
TOILET
VEST
SHAFT
STAIR

4th Floor

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View from Entry

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Far View

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Lobby View

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Lobby View

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B Qualifications, Experience, and Past Performance

Our Team
Qualifications
Relevant Design Experience
Client References

ZMM
ARCHITECTS
ENGINEERS

Roots

ZMM was founded in 1959 in Charleston, West Virginia by Ray Zando, Ken Martin, and Monty Milstead.

Mission

Since the inception of the firm, ZMM has been dedicated to providing an integrated approach to building design for our clients.

Prestige

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.

Firm Information

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 inhouse 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.

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.

Expertise

We are the largest team of professionals dedicated to the design of buildings in the State of West Virginia.

Services Provided

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

CANNONDESIGN

Roots

CannonDesign was founded in 1945 and dates back to 1915 in Niagara Falls, NY.

Mission

CannonDesign is a solutions-based design firm focused on helping people continuously flourish.

Prestige

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. Scientific advancements and technological breakthroughs are the driving forces behind almost every industry on the planet. Their success is based on providing timely and highly responsive client service coupled with design innovation and technical innovation.

Other recognitions include:

#6 Science & Technology Design Firm
—Fast Company

Top 10 Architecture and Engineering Design Firm
—Building Design + Construction, Giants

#2 Most Innovative Company in North America
—World Architecture 100

Firm Information

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. 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 State of West Virginia New Consolidated State Laboratory Facility Project.

Expertise

We provide integrated services that span the lifecycle of an organization's transformation.

+ Public health laboratories
+ Medical testing/screening laboratories
+ BSL-3/4 laboratories
+ Water quality laboratories
+ Biodefense laboratories
+ Workplace planning/design
+ Environmental testing laboratories
+ Chemical testing laboratories
+ Materials testing laboratories
+ Laboratory equipment planning
+ Laboratory work flow analysis/ optimization
+ Laboratory consolidation
+ Federal laboratories
+ Modular/flexible laboratory strategies

Services Provided

+ Architecture & Design
+ Consulting & Planning
+ Lab Planning
+ Construction Delivery Services
+ Engineering
+ Environmental Graphics
+ Facility Operations
+ Lighting Design
+ Sustainable & Resilient Design

McClaren, Wilson & Lawrie, Inc.

Roots

McClaren, Wilson & Lawrie, Inc. (MWL) was founded in 1995 with an exclusive commitment to the planning and design of public safety and civic facilities, forensic science laboratories, forensic pathology, research and educational facilities.

Mission

The cornerstone of MWL's success is its commitment to work with each client to addressing their current, as well as future facility needs. MWL's proven process engages clients and seeks to understand and apply appropriate operational and functional criteria as the basis for planning and design efforts. MWL provides design leadership and technical expertise with a skilled, experienced staff working diligently to respond to its clients' interests in function, cost effectiveness and progressive design. MWL consistently delivers practical, flexible and cherished solutions.

Prestige

MWL has achieved international recognition with its extensive portfolio consisting of 325 public safety facilities and 150 laboratories and medical examiner facilities in 46 states, three Canadian provinces and around the world. MWL's clients include a diverse range of government clients at city, county, state and federal levels throughout North America.

A good reputation is gained over time, and MWL is proud to have the endorsement of previous clients for its commitment to excellent service and outstanding laboratory buildings. Through its pursuit of practical, durable and timeless architecture, MWL has shown that there is no inconsistency between functional design and perennial legacy architecture.

We have designed more built Forensic Science and Forensic Pathology facilities than any architectural firm in the United States.

Expertise

+ Forensic Science Laboratories
+ Medical Examiner Facilities
+ Public Health Laboratories
+ Research Laboratories
+ Biosafety 3 & 4 Containment
+ University Laboratories
+ Police and Fire Headquarters
+ Public Safety Training Facilities
+ Firearms Proficiency Ranges
+ 911/EOC
+ Property & Evidence Facilities

Services Provided

+ Master Plans
+ Feasibility Studies
+ Needs Assessments
+ Facility Design
+ Technical Consulting

POTESTA
Engineers and Environmental Consultants

Roots

Potesta & Associates, Inc. (POTESTA) was founded in 1997 to provide quality engineering and environmental consulting services to a wide variety of private and public clients in West Virginia and the eastern United States.

Mission

We take pride in delivering innovative, cost-effective solutions to our clients' complex requirements.

Prestige

Potesta has a long standing relationship with various institutions in West Virginia such as state agencies, the West Virginia Regional Tech Park, Marshall University, and West Virginia University.

Firm Information

We have now grown to a large and very diverse staff that includes civil, geotechnical, environmental, mining and chemical engineers, Licensed Remediation Specialists, site designers, surveyors, CADD designers, biologists, toxicologists, ecologists, geologists, hydrogeologists, foresters, stream restoration design specialists, occupational safety and health specialists, field technicians, a land management team and support personnel.

Our clients include mining, manufacturing and chemical companies, utility companies, municipalities, waste management companies, architects, attorneys, financial institutions, insurance companies, colleges/universities, land developers, construction companies, local, state and federal agencies and non-profit groups. We primarily serve clients east of the Mississippi River, occasionally reaching further west. Our services are provided from our headquarters in Charleston, West Virginia and branch offices in Morgantown, West Virginia and Winchester, Virginia, and Cambridge, OH.

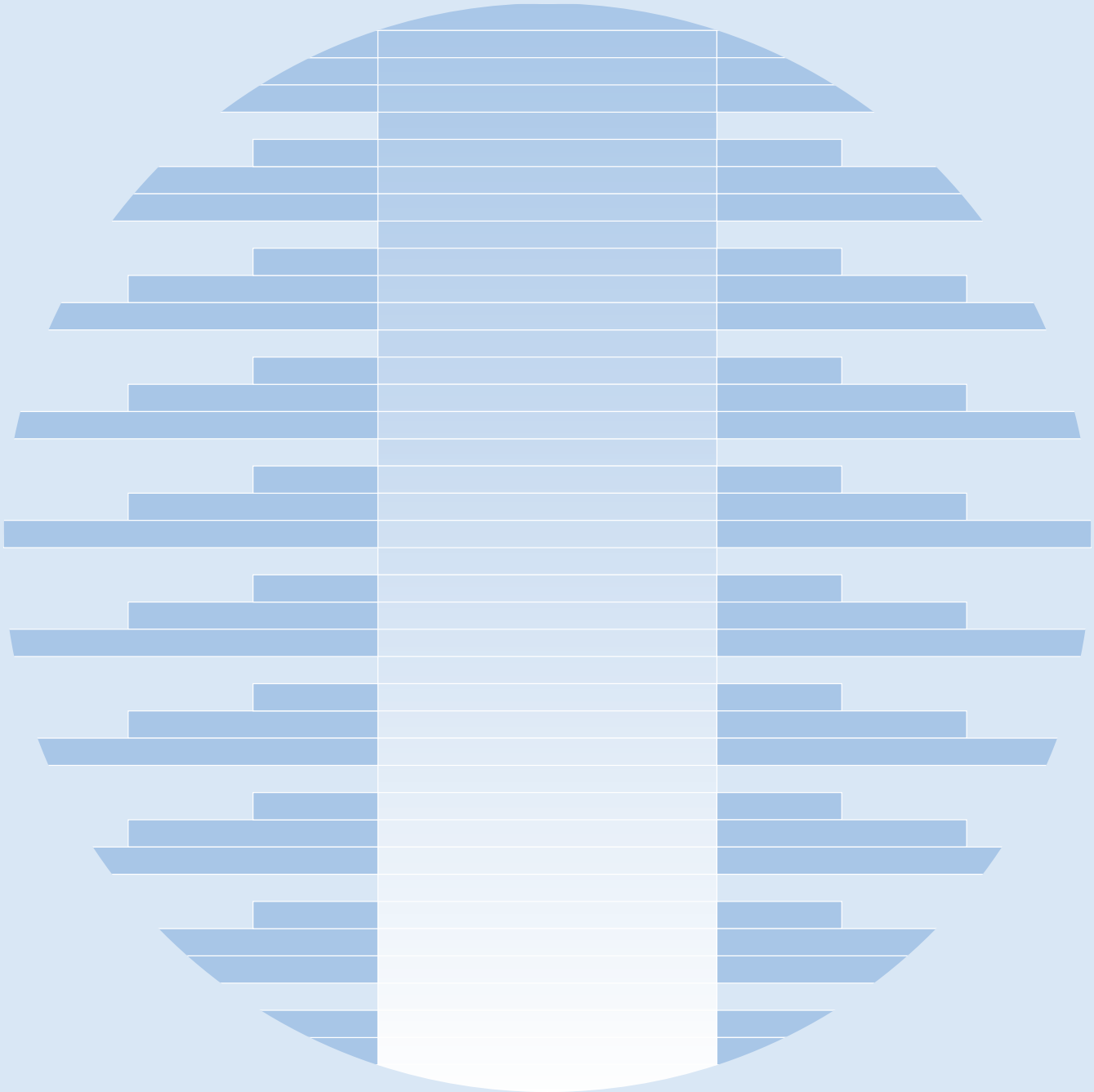
Experience with West Virginia State Agencies

+ West Virginia Department of Highways
+ West Virginia Department of Economic Development
+ West Virginia Department of Commerce
+ West Virginia Department of Environmental Protection
+ West Virginia Department of Health and Human Resources, Bureau for Public Health
+ West Virginia Conservation Agency
+ West Virginia Higher Education Policy Commission

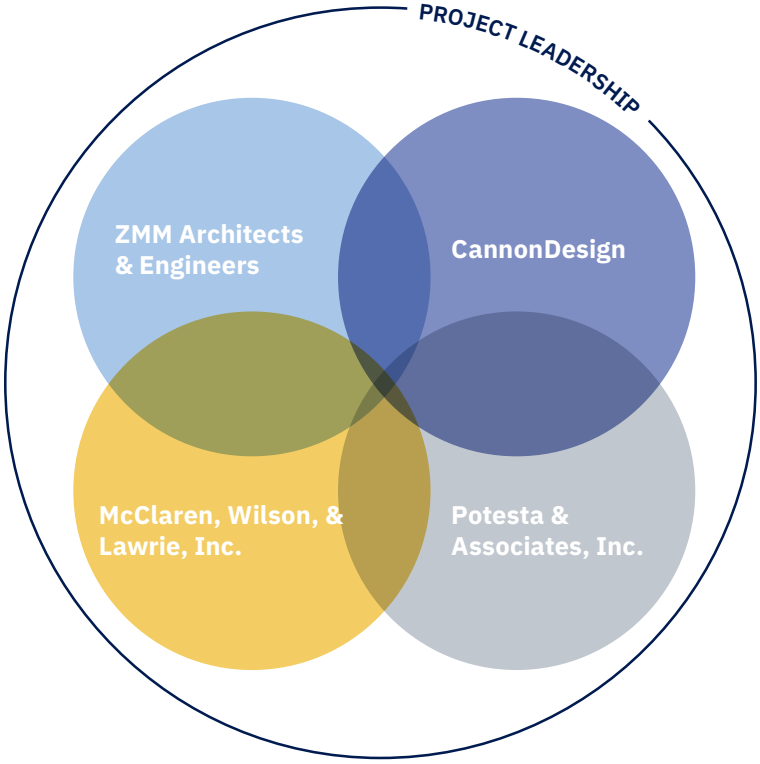
Experience with West Virginia Regional Technology Park

+ City of South Charleston
  - 900,000 Cubic Yard Borrow Site
+ WVRTP
  - Master Plan
  - Sewer Extension
  - Evaluation of Asphalt Parking Lot/ Access Road
  - Various Master Metered Utilities
+ WVRTP/MATRIC, Permit Renewals
+ Dow Inc.
  - Dam Inspections
  - Modification of Permit
  - Landslide Stabalization Plans

One team in pursuit of your vision.



Team Organization



PROJECT LEADERSHIP

Adam R. Krason
Principal, ZMM

Steve Blair
Director, Science & Technology Practice, CannonDesign

Russell H. McElroy
Senior Principal, MWL, Inc.

ZMM ARCHITECTS & ENGINEERS

Michael M. Phillips
Project Manager

Rodney Pauley
Project Manager

Robert Doefinger
Principal

Ronnie Burdette
Structural Engineer

Frankie Kantsios
Electrical Engineer

Carly Chapman
Senior Interior Designer

Carlie Ray
Interior Designer

CANNONDESIGN

Jeff Murray
Senior Project Director

Chris Jahn
Project Manager

Roland Lemke
Project Designer

Erik Terry
Lead Laboratory Planner

Leslie Trevitt
Laboratory Planner

Russell Guest
Project Architect

Som Homphothichak
Biocontainment Expert

Rob Lane
Water Quality Expert

Sarunas Rumsa
QA/QC

Scott Pegler
Engineering Lead

Brian Alesius
Structural Engineer

Pankaj Hoogan
Mechanical Engineering

Roy Waters
Electrical Engineering

Donald Keith
Plumbing/FP

Tina Sarawgi
Lighting Design

Tim Adams
Technology

MCCLAREN, WILSON, & LAWRIE, INC.

Bonnie J. Carver
Senior Principal

H. Bryant Warren Jr.
Laboratory Planner/Designer

Anne M. Vig
Laboratory Architect

POTESTA AND ASSOCIATES, INC.

Dana L. Burns
Vice President

Christopher A. Grose
Senior Engineering Associate

D. Mark Kiser
Chief Engineer

Mark A. Sankoff
Chief Engineer

David B. Sharp
Branch Manager / Senior Engineer

Terrence C. Moran
Senior Engineer

Jarrett M. Smith
Senior Engineer

Adam Krason

AIA, LEED AP, ALEP

Principal

ZMM Architects & Engineers

For more than 25 years, Adam has provided architectural and project management services for large-scale, complex projects that require discerning leadership, extensive consensus-building, and prudent decision-making. As a Principal at ZMM, he has led projects for many state, military, and higher education clients and, in particular, has experience working with the State of West Virginia, West Virginia University, and Marshall University. While his responsibilities include programming, design, documentation, A/E team coordination, and construction administration, it is Adam's straightforward leadership style that ensures a project's ultimate success.

Since 1998, Adam has worked with clients throughout Ohio, West Virginia, and North Carolina. An advocate for sustainable design and enery efficiency, he presents at sustainable design seminars throughout the region. He also serves on the BOD and is responsible for firm management, business development, and corporate philanthropy at ZMM. Outside the office, Adam is actively engaged in his community, serving on a variety of statewide and local civic and non-profit boards.

EDUCATION

BArch, The Catholic University of America

Bachelor of Civil Engineering, The Catholic University of America

CERTIFICATIONS

Registered Architect: VA, WV, OH, KY, MD, NJ

American Institute of Architects (AIA)

LEED Accredited Professional

UNIQUE KNOWLEDGE

- State of West Virginia Process
- Extensive Experience with State Entities in West Virginia
- Leadership of Complex Projects

RELEVANT EXPERIENCE

WV Department of Agriculture Laboratory Evaluations, Guthrie, WV

WV State Laboratory Testing Facilities Assessment, WV

Capital Sports Center, Charleston, WV

Charleston Coliseum and Convention Center, Charleston, WV

State Office Building #5, 10th Floor Renovation (Office of Technology), Charleston, WV

WV Children's Crisis Center, Elkins, WV

WV School of Osteopathic Medicine - Lewisburg, WV
- Master Plan
- Testing Center

WV Regional Technology Park, Charleston, WV
- Building 727 Assessment
- Building 770 Assessment
- Building 754 National Weather Service Center (NOAA)

BridgeValley Community and Technical College, Multiple Locations WV
- Master Plan
- Nursing Wing Renovation (Building 2000)

Marshall University Security Operations Center, Huntington, WV

Joint Interagency Training and Education Center (WVARNG), Kingwood, WV

CANNONDESIGN

Steve Blair

PE, LEED AP

Principal in Charge
CannonDesign

Steve's more than 30 years of experience has focused on the design of laboratory facilities for state, federal, academic and corporate clients. As an engineer, he brings a practical approach in developing laboratory facilities focused on functional excellence and operational maintainability. His experience includes numerous state laboratory facilities, as well as federal clients such as Oak Ridge National Laboratory, the National Institutes of Health, and the National Cancer Institute.

EDUCATION

Bachelor of Science, Mechanical Engineering, Drexel University

CERTIFICATIONS

Professional Engineer: PA

International Association of Pharmaceutical Engineers

LEED Accredited Professional

UNIQUE KNOWLEDGE

- Complex Laboratory Design and Planning
- Government Facilities
- Public Health Laboratory Design
- Phased Design

RELEVANT EXPERIENCE

West Virginia Department of Agriculture, Programming, Feasibility Study, and Concept Design, 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.

State of West Virginia Co-located State Laboratories Facility Feasibility Study & Concept Design, Charleston, WV
New 270,000 SF statewide testing laboratory that brings together a diverse range of testing laboratories from multiple departments to support greater effectiveness and flexibility to replace a collection of dispersed and outdated facilities. A wide range of functions including specialized laboratories for forensics, medical examiner, public health, environmental services, and agriculture are all included.

State of Michigan, Public Health and Environmental Science Lab, Lansing, MI
300,000 SF lab that includes BSL3 biocontainment laboratories, cleanrooms, chemistry labs supporting water and environmental testing. Supports long term flexibility and advanced technology, and the design focuses on supporting the laboratory staff through human centered design features.

Johns Hopkins University, Applied Physics Laboratory, Building 201, Laurel, MD
Building 201 consolidates federally funded research program teams from 8 different locations into one consolidated research facility. The new 263,000 gsf facility houses research from multiple federal agencies including NIH, NASA, DOD, DOE, NOAA. In addition to numerous laboratories, the complex includes a conference center, a cafe, outdoor amenities, and a rooftop balcony.

National Cancer Institute, Consolidated Research Laboratory Rockville, MD
A 65,000-gsf, $40M research facility for the National Cancer Institute. This laboratory houses a genomics research lab, a translational genomics lab, a genomic susceptibility lab, and a genetic epidemiology lab, along with adjacent office, meeting, and amenity spaces for staff.

State of MD, New Public Health Lab, Baltimore, MD*
$116M, 232,000-sf laboratory building. The facility includes open and closed laboratories, a secure holding dock, training facilities, and an All Hazards Receipt Facility.

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.

**Experience in prior practice*

Michael M. Phillips

AIA, LEED AP

Project Manager

ZMM Architects & Engineers

As a Project Manager and a Senior Project Architect, Michael has organized, planned, and managed projects for many client types, including healthcare, higher education, military, and correctional. Relevant to this project is his experience working with the State of West Virginia on its recent laboratory assessments and evaluations.

In addition to West Virginia, Michael has worked on projects throughout Pennsylvania, Virginia, Florida, and Tennessee. He is responsible for programming, design, documentation, and construction administration.

EDUCATION

BArch: University of Tennessee, School of Architecture

CERTIFICATIONS

Registered Architect: WV, VA

LEED Accredited Professional

WV Chapter, American Institute of Architects (AIA)

UNIQUE KNOWLEDGE

- State of West Virginia Process
- Extensive Experience with State Entities in West Virginia
- Project Management of Complex Projects

RELEVANT EXPERIENCE

WV Department of Agriculture Laboratory Evaluations, Guthrie, WV

WV State Laboratory Testing Facilities Assessment, WV

Charleston Area Medical Center (Multiple Locations)

- Cardiac Diagnostic Lab, Hybrid Operating Suite, Angio-CT, AII-Isolation Rooms General Hospital, Charleston, WV
- Cardiac Diagnostic Lab, Nuclear Imaging Suite, AII-Isolation Rooms,
- Pre/Post OP, Teays Valley, WV
- 48 Bed Critical Care Unit Memorial Hospital, Charleston, WV
- Urology Clinic and Lab, Hurricane, WV

Appalachian Regional Healthcare (Multiple Locations)

- USP 797/800 Hazardous Compounding Pharmacy, Chemotherapy Infusion Suite, Central Sterile, Beckley, WV
- Pharmacy Renovations, Hinton, WV
- Lab Replacement, Pharmacy Renovations, MRI, Whitesburg, WV

Mineral County Health Airborn Infection Isolation and Response Facility, Keyser, WV

Hampshire County Health Airborn Infection Isolation and Response Facility, Augusta, WV

WVDNR District IV Headquarters and Necropsy Lab, Beckley, WV

WVU Medicine Jackson General Hospital, Ripley, WV

New River Health Clinic and Labcorp, Oak Hill, WV

Asthma and Allergy Center, Charleston, WV

Mountain State Oral Surgery, Charleston, WV

State of WV Children's Crisis Center, Elkins, WV

WVDNR Tomblin Facilities with Necropsy Lab - Holden, WV

Highland Hospital Secure Intake, Charleston, WV

Rodney Pauley

AIA

Project Manager

ZMM Architects & Engineers

As Project Manager for ZMM, Rodney oversees the daily design and production of projects, working in conjunction with in-house architectural and engineering staff to ensure buildings meet program requirements, budget and schedule goals, and the client's long-term objectives. Having worked with clients in the higher education, healthcare, and commercial markets, Rodney has recently managed ZMM's projects for the State of West Virginia and the West Virginia Regional Technology Park.

Working with principals to manage contracts, staffing, and project deliverables, Rodney has a broad knowledge of building materials and services, building codes, construction techniques, and architectural detailing. His career began in 1992 in Atlanta, where he worked for 12 years and became an Associate at his previous firm. In 2010, he moved back to Charleston to be ZMM's Project Manager for supervising design and production.

EDUCATION

BArch: University of Tennessee

Associate of Science, West Virginia Institute of Technology

CERTIFICATIONS

Registered Architect: VA

UNIQUE KNOWLEDGE

- State of West Virginia Process
- Extensive Experience with State Entities in West Virginia
- Project Management of Complex Projects

RELEVANT EXPERIENCE

WV Department of Agriculture Laboratory Evaluations, Guthrie, WV

WV State Laboratory Testing Facilities Assessment, WV

Charleston Coliseum and Convention Center, Charleston, WV

WV State Capitol Senate Bathroom Renovations, Charleston, WV

Capital Guard House, Charleston, WV

WV Lottery Headquarters, Charleston, WV

State Office Building #5 and #6 Renovations, Charleston, WV

WV Children's Crisis Center, Elkins, WV

WV School of Osteopathic Medicine - Lewisburg, WV
- Master Plan
- Testing Center

WV Regional Technology Park, Charleston, WV
- Building 754 National Weather Service Center (NOAA)

Wood County Resiliency Center, Parkersburg, WV

WVDNR Pipestem State Park Lodge Renovations, Pipestem, WV

WVU Institute of Technology Renovations, Montgomery, WV

BridgeValley Community and Technical College Master Plan, Montgomery, WV

Valley Health Clinics, Multiple Locations WV

CANNONDESIGN

Jeff Murray

FAIA, LEED AP

Senior Project Director

CannonDesign

Jeff has been providing client facing experiential and technical design leadership for complex projects supporting research and education work throughout his four-decade career. Jeff has pioneered iterative and collaborative design processes that engage stakeholders as active participants in the design process. Jeff was recently recognized by the College of Fellows of the American Institute of Architects (FAIA) for his ability to successfully lead complex science projects and engage large stakeholder groups as active participants in the design process.

EDUCATION

MArch: Ohio State University

BArch: University of Notre Dame

CERTIFICATIONS

Registered Architect: PA

LEED Accredited Professional

FAIA (AIA College of Fellows)

UNIQUE KNOWLEDGE

- Complex Laboratory Design and Planning
- Government Facilities
- Public Health Laboratory Design
- Phased Design

RELEVANT EXPERIENCE

State of West Virginia Co-located State Laboratories Facility Feasibility Study & Concept Design, Charleston, WV
New 270,000 SF statewide testing laboratory that brings together a diverse range of testing laboratories from multiple departments to support greater effectiveness and flexibility to replace a collection of dispersed and outdated facilities. A wide range of functions including specialized laboratories for forensics, medical examiner, public health, environmental services, and agriculture are all included.

State of Michigan, Public Health and Environmental Science Lab, Lansing, MI
300,000 SF lab that includes BSL3 biocontainment laboratories, cleanrooms, chemistry labs supporting water and environmental testing. Supports long term flexibility and advanced technology, and the design focuses on supporting the laboratory staff through human centered design features.

Oak Ridge National Laboratory, Second Target Station, Oak Ridge, TN
400,000 SF multi-building expansion of the Spallation Neutron Source at Oak Ridge National Laboratory. The STS will house newly developed technology that will allow particle physics to research soft and biological materials for the first time. Project includes a wide range of specialized labs and workshops, large scale instrumentation halls, containment facilities, linear accelerator tunnels, as well as office and conference space.

Johnson Controls Advanced Development and Engineering Center (JADEC), York, PA*
340,000 SF research and testing facility. Phase one scope includes 240,000 SF testing facility and 100,000 SF office space on a 60-acre site near the Mason Dixon line (PA/MD border). The testing facilities included specialized large scale chambers for testing acoustics and temperature extremes.

Industrial Scientific Corporation Global Headquarters, Pittsburgh, PA*
Design of corporate headquarter facility. Phase 1 of the project involved 200,000 SF including 70,000 SF of light manufacturing space, 80,000 SF of offices, 20,000 SF of laboratories, and 30,000 SF of shelled space. The project site was master planned to accommodate 350,000 SF.

SUNY Polytechnic, College of Nanoscale Science and Engineering, NFX NanoFabXtension Facility, Albany, NY*
New 325,000 SF cleanroom facility for advanced semiconductor and nanotechnology research and development. This advanced facility is the first in the world to house extreme ultraviolet light (EUVL), 450 mm toolset and automated material handling. The project includes a large CUB expansion and a personnel and material handling link that crosses an existing four-lane highway.

NCI, Advanced Technical Research Center for Frederick National Laboratory for Cancer Research, Frederick, MD*
330,000 SF Advanced Technical Research Facility with labs for cancer research, pilot production of potential drug therapies, and support spaces. The labs are designed to be highly flexible, with overhead service carriers, and table based lab benching. 10% of all the labs are designated for outside researchers to collaborate with the NCI researchers.

**Experience in prior practice*

CANNONDESIGN

Chris Jahn

AIA, LEED AP

Project Manager
CannonDesign

Chris is driven by the notion that well-designed space is critical to our health, performance and wellbeing. Through 23 years of practice, he brings a keen perspective to projects for various government agencies. He understands what drives and defines their success – embracing each institution's mission as his own, delivering outstanding solutions satisfying the myriad of requirements and stakeholders that are inevitably involved in these complex projects. Chris is relentless in diving deep to uncover the needs and solutions that result in better outcomes for the clients he serves. His energy and passion are infectious, encouraging everyone involved to contribute and ensures their voices are understood, not just heard. He brings this to bear on each project – delivering results that truly exceed expectations.

EDUCATION

MArch: University of Illinois

Master of Science, Civil Engineering and Construction Management: University of Illinois

BArch: University of Illinois

CERTIFICATIONS

Registered Architect: NY

American Institute of Architects (AIA)

LEED Accredited Professional

NCARB Certificate

UNIQUE KNOWLEDGE

- Institutional and Governmental Clients
- Multi-Stakeholder Projects
- Complex Laboratory Design and Planning

RELEVANT EXPERIENCE

SUNY Morrisville, Agricultural and Clean Energy Technology Center (ACET), Morrisville, NY*
$15M, 34,000-sf new facility to house the Clean Energy and Diesel Tech programs. High-quality space with elegant use of cost-effective materials, efficient layout of space, effective use of sloped site, high-performing low EUI building utilizing straightforward campus-standard mechanical systems.

Cornell University, New Experimental Hall for CHESS, Ithaca, NY*
$20M, 17,500 SF addition to the Cornell High Energy Synchrotron Source. Enables the addition of three new beamlines, each generating $1M annual revenue.

Cornell University, Atkinson Hall, Ithaca, NY*
$54M, 105,000 SF Multidisciplinary Biomedical Research Facility. Through co-location of research, collaboration and administrative space, the building fosters collaboration among four different departments across multiple colleges.

Cornell University, Veterinary Research Tower Floors 6 & 7 Renovation, Ithaca, NY
$5M, 22,000 SF renovation of lab and office space on the 6th and 7th floors for the College of Veterinary Medicine. Flexible open lab concept with a balance of support spaces to enable adaptability as research needs evolve.

University of Missouri-Columbia, Biomedical Research Lab and Morgue Renovation, Columbia, MO*
Renovation included two floors of biomedical research laboratory space and a co-located morgue and autopsy suite shared by the County medical examiner and the School of Medicine. Secure autopsy area provided separate from medical school space, the combined facilities leveraged shared infrastructure and other elements, affording each ample space and enhancing their capabilities.

OGS / DHSES, Emergency Vehicles Operations Center (EVOC)*
Training center and garage for emergency vehicle operations training. Included simulated ER receiving bay, garage to house police cars fitted with outriggers (to prevent rollover during training), firetrucks, ambulances, etc.; and crow's nest observation tower).

OGS / DHSES, Cityscape*
Also at the NYS training facility. Indoor/outdoor facility with simulated environments (school, shopping mall, seedy motel, restaurant, bar, etc.) for simulating a variety of first responder scenarios incl. natural disaster, terror attack, drug bust, active shooter, etc.

**Experience in prior practice*

Russell H. McElroy

AIA, NCARB

Senior Principal

McClaren, Wilson & Lawrie, Inc. (MWL)

An architect for more than 30 years, Russell has focused his career on the design of laboratories and medical examiner facilities, ranging broadly from 1,500 to 665,000 sf. Laboratory units included in his scientific knowledge are DNA, drug analysis, toxicology, latent print, digital/computer, trace with SEM, questioned documents, breath analysis, evidence control, police ID, and shared lab support systems. He has also designed a variety of forensic science facilities, including high-containment BSL-3 and BSL-4 laboratories. His work on medical examiner/coroner facilities is unmatched — he pioneered the design of the first autopsy suite in the U.S. to seek BSL-3 verification with the CDC/NIH. He is recognized internationally for designing the first CL-3 autopsy suite in Canada and for designing the Haitian Nation Labs' first public health BSL-3 lab dedicated to TB diagnostics.

In addition to labs and medical examiner facilities, Russell has designed public health facilities, high-hazard chemical containment structures, cold rooms, nuclear clean rooms (ISO5 and EU Class A), nanotechnology, TEM, laser, blood labs, water labs, molecular labs and microbiology labs.

EDUCATION

BArch: Virgina Tech

CERTIFICATIONS

Registered Architect: GA, IN, LA, MD, NE, NH, OH, OK, SC, VA

National Council of Architectural Registration Boards (NCARB)

American Institute of Architects (AIA)

National Fire Protection Association (NFPA)

International Veterinarians Bio-Safety Group (IVBG)

UNIQUE KNOWLEDGE

- Forensic Science Laboratories
- Forensic DNA Laboratories
- Medical Examiner/Coroner Facilities
- Health Science Laboratories
- High Containment Laboratories
- Designed First BSL-3 Autopsy Suite in the U.S.

RELEVANT EXPERIENCE

Indiana State Police Statewide Forensic Study, Indianapolis, IN

Forensic Center, Montgomery County, Conroe, TX

Ohio Bureau of Criminal Investigations & Bowling Green State University Forensic Laboratory, Bowling Green, OH

Health Sciences Authority Blood Services Group Facility, Singapore

Kansas Bureau of Investigation Forensic Laboratory, Topeka, KS

Stanislaus County Sheriff's Coroner's Facility, Modesto, CA

Forensic Services & Coroner's Complex, Toronto, Ontario, Canada

Northern Virginia Division of Forensic Science Laboratory & Medical Examiner Facility, Manassas, VA

Nebraska State Police Crime Lab, Lincoln, NE

Police Department Forensic Science Laboratory, Columbus, OH

Franklin County Forensic Science Center, Columbus, OH

Lancaster County Coroner's Facility, Lancaster, PA

University of Central Oklahoma College of Math & Science Laboratory Edmond, OK

St. Louis County Police Department Crime Laboratory, St. Louis, MO

Alameda County Coroner Facility, Forensic Science & Public Health Laboratories, Oakland, CA

Public Health BSL3, American Society for Microbiology, Port Au Prince, Haiti

State of Maryland Forensic Center Examiner, Baltimore, MD

Department of Public Safety Forensic Science Laboratory, Houston, TX

Department of Public Safety Forensic Science Laboratory, El Paso, TX

Utah Unified State Laboratory Module 2, Taylorsville, UT

Bonnie J. Carver

AIA, NCARB

Senior Principal

McClaren, Wilson & Lawrie, Inc. (MWL)

An architect for more than 25 years, Bonnie has focused her career on forensic laboratory, medical examiner and coroner facilities. Under her guidance, design intentions are balanced with project budgets, and continuity is ensured from the earliest phases through construction administration. She is well known for her attention to detail, giving her clients the highest sense of confidence the work is done right, from the start.

Bonnie's multifaceted background has provided her with the strong technical ability to successfully manage and provide innovative solutions to complex projects. A testament to her abilities, she was one of the designers of the award-winning 665,000-sf Forensic Services and Coroner's Complex in Toronto, Canada. Her knowledge of forensic laboratories and pathology facilities is further demonstrated by her involvement in a wide variety of renovation and new construction opportunities throughout the country.

EDUCATION

BArch: Virgina Tech

CERTIFICATIONS

Registered Architect: DE, FL, LA, ME, MO, PA, RI, VA

National Council of Architectural Registration Boards (NCARB)

American Institute of Architects (AIA)

UNIQUE KNOWLEDGE

– Forensic Science Laboratories

– Forensic DNA Laboratories

– Medical Examiner/Coroner Facilities

RELEVANT EXPERIENCE

Forensic Services & Coroner's Complex, Toronto, Ontario, Canada

Scientific Detection Laboratory, State of Alaska, Anchorage, AK

Office of Chief Medical Examiner, City & County of San Francisco, CA

Sheriff's Scientific Investigation Division Crime Laboratory, San Bernardino County, San Bernardino, CA

Medical Examiner Facility - Dane County, McFarland, WI

Maryland Forensic Center, State of Maryland, Baltimore, MD

Medical Examiner Facility & Forensic Science Laboratory, Tarrant County, Fort Worth, TX

Medical Examiner's Office, Washoe County, Reno, NV

Office of the Chief Medical Examiner, State of Oklahoma, Oklahoma City, OK

Medical Examiner's Office, Hennepin County, Minneapolis, MN

Medical Examiner's Office, Leon County, Tallahassee, FL

Medical Examiner's Office, Cobb County, Marietta, GA

Forensic Science Laboratory, Police Department, Columbus, OH

Coroner Facility, Forensic Science & Public Health Laboratories, Alameda County, Oakland, CA

Forensic Laboratory & Medical Examiner Facility, Allegheny County, Pittsburgh, PA

Forensic Science Laboratory & Office of Chief Medical Examiner, Central Virginia Division, Richmond, VA

St. Louis County Police Department Crime Laboratory, St. Louis, MO

Kansas Bureau of Investigation Forensic Laboratory, Topeka, KS

Department of Public Safety Forensic Science Laboratory, Houston, TX

Forensic Science Laboratory - Division of Criminal Justice, Burlington, VT

Forensic Science Laboratory & Medical Examiner Facility, Northern Virginia Division, Manassas, VA

Utah Unified State Laboratory Module 2, Taylorsville, UT

CANNONDESIGN

Roland Lemke

AIA, LEED AP

Project Designer

CannonDesign

Roland is an award-winning design principal with 34 years experience in the planning and design of complex government, institutional, and corporate projects, with a strong focus on state and federal research facilities, university science buildings, and interiors. As a designer, he draws closely upon the functional and formal attributes of interior spaces in the conception of compelling structures and exteriors. As a team leader, he fosters innovation and rigor among team members with a deft hands-on approach and a bedrock commitment to client service.

EDUCATION

BArch: Oklahoma State University

CERTIFICATIONS

Registered Architect: DC, FL, MD, NC, PA, VA, WV

American Institute of Architects (AIA)

LEED Accredited Professional

NCARB Certificate

UNIQUE KNOWLEDGE

- Complex Planning and Design
- Client Engagement
- State and Federal Research Facilities

RELEVANT EXPERIENCE

State of West Virginia Co-located State Laboratories Facility Feasibility Study & Concept Design, Charleston, WV
New 270,000 SF statewide testing laboratory that brings together a diverse range of testing laboratories from multiple departments to support greater effectiveness and flexibility to replace a collection of dispersed and outdated facilities. A wide range of functions including specialized laboratories for forensics, medical examiner, public health, environmental services, and agriculture are all included.

Johns Hopkins University, Applied Physics Laboratory, Building 201, Laurel, MD
Building 201 consolidates federally funded research program teams from 8 different locations into one consolidated research facility. The new 263,000 gsf facility houses research from multiple federal agencies including NIH, NASA, DOD, DOE, NOAA. In addition to numerous laboratories, the complex includes a conference center, a cafe, outdoor amenities, and a rooftop balcony.

National Cancer Institute, Consolidated Research Laboratory Rockville, MD
A 65,000-gsf, $40M research facility for the National Cancer Institute. This laboratory houses a genomics research lab, a translational genomics lab, a genomic susceptibility lab, and a genetic epidemiology lab, along with adjacent office, meeting, and amenity spaces for staff.

National Institutes of Health, Building 29A Renovation, Bethesda, MD
Planning and design services for $60 million gut renovation of 125,000 gsf Building 29A into quality research space, including vivarium and high containment lab.

Children's Hospital of Philadelphia, Schuylkill Avenue Research Building (SARB), Philadelphia, PA
New 14-story 350,000-gsf research tower located on top of an existing three-level podium. The new tower will provide 120 lab bays, including eight floors of lab/office space, two floors for a rodent vivarium and vivarium support, administration spaces, conference rooms, and a 250-seat lecture hall.

George Mason University, Institute for Advanced Biological Research, Manassas, VA
Design for a new 75,000 sf highly flexible, state-of-the-art life sciences research facility that houses laboratories, lab support, offices, conferences rooms, and building support functions.

CANNONDESIGN

Erik Terry

LEED AP

Lead Laboratory Planner

CannonDesign

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. Erik has a broad range of experience developing strategic/ master planning initiatives, as well as providing programming and planning services for laboratory design projects focused on Public Health. As a lead planner, he works with end-users, designers and engineers to develop innovative solutions for the ever-changing research environment.

EDUCATION

Bachelor of Science, Historic Preservation Planning: Roger Williams University

CERTIFICATIONS

LEED Accredited Professional

UNIQUE KNOWLEDGE

- Complex Laboratory Design and Planning
- Vivarium Design
- Biocontainment Design
- Public Health Laboratories
- Holistic Systems / Infrastructure Integration

RELEVANT EXPERIENCE

State of Michigan, Public Health and Environmental Science Lab, Lansing, MI
300,000 SF lab that includes BSL-3 biocontainment laboratories, cleanrooms, chemistry labs supporting water and environmental testing. Supports long term flexibility and advanced technology, and the design focuses on supporting the laboratory staff through human centered design features.

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.

U.S. Army Public Health Command, Replacement Laboratory Facility, Edgewood Area, Aberdeen Proving Ground, MD*
259,000 gsf, $173M replacement lab 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).

Vermont Agriculture and Environmental Laboratory, Montpelier, VT
New, 38,000-sf laboratory to serve all environmental and agricultural needs. Highly flexible to accommodate multiple uses, program evolution and emergencies, as well as technological/mechanical advances.

U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID), Frederick, MD*
Design and development of 900,000-sf replacement facility. Focused on planning and design of the BSL-2, BSL-3E, and BSL-4 research spaces, ABSL-2, ABSL-3E, and ABSL-4 vivaria, laboratory support, administrative and conferencing spaces.

Walter Reed National Military Medical Center, Clinical Pathology Laboratory BSL-3 Suite Study, Bethesda, MD*
Walter Reed National Military Medical Center, Clinical Pathology Laboratory BSL-3 Suite Study, Bethesda, MD.

HFPA-Department of Homeland Security, National Biodefense Analysis & Countermeasures Center Feasibility and Planning Study, Fort Detrick, MD*
Facility function 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.

**Experience in prior practice*

Robert Doefinger

PE

Principal

ZMM Architects & Engineers

Having designed mechanical and electrical systems for more than 45 years, Robert has worked across many project typologies, including industrial and manufacturing facilities, higher education, military facilities, correctional facilities, and office buildings. His recent experience includes projects for the State of West Virginia, the West Virginia Regional Technology Park, and Marshall University.

As ZMM's principal engineer, Robert is involved on a daily basis with the firm's selection of appropriate systems for all building types and performs life-cycle cost analysis and energy studies. He is a member of the American Society of Heating, Ventilation and Air-Conditioning Engineers, as well as 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 nation's building energy use standards in the future.

EDUCATION

Master of Science: The Pennsylvania State University

Bachelor of Science, West Virgina University

CERTIFICATIONS

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

UNIQUE KNOWLEDGE

- State of West Virginia Process
- Extensive Experience with State Entities in West Virginia
- Project Management of Complex Projects
- Energy Use Standards
- New and Retrofit Design of Chilled Water Systems for all Building Types

RELEVANT EXPERIENCE

First Presbyterian Church Assessment, Charleston, WV

Charleston Coliseum and Convention Center, Charleston, WV

State Office Buildings #5, 10th Floor, Charleston, WV

WV Capitol Complex Buildings #5, #6, and #7, Charleston, WV

Marshall University (Multiple Projects), Huntington, WV

West Virginia Regional Technology Park, S. Charleston, WV
- Building 704
- Building 740
- Building 770

Joint Interagency Training and Education Center (JITEC), Kingwood, WV

West Virginia Regional Jails

West Virginia Army National Guard Projects

BridgeValley Community and Technical College, Montgomery, WV

Appalachian Regional Hospital (Multiple Projects), Beckley, WV

The Plaza at the King of Prussia, Philadelphia, PA

CANNONDESIGN

Leslie Trevitt

LEED AP BD+C, NCIDQ

Laboratory Planner

CannonDesign

Leslie has more than 13 years of international experience in architectural design and BIM management, with 8 years focused on the science and technology sector. She has experience with vivaria, research, federal, public health, and healthcare design. She has comprehensive experience in planning, schematic design, design development, and construction documentation working on projects varying in size, location, delivery type, and scope of work.

Her current focus is on the planning and design of state and federal laboratory facilities that include multiple departments, such as the State of Michigan Public Health and Environmental Science Lab.

EDUCATION

Bachelor of Arts, Interior Design (Minor in Architecture), Syracuse University

CERTIFICATIONS

LEED Accredited Professional Building Design + Construction

NCIDQ Certificate

UNIQUE KNOWLEDGE

- Public Health Laboratories
- Complex Laboratory Design and Planning
- BIM Management
- Interior Design

RELEVANT EXPERIENCE

State of Michigan, Public Health and Environmental Science Lab, Lansing, MI
300,000 SF lab that includes BSL3 biocontainment labs, cleanrooms, chemistry labs supporting water and environmental testing. Supports long term flexibility and advanced technology, and the design focuses on supporting the laboratory staff through human centered design features.

J. Mehsen Joseph, Public Health Laboratory, Baltimore, MD*
State of the art research facility built to lead the state of Maryland in ensuring the health and well being of its communities, while being an integral part of the efforts to restore and enrich the city as a whole. Its interior seamlessly transition from inviting public spaces to highly specialized open plan bio-safety level (BSL) 2 laboratories & strictly controlled BSL-3 laboratories.

National Cancer Institute, Bethesda, MD*
Laboratory of Receptor Biology and Gene Expression (LRGBE) — Renovated with an open bio-safety level (BSL) 2 laboratory layout to maximize the laboratory modules to their fullest. Additional emphasis was placed on the chosen niches to create an engaging working facility for the users.

Stem Cell Laboratory — Similar open laboratory design techniques to the LRGBE were used for the renovation of the Stem Cell Lab.

Children's Hospital of Philadelphia, Schuylkill Avenue Research Building (SARB), Philadelphia, PA
New 14-story 350,000-gsf research tower located on top of an existing three-level podium. The new tower will provide 120 lab bays, including eight floors of lab/office space, two floors for a rodent vivarium and vivarium support, administration spaces, conference rooms, and a 250-seat lecture hall.

US Army Corps of Engineers, Fort Bliss Replacement Hospital, Al Paso, TX*
An advanced medical facility designed to replace the existing building. Consists of five separate buildings that connect through a central 'spine' to function as a cohesive unit. The Pathology Laboratory, located within the hospital building, seamlessly integrates current U.S. Department of Defense program requirements with state-of-art planning and evidence based design practices.

**Experience in prior practice*

Dana L. Burns

PE, PS

Vice President

Potesta & Associates, Inc.

Dana specializes in management of design and permitting of civil, environmental, geotechnical, and mining engineering projects. He directs engineering division including day-to-day operation of headquarters and three branch offices concerning staffing, coordination, training, business development, and overall management of technical and support staff.

POTESTA
Engineers and Environmental Consultants

EDUCATION

MS, Civil Engineering: West Virginia University

BS, Civil Engineering: West Virginia University

CERTIFICATIONS

Professional Engineer: WV, IL

Professional Surveyor: WV

UNIQUE KNOWLEDGE

- Utility Extension
- Site Grading Plans
- Stormwater Management
- Roadway Design, and Permitting
- Site Development of Residential Subdivisions and Commercial Developments
- Clients in West Virginia

RELEVANT EXPERIENCE

City of South Charleston
Principal-in-Charge for the site development for 500,000 SF of retail, entertainment, and food/beverage development, known as Park Place. Including the dewatering and filling of a fly ash impoundment.

Tucker County Development Authority
Principal-in-Charge for the design which included water and sewer lines, stormwater management design, roadway design, pavement design, site grading plan, master plan, and geotechnical exploration/foundation recommendations for the Tucker County Industrial Park in Tucker County, West Virginia.

ALSC Architects/Parkersburg and Wood County Area Development Corporation
Principal-in-Charge for site grading plans, stormwater management system, site surveying, roadway/parking lot design, wetland delineation/mitigation, and construction monitoring for the 400,000-square foot Coldwater Creek distribution center in Parkersburg, West Virginia.

Ridgeline, Inc./Cabela's
Principal-in-Charge for civil engineering design services for the new Cabela's retail store in Charleston, West Virginia. Including ALTA survey, subsurface exploration, grading plan, pavement design, utility extension design, and permitting.

West Virginia Department of Transportation, Division of Highways
Project Management of 10 Master Service Agreements for various civil engineering and environmental services.

Principal in Charge of a mixed-use industrial park including the development of a conceptual development plan for a mixed-use industrial park. The evaluation included developing preliminary alignments for two access roadways including earthwork requirements, drainage, subbase, and paving with preliminary cost estimates. Also included a preliminary layout of water and sewer service for a proposed 400-acre development.

West Virginia Regional Technology Park Corporation
Land Use Study and Land Use Plan for a largely undeveloped 167-acre parcel of land.

ZMM, Inc.
Site design and engineering for a new elementary school and HS in Bradshaw, WV on the site of an existing elementary school. Involved design of the relocation of WV Route 80 and County Route 5/6.

Christopher A. Grose

LRS

Senior Engineering Associate

Potesta & Associates, Inc.

Chris specializes in geological/geotechnical engineering related to subsurface exploration studies, soil and rock slope design, landslide causation studies, foundation system design, surface/subsurface hydrogeology, ground subsidence, contaminant transport, and groundwater flow modeling. Planning, design, and permitting of natural gas production well pads and access roads. Geological study of hazardous waste remediation sites, CERCLA/SARA, RI, and FS report compilation, geological and geotechnical aspects of siting and design of municipal and industrial waste landfills.

EDUCATION

MS, Geological Engineering: University of Missouri-Rolla

BS, Civil Engineering: West Virginia Institute of Technology

CERTIFICATIONS

Licensed Remediation Specialist: WV

UNIQUE KNOWLEDGE

- Multi-story Structures
- Geotechnical Explorations
- Foundation Recommendations
- Clients in West Virginia

RELEVANT EXPERIENCE

City of South Charleston
Geotechnical engineering ground improvements before construction of Park Place, a 500,000 square-foot retail, entertainment, and food/beverage development on a former fly ash disposal and former manufacturing plant in South Charleston, West Virginia. Services included subsurface exploration, preparation of a Geotechnical Report, grading plan, soil sampling plan, and construction monitoring of placement of engineered fill over the fly ash material.

City of South Charleston
Forensic study, expert testimony, and legal support related to the failure of numerous soil/rock slopes throughout West Virginia. This work included an extensive review of relevant project case documents, site reconnaissance visits, interviews with project personnel, and deposition testimony.

Responsible for the development of geotechnical and geological recommendations as well as the development of stabilization designs for many failed soil/rock slopes in West Virginia. This work included initial site reconnaissance visits, the development of a subsurface exploration study and materials testing program, evaluation of stabilization alternatives, and construction plan preparation.

City of South Charleston
Geotechnical engineer for West Virginia Division of Highways for various bridge replacement and roadway improvement projects including North Bridgeport Bypass, Corridor H, Smith Creek Bridge, I-81 Upgrade, Platinum Drive, etc.

Hardy County Rural Development Authority
Engineering services for the study, design, and preparation of construction contract plans, related documents, and construction oversight services for an industrial access road for the Baker Business Park District in Hardy County, West Virginia.

Roane County Development Authority
Site development construction documents for National Industrial Wholesale Lumber located in Roane County's industrial park.

ZMM, Inc.
Site design and engineering for a new elementary school and HS in Bradshaw, WV on the site of an existing elementary school. Involved design of the relocation of WV Route 80 and County Route 5/6.

CANNONDESIGN

Som Homphothichak

Biocontainment Expert

CannonDesign

Som is a science and technology architect with over 25 years' experience in a variety of project types including biocontainment labs (including BSL-3 & BSL3-Ag), vivaria, and corporate labs including small scale cGMP facilities. He has extensive experience in helping clients (state agencies, higher education research institutions, corporations) to proactively coordinate equipment planning, procurement, and installation processes and experience in all phases of a project. With an unwavering work ethic and personal integrity, Som welcomes new challenges and opportunities to share knowledge with others.

In 2022, Som was recruited to be a NIH Peer Reviewer.

EDUCATION

BArch: Cornell University

CERTIFICATIONS

Registered Architect: NY

UNIQUE KNOWLEDGE

- Complex Laboratory Design and Planning
- Biocontainment Labs
- Academic Research Labs
- Vivarium Design
- cGMP Facilities

RELEVANT EXPERIENCE

State of Michigan, Public Health and Environmental Science Lab, Lansing, MI
300,000 SF lab that includes BSL3 biocontainment laboratories, cleanrooms, chemistry labs supporting water and environmental testing. Supports long term flexibility and advanced technology, and the design focuses on supporting the laboratory staff through human centered design features.

Morehouse School of Medicine, Multiple NIH Grant Funded Projects, Atlanta, GA*
Renovation of multi-discipline research laboratories building that includes rodent and small animal surgery suite, animal housing facility and BSL-3 suite. Major renovation (complete gutting of interior and replacement of mechanical system) of existing 3-story research lab and medical library building.

Washington University School of Medicine, Vivarium Expansion, St. Louis, MO
Conceptual programming study for the expansion of animal housing and support to campus needs of an additional 40,000 cages over the next 10-years. Options included expansion/renovation of existing facilities and new construction.

Stratatech Corp, Renovation and Expansion, Madison, WI*
Remodeling of 5,000-sf existing lab and office building and 27,000-sf expansion. Includes converting de-commissioned containment lab into a new cGMP production suite and supporting QA/QC labs.

The University of North Carolina, School of Medicine, Burnett-Womack Clinical Science Building, Chapel Hill, NC*
Renovation of an existing 9-story laboratory building from 1970s era. The improvement includes replacing outdated engineering system and creating large open labs on each floor to promote interdisciplinary research among departments. Also includes a new 4,000 SF BSL-3 and ABSL-3.Construction of the BSL-3 received 50% NIH construction grant matching fund.

The University of North Carolina, School of Medicine, Genetic Medicine Building, Chapel Hill, NC*
A new 340,000 sf interdisciplinary research building with 5 floors research labs and 2 floors vivarium. Each lab floor was layout in open lab plan concept based on modular lab planning module. The vivarium layout includes various sizes of rodent holding rooms clustered in number of suites and several large open plan holding room. Also available in the vivarium area are ABSL-2 barrier suite and ABSL-3 suite.

**Experience in prior practice*

CANNONDESIGN

Robert Lane

NCARB

Water Quality Expert

CannonDesign

A well-respected and detail-oriented architect with over 25 years of experience, Rob has worked on a wide range of complex project types for federal and state agencies, the aerospace industry, and healthcare and biotech clients. In addition to research and manufacturing projects requiring high-tech facilities, he also focuses on the design of water quality laboratories for state public health and environmental agencies, including the Colorado Department of Public Health and Environment, and for corporate clients. He is exceptionally knowledgeable with programming and planning, building code studies, design, development of construction documents, and construction administration.

EDUCATION

BArch: University of Oklahoma at Norman

CERTIFICATIONS

NCARB Certificate

UNIQUE KNOWLEDGE

- Complex Laboratory Design and Planning
- Clean Rooms
- Government Research Environments
- Water Quality
- Public and Private S&T Clients

RELEVANT EXPERIENCE

State of West Virginia Co-located State Laboratories Facility Feasibility Study & Concept Design, Charleston, WV
New 270,000 SF statewide testing laboratory that brings together a diverse range of testing laboratories from multiple departments to support greater effectiveness and flexibility to replace a collection of dispersed and outdated facilities. A wide range of functions including specialized laboratories for forensics, medical examiner, public health, environmental services, and agriculture are all included.

Colorado Department of Health and Environment, North Clear Creek Water Treatment Plant, Black Hawk, CO
New 17,000 sf water treatment facility and superfund site, the building massing and two story height were established to accommodate the needs of the process equipment. High Bay garages were included to accommodate large and complex equipment and vehicle storage. The administration department is also located in the building and includes offices, water quality laboratory, conference rooms, and staff break room and amenities. The water quality laboratory supports the water treatment process by providing real time analysis and evaluation of process parameters.

Colorado Department of Public Health and Environment, Summitville Mine Superfund Site Water Treatment Facility, Del Norte, CO
Replacement of water treatment facility with 17,600-sf state-of-the-art facility capable of handling site's flow requirements. Includes a water quality laboratory to ensure reductions in environmental hazards associated with the Summitville Mine Superfund Site. $17.5M. *In association with WSP | Golder.*

Bayer Water Treatment Plant, Soda Springs, ID
Interior TI plant support wing package, within a 28,400 square foot pre-engineered metal building, to a water treatment plant. 3,050-sf support area consisting of a control room, water quality lab, combined restroom and locker room facilities, break room, electrical/IT rooms, conference room and a staff office. The water quality laboratory supports the water treatment process by providing real time analysis and evaluation of process parameters. *In association with WSP | Golder.*

City of Fountain, Utilities Operation Center, Fountain, CO
The new building is planned as a one-story facility located on a 10 acre site. An industrial functioning building with a civic presence, the building accommodates the occupancy of two public works tenants with the Water Department and the Electric Department.

CANNONDESIGN

Scott Pegler

PE, LEED AP

Engineering Lead
CannonDesign

With 30 years of experience designing specialized engineering systems for complex laboratory facilities, Scott acts as a technical guide and resource to lead design direction and assist engineers and designers in ensuring projects are consistent with design standards, project budgets and client's expectations in terms of: design and construction contract delivery vehicles, sustainability, energy efficiency, constructability, operations and maintenance requirements, and life cycle cost goals.

EDUCATION

Bachelor of Science, Mechanical Engineering, West Virginia Institute of Technology (West Virginia University)

CERTIFICATIONS

Professional Engineer: DC, MD, VA

LEED Accredited Professional

UNIQUE KNOWLEDGE

- Mechanical Engineering
- Complex Laboratory Design and Planning
- Government Research Environments

RELEVANT EXPERIENCE

State of West Virginia Co-located State Laboratories Facility Feasibility Study & Concept Design, Charleston, WV
New 270,000 SF statewide testing laboratory that brings together a diverse range of testing laboratories from multiple departments to support greater effectiveness and flexibility to replace a collection of dispersed and outdated facilities. A wide range of functions including specialized laboratories for forensics, medical examiner, public health, environmental services, and agriculture are all included.

WV Dept. 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.

National Cancer Institute, Consolidated Research Laboratory Rockville, MD
A 65,000-gsf, $40M research facility for the National Cancer Institute. This laboratory houses a genomics research lab, a translational genomics lab, a genomic susceptibility lab, and a genetic epidemiology lab, along with adjacent office, meeting, and amenity spaces for staff.

National Institutes of Health, Building 10, Bethesda, MD
Renovation of space on the 6th floor of Building 10 ACRF. The 6,000 SF project will adapt and renovate existing wet laboratory, laboratory support and office spaces into new Core Facilities and support lab functions for three (3) Principal Investigators from the NHLBI, Division of Intramural Research.

Johns Hopkins University, Applied Physics Laboratory, Building 201, Laurel, MD
Building 201 is a new, 263,000-gsf, interdisciplinary research facility housing over 500 of the nation's most accomplished scientists in a highly collaborative and adaptable environment. Disciplines include: electrical engineering, mechanical engineering, biological sciences engineering, microelectronics/microsystems, multifunctional materials, and nanostructure prototyping.

Children's Hospital of Philadelphia, Schuylkill Avenue Research Building (SARB), Philadelphia, PA
New 14-story 350,000-gsf research tower located on top of an existing three-level podium. The new tower will provide 120 lab bays, including eight floors of lab/office space, two floors for a rodent vivarium and vivarium support, administration spaces, conference rooms, and a 250-seat lecture hall.

George Mason University, Institute for Advanced Biological Research, Clean Room, Manassas, VA
Fit-out of a 1,185-nsf, Class 1,000-level, non-sterile cleanroom and a 594-nsf, Class 100,000-level support lab in existing third-floor shell space. Construction of the cleanroom is stick-built and includes a new dedicated rooftop air handling unit.

Sarunas Rumsa

AIA, LEED AP

QA/QC
CannonDesign

Sarunas' career has been focused on designing facilities for science & technology, including some of the world's largest and most technically complex buildings for government, academic, and corporate clients. He brings to ever project, his experience of excellence in Architectural Design, Laboratory Planning, Technical expertise along with fiscal responsibility to the owner.

CANNONDESIGN

EDUCATION

MArch: University of Illinois at Urbana-Champaign

BS, Architectural Studies: University of Illinois at Urbana-Champaign

CERTIFICATIONS

Registered Architect: IL

American Institute of Architects (AIA)

LEED Accredited Professional

UNIQUE KNOWLEDGE

- Complex Laboratory Design and Planning
- Government Facilities
- Public Health Laboratory Design

RELEVANT EXPERIENCE

State of Michigan, Public Health and Environmental Science Lab, Lansing, MI
300,000 SF lab that includes BSL3 biocontainment laboratories, cleanrooms, chemistry labs supporting water and environmental testing. Supports long term flexibility and advanced technology, and the design focuses on supporting the laboratory staff through human centered design features.

State Hygienics Laboratory at the University of Iowa, Iowa City, IA*
New 112,000 sf Public Health Laboratory for the State of Iowa. Includes chemistry and biology labs, biological and chemical terrorism labs, BSL-3 labs, medical examiner autopsy suites, and office space.

Minnesota Departments of Health and Agriculture, Public Health Facility Laboratory, Minneapolis, MN*
New 178,000 sf Public Health Laboratory for the State of Minnesota. The project co-locates laboratories for the Minnesota Departments of Agriculture and Health to put Minnesota at the forefront of public health and food safety.

Food and Drug Administration (FDA), Forensic Chemistry Center Laboratory, Cincinnati, OH*
Renovation of a 72,000 SF GSA facility for the FDA Forensic Chemistry Center (FCC) — the FDA's premier national forensic laboratory for method development, research, and analysis related to criminal, regulatory, and counter terrorism investigations.

National Institutes of Health, National Institute of Allergy and Infectious Diseases, Hamilton, MT*
New 86,000 sf High Containment Laboratory (BSL-4) for the National Institutes of Health (NIH) and National Institute of Allergy and Infectious Diseases (NIAID). It is one of a the few Biosafety level 4 laboratories in the United States, as well as Biosafety level 3 and ABSL3/4 laboratories.

U.S. Environmental Protection Agency, Region V Laboratory Renovation, Chicago, IL*
Renovation of the U.S. EPA Region V laboratory in Chicago. The laboratory annually analyzes more than a quarter million samples of a variety of matrices, such as drinking water, wastewater, soil, rivers, lakes and streams, taken by field staff or submitted from public water supplies.

N.C. Department of Health & Human Services, State Public Health Laboratory and OCME, Raleigh, NC*

Illinois Department of Public Health, CUH2A Chicago Medical Center Laboratory, Chicago, IL*

U.S. Environmental Protection Agency, Multiple Projects Master Plan, Washington, DC*

University of Illinois at Chicago, National Center for Biodefense and Emerging Infectious Diseases, Chicago, IL*

University of Illinois at Urbana-Champaign, Regional Biocontainment Laboratory Feasibility Study, Urbana, IL*

University of Iowa, Hazardous Materials Facility, Iowa City, IA*

The City of Chicago Crime Laboratory, Crime Analysis Laboratory, Chicago, IL*

Illinois State Police, Forensic Science Laboratory and Training Center Laboratory, Chicago, IL*

**Experience in prior practice*

H. Bryant Warren Jr.

CID

Laboratory Planner/Designer

McClaren, Wilson & Lawrie, Inc. (MWL)

Bryant has over 23 years of experience in the fields of life science design, architectural design, interior design, critical facilities, and facility planning. As a design professional Bryant understands design in today's world for tomorrow's cutting-edge challenges Bryant's experience as a life science designer includes the design of chemistry, toxicology, drug science, DNA/serology, firearms, trace, latent print, evidence handling, pharmaceuticals, clean rooms, microbiology, water, dairy, media preparation and medical examiners.

His knowledge in forensic laboratories is significant as MWL continues to lead the architectural community designing more criminalistics laboratories than any other firm. His well-organized solutions accommodate unseen changes in future laboratory procedures. Adaptability, flexibility, and mobility are the basic factors in his design process.

EDUCATION

Bachelors in Interior Design and Architecture: Virginia Commonwealth University

Lorenzo De' Medici Art Institute Ancient Architecture and Design

Associate, Science: Richard Bland College, The College of William and Mary

UNIQUE KNOWLEDGE

- Forensic Science Laboratories
- Medical Examiner/Coroner Facilities
- Health Science Laboratories
- High Containment Laboratories
- Clean Room Laboratories

RELEVANT EXPERIENCE

Forensic Laboratory, Department of Public Safety, Houston, TX

Forensic Science Laboratory, Winston-Salem University, NC

Forensic Services and Coroner's Complex, Toronto, Ontario Canada

University of Central Oklahoma, Math & Science Laboratory, Edmond

Scientific Crime Detection Lab, State of Alaska, Anchorage, AK

Regional Police Services Facility, Niagara Falls, Canada

Forensic Science Laboratory, Department of Justice, Edneyville, NC

Police Services Laboratory, Hamilton, Canada

Chemical Laboratory, Afton Chemical Company, Richmond, VA

Forensic Laboratory, Kansas Bureau of Investigation, Topeka, KS

Nebraska State Patrol Crime Laboratory, Lincoln, NE

Forensic Science Laboratory, St. Louis County, St. Louis, MO

Forensic Science Laboratory, Ohio Bureau of Investigation & Bowling Green State University, Bowling Green, OH

Police Crime Laboratory, Columbus, OH

Coroner Facility, Arts Building, Stanislaus County, Modesto, CA

Crime Laboratory, San Bernardino County Sheriff's Scientific Investigation Division, San Bernardino, CA

Office of Chief Medical Examiner, San Francisco, CA

Medical Examiner Facility, Dane County, McFarland, WI

Coroner Facility & Crime Laboratory, Lancaster, PA

Forensic Science Laboratory, Medical Examiner Facility, Northern Division, Manassas, VA

Medical Examiner Facility, Lehigh County, Allentown, PA

Medical Examiner Building, Montgomery County, Conroe, TX

Police Department Building, Minneapolis, MN

Anne M. Vig

AIA, NCARB

Laboratory Architect

McClaren, Wilson & Lawrie, Inc. (MWL)

Anne has 23 years of architectural experience in a wide range of project types. The experience she has gained designing and working on large-scale projects is now focused on forensic laboratory, medical examiner and coroner facilities. Anne's understanding of construction methods and technical attention to detail ensures that the lab has been fully coordinated with all trades from the planning process through construction, allowing for fewer problems to arise during construction.

With 12 years of experience with Building Information Modeling (BIM), she brings lab spaces to life, giving the client the ability to picture a space before it is built. In addition to modeling spaces for the client, BIM also brings to light potential conflicts that can be mitigated during the design process before they become problem during construction.

EDUCATION

BArch: Virginia Tech

CERTIFICATIONS

National Council of Architectural Registration Boards (NCARB)

American Institute of Architects (AIA)

UNIQUE KNOWLEDGE

– Forensic Science Laboratories

– Medical Examiner/Coroner Facilities

– Forensic DNA Laboratories

RELEVANT EXPERIENCE

San Francisco City & County Office of Chief Medical Examiner, San Francisco, CA

Forensic Science Center, Henderson, NV

Kansas Bureau of Investigation Forensic Science Center – Topeka, KS

North Carolina Western Regional Lab, Edneyville, NC

Utah Unified State Laboratory Module 2, Taylorsville, UT

Oklahoma Medical Examiner's Office, Oklahoma City, OK

University of Central Oklahoma STEM Teaching and Research Center, Edmund, OK

Lehigh County Coroner's Facility, Allentown, PA

Hamilton Ontario Forensic Services, Hamilton, Ontario Canada

Columbus Police Crime Lab, Columbus, OH

Nebraska State Patrol Crime Lab, Lincoln, NE

Central Virginia Division Forensic Science Laboratory and Office of Chief Medical Examiner, Richmond, VA

City of Charleston Forensic Lab, Charleston, SC

Tennessee Bureau of Investigation Regional Crime Laboratory, Jackson, TN

Division of Consolidated Laboratory Services Public Health*

Virginia Biotechnology Research Park Authority - Richmond, VA*

Advanced Orthopedic Center - Richmond, VA*

James Madison University Bridgeforth Stadium, Harrisonburg, VA*

Plant 64 Apartments, Adaptive re-use - Winston Salem, NC*

Interbake Lofts, Adaptive re-use - Richmond, VA*

**Experience in prior practice*

CANNONDESIGN

Russell Guest

Project Architect

CannonDesign

A native of Charleston, West Virginia, Russell designs complex laboratories and other high-performance buildings, such as medical research towers. He finds thoughtful design opportunities through generation and exploration of options/ concepts that work best for his clients. Russell has worked on a large variety of project types, including public health laboratories, corporate R&D headquarters, and academic medical centers. He is experienced in facade and envelope design, rapid-prototyping, client presentations, engineer collaboration, contributing to proposals, and writing concept report documents.

EDUCATION

BArch: University of Tennessee, Knoxville

CERTIFICATIONS

Registered Architect: PA

UNIQUE KNOWLEDGE

- High-Performance Buildings
- Conceptual Building Design
- Rapid Prototype Design Process and Modeling
- Laboratory Design and Planning

RELEVANT EXPERIENCE

State of West Virginia Co-located State Laboratories Facility Feasibility Study & Concept Design, Charleston, WV
New 270,000 SF statewide testing laboratory that brings together a diverse range of testing laboratories from multiple departments to support greater effectiveness and flexibility to replace a collection of dispersed and outdated facilities. A wide range of functions including specialized laboratories for forensics, medical examiner, public health, environmental services, and agriculture are all included.

Children's Hospital of Philadelphia, Schuylkill Avenue Research Building (SARB), Philadelphia, PA
New 14-story 350,000-gsf research tower located on top of an existing three-level podium. The new tower will provide 120 lab bays, including eight floors of laboratory/ office space, two floors for a rodent vivarium and vivarium support, administration spaces, conference rooms, and a 250-seat lecture hall.

Naples Community Hospital Naples, FL
New Heart, Vascular, and Stroke Institute at the client's downtown campus. The building aims to house all of the cardiac and stroke services under one roof, allowing for better collaboration and provides integrated patient care. The new building will be home to the heart, vascular, and stroke services and is necessary for them to succeed in delivering top-quality patient care.

Industrial Scientific Global Headquarters, Robinson Township, PA*
Serving as the brand new global headquarters for Industrial Scientific, the global leader in gas detection, this 200,000 SF building aids the company in consolidating all of their operations from customer services to manufacturing into one location.

Bayer Material Science North American Headquarters Building 14 Entry Pavilion, Pittsburgh, PA*
New entrance addition and renovation for the Bayer Material Science North American Headquarters.

**Experience in prior practice*

Ronnie Burdette

PE

Structural Engineer

ZMM

At ZMM, Ronnie has worked on a variety of projects requiring additions, renovations, and new construction for many client types, including state and municipal; educational, and residential. He designs and analyzes structural systems, produces structural drawing sets, and documents design results. Of particular note is his recent work for the State of West Virginia Department of Natural Resources and his work at the West Virginia Regional Technology Park.

EDUCATION

BS, Civil Engineering: West Virginia University

CERTIFICATIONS

Professional Engineer: WV, VA

RELEVANT EXPERIENCE

WV Regional Technology Park - Charleston, WV
- Building 754 National Weather Service Center (NOAA)

WV Department of Natural Resources, WV
- Tomblin Visitor's Center
- Tomblin Headquarters Building
- Tomblin Wildlife Viewing Tower

Charleston EDGE, Charleston, WV

Wood County 911 Center, Parkersburg, WV

Wood County Resiliency Center , Parkersburg, WV

Valley Park Community Center, Hurricane, WV

Cabell County Schools,Cabell County, WV
- Barboursville Middle School
- Cabell Midland High School Renovation/Addition
- Huntington High School Renovation/Addition

Mercer County Schools - Mercer County, WV

Frankie Kantsios

PE

Electrical Engineer

ZMM

An experienced professional with a proven record of managing projects from concept to completion, Frankie carries out engineering and design services for a diverse range of projects. Whether working independently or with others, Frankie finds effective solutions and opportunities to further client goals. His recent experience involves projects for healthcare, higher education, and municipal clients.

EDUCATION

BS, Old Dominion University

CERTIFICATIONS

Professional Engineer: WV, VA

RELEVANT EXPERIENCE

Carilion New River Valley Medical Center, VA
- Cardiology Expansion
- Infusion Clinic Alterations

HCA Healthcare, LewisGale Hospital Montgomery - 3rd Floor Graduate Medical Education Center, VA

InnovAge PACE, VA
- New Richmond Facility
- New Roanoke Facility
- Roanoke Facility Study

Bath Community Hospital, New Pharmacy Building, VA*

New Triumph Baptist Church, VA

Frederick County Sunny Side Voter Registrar's Office

A.S. Rhodes Elementary School Renovations, VA

New River Community College, ADA Accessibility Improvements, VA

City of Covington City Hall Renovations, VA*

**Experience in prior practice*

Carly Chapman

Senior Interior Designer
ZMM

Carly always brings a client's vision to life through her original and innovative approach to the design process. From renovations to new construction, she has designed for clients in nearly every industry, including municipal, higher education, healthcare, and corporate projects. Carly develops design proposals and presentations, and produces design documents and specifications relating to all aspects of interior design.

Of note to this project is her experience working with the State of West Virginia on office renovations, as well as her extensive work at the Charleston Area Medical Center.

EDUCATION

Bachelor of Interior Design, University of Charleston

CERTIFICATIONS

Association for Learning Environments

RELEVANT EXPERIENCE

Charleston Area Medical Center (Multiple Locations)
- Hybrid Operation Room, Teays Valley, WV
- General Division (C Suite, Charleston, WV
- 48 Bed Critical Care Unity Memorial Hospital, Charleston, WV
- Urology Clinic and Lab, 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
- Hospital Wing Renovation
- Chemotherapy / Infusion Room

Clarksburg, Richmond, Huntington and Salem VA Hospitals *

WVU Medicine Jackson General Hospital, Ripley, WV

WV School of Osteopathic Medicine Multiple Projects, Lewisburg, WV

Capital Sports Center, Charleston, WV

Charleston Coliseum and Convention Center, Charleston, WV

WV State Office Building #6 Renovations, Charleston, WV

Carlie Ray

NCIDQ

Interior Designer
ZMM

Carlie is a detail-oriented and creative professional with extensive knowledge in interior architecture. Her goal with every project is to create a beautiful and functional environment that suits the client's needs.

As an interior designer, her background includes commercial properties, education, healthcare, historic adaptive reuse, residential properties, existing building renovations, and hospitality design. She has experience managing a variety of project elements: interior space planning, finish and fixture selection, creating concept presentations, rendering 3D models, and producing construction documents.

EDUCATION

BS, Interior Design, West Virginia State University

CERTIFICATIONS

NCIDQ Certificate

West Virginia University, Interior Architecture Advisory Board Member

RELEVANT EXPERIENCE

Project N WV Regional Technology Park, Building 754 National Weather Service Center (NOAA), Charleston, WV

Capital Sports Center, Charleston, WV

CAMC Access Clinic, Beckley, WV

Williamson Health and Wellness Renovation, Williamson, WV

New River Health Clinic and Labcorp, Fayetteville, WV

WVSOM Community Health Center, Lewisburg, WV

Highland Hospital Secure Intake, Charleston, WV

Mineral County Health Airborn Infection Isolation and Response Facility, Keyser, WV

Hampshire County Health Airborn Infection Isolation and Response Facility, Augusta, WV

Wood County Resiliency Center, Parkersburg, WV

WVARNG Buckhannon Readiness Center Addition, Buckhannon, WV

Brian Alesius

PE

Structural Engineering
CannonDesign

Focusing on complex lab facilities, government projects, and academic medical centers, Brian is a skilled structural engineer with over 20 years of experience. He enjoys working with his team develop creative, constructible solutions that meet the needs of all disciplines. Brian's knowledge and expertise in advanced technology, most notably BIM, has enabled him to contribute and collaborate through all aspects of the design process.

EDUCATION

MS, Structural Engineering: State University of New York at Buffalo

BS, Civil Engineering: State University of New York at Buffalo

CERTIFICATIONS

Professional Engineer: CO, CT, DE, IN, KS, MD, MI, NC, NH, NJ, NY, OK, PA, SC, TX, VA, WI, WV, Ontario, Saskatchewan

RELEVANT EXPERIENCE

State of Vermont Agency of Administration, Agriculture & Environmental Laboratory (VAEL), Rudolph Center, VT

Johns Hopkins University, Applied Physics Laboratory, Building 201, Laurel, MD

Children's Hospital of Philadelphia, Schuylkill Avenue Research Building (SARB), Philadelphia, PA

U.S. Department of Veteran Affairs, VA Medical Center, Lab 1 Code Update, Pittsburgh, PA

Pankaj Hoogan

PE, LEED AP BD+C

Mechanical Engineering
CannonDesign

During his 15+ years in the industry, Pankaj has designed mechanical systems for many types of projects, including complex laboratory facilities for federal research agencies and academic medical centers. Highly versatile in his abilities, Pankaj is comfortable taking on the role of design engineer or project manager.

EDUCATION

Bachelor of Engineering, Mechanical Engineering: Visveswaraiya Technological University, Belagum, India

LEED Accredited Professional Building Design + Construction

CERTIFICATIONS

Professional Engineer: VA

RELEVANT EXPERIENCE

State of West Virginia Co-located State Laboratories Facility Feasibility Study & Concept Design, Charleston, WV

National Institutes of Health, Building 10, Bethesda, MD

National Institutes of Health, NIMH Radiochemistry Lab, Bethesda, MD

Children's Hospital of Philadelphia, Schuylkill Avenue Research Building (SARB), Philadelphia, PA

Frederick National Laboratory for Cancer Research / Leidos Biomedical Research, Inc. IDIQ Contract, Frederick, MD

Roy Waters

Electrical Engineering
CannonDesign

Roy has over 38 years of extensive design and construction administration experience with projects involving high-performance research facilities for state and federal agencies and higher education institutions. The design of these types of structures includes electrical interior and site distribution infrastructure, lighting, lighting control (which include today's extensive controls strategies based on the relevant energy codes) and fire alarm systems design.

EDUCATION

BS, Business Management: University of Phoenix

RELEVANT EXPERIENCE

State of West Virginia Co-located State Laboratories Facility Feasibility Study & Concept Design, Charleston, WV

National Cancer Institute, Consolidated Research Laboratory Rockville, MD

Johns Hopkins University, Applied Physics Laboratory, Building 201, Laurel, MD

Frederick National Laboratory for Cancer Research / Leidos Biomedical Research, Inc. IDIQ Contract, Frederick, MD

Children's Hospital of Philadelphia, Schuylkill Avenue Research Building (SARB), Philadelphia, PA

George Mason University, Institute for Advanced Biological Research, Clean Room, Manassas, VA

Donald Keith

CPD, FASPE, MSS

Plumbing/Fire Protection
CannonDesign

Donald has over 40 years of professional experience in the planning and design of plumbing and fire protection systems for a variety of project types, including complex laboratory facilities for federal research agencies and academic medical centers. His expertise in understanding client needs and translating those needs into designs that exceed client expectations makes him one of CannonDesign's most effective engineers.

EDUCATION

AAS, Construction Technology: Community College of Philadelphia

CERTIFICATIONS

Certified in Plumbing Design (CPD)

American Society of Plumbing Engineers

Medical Systems Specialist (MSS)

RELEVANT EXPERIENCE

National Cancer Institute, Consolidated Research Laboratory Rockville, MD

National Institutes of Health, Building 10, Bethesda, MD

Frederick National Laboratory for Cancer Research / Leidos Biomedical Research, Inc. IDIQ Contract, Frederick, MD

Children's Hospital of Philadelphia, Schuylkill Avenue Research Building (SARB), Philadelphia, PA

National Institutes of Health, NIMH Radiochemistry Lab, Bethesda, MD

Tina Sarawgi

NCIDQ

Lighting Design
CannonDesign

Tina is an accomplished lighting designer for interior and exterior project lighting of varying sizes and programmatic requirements such as such as federal research laboratories and, health sciences and educational facilities. Her responsibilities are across all phases of design, with consistent, active client communication and on-site reviews.

EDUCATION

MArch: Miami University

BArch: School of Planning and Architecture, New Delhi, India

CERTIFICATIONS

Lighting Certified (LC), National Council on Qualifications for the Lighting Professions

Registered Architect, Council of Architecture, India

NCIDQ Certificate

RELEVANT EXPERIENCE

State of California, Department of General Services, Gregory Bateson Building, Sacramento, CA

National Institutes of Health, Building 10, Bethesda, MD

Children's Hospital of Philadelphia, Schuylkill Avenue Research Building (SARB), Philadelphia, PA

St. Johns University, Health Science Center, New York, NY

Tim Adams

CTS

Technology Engineer
CannonDesign

Tim's expertise in technology design includes innovative strategies customized and developed to achieve specific client goals. His knowledge of system integration and ability to specify multi-purpose use and operation creates cost-effective solutions. He has vast experience with federal research laboratories universities, healthcare facilities and corporate-commercial projects.

EDUCATION

BA, Audio Arts and Acoustics: Columbia College, Chicago

Additional Studies, Electrical and Electronics Engineering, Ohio State University

CERTIFICATIONS

Certified Technology Specialist (CTS)

RELEVANT EXPERIENCE

Fermi National Accelerator Laboratory, The Target Services Integration Building, (TSIB), Batavia, IL

Patheon by Thermo Fisher Scientific, Building 1 QC Lab Renovation, Berkeley, MO

Illinois State University, MCN Simulation Lab Building Study, Normal, IL

Rhode Island College, Clarke Science Renovation, Providence RI

D. Mark Kiser

PE, LRS

Chief Engineer
Potesta & Associates, Inc.

Mark specializes in conceptual and final designs for chemical, utility, and municipal solid waste disposal sites, design of stormwater management systems and basin/pond closure projects, environmental permitting, hydrologic and hydraulic analyses, quality assurance/quality control monitoring, and civil/site design for residential, commercial, and industrial developments.

EDUCATION

BS, Civil Engineering: West Virginia University

CERTIFICATIONS

Professional Engineer: WV

Licensed Remediation Specialist: WV

RELEVANT EXPERIENCE

Ridgeline, Inc./Cabela's
Civil engineering design services for the new Cabela's retail store in Charleston, West Virginia. Including ALTA survey, subsurface exploration, grading plan, pavement design, utility extension design, and permitting.

City of South Charleston
Site development for 500,000 SF of retail, entertainment, and food/beverage development, known as Park Place. Including the dewatering and filling of a fly ash impoundment.

Project Manager/Engineer for the development of subdivisions in Kanawha County, WV

Villages at Coolfont, Berkeley Springs, WV
Project manager for engineering and permitting associated with developing a second home community on 1,000 acres.

Mark A. Sankoff

PE, PS

Chief Engineer
Potesta & Associates, Inc.

Mark's expertise includes the design of water mains, water storage tanks, booster stations, pressure-reducing stations, advanced metering infrastructure – (AMI), and Automated Meter Reading – (AMR) systems. Extensive knowledge in water distribution systems operation and maintenance.

EDUCATION

BS, Civil Engineering, West Virginia University

CERTIFICATIONS

Professional Engineer: WV

Professional Surveyor: WV

RELEVANT EXPERIENCE

West Virginia Regional Technology Park Utility Projects, South Charleston, WV
- Water line replacement at Building 754 (National Weather Service Office) consisting of approximately 340 linear feet of 6 " and 100 feet of 2-inch PVC water line.
- Sanitary sewer replacement at the National Weather Service Office building consisting of approximately 600 linear feet of 8" PVC gravity sewer line and six pre-cast manholes.
- Relocation of approximately 260 linear feet of 4" PVC water line at Building 2000.

South Charleston Development Authority, Water Line Relocation, Charleston, WV

Southridge Development Project, Charleston, WV

Kanawha County Water Main Extension Project, Kanawha Valley, WV

David B. Sharp

PE

Senior Engineer
Potesta & Associates, Inc.

David is involved with many aspects of civil engineering with a special interest in the geotechnical/environmental aspects. Responsibilities have included projects involving civil/site design, geotechnical design, roadway engineering, and municipal water and wastewater design.

EDUCATION

MS, Civil Engineering, West Virginia University

BS, Civil Engineering, West Virginia University

CERTIFICATIONS

Professional Engineer: WV, PA, MD, OH, KY

RELEVANT EXPERIENCE

West Virginia Experience
Coordination of subsurface investigation, lab testing program, slope stability analysis, and preparation of design documents associated with the repair of landslides at various sites.
- WVDEP AML Sardis Landslide Repair
- WVU University Avenue Rockfall
- Kinetic Park Landslide Repair
- Town of Granville Bowser Street Landslide Repair
- Well Pad Landslide Repairs
- Freshwater Impoundment Embankment Stability
- Residential landslides
- Tower landslides

West Virginia Department of Transportation
- Platinum Drive Urban Connector
- North Bridgeport Bypass
- Corridor H, Section IV
- Dry Run Interchange
- Sulphur Springs Bridge
- Interstate 81 Bridges
- Multiple County Route Bridge Replacement or Temporary Bridges

Terrence C. Moran

PE

Senior Engineer
Potesta & Associates, Inc.

Terrence specializes in water and wastewater engineering and permitting; preparation of studies, design calculations, drawings, technical specifications, and cost estimates; bidding phase services; and construction phase services, including construction administration. He is project Manager/project Engineer for more than 70 water supply projects.

EDUCATION

MS, Civil Engineering, West Virginia University

BS, Civil Engineering, West Virginia University

CERTIFICATIONS

Professional Engineer: WV, VA

RELEVANT EXPERIENCE

Boone County Public Service District
15+ water supply extension projects in Boone County District from 2004 to present. Included were Preliminary Engineering Reports (PER), and design bidding and construction phase tasks.

West Virginia Division of Highways
Design and preparation of contract plans and related documents for the construction of approximately 16,000 linear feet of water line, an 80,000-gallon welded steel panel water storage tank, and upgrades to an existing water booster pump station

West Virginia Department of Environmental Protection
Project Manager/Project Engineer for the design of multiple waterline extensions in West Virginia.

Tucker County Development Authority
Design of approximately 10,000 feet of water line and sewer line to serve an industrial park, including a lift station.

Jarrett M. Smith

PE

Senior Engineer
Potesta & Associates, Inc.

Jarrett specializes in management and oversight of civil engineering projects with services related to surveying, geotechnical exploration, planning, design, permitting, and construction monitoring. Responsibilities include civil site design, hydrologic and hydraulic design, grading plans, water line plans, sewer line plans, roadway layout, utility design, development of technical specs, preliminary cost estimates, schedule, and budget tracking.

EDUCATION

BS, Civil Engineering, West Virginia University

AS, General Science, West Virginia University

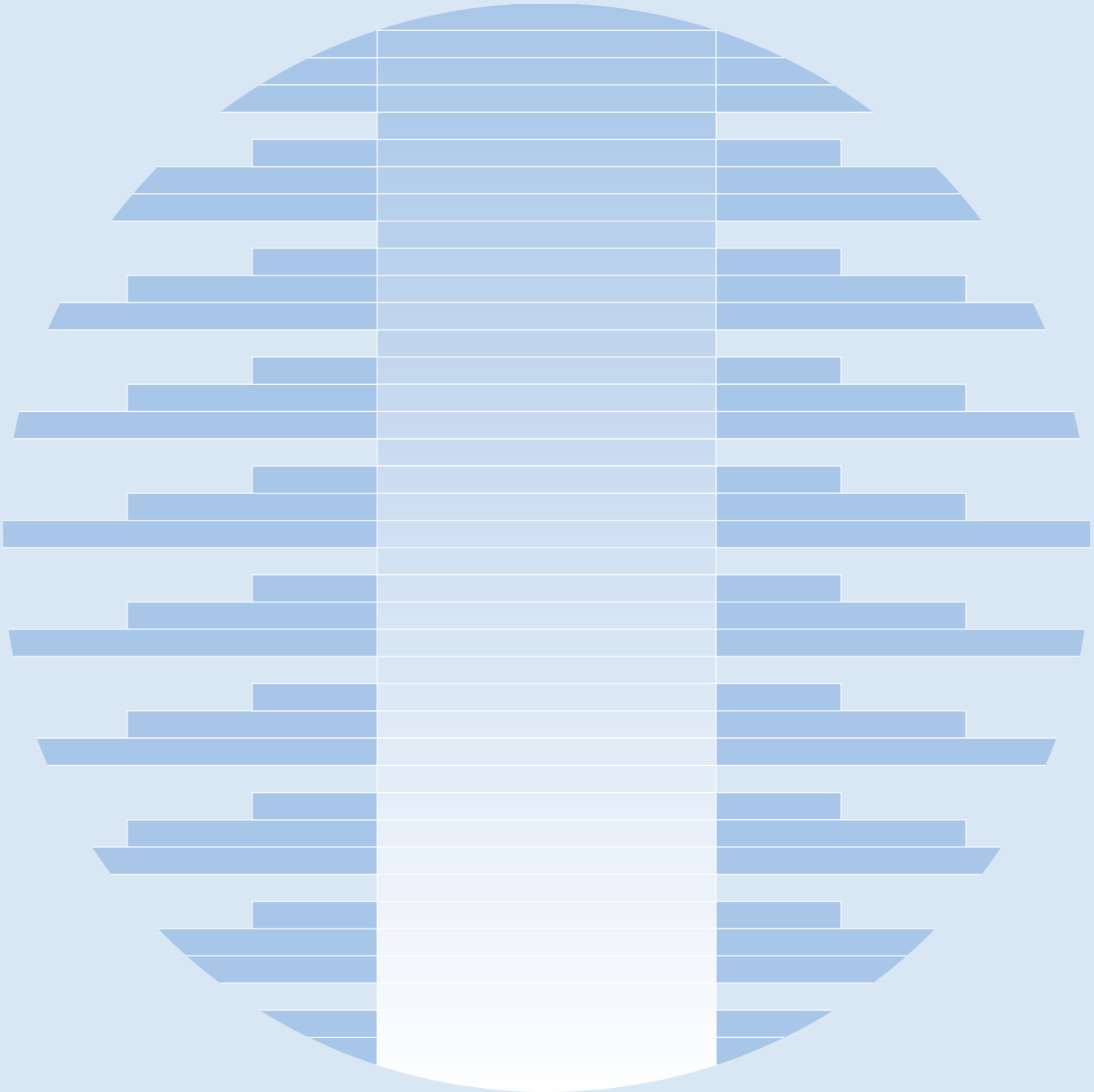
CERTIFICATIONS

Professional Engineer: WV

RELEVANT EXPERIENCE

West Virginia Experience
- West Virginia Water Development Authority Office
- Pison Development, 10 apartment complex projects
- Double C Enterprise, Kenna Ridge Business Park
- Tricor Development, Hurricane Marketplace Parcels A and B
- Green Eagle Development, Residential site development projects
- Ervin Development, Woodstock Commercial Site Development Project
- MDG Development, Oakland subdivision
- Tucker County Industrial Park, Water and Sewer Line Expansion
- Dunlap Builders, West Run Student Housing
- Allegheny Energy Supply's Fort Martin Power Station, Fly Ash Landfill Expansion Project

Relevant Experience



West Virginia University

Academic Forensic Science Lab

LOCATION:
Morgantown
West Virginia

SIZE:
55,000 SF

DATE:
2008

COST:
$15M

Forensic laboratory aiming to emulate a working crime laboratory.

The forensic initiatives at West Virginia University are comprised of a multidisciplinary research and educational collaboration in areas related to the forensic sciences. These initiatives fall under two distinct programs: the Forensic and Investigative Science Program, an academic program within the Eberly College of Arts and Sciences; and the Forensic Science Initiative, a research program under the administrative authority of the WVU Research Corporation.

Oglesby Hall was constructed in 1918 and is listed on the National Register of Historic Buildings. Renovation of this historic building included the addition of laboratory facilities previously located elsewhere on the campus. The relocation serves well the forensic initiatives of the university with the addition of state-of-the-art forensic laboratories, classrooms, and faculty offices.

MWL programmed and designed the new forensic laboratory facilities working in close relationship with the prime architectural and engineering firms. The forensic labs were designed as specialist labs to emulate a working crime laboratory. This specialist approach comprises labs designed for specific purposes such as exam rooms, DNA amplification, and an alternate light-source exam room.

West Virginia Regional Technology Park

LOCATION:
Charleston
West Virginia

SIZE:
Varies

DATE:
2015

COST:
Varies

ZMM ARCHITECTS ENGINEERS

Envisioning the future of the West Virginia Regional Technology Park.

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 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.

Building 2000

BridgeValley South Charleston campus houses multiple simulation labs, an assessment lab, a nurses' station, a general classroom, and office space. Phase one of the expansion of the BVCTC nursing program included the construction of a nursing wing that simulates a hospital floor and assessment lab facilities.

State of Michigan

Public Health and Environmental Science Lab

LOCATION:
Lansing
Michigan

SIZE:
300,000 SF

DATE:
Ongoing

COST:
$315M

CANNONDESIGN

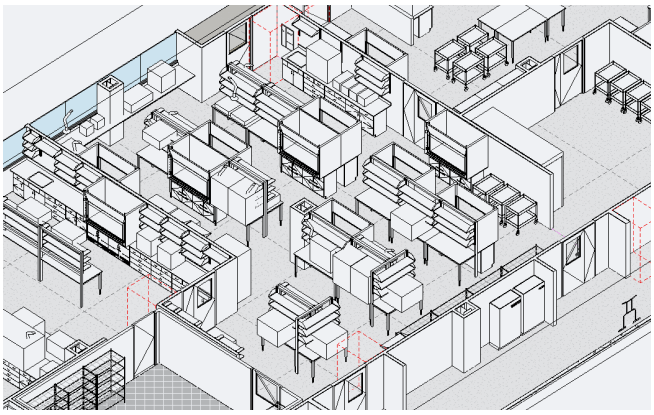
A new multi-agency testing laboratory to foster the wellbeing of the people of Michigan.

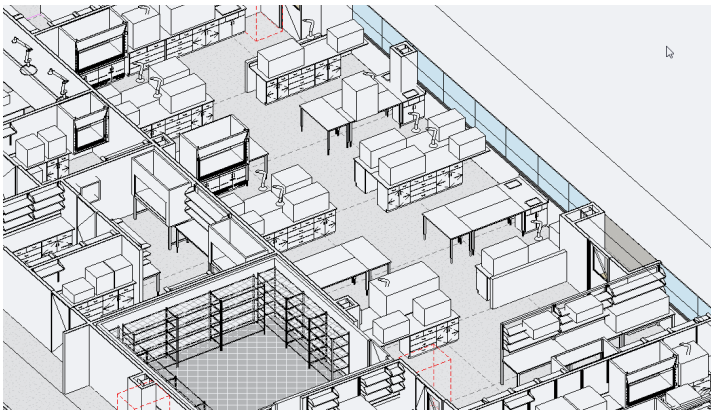
This project for a new 295,000 SF laboratory serving the State of Michigan located in the capitol region consolidates and co-locates multiple state testing agencies from the Department of Health and Human Services (DHHS); Environment, Great Lakes and Energy (EGLE); and the Michigan Occupational Safety and Health Administration (MIOSHA). This includes a wide range of testing laboratories for infectious disease (including virology, micro-biology and genomics) featuring a shared BSL-3 suite, newborn screening, environmental testing, air quality testing, drinking water and environmental water testing, cleanrooms for VOC testing, analytical chemistry and toxicology labs, bioinformatics and accessioning.

The design team worked closely with a large group of stakeholders from all of the agencies. These collaborative sessions included face to face meetings enhanced with digital tools and live 3D views of the labs to enhance understanding of the planning and design concepts.

The planning and design features functionality, short-term adaptability and long-term flexibility, occupant wellbeing, energy efficiency and environmental sensitivity. Shared amenities, training and conferencing facilities support synergies between the staff of the different agencies, and efficiencies in shared services and building system performance are projected to save the state in operating and management costs. Energy efficiency strategies include ice storage, geothermal heating/cooling, cross laminated timber envelope backup, and advanced building control systems.

In association with Hobbs and Black.





Kansas Bureau of Investigation

Forensic Science Laboratory

LOCATION:
Topeka
Kansas

SIZE:
105,000 SF

DATE:
2015

COST:
Item

Co-locating a forensic laboratory with a forensic teaching laboratory.

In 2008, McClaren, Wilson & Lawrie, Inc. (MWL), with Emig Associates determined the needs and feasibility of constructing a new laboratory building or renovating an existing campus building at the KBI headquarters. A needs assessment, including estimated size and cost, was prepared. The assessment was based on case loading, number of tests needed to complete a case, demographic factors and service region with projections 20 years into the future.

In 2013 the study was revised by the same firms and updated to locate the new laboratory and instructional building on the east side of the Washburn University campus. The purpose of the revised study was to document for Kansas state legislators the need for a new forensic laboratory building combined with a forensic teaching facility. The study included the identification of present and future space needs of the KBI laboratory, the development of the space needs into a conceptual building footprint, the selection of a building site as well as the determination of probable cost to design, construct, and equip a new laboratory. Legislators agreed to move forward with construction that same year contracting with local architects PGAV and for a third time, MWL.

The laboratory is one of the first state forensic laboratory facilities to co-locate with a forensic teaching laboratory on a university campus. Furthermore, with this partnership, the new facility is able to participate in cutting-edge research, development, and validation of new and/or improved forensic technologies. The results should be peer-reviewed, published and well accepted in the forensic and judicial communities.

West Virginia Department of Agriculture

Lab Facility Programming, Feasibility Study, and Concept Design

LOCATION:
Charleston
West Virgina

SIZE:
18,647 SF

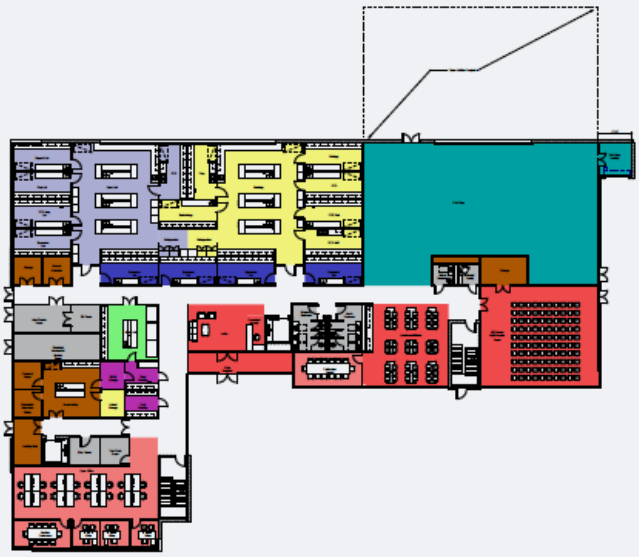
COST:
$120M

DATE:
2020

ZMM ARCHITECTS ENGINEERS

CANNONDESIGN

Vision and strategic planning for the West Virginia Department of Agriculture.



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.

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.)
- 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 were 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.

The National Weather Service

Building 754

LOCATION:
South Charleston
West Virginia

SIZE:
22,000 SF

DATE:
2022

COST:
$7M

ZMM ARCHITECTS ENGINEERS

The newest building at the West Virginia Regional Technology Park.

The National Weather Service (Building 754) is the newest office building on the 40-building West Virginia Regional Technology Park (WVRTP) Campus in South Charleston, WV. The two-story, 22,000 SF brick building is located directly behind Building 740.

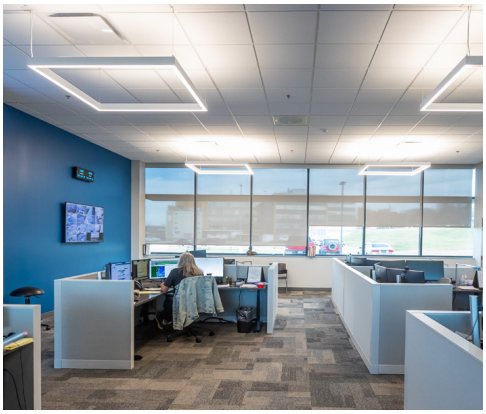
Building 754 is a more modern interpretation of the style of the 1960's era high-tech lab buildings on campus. The interior of the National Weather Service Office was designed to embody an atmospheric approach to weather that incorporates NOAA's branding. The color palette is neutral; featuring grays, wood tones, and accents of blue. Design elements in the space were chosen to continue the high-tech look of the exterior. Key elements include RGB color-changing lighting and metal mesh ceilings. The exterior veneer is a combination of rich brick colors, ribbon windows and metal panels. The dark orange brick portrays a solid connection to the ground while the dark brown bricks highlight the vertical circulation. The dark charcoal color of the window mullions enhances the richness, matching the iron spots in the brick veneer.

The bullet-resistant glass stretches in a ribbon-fashion around the perimeter providing access to daylight and views. Silver sunshades on the exterior of the windows reduce the glare while allowing and abundance of light to reach deep into interior spaces. The metal panels are used to break up the vertical form while also being used to highlight special façade elements. A horizontal, corrugated metal panel runs continuously around the perimeter of the building above the second story windows.

The charcoal color matches the window mullions and sets off the deep roof overhang constructed of smooth, silver metal panels. This smooth metal panel is also used to create an overhang feature on top of the front stair tower. The largest area of smooth silver metal panel projects from the building on the first-floor housing the Science on a Sphere while leading to the main entrance.

The first floor of the building is approximately 11,500 SF of which 7,750 SF is the new home of the National Weather Service. The Science on a Sphere occupies 1,025 SF of space with a 1,200 SF Warehouse on the end. The 10,500 SF second floor is being constructed as speculative office space for a future tenant or tenants. The National Weather Service is locating their staff of 24 from an older building in a suburban retail area into Building 754. Off the reception area to the left are the main offices of the executive staff and to the right are conference and support rooms leading to the large, 24-hour Operations Room which is monitored 24-hours a day by three shifts.

The most critical space in the building is Equipment Room which houses the technology equipment that reads data from towers and satellite dishes on the building's exterior. The Science on a Sphere is a roomsized, global display system that uses computers and video projectors to display planetary data onto a six-foot diameter giant animated globe. It was developed as an educational tool to help illustrate earth science to people of all ages in a way the is simultaneously intuitive and captivating



Oak Ridge National Laboratory

Second Target Station

LOCATION:
Oak Ridge
Tennessee

SIZE:
300,000 SF

DATE:
Ongoing

COST:
$400M+

CANNONDESIGN

Expansion of accelerator-based neutron source for international research.

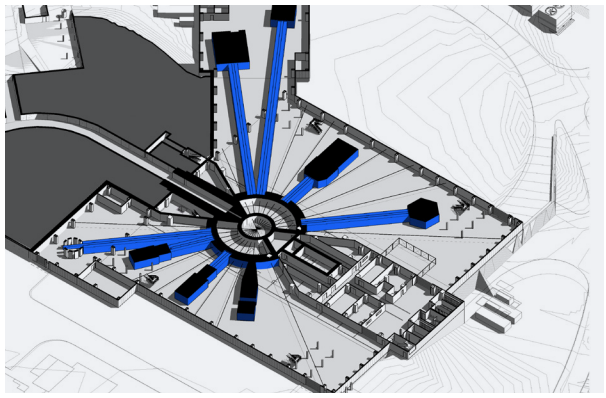
The Oak Ridge National Laboratory Spallation Neutron Source (SNS) is a major DOE accelerator-based neutron source facility that provides the most intense pulsed neutron beams in the world for an international user community. The facility currently operates at a maximum energy level of approximately 1 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 beam line capacity of the facility.

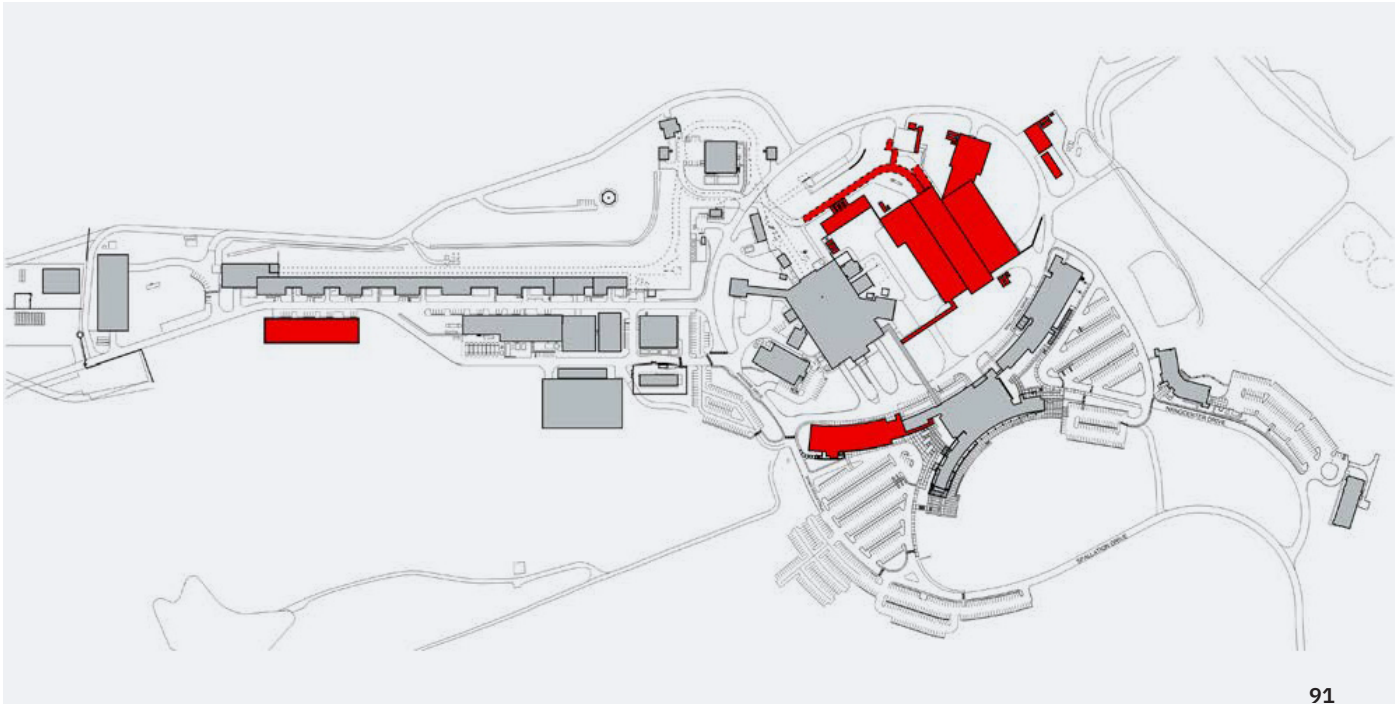
The STS is a 300,000 GSF, $400M+ facility. It will include an extension of the existing proton beamline and earth shielded underground tunnel enclosure, a new target building, 22 neutron beam lines, multiple experimental buildings, central utility plant, central exhaust facility and a new laboratory/office research building. The complex will occupy approximately 14 acres and include 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.

Working through an IDIQ task order, CannonDesign worked 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. CannonDesign provided project management, architecture, and cost estimating.

Currently CannonDesign is engaged as the Architect of Record on the STS Detailed Design.





City of South Charleston

Borrow Area Development Plan and Geotechnical Engineering

LOCATION:
South Charleston
West Virgina

SIZE:
500,000 SF

DATE:
Item

COST:
Item

Preparing for future development at the West Virginia Regional Technology Park.

Potesta & Associates, Inc. (POTESTA) was retained by the City of South Charleston (City) as the design engineer for the development of Park Place, a 500,000-square-foot space of retail, entertainment, and food and beverage on a former fly ash disposal and former manufacturing plant in South Charleston, West Virginia. The development required structural fill and dewatering of the fly ash impoundment before construction.

POTESTA prepared a borrow area development plan for the excavation of 900,000 cubic yards to be crushed and hauled to Park Place for use as structural fill. The fill material was obtained from the West Virginia Regional Technology Park, which left a 14- acre flat site for future development of the Tech Park.

Specific details about the borrow site:

- The plan included over-drilling/ blasting to 5 feet below the bottom elevation of the “flat” in the borrow area.
- The approximate “flat” area provided per the proposed plan is 10.4 acres. A flat area is crowned along the center at an approximate elevation of 747 feet and sloped to drain toward perimeter collection ditches at about 1 percent. The finished grade at the perimeter of the “flat” is 745 feet.
- Six temporary sediment traps were installed along the perimeter of the “flat.” Perimeter collection ditches direct runoff to the sediment traps. Traps are equipped with skimmer dewatering devices and riprap exit channels and pipes.
- Two fiber optic lines run just outside the limits of disturbance on the west and south sides of the borrow area.
- A relocated 8-inch ductile iron water line was installed just south of the limits of disturbance.

– This water line is the primary supply to the Tech Park. A tee-fitting and valve/cap were installed to facilitate the future extension of potable water for the development of the borrow area.

– The development of the borrow area included the construction of a relocated access road leading to the American Electric Power electric substation just east of the borrow area.

– Union Carbide Corporation/DOW executed land use covenants covering the borrow area and surrounding areas in the Tech Park under RCRA Corrective Action. The borrow area and surrounding areas are subject to certain restrictions per the land use covenants. The majority of the borrow area is located within an area designated as Tract A. Tract A includes the following restriction: Extraction of groundwater for any purpose other than monitoring or remediation approved by the West Virginia Department of Environmental Protection is prohibited. A portion of the borrow area is also within an area where residential or quasiresidential uses are prohibited. Additionally, a 1.22-acre tract of land adjacent to and south of the borrow area includes a restriction on excavation, drilling, and construction activities.

– POTESTA completed subsurface borings to characterize soils/rock within the limits of the borrow area. POTESTA also obtained and evaluated surface soil samples to evaluate soils before excavation and processing.

– Up to 80 feet of soil/rock was excavated and removed during the development of the borrow area. Rock encountered in the excavation included interbedded sandstone, shale, siltstone, and claystone.

State of Maryland

Forensic Science Laboratory, Medical Examiner's Office

LOCATION:
Baltimore
Maryland

SIZE:
120,000 SF

DATE:
2010

COST:
$44.2M

One of the largest freestanding medical examiner facilities in the US.

The Maryland Forensic Center is located in the University of Maryland Bio-Research Park and serves the entire State of Maryland. The six-story facility is one of the largest freestanding medical examiner facilities in the US. The facility contains primary autopsy rooms with a total of 16 autopsy stations and four BSL3 autopsy suites, each one with an autopsy station. The primary autopsy rooms are designed with a unique glassed-in observation platform, running the full length of the two main autopsy rooms and elevated six feet above the floor of the autopsy rooms.

Natural light was incorporated in autopsy and support areas. Shell space was included on each floor to accommodate future expansion of each of the forensic center programs.

The State of Maryland required that the facility contain a BSL-3 autopsy complex. While the CDC has developed design guidelines for BS-L3 laboratories, it has not developed a corresponding set of design guidelines for BSL3 human autopsy facilities. Therefore, MWL worked closely with Dr. Jonathan Richmond, the primary author of the CDC BMBL document and the premier US expert in the field of bio-safety, to assist in the development of BSL-3 design guidelines applicable to autopsy facilities. This effort essentially broke new ground in BSL-3 autopsy facility design and a solution emerged applicable to future autopsy facilities.

When MWL was awarded the design phase of this project, it was given a space program prepared by another firm, which called for the autopsy complex to be on one of the upper floors of the six-story building. As the design process unfolded, MWL developed multiple options to explore alternative design approaches locating the autopsy complex on a lower floor. This more functional approach reduced costs.

MWL served in a joint venture with Gaudreau Architects leading the preparation of the programming and design for this facility. MWL conceived the basic building concepts and floor plans, followed by the development of large-scale plans, details, and specifications for the laboratory and medical examiner spaces.

Johns Hopkins University, Applied Physics Laboratory

Building 201

LOCATION:
Laurel
Maryland

SIZE:
263,000 SF

DATE:
2021

COST:
Confidential per client's request

CANNONDESIGN

Optimizing a "research engine" for the nation's top scientists.

The Johns Hopkins Applied Physics Laboratory is a university-affiliated research center (UARC) employing advanced physics and other interdisciplinary sciences to address complex analytical and engineering challenges related to critical national priorities and technology system development.

Building 201 houses over 500 staff and consolidates federally funded research program teams from 8 different locations into one consolidated research facility. Research from these teams includes multiple federal agencies including NIH, NASA, DOD, DOE, NOAA.

The highly collaborative environment that supports interaction among many disciplines: the physical sciences, multifunctional material sciences, biological sciences, bioengineering, nanostructures, electrical engineering, mechanical engineering, and microelectronics/ microsystems. The entire five-level research center, arranged according to a non-departmental, shared facility plan that surrounds a central atrium, provides generous unassigned collaborative spaces where researchers from different disciplines can work in focused, informal, or groupwork settings.

In addition, lower-level laboratory space houses vibration- and electromagnetically sensitive technical instrumentation, thus requiring specialized sub-grade concrete and waterproofing construction.

In addition to numerous laboratories, the complex includes a conference center, a cafe, outdoor amenities, and a rooftop balcony.

Marshall University

Multiple Projects

LOCATION:
Huntington
West Virginia

SIZE:
Varies

DATE:
Ongoing

COST:
Varies

An ongoing relationship with a local research university.

ZMM has significant experience providing Architectural and Engineering services to Marshall University.

IT/OT Security OP Center

The Cyber Security Command Center is proposed to be housed in the existing Weisberg Laboratory Building. This is a renovation of 2,000 SF of existing high-volume space which includes installation of new partial second floor for conference room and secondary computer stations on a tiered floor. The main level contains forty desk stations that focused on a 24' x 15' video wall. Integrated lighting is located in the walls, ceiling, and desk stations to control light levels and provide some color feedback to students based upon simulations. The build-out of the existing space includes a new addition to provide stair and elevator access up to the second floor. The ceiling is comprised of acoustical baffles to reduce sound reverberation and the underside of the second-floor area is comprised of backlit perforated metal panels. The front bulkhead contains a digital sign that displays "We are... Marshall" in hexadecimal code.

Smith Hall Renovation

This 22,000 SF renovation project was completed in 2017 and included interior finish and acoustical upgrades to improve the quality of the music practice rooms and additional performance areas. ZMM worked closely with Marshall University professors to determine the correct acoustics to meet the accreditation needs for the college. Taking inspiration from The Thundering Herd, the building was transformed with a mature palette and pops of green.

Interior improvements included replacement of ceilings in areas that were affected by the HVAC replacement. Existing ceilings in the practice rooms received a sound blanket barrier and acoustical coating to improve the performance of the space. Paint, carpet and acoustical wall treatments were also installed.

Mechanical system improvements were implemented to correct issues of the aging HVAC system, which was a high-energy user. ZMM converted the system to VAV by installing terminal units with SCR electric reheat. A smaller electric coil provided enough electrical capacity to power the terminal reheat. ZMM retained the fan wall and chilled water coil and installed DDC controls. Dehumidification was provided by a gas-fired humidifier to maintain stable humidity. Additional projects at Smith Hall Include:

- Building Assessment
- Cooling Tower Replacement
- Underground Chilled Water Piping
- Retrofit AC Smith Hall Music Building - Dual Duct VAV Humidified Building

Drinko Library

- Mechanical and Electrical Assessment in 2022
- Cooling Tower

Morrow Library

- Underground Chilled Water Piping

Sorrell Maintenance Building

- Air Conditioner Replacement

Applied Engineering Building

- Chiller Consulting
- Boiler Consulting

Pritchard Hall

- Chiller Replacement

Science Building

- Laboratory Ventilation Consulting

Hennepin County

Regional Medical Examiner's Office

LOCATION:
Minnetonka
Minnesota

SIZE:
64,000 SF

DATE:
2021

COST:
$52.8M

Creating the next generation of medical examiner facilities.

The Hennepin County Regional Medical Examiner's Office is set on the edge of woodlands with prairie, wetlands and wild turkeys roam the parking lots. This facility, dedicated to forensic pathology, is unlike any constructed throughout North America. Designed with the ambition of creating the next generation of medical examiner facilities, the autopsy theater is clearly not just another autopsy room.

With a client team fully committed in taking on new ideas and investing in predesign observations of other newly constructed medical examiner facilities, the end result collected all of the best concepts of our era into one dynamic, secure, efficient, flexible, safe, ergonomic, expandable, organized and accredited environment. Then our design team took it one step further and invented an all new autopsy table system. Previously, decedents came into the morgue and had to be transferred from a gurney to a table by staff, which was the top work-related injury in the office. Now the table lifts the decedent and photo blue tray free of the gurney with no staff muscle required and the tables now move up and down so investigators and doctors of any stature can work without standing on dangerous risers.

A series of mockup drawings were prepared prior to constructing the initial mockup of this new autopsy table system. In addition, a physical mockup was constructed by Mortech Manufacturing for the client/design team to review. Detailed edits were made resulting in an unmatched ergonomic solution. Sight line mockups were also performed to confirm doctors could reference in-house CT scans without moving from the cutting position during autopsy while viewing 98" diagonal x-ray quality monitors. Each of the eleven autopsy theaters are tuned for both occupied and unoccupied modes of operation. When not in use each station can independently reduce lighting and ventilation values resulting in lower energy costs for operation.

Some of the spaces that make a difference in the Hennepin facility include a multilane, fully enclosed sally port, separated receiving and release for single directional flow, dedicated enclosed processing area for pathogen containment and decedent storage for more than 130 with a variable temperature cold room that may be adjusted to either freezer or cooler.

Centre of Forensic Sciences

Forensic Services & Coroner's Complex

LOCATION:
Toronto
Ontario

SIZE:
665,000 SF

DATE:
2013

COST:
$266M

State-of-the-art forensic laboratory serving Ontario.

The state-of-the-art Forensic Services & Coroner's Complex is one of the largest of its kind in the world, housing a full service forensic laboratory, medicolegal autopsy facility and coroner's courts. It serves the entire province of Ontario Canada, with a population of 13 million.

Expressed as three distinct masses, podium, laboratory block and office block, the articulated complex relates in mass and character to its neighborhood. Above the podium, a light filled atrium separates the lab and office blocks. This 'forensics common' space provides collaborative space in this highly secure program. The facility is comprised of five floors, a full basement for parking and building support functions and a sixth mechanical floor. The ground floor includes the coroner's courts, entry and training complex and the forensic pathology unit. The second floor contains the primary office complex for the entire facility. The upper three floors contain forensic labs and their associated lab offices.

The lab floors are organized on a repetitive lab module with a flexible band of uninterrupted lab spaces at the perimeter of the plan. This lab band surrounds a central core comprised of fixed opaque elements such as stairs, elevators, vertical mechanical and plumbing shafts, evidence storage rooms, etc. By eliminating the opaque elements from the perimeter lab bands, a more transparent, flexible lab zone is achieved, with a corresponding increase in the penetration of natural light into the interior lab spaces. Ultimate flexibility was achieved by using predominantly table-based, mobile lab cabinetry with overhead power, data and gas services throughout the lab. The FSCC design allows for over 100,000 gross square feet of expansion by having the ability to expand horizontally in a linear fashion.

The autopsy theater is organized into individual working stations promoting containment of evidence and isolation while in a large open environment with natural light filtered into the room from clear story and observation possible at 50% of the stations. A fully certified Canadian CL3 (US=BSL3) suite is isolated from main autopsy for work with high containment pathogens. The CL3 includes delivery/discharge, incoming/outgoing cold rooms, containment autopsy, small lab and decontamination utilities like double-door autoclave, dunk tank and VHP room decontamination.

State of Utah

Unified State Laboratory

LOCATION:
Salt Lake City
Utah

SIZE:
97,174 SF

DATE:
2017

COST:
$32.4M

Co-locating multiple state agencies on one single site.

As a part of a master plan to co-locate similar state agencies on a single site, Module 2 unites the facilities of the Medical Examiner, the Department of Agriculture and Food Laboratories and the Department of Public Safety Forensic Services Laboratories. Module 2 is located directly adjacent to Module 1 which was completed in 2010 and houses the main laboratories of the Department of Health and Department of Environmental Quality.

The new facility replaced the previous Forensic Services Lab built in 1980 and allowed DPS to bring firearms testing from an offsite location so that all forensic services functions could be located together under one roof. In addition, the Medical Examiner was able to relocate from its University of Utah location its new home that includes a state-of-the-art autopsy suite.

McClaren, Wilson & Lawrie, Inc. was selected to provide laboratory consulting services, together with CRSA. The three-story, 97,000 square foot layout of the building locates the medical examiner facilities along with vehicle crime scene exam bays on the 1st floor. The second floor accommodates the forensic labs and associated offices, and the 3rd floor provides lab and office space dedicated to the Department of Agriculture and Food.

State of Vermont Agency of Administration

Agriculture & Environmental Laboratory (VAEL)

LOCATION:
Randolph Center
Vermont

SIZE:
38,000 SF

DATE:
2020

COST:
$22M

CANNONDESIGN

Rebuilding from devastation, a new home for a unique group of researchers.

CannonDesign provided design and planning services for the new 38,000 sf Vermont Agriculture & Environmental Laboratory (VAEL). The laboratories provide a wide range of services to the people of Vermont, protecting human and animal health, safeguarding environmental resources, and fostering commerce and economic development. This single laboratory will serve all environmental and agricultural needs in the state. Initially the building will serve 3 administrators, 7 chemists, 3 biologists, and 7 independent labs (and their staff). The building was programmed and designed to be highly flexible in order to accommodate multiple uses, program evolution and emergencies, as well as technological/mechanical advances. The CannonDesign team was instrumental in developing a comprehensive and forward-looking program that fosters collaboration.

Among the challenges of designing the VAEL is the need to create an infrastructure that supports myriad of different functions, i.e., the requirements for Chemistry Testing Laboratories are in contrast to the storage and structural requirements for massive weights and volumetric containers for Weights & Measures. Other departments and their features include an Animal Pathology Unit that includes a necropsy suite, a Forest Biology Unit that houses an extensive specimen collection, Fish and Wildlife collections, Water Testing areas, Air Quality Laboratories, Plant and Feed Laboratories, Soil Testing Laboratories, and an extensive Biology area with BSL 2+ Laboratory.

Federal Bureau of Investigation
United States Department of Justice

Forensic Science Laboratory

LOCATION:
Quantico
Virginia

SIZE:
508,000 SF

DATE:
2004

COST:
$116.4M

State-of-the-art laboratory for the latest forensic procedures.

McClaren, Wilson & Lawrie, Inc. served as specialists in the programming and design of a new FBI Laboratory to replace the J. Edgar Hoover headquarters facility in Washington, D.C. This state-of-the-art laboratory serves the vital interests of the United States of America nationally and internationally. The 760 person laboratory staff work in the FBI's divisional network of administrative, investigative, forensic science, special projects, research, and training facilities.

Forensic science laboratories in the Scientific Analysis Section are devoted to the examination, analysis and identification of evidence throughout the full spectrum of the forensic sciences. The cutting edge laboratory was designed to perform work using the latest procedures including: DNA profiling, serological, chemical, and toxicological analysis, hair and fiber examination, firearms/toolmarks identification, elemental, metals, and materials analysis, explosives and bomb reconstruction analysis, and statistical analysis regarding terrorism.

The latent print section includes advanced latent print analysis, automated fingerprint identification, and latest photographic techniques. The investigative operations section is involved in questioned documents analysis, computer crimes, racketeering, polygraph work, and specialized photography and photo analysis.

The FBI provides advance training and conducts leading edge research through its Forensic Science Research and Training Center. The center focuses on forensic science research and development, and the improvement of new forensic examination procedures, polygraph research, and other specialized research. FBI research is widely published in scientific journals.

MWL served as the design consultant in the programming and design of the FBI laboratory. MWL lead the preparation of the space needs assessment and design program, assisted in the development of the building design concepts, developed floor plans for various laboratory sections, and assisted in the preparation of large scale lab plans and specifications. MWL also reviewed the work being prepared by two other lab consultant teams.

State of West Virginia General Services Division

State Office Buildings 5, 6, & 7

LOCATION:
Charleston
West Virginia

SIZE:
Varies

DATE:
Ongoing

COST:
Varies

A decade-long relationship with the State of West Virginia.

Nearly 50 years ago, ZMM (as Zando, Martin & Milstead) designed the original West Virginia State Office Buildings 5, 6, and 7.

Over the past decade, ZMM has been assisting the State of West Virginia General Services Division with various improvements to the buildings. The improvements commenced with an overall building assessment that examined the condition of the buildings, as well as cost and phasing options for implementing various upgrades. Improvements that have been undertaken have ranged from substantial renovations to maintenance and repair projects, and include:

Major Renovations: ZMM Architects & Engineers provided design services for the renovation of the 10th Floor of Building 5 for the Office of Technology - a project that was recognized with a design award from the West Virginia Chapter of the American Institute of Architects. The project focused on demonstrating the potential that exists in State Office Buildings 5 and 6 if the floors are renovated in a more contemporary manner that moves the open office spaces to the perimeter, and pulls the offices adjacent to the building core. The project also involved close coordination with the State Fire Marshal, the introduction of a sprinkler service and fire pump into the building, demolition, hazardous material abatement, and FF&E coordination. The project was delivered considerably under the anticipated project budget.

The next phase of the renovation involved floors 7, 8, and 9 of Building 5 and floors 7 and 8 of Building 6. All of these floors have been fully renovated, including abatement, demolition, new construction, and updated life safety systems. ZMM has also provided design services for the renovation of the 2nd, 3rd, and 4th Floors of Building 6 for the Department of Education and Division of Personnel.

Roof Replacement: ZMM assisted the General Services Division with a roof replacement for all three buildings, utilizing a white EPDM roofing material, with consideration being given to sustainability. The existing ballast, roof membrane, and rigid insulation were also salvaged as part of the roof replacement project. Several unused mechanical penthouses, antenas, and other abandoned equipment were also removed.

Electrical Courtyard Improvements: ZMM Architects & Engineers assisted the General Services Division with a project to expand the electrical courtyard adjacent to Building 7, and simultaneously improve the electrical service entry to buildings 5, 6, and 7. This project required both historical (matching the existing granite panels), as well as very technical electrical engineering design considerations.

Door and Window Replacement: ZMM has assisted with two separate projects, one to replace the windows in Buildings 5 and 6, and the second to replace the doors at the entries to Buildings 5, 6, and 7. The window replacement included over 1,200 windows, as well as decorative extruded metal screen. These projects included building envelope and security considerations. The projects were designed and staged to minimize disturbance to the buildings' occupants.

Caulk Replacement: ZMM provided design services to remove and replace all of the caulk located between the limestone and precast panels on the exterior of Buildings 5, 6, and 7. The project also included cleaning of the building's exterior along with some repair work. The project was coordinated with the Capitol Building Commission.

Valve Replacement: ZMM assisted with a valve replacement project to isolate mechanical risers in Building 5 and 6. This technically intensive mechanical project gave the General Services Division greater control over the system, and helped to isolate various risers in the event of significant system failures in the future.

2011 AIA WV Merit Award

Army National Guard

Joint Interagency Training and Education Center (JITEC)

LOCATION:
Kingwood
West Virginia

SIZE:
283,000 SF

DATE:
2013

COST:
$100M

ZMM ARCHITECTS ENGINEERS

Campus style facility for training and operational mission support.

ZMM Architects and Engineers, in association with AECOM, provided architectural and engineering design services for the Joint Interagency Training and Education Center (JITEC), an Army National Guard campus-style facility for training and operational mission support.

Sited on 30 acres at the northern end of Camp Dawson between the Cheat River and the foot of Brier Mountain, this 283,000 SF project included the design of a new operations building, expansion of the billeting facility, renovation of the training facility, creation of a new base access control point (ACP) and visitor's center, and design for walkway connectors between all the facilities.

The project began with a review of the existing base master plan, followed by a revision of the master plan concept. JITEC is a training and educational facility — the vision behind the site design and updated master plan is that of a college campus atmosphere. The client's goal was to create a campus environment that integrates existing buildings with new ones, which was accomplished by using complimentary, yet distinct building materials.

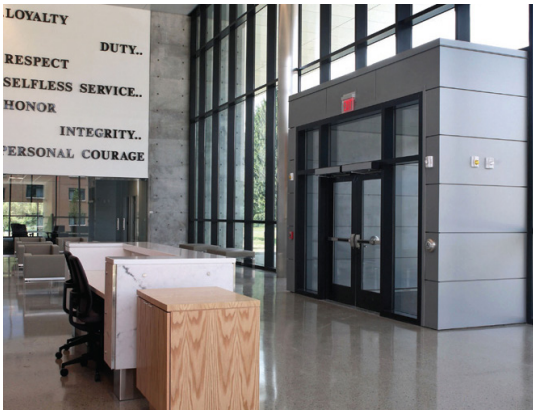
The facility is designed to meet all anti-terrorism/force protection criteria and has achieved LEED Gold Certification from the U.S. Green Building Council. The 82,000 SF operations building is prominently sited as the main focal point upon entering Camp Dawson through the secure access control point and visitor's center, also designed by AECOM. The building's exterior complements its West Virginia setting. The entire building front, composed of glass and pre-cast concrete walls, is open and inviting, with glazing that reflects the surrounding trees and hills.

Security requirements for the command center influenced the design of the attached, copper-clad “black box” that is an homage to the native rock stratification seen throughout the state. The building consists of four distinct areas: the Joint Operations Center, a suite of secure training rooms, base headquarters and JITEC administrative offices, and a 6,000 SF server and telecommunications room.

Entry to the Joint Operations Center (JOC) is provided by a secure mantrap adjacent to a dedicated security office. Built to SCIF standards, the JOC contains a state-of-the-art command center, housing 48 permanent work stations in a theater-style configuration, facing a large video wall, flanked by conference rooms and offices for both officers and support staff. Within the JOC is a secure area consisting of workstations, offices, and two divisible conference rooms with secure video conferencing capabilities. The secure area construction dictates a windowless environment, requiring proper lighting and creative use of materials to create an agreeable work atmosphere.

The 180,000 SF billeting (hotel) expansion more than triples the facility size and increases the total capacity from 189 guest rooms to 600 guest rooms and suites. Designed to relate to the existing architecture with similar scale, materials, textures, and massing, the addition also brings in new elements, such as iconic glazed building corner elements, to integrate the design of the operations building. A dedicated lobby with terrazzo tile flooring leads to a monumental stair with terrazzo treads, open risers, and a glass/stainless steel railing for access to the open lounge areas on the second and third floors. The lobby’s design provides a hotel atmosphere, underscored by the Liberty Lounge, an upscale bar and restaurant area, with wood finishes salvaged from the gymnasium floor of the former Preston County Armory. The six “executive suites” are designed with the full amenities of corporate hotels.

2011 AIA WV
Honor Award



City of Charleston

Charleston Coliseum and Convention Center

LOCATION:
Charleston
West Virgina

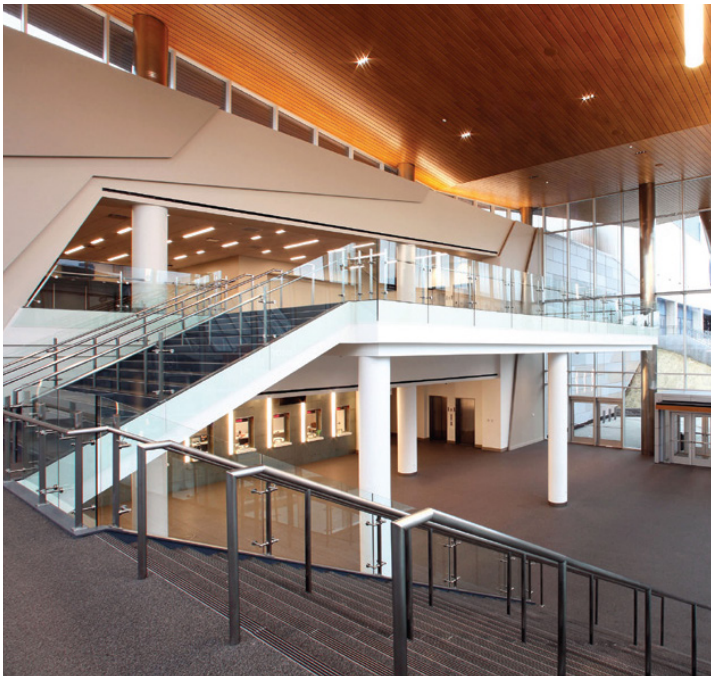
SIZE:
283,000 SF

DATE:
2018

COST:
$100M

ZMM ARCHITECTS ENGINEERS

Building on the strong authentic character of Charleston.



Our team built on the strong authentic character of Charleston to remake the Charleston Convention Center into a more efficient, sustainable, dynamic, and iconic best-in-class destination.

The design of the expansion and renovation of the Charleston Convention Center was inspired by the story of West Virginia. Defined by a rugged landscape, the early history of the state was dominated by extractive industries: salt, coal, timber, and trapping. This set the local character. With a foundation rich in resources, manufacturing added value to the raw materials, with crafts like glass-making and industries like chemicals and energy. This attracted a rich diversity of immigrants and a culture of craftsmanship that set the urban character. The economy is shifting from industry and service to information and technology. Again, the landscape and industry that shaped the region gives Charleston real advantages to exploit. The Creative Class, critical for the information and technology age, can live and work anywhere - what they want is access to the outdoors, real places with real character, and continuous education and entertainment.

Our design started with an organizational concept inspired by this history. The Kanawha River is the social organizing link throughout the region, with settlement zones developing on whatever flat land the river provided, creating nodes of activities among the hills and valleys. The renovated Convention Center is a building that emerges from this iconic landscape, with the architecture and topography working together. The Convention Center also has distinct active nodes to celebrate each activity; arena, convention, and banquet. These nodes are connected like the hills and cut-rock faces that are seen throughout the

state, as people work to connect to each other through the landscape.

The first critical design objective was to create separate entries and identities for the arena and convention center. This allowed for simultaneous events and clarity of use. For the Convention Center to thrive, it needed a real ballroom assembly space. Located overlooking the Elk River, the ballroom pre-function space is the most dramatic feature of the center. Together, the three glass-enclosed nodes - arena lobby, convention lobby, and ballroom - define a unique Charleston event campus. As described above, the spaces that connect these nodes are inspired by the hills and cut-rock faces that connect the towns along the Kanawha River. With the building emerging from the landscape and expressed as cut-rock walls, the connecting areas were designed to be expressive and economical backdrops to the glass-boxed nodes.

While the expansion transformed the southeast to the middle of the northern zone of the site, the existing building mass still dominates a portion of the northern and eastern campus. The dominant expression along these existing façades is the landscaped berms. As we imagined the building expression emerging from the landscape, a strategy developed to transform these berms to reflect, at the pedestrian level, the overall design theme. Above the level of the berms, the concourse level windows open up the façade and provide a much needed break in the massing. The upper part of the arena is painted in two tones to match the new building, playing off the different faces. The north, south, east, and west faces painted a lighter shade; and the northeast, southeast, southwest, and northwest faces a darker shade. Dramatic exterior color-changing lighting on the northeast, southeast, southwest, and northwest faces transform the look and feel of the center into a fun and festive landmark.

2019 AIA WV Honor Award, Citation & People's Choice Award

Children's Hospital of Philadelphia

Schuylkill Avenue Research Building

LOCATION:
Philadelphia, Pennsylvania

SIZE:
350,000 SF

DATE:
2025 est.

COST:
Confidential

CANNONDESIGN

Designing a research platform to boost a children's hospital from #2 to #1.

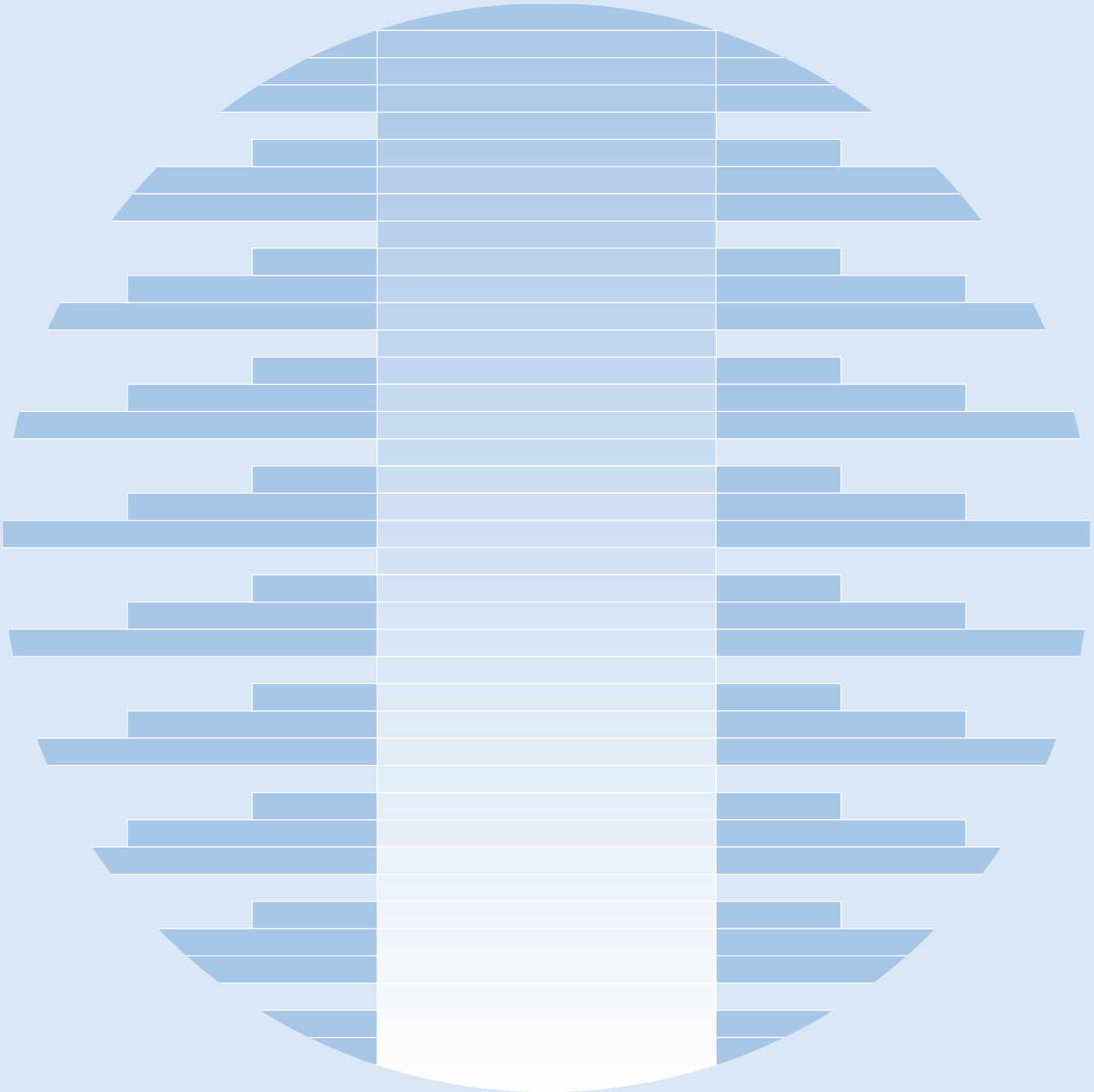
This 14-story, 350,000-gsf new research tower will be located immediately adjacent to an existing center for pediatric research, a proximity that presents the opportunity to create activity and energy between the two buildings. This building will serve as an extension of the institution's research platform from its main campus and will ensure seamless functionality between the two locations.

Central core location. Constructed above an existing three-story podium, the building features a central core location that the laboratory planning grid will work around.

Vivarium. The vivarium is a two-level, full-service, small animal facility. Located at the top levels of the research building to improve security and mitigate noise and vibration, the vivarium uses disposable caging technology to support 16,000-20,000 rodent cages.

Multipurpose research building. The first two floors will be dedicated to building amenities and support spaces, including the main entry, public areas, a 250-seat conference center, smaller conference/seminar rooms, privacy rooms, breakout/ lounge spaces, a café area, event staging areas, a catering kitchen, and furniture and general storage.

Client References



Client References

ZMM ARCHITECTS ENGINEERS

Marshall University
Multiple Projects

Randy Vaughn, Associate Director of Facilities Planning and Management

1625 3rd Avenue
Huntington, WV 25755

T: (304) 696-6481

West Virginia Regional Technology Park

Mr. Matt Ballard, CEO, Executive Director

1740 Union Carbide Drive
South Charleston, WV 25303

T: (304) 365-3165

West Virginia Army National Guard
Joint Interagency Training and Education Center (JITEC)

Todd Reynolds, Deputy Branch Chief

1707 Coonskin Drive
Charleston, WV 25311

C: (304) 380-7226
T: (304) 561-6568

BridgeValley Community and Technical College
Campus Development Plans

Casey Sacks, Ph.D., President

2001 Union Carbide Drive
South Charleston, WV 25303

T: (304) 205-6600 (S. Charleston)
T: (304) 734-6600 (Montgomery)

Client References

CANNONDESIGN

Michigan Department of Technology, Management and Budget
New Public Health Laboratory

Chris Kulhanek, R.A., Design and Construction Division

3111 W. St. Joseph Street
Lansing, MI 48917

C: (517) 749-2610
E: kulhanekc@michigan.gov

Johns Hopkins University, Applied Physics Laboratory
Building 201

Jimmy Patel, Group Supervisor, Facilities Design and Construction (FDC)

11100 Johns Hopkins Road
Laurel, MD 20723

T: (240) 592-1584
E: jimmy.patel@jhuapl.edu

j. e. k. consulting, l.l.c.

John E. Kraus
Former Project Manager for the National Cancer Institute (with JBG Smith)

20216 Darlington Drive
Montgomery Village, MD 20886

T: (202) 369-5072
E: jkraus@jekcllc.com

MWL McClaren, Wilson & Lawrie, Inc.

Kansas Bureau of Investigation
Forensic Science Laboratory

T.L. Price, Laboratory Director

1620 SW Tyler
Topeka, KS 66612

T: (785) 296-8300
E: tl.price@kbi.state.ks.us

Hennepin County
Regional Medical Examiner's Office

Andrew Baker, MD, Chief Medical Examiner

14250 County Rd 62
Minnetonka, MN 55345

T: (612) 215-6300
E: andrew.baker@co.hennepin.mn.us

Montgomery County
Forensic Laboratory

Kathryn Pinneri, MD, Director Forensic Services

205 Hilbig Road
Conroe, TX 77301

T: (936) 538-3791
E: kathryn.pinneri@mctx.org

ZMM
ARCHITECTS
ENGINEERS

CANNONDESIGN

MWL
McClaren, Wilson & Lawrie, Inc.

Adam Krason, AIA, NCARB, LEED-AP

222 Lee Street West
Charleston, WV 25302

(304) 342-0159
ark@zmm.com