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WV PURCHASING
DIVISION

West Virginia Main Capitol Clay Tile Repairs Project

Architectural/ Engineering Services

SOLICITATION NO.: CEOI 0211 GSD190000

Attn: Michelle Childers
Department of Administration, Purchasing Division
2019 Washington Street East
Charleston, WV 25305-0130

WDP & Associates Consulting Engineers, Inc.
335 Greenbrier Drive, Suite 205
Charlottesville, Virginia 22901
Tel: 434-245-6117 | www.wdpa.com

ORIGINAL

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January 23, 2019

State of West Virginia
Purchasing Division
2019 Washington Street East
P.O. Box 50130
Charleston, WV 25305-0130



Attention: Michelle L. Childers
Reference: Expression of Interest: WV State Capitol Clay Tile Repairs Project
Solicitation #: CEOI 0211 GSD1900000003

Dear Ms. Childers:

Charlottesville, VA

WDP & Associates Consulting Engineers, Inc., (WDP) is pleased to submit our expression of interest to provide professional architectural and engineering services for the West Virginia Capitol Clay Tile Repairs Project.

Manassas, VA

Blacksburg, VA

WDP is a certified small business consulting engineering firm with a proven history of investigating existing masonry and structural related issues, as well as in the design of repairs to remedy those problems. Building envelope and structural engineering is not just a service that we provide; it's at the heart of our business. Our technical staff has performed these services for public and private sector clients throughout the United States, including West Virginia state agencies. The proximity of our Blacksburg and Charlottesville offices along with our current work in West Virginia gives us the ability and flexibility to respond to the needs of this project both during the design phase and through construction administration. Our projects have brought us to the state on a weekly basis for the past two years. Additionally, our ability to assess the condition of the existing structures, conduct testing needed to identify the root cause of problematic conditions, and design the needed repairs in-house provides a cost-savings to our clients.

Myrtle Beach, SC

New York, NY

Our senior staff are nationally recognized experts that are actively involved on the national level in standard and code development committees, and our involvement includes current Chairs of standard committees that write and develop the standards which are used to test, design, construct, and repair buildings. This engagement brings a level of expertise and insight that will be an invaluable resource for determining the solutions for the problems currently being experienced. We have found our ability to provide scalable or tiered-approach services to be particularly appreciated by our cost-conscious clients working within tight budget constraints.

The attached expression of interest submission clearly and concisely conveys our experience and abilities for the requested services for the West Virginia General Services Division.

Thank you for your consideration, and we look forward to hearing from you.

Respectfully submitted,
WDP & Associates Consulting Engineers, Inc.

Rex A. Cyphers, P.E.
Principal

SECTION 2.0 – FIRM PROFILE



WDP & Associates Consulting Engineers, Inc., is a SBA-certified (1KZR5), consulting engineering firm specializing in the evaluation of existing masonry structures, building envelope, façade investigations and repair, structural investigations and repair, and building science analysis. Creating lasting solutions that extend the service life of structures is at the heart of our business.

Since the firm's establishment in 1995, WDP's expertise, particularly in regard to the evaluation of existing masonry and structural repair, has garnered recognition on a national level and makes us uniquely qualified to evaluate and repair the observed clay tile distress at the West Virginia State Capitol Building. Masonry evaluation and repair design are the hallmark services of our firm, and our tailored professional services can preserve and enhance the value of client facility assets.

WDP is a small business with a national presence and a firm commitment to the state of West Virginia. **Our experience in the state began over 17 years ago with a project at West Virginia University in Morgantown,** and we remain dedicated to serving the needs of our West Virginia clients. In the last five years alone, we have worked on more than twelve projects from Charleston to Morgantown to Snowshoe; our services on those projects have included evaluating the structural stability of existing building components, investigating air and water infiltration issues, evaluating the hygrothermal properties of existing wall assemblies, and providing recommendations for repairs. Our ongoing project at the Capitol Complex for the West Virginia General Services Division and our recently completed project at the Public Service Commission Headquarters building have brought us to Charleston on a weekly basis for the past two years.



Interior of West Virginia State Capitol Building

Companywide, WDP performs around 100 structural and building envelope investigation and repair projects every year, with many of them focusing on masonry evaluation and restoration. **Structural engineering and building envelope consulting are not just services that we provide; it is at the core of what we do.** We have been the designer of record for numerous projects regarding buildings of historic significance and with historic designations, including a UNESCO World Heritage site and the oldest continuously in-use higher education building in the United States. Our investigative strategies and cost-effective design approaches have addressed countless issues, such as structural deficiencies caused by moisture infiltration issues, differential movement, or general deterioration of building materials, or building envelope problems manifested through air/water leakage, occupant comfort issues, biological growth, and aesthetic deficiencies, among others. Our senior staff members are nationally and internationally recognized for their technical expertise, project accomplishments, and involvement in industry organizations and National Design Standards committees.

Our ability to provide a wide range of services in-house minimizes or eliminates the need for numerous subconsultants, translating into cost savings for our clients. Our in-house capabilities include the combination of structural and building envelope engineering, non-destructive testing capabilities, engineers proficient in field testing for air and water infiltration, in-house laboratory testing of materials, and the ability to conduct hygrothermal analyses with our WUFI-trained engineers.

Additionally, we take a tiered approach when developing recommendations for repairing the problems in our clients' structures. Rather than simply presenting the most comprehensive (and typically most expensive) repair option, whenever possible, we prefer to develop two or three options which range from addressing the most immediate issues as a minimal repair approach to proactively correcting conditions that can adversely affect the structure's longevity as a comprehensive repair approach. **We have found that our clients appreciate these cost-conscious solutions for budget constraints.**

Historic Preservation

WDP recognizes the importance and historic significance of the West Virginia State Capitol Building as a symbol to the State of West Virginia. Our approach to this project, as with any historically significant project, is aimed at preserving and enhancing the value of existing facility assets through tailored engineering solutions.

Historic buildings are a strong component of WDP's project portfolio, and our consulting engineering expertise has earned accolades from clients and industry organizations. From brick to stone and from wood to plaster, our experience covers historic structures from the late 1600s to the mid-twentieth century.

Our understanding of historic preservation has been demonstrated on projects such as the 1930s Art Deco Roanoke Higher Education Center for a design resulting in the restoration of the brick façade; the investigation and design repairs of the Thomas Jefferson-designed Virginia State Capitol (1788) and Pavilions at the University of Virginia (1820s); and the Corcoran School for the Arts and Design (1897) at George Washington University. Our engineers are familiar with the standards and guidelines of the Association for Preservation Technology and have presented papers at their annual conference. Our firm is also the Designer of Record for repairs currently ongoing at the historic West Virginia Capitol Dome building (1932). Additionally, our firm has investigated and developed repair and preservation recommendations for the Wren Building at the College of William & Mary, a circa-1699 structure that is the oldest college building in the United States still standing and is named after the legendary English architect, Christopher Wren, who is purported to have designed it.



The Wren Building at the College of William & Mary, a circa-1693 structure that is the oldest college building in the United States.

Additionally, one of our principals, Rex Cyphers, has been designated by the U.S. Army Corps of Engineers and the General Services Administration as a historic preservationist due to the combination of his educational background and professional experience.

A representative sampling of recent historic preservation projects includes:

West Virginia State Capitol Dome (1932) Structural Evaluation and Moisture Intrusion Repairs	Erie Federal Courthouse Complex (1938) Masonry Façade Evaluation
Radford University Whitt Hall (1928) Exterior Masonry Façade Evaluation	Roanoke Higher Education Center (1930s) Masonry Façade Renovation
University of Richmond North Court Housing (1914) Masonry Façade Evaluation and Preservation	UVA Pavilions I-VII (1820s) Structural Evaluation and Repair Design of Balcony
GWU Corcoran School of the Arts & Design (1897) Masonry Façade Restoration and Retrofit Design	UVA Chapel Bell Tower (1820s) Structural Evaluation and Preservation of Masonry Façade
William & Mary, Wren Building (1699) Building Envelope Evaluation	St. Francis of Assisi Catholic Church (1895) Structural Evaluation & Masonry Façade Replacement
Cyrus McCormick Farm (1822) Structural Evaluation and Preservation of Masonry and Wood Structures	Virginia State Capitol Building (1788) Crack Evaluation and Moisture Intrusion Repair Design
Civil War Museum at Tredegar Iron Works (1837) Masonry Façade Evaluation and Repair Design	William & Mary, Chandler Hall Renovation (1930) Hygrothermal Analysis of Renovation Design

SECTION 2.0 – FIRM PROFILE

Structural Services

WDP's structural experience is both broad and deep, encompassing investigation, analysis, repair, and restoration of all structure types including masonry, concrete, steel, wood, and combinations thereof. The structural projects in WDP's extensive portfolio include repairs to federal, state, municipal, institutional, commercial, manufacturing, transportation, and residential buildings.

WDP's knowledge and experience has been broadened through decades of structural investigations on myriads of existing structures, from historic to contemporary, which gives the added understanding of how existing structures have been constructed, how they perform over time, and how they fail.

WDP's approach to structural engineering begins by developing an understanding of the existing building conditions and problems through on-site investigation, study of existing building documentation, and review of pertinent building standards from relevant eras of construction. WDP staff receive training and maintain certifications for various types access required to investigate portions of existing buildings, such as fall protection, aerial lifts, scaffolding, suspended scaffolds, and confined space. Our structural investigation capabilities include:

- Visual and tactile (sounding) surveying
- Non-destructive testing methods
- Materials sampling and testing
- Exploratory openings
- Structural instrumentation and health monitoring

WDP employs numerous types of specialty equipment and methods for performing non-destructive testing, including pachometers, surface-penetrating radar, and impact-echo, and structural monitoring. WDP is also experienced with using other field testing methods, such as direct bond tension, direct bond shear, flat-jack, and in-situ load testing. WDP's material investigation and testing work is supported by our own in-house laboratory, which is accredited by the Washington Area Council of Engineering Laboratories (WACEL). WDP is proficient in sampling and testing concrete, masonry, mortar, and aggregate materials. Each piece of equipment that WDP's technicians use in both the laboratory and the field is calibrated at intervals as required by ASTM or sooner if required. All calibrations use instruments and gauges that are traceable to the National Institute of Standards and Technology (NIST).

Structural engineering for existing structures presents additional challenges that are not present with new construction. WDP maintains a large library of historical building references, including building and material standards, manufacturer publications, and industry periodicals. The location, condition, and suitability of existing structural members create additional constraints that the repair design must satisfy, which often precludes the use of standard design approaches and construction practices. When necessary, WDP is able to leverage its structural experience and toolsets to develop original and innovative design solutions to address the unique challenges presented by an existing building.



**Investigation into Failures of Clay Tile Masonry –
West Virginia State Capitol Building**

SECTION 2.0 – FIRM PROFILE

WDP Staff Participation in National Standards Development

WDP's ability to expertly serve our clients is due, in part, to the extensive engagement on the part of our engineering staff with the industry organizations responsible for developing the professional design standards that are pertinent to evaluating, preserving, and repairing existing structures. Furthermore, WDP's engineers are actively engaged in sharing their knowledge and experience with others in the industry through regular publication of research papers and presentation at professional conference. The list below represents the specific code committees on which WDP's engineers are either a member or Chairperson.

Air Barrier Association of America

- Research Committee

American Concrete Institute

- Director, ACI National Capital Chapter
- 216 Fire Resistance and Fire Protection of Structures
- 444 Structural Health Monitoring and Instrumentation
- 530 Masonry Standards Joint Committee
- 546 Repair of Concrete

The Masonry Society

- Secretary, TMS 402/602 Building Code Requirements and Specification for Masonry Structures Committee
 - Seismic & Limit State Design Subcommittee
 - Design Subcommittee
- Past Committee Chair, Existing Masonry Committee
- Existing Masonry Committee
 - Façade Task Group
- Standards Development Committee
Author, Masonry Designers Guide

International Concrete Repair Institute

- 210 - Evaluation

American Society for Testing and Materials

- C-09 Concrete and Concrete Aggregates
- C-09.60 Testing Fresh Concrete
- C-09.64 Non-destructive Testing
- C-09.98 Evaluation of Laboratories
- C-11 Gypsum and Related Building Materials and Systems
- C-12 Mortars for Unit Masonry
- C-15 Manufactured Masonry Units
- C-16 Thermal Insulation
- D-08 Roofing and Waterproofing
- D-18 Soil and Rock
- E-06 Performance of Buildings
- E-06.24 Building Preservation and Rehabilitation
- E-06.41 Air Leakage and Ventilation Performance
- E-06.51 Performance of Windows, Doors, Skylights and Curtain Walls
- E-06.55 Performance of Building Enclosures
- E-36 Accreditation & Certification
- E-36.70 Agencies Performing Construction Inspection, Testing, and Special Inspections

American Society of Civil Engineers

- Structural Engineering Institute
- Architectural Engineering Institute
- Geo-Professional Institute
- Technical Council on Forensic Engineering

Experience with Investigation of Clay Tile Failures & Subsequent Design of Repairs

WDP has conducted field evaluations, developed repair recommendations, and designed repairs to numerous buildings that were constructed with hollow clay tile as a part of the wall assemblies. In most of the projects, the clay tile was used as a backing for brick veneer or other masonry elements, fire proofing around steel beams and columns, or as in-fill walls between structural elements. The evaluation of the hollow clay tile for our previous projects primarily focused on whether the walls were stable and strong enough to support veneer or other cladding elements or the impact the walls were having on the migration of moisture through the building.

Most recently, WDP has performed an investigation of the historic clay tile walls within many of the spaces of the Main Building of the West Virginia State Capitol and developed repair designs to strengthen and restore the walls while preserving the historic nature of the clay tile. This investigation was performed as part of the Dome Moisture Intrusion Repair Project to strength existing clay tile walls beneath the cast-plaster inner dome utilizing internal reinforcement as well as part of emergency repairs within other spaces of the building that incorporated external reinforcement to strengthen large expanses of clay tile walls. WDP also performed an evaluation of the Engineering Sciences Building at West Virginia University that featured brick veneer over structural clay tile backup walls. From this investigation, WDP evaluated the strength of the backup walls to support the loads induced from the veneer and proposed repair recommendations to the University for consideration. A more detailed description of these projects can be found in Section 4.3, "Project Experience" of this submission.



**Evaluation of existing clay tile to develop shoring design
Moynihan Train Station, New York City**



**Instrumentation to evaluate clay tile walls
Hodges Hall, WVU**

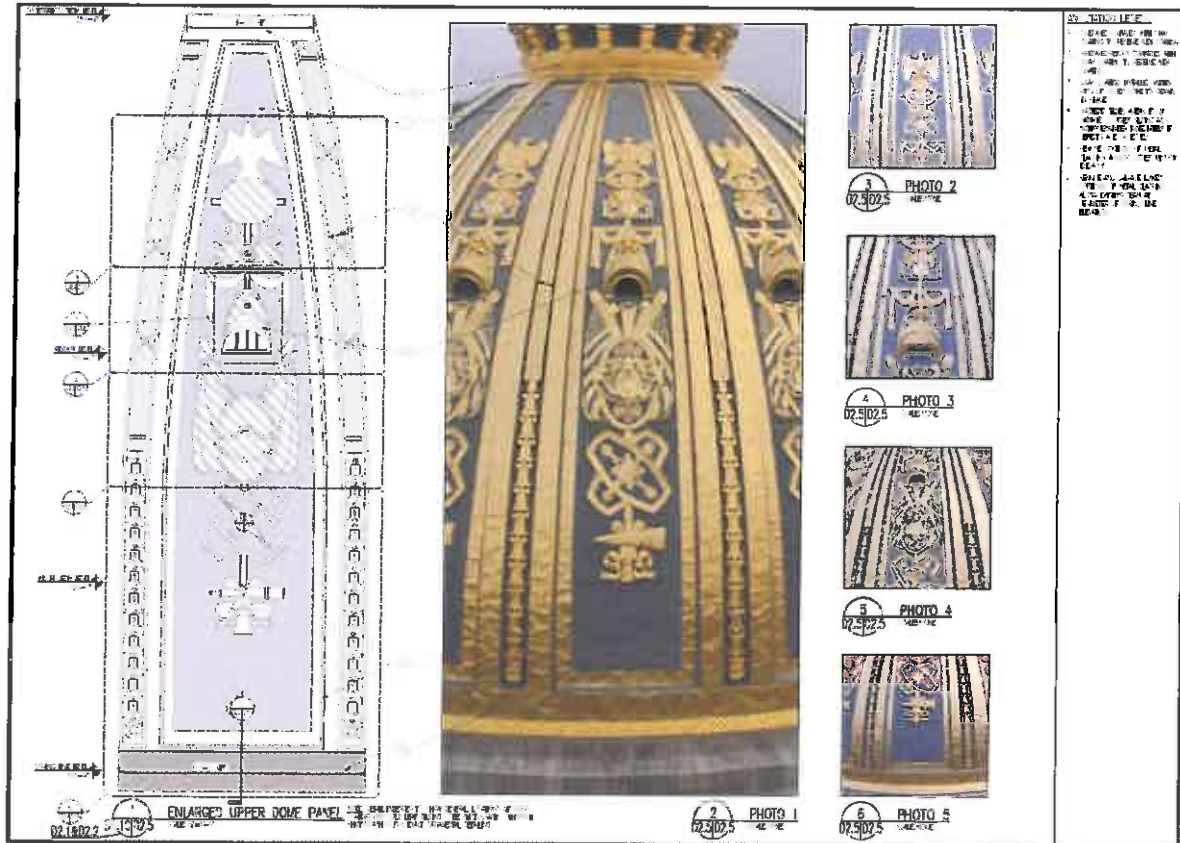
WDP has also designed shoring to support clay tile during the removal of masonry elements at the old Farley Post Office in New York City, which is being converted to the Moynihan Train Station, located across from Penn Station in Manhattan. This design required an understanding of the properties of the existing clay tile to ensure the shoring design would support the loads during the execution of the work. Furthermore, WDP conducted a building envelope evaluation using data acquisition equipment at Hodges Hall and West Virginia University to develop a retrofit wall assembly for an upcoming renovation project that allowed existing clay tile walls to be salvaged and remain in place.

Approach for Developing Construction Bid Documents

WDP has extensive experience developing Construction Bid Documents for various clients, to include government agencies, that are based on written and photographic documentation collected during a field investigation. Our engineers are involved in both the development of drawings as well as specification writing and would develop these documents in accordance with applicable codes and design guidelines. We strive to develop construction documents focused on attention to detail and practical constructability. Depending on the level of detailed required, our construction drawings can be presented in isometric form or in sequential construction to assist contractors with proper sequencing. We have developed drawings utilizing photographic documentation to convey the scope of work, as shown below. WDP also places special emphasis on providing clear delineation of work items within the bid document, to minimize miscommunication during the bid process and execution of the work. WDP takes pride in the fact that we write project specifications that are unique for each project to ensure project specific requirements are clearly outlined within the bid documents.

SECTION 3.1 - GOAL ONE

Example of Construction Bid Documents Utilizing Photographic Documentation to Convey Scope of Work



Experience working with Third-Party Authorities Having Jurisdiction Over Historic Repairs

WDP's proposed project team for the WV Main Capitol Clay Tile Repairs project have personal experience coordinating with Third-Party Authorities having jurisdiction over historic repairs, to include the West Virginia State Historic Preservation Office (SHPO) as well as similar entities in other states and regions, to ensure that design methods align with best practices for historic structures. WDP is familiar with the requirements for historic structures outlined in the U.S. Department of the Interior's Historic Preservation Standards and Guidelines and aims to incorporate such practices in designs for historic structures to the greatest extent possible without compromising the existing structure. Our engineers are also familiar with the standards and guidelines of the Association for Preservation Technology and have presented papers at their annual conference.

Our current work with the Moisture Intrusion Repair and EPO Work for Clay Tile Remediation at the West Virginia State Capitol has involved coordination and consistent interaction with the West Virginia SHPO. For the Moisture Intrusion Repair Project, WDP engaged with SHPO multiple times through the design process to review the Drawings and Specifications for the project and subsequently incorporated comments received into the final construction documents. WDP also presented an overview of the proposed scope of work to the Capitol Building Commission to gain approval for the project. The findings from the investigation for the EPO Work for Clay Tile Remediation were also presented to SHPO, and various repair approaches were presented and discussed such that remediation efforts provided the best value to the State while maintaining the historic character of the building.



Crack Repairs to Columns at the Virginia State Capitol Building



Reviewing a sample panel mockup with the VA SHPO for new stone façade for St. Francis of Assisi Catholic Church

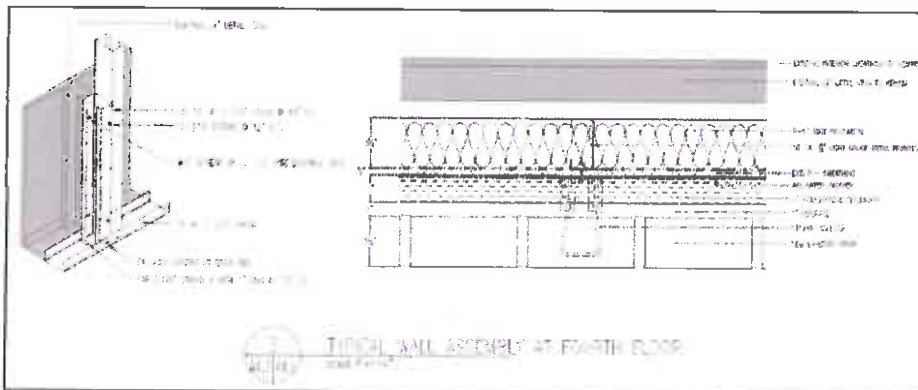
WDP has worked on a number of projects that have also required coordination with the Virginia SHPO to include the Jefferson-designed Virginia State Capitol Building, investigating the water infiltration into the historic portico and terrace and subsequent design repairs, as well as the structural investigation and façade replacement of the historic St. Francis of Assisi Catholic Church in Staunton, VA. WDP has also worked with local historic preservation entities such as the University Architect at the University of Virginia on projects such as the University Chapel structural evaluation and restoration of the historic mass masonry tower. Furthermore, WDP has been engaged with the Pennsylvania SHPO as well as the General Services Administration Regional Preservation Officer for the investigation and repair design of mass masonry wall, parapet replacement, and window restoration for the Federal Courthouse in Erie, Pennsylvania.

Detailed descriptions for each of the aforementioned projects, including explanations of the failures experienced, the methods of identifying the cause of the issues, and WDP's solutions, can be found in Section 4.3, "Project Experience" of this submission.

Capacity to Perform Procurement Phase Services for Expedited Projects

By their very nature, emergency projects require a swift response, a breadth of knowledge and experience to handle unforeseen conditions, and the flexibility to provide adequate manpower to fully investigate and repair the failures at hand. WDP's engineers have served as emergency responders for several post-disaster sites and emergency failure situations in various structure types, including historic buildings. Through our boots on the ground experience, we understand how structures perform, the need for time-sensitive response, and the importance of thinking on our feet while assessing damaged and/or collapsed structures.

Our façade replacement and structural repair project at the Judge Advocate General (JAG) School at the University of Virginia, which received the 2012 ICRI Outstanding Repair Project Award, was the result of an emergency response by WDP to unforeseen failures uncovered during a planned interior renovation of the building. Within a short amount of time, WDP staff were able to identify the structural problem, develop a repair design and Bid Documents, and assist the University in the selection of a Contractor to execute the work. WDP then provided Construction Administration services during the construction phase of the project. Our ability to respond immediately, coordinating between multiple contractors and firms on-site, and provide a comprehensive repair program that did not delay the renovation project already in progress demonstrates our proficiency in providing procurement phase services for expedited projects.



Repair Drawings for a façade replacement coordinated with existing framing from the interior renovation project - JAG School, UVA

WDP has experience specifically with the procurement process for the General Services Division in West Virginia in the development of the Bid Documents for the West Virginia State Capitol Dome Moisture Intrusion Repair Project. For this project, WDP coordinated the project specifications with the procurement process for the State and assisted in the review of the low bid to verify it was responsive. WDP also provided investigation, design, bid, and construction administration services for a façade replacement project for the West Virginia University South Agricultural

Sciences Building. The design and procurement process for this project was coordinated with the University code review officials. WDP routinely develops Bid Documents and assists Owners, to include government entities, in the procurement process and selection of Contractors to perform the work. Our experience working in emergency response settings, as well as our understanding of the design and procurement process, will enable us to meet the needs of the State for this project.

WDP also recognizes the importance of addressing the State of West Virginia's needs in a timely, detailed and orderly manner. Our proposed project team will be predominantly staffed by our Charlottesville, Virginia, office, which has direct ties with the West Virginia General Services Division and are already in Charleston on a weekly basis. Staff in our offices in Manassas and Blacksburg, Virginia, as well as New York City and Myrtle Beach, South Carolina, are available to provide support in the event that unforeseen conditions or more manpower is required to facilitate the design, bidding, and construction administration of this fast track project.

A detailed description for each of the aforementioned projects, including descriptions of our ability to work with multiple government agencies with this life-safety emergency project, can be found in Section 4.3, "Project Experience" of this submission.

SECTION 3.4 - GOAL FOUR

Services for Occupied Buildings with Multiple Ongoing Projects

More often than not, our clients desire to maintain occupancy and use of their building(s) throughout the course of the repair or restoration by implementing construction phasing and temporary protective measures in order to minimize disruption. WDP seeks to understand any conflicts or restrictions from the Owner's perspective by maintaining communication with the project managers throughout the design and construction phase. As the Engineer of Record, WDP can then incorporate these requirements into the project documents and enforce them with the Contractor. This communication with the Owner's project manager is also key to understanding any projects that will occur simultaneously such that any specific coordination can be included in the Bid Documents.

The repairs executed at the Judge Advocate General (JAG) School at the University of Virginia were performed in coordination with an ongoing project while also maintaining occupancy requirements for the building. The renovation of the building originally focused on the interior spaces under a separate contract, but when structural issues were identified in the exterior walls, WDP was brought on site to evaluate the existing conditions and develop a repair design. Since the exterior of the building was not included in the scope of work, WDP developed a phasing plan and comprehensive pedestrian protection plan such that the building could remain occupied while work was ongoing. WDP also coordinated the exterior work with the interior renovations so as not to disrupt the initial project schedule.

WDP was also the Designer of Record for the Public Service Commission Headquarters project in Charleston, West Virginia, another building that remained occupied during restoration work. The scope of work for this project generally included a complete façade replacement, to include the brick veneer and glazing components. While this work was limited to the exterior, temporary protection measures were included in the Bid Documents for window locations so that windows could be replaced and exterior work could be ongoing without having to displace building occupants from their offices for the duration of the project. During the project, there were short periods of times where occupants were relocated from their office to install the temporary protection. WDP assisted with the coordination of scheduling such periods to provide the least disruption to the building occupants.



Overhead protection for building occupants at the entrance to the Public Service Commission Headquarters Building during construction

WDP is currently working on the West Virginia State Capitol Dome Moisture Intrusion Repair Project. For this project, we have coordinated with other ongoing projects such as a door restoration and sidewalk repair which impacted Contractor access to the building. There is additional coordination with an ongoing mechanical study to understand the impact of the building pressurization and moisture loads within the building. Through open communication with the project team, there has been no impact to the ongoing construction efforts for the project.

If selected for the project, WDP will have first-hand knowledge of the ongoing Moisture Intrusion Repair Project at the Capitol Building. This would assist in the coordination of work between the two projects to reduce or eliminate the impact on one another. Furthermore, WDP will work with the Owner's project manager to understand any limitations for accessing the spaces requiring repairs, such as security requirements or coordination with the Legislative session, and will develop a phasing plan to minimize

disturbances to the building occupants. WDP also has a thorough understanding of the access requirements within the building and can coordinate Contractor access to individual spaces and outline any temporary protection measures that would be required to separate work areas from public areas to ensure occupant safety is held paramount during the execution of the work.

A detailed description for each of the aforementioned projects, including descriptions of our ability to coordinate work with building occupants and simultaneous projects, can be found in Section 4.3, "Project Experience" of this submission.

Investigation of Representative Ceiling Areas in the East & West Wings of the Main Capitol Building

Company-wide, WDP performs numerous building envelope investigations and repair projects every year relating to masonry failures. Our investigative strategies and cost-effective design approaches have addressed countless issues, such as cracking, structural instability, air and water leakage and aesthetic deficiencies. Our staff members bring a unique perspective to the execution of field investigations into masonry failures as they are actively involved in industry organizations, committees, and code councils that develop the guidance for this type of work. We not only follow standardized procedures and test methods to evaluate existing conditions, but also understand the development of these procedures and how they should be applied to unique conditions of each existing building.



Exploratory opening within existing masonry wall assembly as part of field evaluation, St. Francis of Assisi

For the St. Francis of Assisi structural evaluation, WDP was evaluating failures in 19th century green serpentine stone cladding that were posing a life-safety hazard due to the risk of falling onto pedestrians. WDP reviewed historic documentation to understand the construction of the existing wall assemblies and then performed discrete exploratory openings to verify these conditions. From this field evaluation, WDP was able to analyze the structural stability of the existing wall sections and develop a comprehensive shoring design and unique sequencing plan that allowed a significant portion of the wall structure to be removed and replaced while ensuring the stability of the walls were maintained such that the building could remain occupied for the duration of the construction period. WDP also analyzed the material properties for the existing brick and mortar in order to select replacement materials that were compatible with these existing building components

In order to evaluate the masonry failures for walls at the Engineering Sciences Building at West Virginia University, access to both the interior and the exterior of the building were provided. Exterior access required swing stages in order to observe the condition of masonry failures and perform exploratory openings. On the interior of the building, access to spaces was coordinated with the building owner to provide the least disruption to building occupants. Because the space was occupied, interior access was limited to non-destructive measures. From this investigation, WDP was able to understand the composition of the masonry walls, which included clay tile backup, and develop repair recommendations to strengthen and restore the wall assemblies.

As part of the EPO Work for Clay Tile Remediation at the West Virginia State Capitol Building, WDP has surveyed a majority of the spaces within the main portions of the building where non-destructive access could be provided. For this investigation, WDP developed survey drawings that allowed for a systematic and organized method of tracking spaces that had been observed and documenting conditions requiring repairs. WDP coordinated with the State to identify spaces that were accessible and communicated with building occupants regarding any disruptions. WDP maintained communication with the State regarding the progress of the investigation, problematic areas that were identified and any immediate action required, and outlined recommended repair options for the spaces. This same approach would be applied to the investigation of the East and West wings of the Capitol if selected for the project.

A detailed description for each of the aforementioned projects, including descriptions of our ability to perform field investigations, can be found in Section 4.3, "Project Experience" of this submission.

Rex A. Cyphers, P.E. | Principal-in-Charge



Mr. Cyphers, P.E., is a Principal and Chief Operating Officer with WDP & Associates Consulting Engineers, Inc., working primarily out of the Charlottesville, Virginia, office. He is responsible for overseeing the work of all WDP divisions, WDP's hiring process, staff development, and company operational decisions.

Mr. Cyphers specializes in the design and repair of masonry structures, historic preservation, and nondestructive testing. He performs forensic field and laboratory investigations, façade and building envelope investigations, structural inspection/analysis and design, architectural retrofit and repair, roofing and waterproofing investigations, and development of design documents, and repair recommendations.

Mr. Cyphers regularly presents and co-authors for various technical publications.

Education

Master of Science, Civil Engineering, West Virginia University, 2003.

Graduate Certificate, Cultural Resource Management, West Virginia University, 2003.

Bachelor of Science, Civil Engineering, West Virginia University, 2002.

Professional Registration

Professional Engineer – VA and WV.

Professional Memberships / Committees

- ASTM Committee E06.24 Performance of Buildings-Preservation and Rehabilitation Technology
 - Task Chair, ASTM E3069 – 17 Standard Guide for Evaluation and Rehabilitation of Mass Masonry Walls for Changes to Thermal and Moisture Properties of the Wall
 - Task Chair, "New Guide for Evaluation and Rehabilitation of Mass Masonry Walls for Changes to the Thermal and Moisture Properties of the Wall"

Relevant Experience

West Virginia Capitol Dome Moisture Intrusion, Charleston, WV. *Principal-in-Charge:* Oversaw the investigation and subsequent repair design into chronic water leakage of the 1930s-structure designed by architect Cass Gilbert (designer of the United States Supreme Court Building) and listed on the National Register of Historic Places. WDP performed diagnostic water tests, exploratory openings, installation of sensors and instrumentation, and review of prior design

documentation to determine the root cause of interior damage. Among other things, bulk water infiltration at intersections of building elements caused supplementary internal drainage elements to freeze and fail, which led to significant damage of interior finishes. WDP developed repair recommendations, construction documents, and provided bid assistance. Construction is in progress, with WDP providing construction administration services.

West Virginia State Capitol Building, Clay Tile Damage Investigation, Charleston, WV.

Principal-in-Charge: WDP is currently providing construction administration services for the execution of the work in the Construction Directives. This work is being coordinated with the ongoing Dome Moisture Intrusion Repair Project within the building as well as evaluations of the mechanical system performance. As part of the EPO, WDP also issued Construction Directives for spaces that were identified to have the largest impact to the building occupants and highest risk for further damage.

United States General Services Administration, Erie Federal Complex, Erie, PA.

Principal-in-Charge: WDP performed an on-site condition survey and investigation, including NDT and material sampling to determine and document the extent and severity of masonry deficiencies for this structure that is listed on the National Register of Historic Places. Ranging from limestone veneer cracks and spalls to interior infiltration and foundation subflorescence, WDP cataloged areas requiring repair and is currently working to develop the repair construction documents for restoration of the courthouse façade in accordance with historic preservation requirements.

St. Francis of Assisi Catholic Church, Historic Stone Cladding Replacement, Staunton, VA

Principal Structural Engineer: Performed investigation, design, and construction administration services for complete façade restoration of 100+ year old church that is listed on the National Register for Historic Places. Traditional historic masonry and copper procedures and materials were combined with new technologies such as GFRP reinforcing, and complex strengthening and phasing systems to facilitate removal and replacement of over half of the wall section without disruption of church functions. Additional services included review and approval of submittals, RFIs, shop drawings, and contractor pay applications during construction.

Roanoke Higher Education Center, Building Envelope Investigation & Repairs, Roanoke, VA.

Sr. Engineer: Building envelope investigation and design repairs to the building masonry façade, windows, lintels, parapets and EPDM roofing system to mitigate building leakage in historic, 100K SF, 1930s Art Deco building listed on the National Register of Historic Places and featuring complex ornamental brick. Also, performed submittal review and construction administration services for the building repairs.

Gerald (Andy) Dalrymple, P.E. | QA/QC Manager



Mr. Dalrymple has over 30 years of experience in the industry and co-founded WDP & Associates in July of 1995. Mr. Dalrymple is involved with a wide variety of structural engineering and building envelope disciplines including failure investigations, rehabilitation of existing structures, development of

restoration design specifications, construction management and inspection, and litigation support. As a nationally recognized expert in his field, he has been involved in numerous high-profile projects throughout his career and has served a variety of clients including contractors, architects, engineers, government agencies, school systems, and private sector clients. In 2010, he received The Masonry Society's TMS Service Award and previously received a Facilities Management Recognition Award for "exemplary service during reconstruction of balconies at the historic Pavilions in Thomas Jefferson's Academic Village" by the University of Virginia Facilities Management office.

Education

Bachelor of Science, Civil Engineering, Clemson University, Clemson, South Carolina, 1983.

Master of Science, Civil Engineering, Clemson University, Clemson, South Carolina, 1985.

Professional Registration

Professional Engineer – WV, NY, NJ, AL, CT, DC, FL, GA, IN, MD, MO, MS, NC, PA, SC, TN, VA

Professional Memberships/Committees

Main Committee Secretary, TMS 402 Building Code

Requirements for Masonry Structures

ASTM C-12 Mortars for Unit Masonry

ASTM C-15 Manufactured Masonry Units

Relevant Experience

West Virginia Capitol Dome Moisture Intrusion, Charleston, WV. *Project Structural Support:* WDP led the investigation and subsequent design of repairs into the chronic water leakage of the 1930s-structure designed by architect Cass Gilbert (designer of the United States Supreme Court Building). WDP performed diagnostic water tests, exploratory openings, installation of sensors and instrumentation, and review of prior design documentation to determine the source of interior damage. The development of repair recommendations, construction documents, bid assistance, and construction administration are in progress.

West Virginia State Capitol Building, Clay Tile Damage Investigation, Charleston, WV. *Project Structural Support:* WDP is currently providing construction administration services for the execution of the work in the Construction Directives. This work is being coordinated with the ongoing Dome Moisture Intrusion Repair Project within the building as well as evaluations of the mechanical system performance. As part of the EPO, WDP also issued Construction Directives for spaces that were identified to have the largest impact to the building occupants and highest risk for further damage.

Roanoke Higher Education Center, Building Façade, Window & Roof Repairs, Roanoke, VA. *Principal-in-Charge:* Building envelope investigation and design repairs to the building masonry façade, windows, lintels, parapets and EPDM roofing system to mitigate building leakage in historic, 100K SF, 1930s Art Deco building listed on the National Register of Historic Places and featuring complex ornamental brick. Also, performed submittal review and construction administration services for the building repairs.

West Virginia University, Engineering Sciences Building, Morgantown, WV. *Principal-in-Charge:* Led the investigation of the 11-story academic structure, housing classrooms, offices, and research space, that was experiencing façade distress and displacement. WDP performed a survey of the façade at all levels; observed exploratory openings through the steel spandrel beams to evaluate the flashing and the inner clay tile wythe; and conducted a hygrothermal analysis for condensation potential. Developed repair recommendation to address deficiency in precast panels installed as a retrofit and to address the displacement of the original brick along with the excessive air and water leakage.

St. Francis of Assisi Catholic Church, Historic Stone Cladding Replacement, Staunton, VA. *Structural Engineer:* Performed construction administration services for complete façade restoration of 100+ year old church that is listed on the National Register of Historic Places. Traditional historic masonry and copper procedures and materials were combined with new technologies, such as GFRP reinforcing, and complex strengthening and phasing systems, to facilitate removal and replacement of over half of the wall section without disruption of church functions. Additional services included review and approval of submittals, RFIs, shop drawings, and contractor pay applications during construction.

Jodi M. Knorowski, P.E. | Project Manager



Ms. Knorowski joined WDP in 2013 and has 6 years of experience providing professional design, building condition assessments, and construction administration services for post-occupancy failures of existing buildings related to the building envelope. She has performed diagnostic field investigations to determine the root cause of these failures in order to

develop repair recommendations. In this process, she has utilized Hygrothermal modeling techniques to analyze the long-term effects of heat and moisture movement through a wall or roof assembly. Jodi has also provided clients with construction monitoring services for new construction and performed quality assurance testing and observations of the structural, material, and architectural elements of the building envelope.

Education

Master of Science, Civil Engineering, Old Dominion University, 2012.

Bachelor of Science, Civil Engineering, Old Dominion University, 2010.

Professional Registration

Professional Engineer – VA.

Certifications

- WUFI-ORNL 5.3/WUFI-Pro 5.3 and Weather Analyzer 1.0
- NFRC Certified Simulator

Professional Memberships / Committees

- A.I.A. Women in Design, Charlottesville Chapter
- ASTM, C16 Committee, Voting Member
- ASTM E06 Committee, Active Participant

Relevant Experience

West Virginia Capitol Dome Moisture Intrusion, Charleston, WV. Project Manager. Oversaw the investigation and subsequent repair design into chronic water leakage of the 1930s-structure designed by architect Cass Gilbert (designer of the United States Supreme Court Building) and listed on the National Register of Historic Places. WDP performed diagnostic water tests, exploratory openings, installation of sensors and instrumentation, and review of prior design documentation to determine the root cause of interior damage. Among other things, bulk water infiltration at intersections of building elements caused supplementary internal drainage elements to freeze and fail, which led to significant damage of interior finishes. WDP developed repair recommendations,

construction documents and provided bid assistance. Construction is in progress, with WDP providing construction administration services.

West Virginia State Capitol Clay Tile Failure EPO, Charleston, WV. Project Manager. Oversaw the emergency response to clay tile failures throughout various spaces of the Main Capitol Building. For the investigation, access was coordinated with the Owner with Contractor support to identify problematic conditions within the clay tile walls and provide immediate remediation services for critical locations. WDP presented findings and recommendations to the State, developed repair strategies for key areas, and is providing construction administration services for those locations.

West Virginia Public Service Commission Headquarters, Façade Repair & Replacement Design, Charleston, WV. Project Manager. Oversaw building envelope and structural conditions assessment and subsequent façade repair design services for WDP as joint venture member with a construction firm. The design involved complete removal of the building's exterior and replacement with new glazing, brick, air barrier, and thermal insulation to improve the performance of the walls and fenestration assemblies. The design also included temporary enclosures to protect interior finishes and building occupants and a phased demolition and construction plan to ensure minimal disruption as the building remained fully occupied for the duration of the project. During construction, a number of deficient conditions of the existing building were uncovered that brought design challenges to ensure compatibility between the new façade and the structural components of the building.

College of William & Mary, Wren Building Moisture Evaluation, Williamsburg, VA. Project Manager. Oversaw the evaluation of historic mass masonry building constructed between 1695 and 1700 exhibiting interior plaster failures. Deployed data logging instrumentation to determine air and vapor movement around problematic areas; utilized hygrothermal analysis incorporating collected data to calibrate models as a tool to determine cause of damage; correlated data with HVAC systems. WDP will provide recommendations for repairs at completion of investigation.

Foxcroft School, Condition Assessment & Hygrothermal Analysis, Middleburg, VA. Staff Engineer. WDP was engaged as the building envelope consultant for the design, repair, and renovation project of the Court Dormitory building at Foxcroft School, an all-girls boarding school founded in 1914. WDP performed diagnostic water testing to measure moisture vapor emission of the concrete floor and conducted an analysis of the wall assembly.

Patrick B. Dillon, Ph.D., P.E. | Structural Engineer



Dr. Dillon has over eight years of experience in research, investigation of existing buildings, and development of repairs, particularly on projects experiencing structural issues. He has developed repairs for a wide range of projects on both contemporary and historical structures. Dr. Dillon is also involved with a variety of other

architectural and structural engineering disciplines, including development of specifications and drawings, peer review of design documents, and construction management and administration. He is Chair of the Technical Committee for the upcoming 13th North American Masonry Conference scheduled to be held June 2019 in Salt Lake City, Utah.

Education

Doctor of Philosophy, Civil Engineering, Brigham Young University, Provo, Utah, 2015.

Bachelor of Science with Honors, Civil Engineering, Brigham Young University, Provo, Utah, 2010.

Professional Registration

Professional Engineer – VA

Professional Memberships/Committees

The Masonry Society

- TMS 402/602 Building Code Requirements for Masonry Structures
 - Main Committee Voting Member
 - Seismic Design Subcommittee Secretary

Theses

Ph.D. - "Shear Strength Prediction Methods for Grouted Masonry Shear Walls"

Honors - "Effects of a Reinforced Concrete Braced Frame on a Confined Masonry Wall"

Selected Publications and Presentations

"Strut-and-Tie Models for Masonry Walls with Openings" co-authored with F.S. Fonseca and presented at the 10th International Masonry Conference, held, July 9–10, 2018, in Milan, Italy

"Towards a Consistent and Economical Design of Shelf Angles" presented at the 13th Canadian Masonry Symposium, held June 4–7, 2017, in Halifax, Nova Scotia.

"Nominal Shear Strength of Partially Grouted Masonry Walls", co-authored with F.S. Fonseca and published in *TMS Journal*, Vol. 33, No. 1, December 2015.

Relevant Experience

West Virginia Capitol Dome Moisture Intrusion, Charleston, WV. Structural Engineer: Designed structural repairs and retrofits for load-bearing architectural components inside the dome of the 1930s-structure designed by architect Cass Gilbert (designer of the United States Supreme Court Building). Installed instrumentation to monitor deflection and deflection of structural members. Developed repair recommendations and construction documents and provided bid assistance. Currently assisting with construction administration services.

West Virginia Capitol Emergency Repair Project, Charleston, WV. Structural Engineer: Investigated and documented failures to existing historic clay tile masonry partition walls throughout various spaces of the Main Capitol Building. Installed instrumentation to monitor deflection and deflection of structural members. Presented findings and recommendations to the State, developed repair strategies for key areas, and is providing construction administration services for those locations.

West Virginia Public Service Commission Headquarters, Façade Repair & Replacement Design, Charleston, WV. Structural Engineer: Developed structural repair design for a façade repair/replacement. The office building is a steel-framed structure with brick exterior that required maintaining building occupancy throughout the entirety of the project. WDP's design improved the thermal performance of the wall assembly and glazing. The design involved complete removal of the building's exterior, providing temporary enclosures to protect interior finishes and building occupants, and replacement with new brick, air barrier and thermal insulation on a phased demolition and construction plan to ensure minimal disruption to the building occupants. During construction, a number of deficient conditions of the existing building were uncovered that brought design challenges to ensure compatibility between the new façade and the structural components of the building.

University of Virginia Term Contract, Pavilion VII (Colonnade Club) Porch Repair, Charlottesville, VA. Structural Engineer: Developed structural repairs for a reinforced concrete terrace on a historical structure within the Monticello/University of Virginia UNESCO World Heritage Site. Severe moisture-related structural problems necessitated that the 1910s-era terrace be replaced. Structural distress of the historical masonry supporting the terrace and existing masonry Doric columns bearing on the terrace slab brought design challenges that had to be considered. Developed an innovative design for a new terrace slab capable of supporting and transferring the terrace and column loads to grade to relieve load on the historical masonry. The design permitted the existing columns supported on the terrace to remain in place during construction. Designed a modified surface profile of the new slab to add ADA accessibility to the terrace. Provided construction administration services during construction.



West Virginia State Board of Registration for Professional Engineers

GERALD A. DALRYMPLE
WV PE [REDACTED]

This is to certify that the above named PROFESSIONAL ENGINEER has met the requirements of the law, is duly registered and is entitled to practice engineering in the State of West Virginia.

EXPIRES December 31, 2020

West Virginia State Board of Registration for Professional Engineers



REX A. CYPHERS
WV PE [REDACTED]

This is to certify that the above named PROFESSIONAL ENGINEER has met the requirements of the law, is duly registered and is entitled to practice engineering in the State of West Virginia.

EXPIRES December 31, 2020

COMMONWEALTH of VIRGINIA

Department of Professional and Occupational Regulation

9960 Mayland Drive, Suite 400, Richmond, VA 23233

Telephone: (804) 367-8500

EXPIRES ON

12-31-2020

NUMBER



BOARD FOR ARCHITECTS, PROFESSIONAL ENGINEERS, LAND SURVEYORS, CERTIFIED INTERIOR DESIGNERS
AND LANDSCAPE ARCHITECTS
PROFESSIONAL ENGINEER LICENSE



JODI MARIE KNOROWSKI
644 CRUMPET COURT
CHARLOTTESVILLE, VA 22901

DPOR

Status can be verified at <http://www.dpor.virginia.gov>

James W. DeBorja
James W. DeBorja, Director

(SEE REVERSE SIDE FOR PRIVILEGES AND INSTRUCTIONS)

DPOR-LIC (02/2017)

COMMONWEALTH of VIRGINIA

Department of Professional and Occupational Regulation

9960 Mayland Drive, Suite 400, Richmond, VA 23233

Telephone: (804) 367-8500

EXPIRES ON

06-30-2019

NUMBER

BOARD FOR ARCHITECTS, PROFESSIONAL ENGINEERS, LAND SURVEYORS, CERTIFIED INTERIOR DESIGNERS
AND LANDSCAPE ARCHITECTS
PROFESSIONAL ENGINEER LICENSE



PATRICK BARTHOLOMEW DILLON
2456 N BERKSHIRE RD
CHARLOTTESVILLE, VA 22901



Status can be verified at <http://www.dpor.virginia.gov>

John W. DeBore
John W. DeBore, President

(SEE REVERSE SIDE FOR PRIVILEGES AND INSTRUCTIONS)

DPOR-LIC (02/2017)

SECTION 4.2 – PROPOSED STAFFING PLAN



Staffing Plan of Key Personnel

WDP's project team is comprised of key individuals whose experience and qualifications encompass all aspects of the project scope.

Rex A. Cyphers, P.E., has been with WDP since 2003 and will serve as **Principal-in-Charge** on this project. His educational background includes a bachelor and master's degree in civil engineering from West Virginia University, along with a graduate certificate in Cultural Resource Management (2003). Rex has extensive experience in the evaluation and repair of existing buildings, particularly the repair of occupied buildings requiring unique solutions to maintain operations during the execution of repairs. Mr. Cyphers has been a leader in the building science field, serving as a task group chair responsible for the development of ASTM Standard E3069, "Standard Guide for Evaluation and Rehabilitation of Mass Masonry Walls for Changes to Thermal and Moisture Properties of the Walls." Additionally, Mr. Cyphers has written numerous papers, including the publication of "Evaluation of the Thermal Performance of Historic Mass Masonry Walls Utilizing In-Situ Measurements" at the 13th Canadian Masonry Symposium in 2017 and "Evaluation of Strategies to Improve Energy Efficiency in Existing Buildings" for the West Virginia Construction and Design Exposition. He is a registered engineer in the state of West Virginia and has been the driving force in expanding our work there. His recent WV projects include the West Virginia Public Service Commission and the West Virginia State Capitol. **Additionally, Mr. Cyphers has been designated by the U.S. Army Corps of Engineers and the General Services Administration as a historic preservationist due to the combination of his educational background and professional experience.**

Gerald (Andy) Dalrymple, P.E., co-founded WDP in July 1995 and has over thirty years of experience in the industry, particularly masonry failure. He is a nationally recognized expert in his field, and as **QA/QC Manager** of this project, he will ensure that all tasks undergo WDP's Quality Assurance and Quality Control program in order to maintain a high standard of our professional services. Mr. Dalrymple is involved with a wide variety of structural engineering and building envelope disciplines including failure investigations, rehabilitation of existing structures, development of restoration design specifications, construction management and inspection, and litigation support. **In 2010, he received The Masonry Society's TMS Service Award and previously received a Facilities Management Recognition Award for "exemplary service during reconstruction of balconies at the historic Pavilions in Thomas Jefferson's Academic Village" by the University of Virginia Facilities Management office.** He is a registered engineer in the State of West Virginia and is the Secretary for The Masonry Society's committee 402/602, which develops "Building Code Requirements and Specifications for Masonry Structures."

Jodi M. Knorowski, P.E., has been with WDP since 2013 and will serve as the **Project Manager** on this project. Ms. Knorowski has six years of experience and regularly provides professional design, building condition assessments, and construction administration services for post-occupancy failures of existing buildings. She was recently involved with the West Virginia General Services Division as the Project Manager for the façade replacement and structural improvements to the Public Service Commission headquarters building, and **she is currently the Project Manager for the investigation, design of repairs, and construction administration of the West Virginia Capitol Dome project.** Ms. Knorowski is a member of ASTM committees for Historic Preservation and Thermal Performance and has been actively involved in the development of the ASTM Standard 3069 which provides guidance for historic preservation of existing mass masonry walls when changing the thermal or moisture properties of the wall. Her experience in evaluating existing wall assemblies includes deploying data logging instrumentation devices and subsequently analyzing the data acquired to determine how heat, air, and moisture are moving simultaneously through building assemblies and ultimately understand the performance and behavior of a building component.

Patrick B. Dillon, Ph.D., P.E., has been with WDP since 2015 and will serve as the **Structural Engineer** on this project. Dr. Dillon has over eight years of experience in research, investigation of existing buildings, and development of repairs, particularly on projects experiencing structural issues. Dr. Dillon has developed repairs for a wide range of projects on both contemporary and historical structures, including the structural improvements to the Public Service Commission headquarters building and **the West Virginia Capitol Dome project.** Dr. Dillon is an active voting member of The Masonry Society's committee 402/602, which develops "Building Code Requirements and Specifications for Masonry Structures," and in the Seismic & Limit State Design, Design, and Form & Style subcommittees. He is the Chair of the Technical Committee and Member of the Organizing Committee for the upcoming 13th North American Masonry Conference scheduled to be held in Salt Lake City, Utah, in June 2019. Dr. Dillon has authored or co-authored numerous papers in peer reviewed publications on structural and building science aspects of masonry construction.

SECTION 4.2 – PROPOSED STAFFING PLAN

Key Personnel	Project Role	Qualifications	Total Years of Experience
Rex A. Cyphers, P.E. Principal 335 Greenbrier Drive Suite 205 (434) 245-6117	Principal-in-Charge PRIMARY POINT OF CONTACT	MS/2003/Civil Engineering-WVU BS/2002/Civil Engineering-WVU Graduate Certificate- Cultural Resource Management/2003-WVU Professional Engineer – WV, VA,	17 Years
Jodi Knorowski, P.E. Project Engineer	Project Manager	MS/2012/Civil Engineering BS/2010/Civil Engineering Professional Engineer – VA.	6 Years
Gerald A. Dalrymple, P.E. Principal	QA/QC Manager	MS/1985/Civil Engineering BS/1983/Civil Engineering Professional Engineer - WV, NY, NJ, AL, CT, DC, FL, GA, IN, MD, MO, MS, NC, PA, SC, TN, VA,	32 years
Patrick Dillon, P.E. Project Engineer	Structural Engineer	Ph.D./2015/Civil Engineering BS/2010/Civil Engineering Professional Engineer – VA	8 years

West Virginia Capitol Dome Moisture Intrusion

Building Envelope and Structural Investigation and Repairs

Charleston, West Virginia

Owner

West Virginia General Services
Division

WDP's Client

West Virginia General Services
Division

Reference

Kari Dean
Project Manager
(304) 957-7133
Kari.J.Dean@wv.gov

WDP's Role

- Historic Preservation / Structural Investigation
- Engineer of Record
- Bid Assistance
- Construction Administration

Construction Cost

\$13.5 million

Project Details

- Historic Structure
- Water Infiltration
- Structural Deficiencies
- Installation and evaluation of instrumentation to monitor air and water movement
- Architectural/Structural Design
- Occupied Building
- Simultaneous Projects
- Clay Tile Restoration and Design



Originally constructed in 1932 to replace the prior building which burned in 1921, the West Virginia State Capitol Building is a steel framed structure with brick masonry infill and limestone cladding capped with a 292-foot tall dome gilded with gold leafing. Since the time of its completion, the Dome has been plagued with numerous water infiltration issues, which have resulted in significant damage to interior finishes that are difficult to access. In 2015, the State of West Virginia General Services Division issued an RFP seeking professional services to identify and investigate the source of moisture intrusion leading to damage within the upper rotunda of the Dome and to recommend repairs, and WDP was selected after competitive interviews.

Due to the nature of the building, all personnel who worked on the investigation were required to go through a background check and receive badges that allowed access to areas of the Capitol that were not open to the public. WDP conducted a systematic three-week long investigation of the Dome and Capitol building, utilizing visual observations, exploratory

openings, and diagnostic water testing to ascertain the construction of the building envelope and to identify the path of infiltrating water. Due to the location of the damaged interior finishes requiring investigation, unique access was required for the investigation. A swing stage system was installed through the interior of the building and used to make observations to damaged interior finishes near the top of the Dome.

The main source of the water infiltration was found to be a result of improper flashing installation at roofing elements and deteriorated limestone mortar joints, along with failures in the internal water management systems, that allowed bulk water to penetrate through a mass masonry assembly to the interior. WDP developed a comprehensive report summarizing the findings and recommended a tiered approach to address the issues that were found. This allowed the General Services Division to evaluate increasingly more comprehensive repairs and their associated costs to determine the scope of work that would provide the most value to the project. After coordination with the General Services Division, the State Historic Preservation Office, and the Capitol Building Commission, construction documents were developed that generally included the removal of limestone cladding elements to install through wall

SECTION 4.3 - PROJECT EXPERIENCE



flashing and waterproofing systems, selective repointing of limestone mortar joints, replacement of internal plumbing and drainage elements to include portions of roofing elements, and restoration or replacement of interior ornamental and flat plaster finishes to include matching existing decorative paint. Through the investigation, WDP also identified structural failures that required retensioning of the cast plaster inner dome and replacement of interior walls with grouted and reinforced structural clay tile. WDP is currently providing Construction Administration services during the execution of the repairs.

SECTION 4.3 - PROJECT EXPERIENCE

West Virginia State Capitol Building

Clay Tile Damage Investigation

Charleston, West Virginia

Owner

West Virginia General Services
Division

WDP's Client

West Virginia General Services
Division

Reference

Kari Dean
Project Manager
(304) 957-7133
Kari.J.Dean@wv.gov

WDP's Role

- Emergency Investigation and Evaluation
- Repair Design for Unstable Hollow Clay Tile Masonry
- Construction Administration

Construction Cost

\$630,000

Project Details

- Visual observations
- Non-destructive testing
- Installation and evaluation differential movement data loggers
- Architectural / Structural Design
- Occupied Building
- Simultaneous Project
- Clay Tile Restoration and Design



The West Virginia State Capitol Building was constructed in 1932 with a steel framed structure and interior partition walls comprised of hollow clay tile. Throughout the building, many of these partition walls extend between floors and are covered with interior finish plaster. Most of the spaces within the building also have dropped ceilings in the form of either ceiling tiles or hard plaster, concealing the hollow clay tile partition walls from view. While performing construction administration services for the West Virginia State Capitol Dome Moisture Intrusion Repair Project, locations within the building were identified to have cracked and spalled hollow clay tile masonry units that had fallen or were in imminent danger of falling.

With the life-safety hazard posed to building occupants because of the instability of the hollow clay tile, an Emergency Purchase Order (EPO) was utilized to investigate spaces on the Ground Floor, First Floor, Second Floor, 3rd Floor Mechanical Rooms, and Catwalks over the House and Senate Chambers in order to identify locations where the hollow clay tile units had been compromised and take immediate remedial action to make the spaces safe for building occupants. WDP took a systematic approach to the investigation and coordinated with the GSD, building occupants, and contractor support to access above the ceilings in each location, document conditions through photographs and annotated floor plans, and give direction to the contractor to remove any clay tile units that created a life-safety risk. WDP presented our findings to the GSD and the State Historic Preservation Office (SHPO) along

with various levels of repair options for consideration for each of the spaces. As part of the EPO, WDP also issued Construction Directives for spaces that were identified to have the largest impact to the building occupants and highest risk for further damage if left untouched. These directives included a combination of written descriptions, photographs, sketches, annotated figures, and construction details to convey the scope of work to be performed. WDP is currently providing construction administration services for the execution of the work in the Construction Directives. This work is being coordinated with the ongoing Dome Moisture Intrusion Repair Project within the building as well as evaluations of the mechanical system performance.

Virginia State Capitol Building Investigation and Repairs Water Infiltration at Portico and Terrace & Crack Repairs to Columns Richmond, VA

Owner

Virginia Department of General
Services

WDP's Client

Virginia Department of General
Services

Reference

Trev Crider
Project Manager
DEBinfo@dgs.virginia.gov

WDP's Role

- Building Envelope Testing & Investigation
- Engineer of Record
- Bid Assistance
- Construction Administration

Construction Cost

\$800,000

Project Details

- Historic Structure
- Water Infiltration
- Terrace / Plaza Over Occupied Space
- Structural / Building Envelope Investigation
- Architectural / Structural Design



Designed by Thomas Jefferson and built in 1788, the Virginia State Capitol is a National Historic Landmark and accommodates the Virginia General Assembly, the oldest legislative body in the Western Hemisphere. WDP was retained to investigate water leakage and excessive cracking both within the historic Capitol building and in an underground expansion completed in 2007.

The underground addition to the Virginia Capitol building experienced leaks through the south terrace skylight and failed waterproofing on the plaza. WDP was retained to evaluate the water infiltration, conduct a condition survey, and perform diagnostic testing to determine the underlying chronic structural issues and the cause of acute failures of previously attempted exterior surface repairs. Based upon the findings, WDP also provided repair alternatives consisting of temporary repairs, repair-in-place option to address the waterproofing issues only, structural repairs to the skylight, and an option for the complete rebuild of the skylight.

WDP developed Contract Documents to repair the waterproofing at the integration of the stairs and the lower terrace, as well as provide additional drainage provisions to eliminate standing water on the terrace. Furthermore, repairs were undertaken to restore the cracked columns at the top of the South Portico. The repair scope was carefully developed to maintain the historic nature of the building when executing the repairs.

SECTION 4.3 - PROJECT EXPERIENCE

St. Francis of Assisi Catholic Church

Structural Investigation & Repair

Staunton, VA

Owner

St. Francis of Assisi Catholic Church
Catholic Diocese of Richmond

WDP's Client

St. Francis of Assisi Catholic Church
Catholic Diocese of Richmond
118 North New Street
Staunton, VA 22815

Reference

Father Joseph Wamala
540-886-2262

WDP's Role

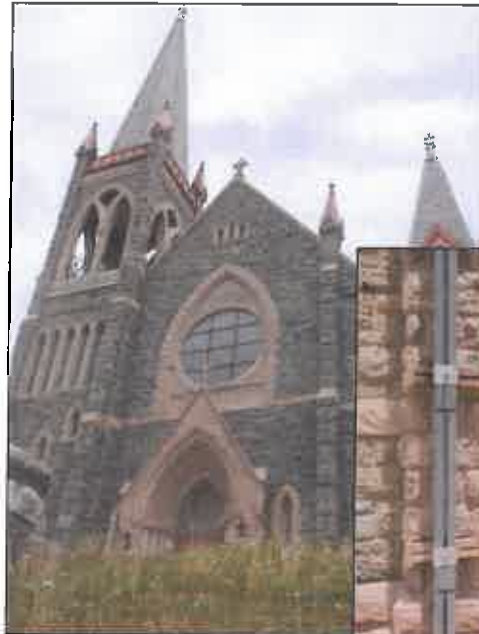
- Historic Preservation
- Structural Investigation
- Engineer of Record
- Bid Assistance
- Construction Administration

Construction Cost

\$3,075,000

Project Details

- Historic Structure
- Structural & Building Envelope Deficiencies
- Architectural / Structural Design
- Detailed Shoring and Phasing Plan Design
- Replication of existing historical building components
- Occupied Building



Constructed in 1895 and designed in the English Gothic style, the original exterior mass masonry walls consisted of green serpentine stone laid in a random ashlar pattern and were backed by three wythes of brick masonry. In the late 19th century the green serpentine stone was prized for its distinctive green color. However, around the same time, it was becoming increasingly evident that the stone did not lend itself as a suitable building material. The green serpentine stone is "soft", as far as a rock is considered, and susceptible to deterioration. While the green serpentine stone was used for the majority of the building's north, south, and west elevations, there were several other stone types found in the building, and Native Shenandoah Valley limestone was used as the foundation stones. Indiana Limestone was used to make the window surrounds, elaborate entryway, and rose window surrounds as well as water table and trim courses around the building. In the 1960s, bluestone was installed at the uppermost portion of the bell tower to replace the damaged green serpentine stone. There was documentation of various masonry repairs implemented over the last few decades, including the repointing of the stone masonry and the application of a coating to the greenstone.

Over recent years, the stone continued to deteriorate. Metal catch baskets were installed above the north elevation entrance to protect Parishioners from falling rock and debris prior to the commencement of the façade repairs. WDP designed a façade repair and replacement program as well as an exterior shoring system and demolition / reconstruction phasing plan that permitted unrestricted use of the church interior during execution of the project while the exterior walls were removed from beneath the roof. Hygrothermal analyses were conducted to permit selection of materials to minimize any change in moisture vapor movement through the wall system to protect the integrity of the original horse hair plaster used in the interior wall finish.

St. Francis of Assisi Parish has an ever revolving weekly, monthly, and yearly calendar of events. Additionally, funeral services, weddings, and other events are held regularly and spontaneously. The main sanctuary and the other facilities on the grounds had to

SECTION 4.3 - PROJECT EXPERIENCE



remain completely operational throughout the execution of the Work. WDP's development of an exterior shoring system and demolition/reconstruction phasing plan permitted unrestricted use of the church interior during execution of the facade replacement.

The restoration was substantially completed in May 2016, and the design and repairs were conducted in accordance with the requirements for obtaining Virginia's Department of Historic Resources Rehabilitation Tax Credits. This project won the 2016 MIA+BSI: The Natural Stone Institute Pinnacle Award of Merit in Renovation/Restoration.

SECTION 4.3 - PROJECT EXPERIENCE

WVU Engineering Sciences Building

Façade Investigation
Morgantown, WV

Owner

West Virginia University

WDP Client

West Virginia University

Reference

Joe Patten, Project Manager
(304) 293-5876
joe.patten@mail.wvu.edu

WDP's Role

- Building Envelope / Structural Investigation

Cost

\$69,200 (WDP fee)

Project Details

- Condition Assessment
- Document Review
- Masonry Investigation, Analysis & Review
- Water Infiltration Investigation/ Waterproofing Repair
- Development of Construction Documents
- Value Management
- Hygrothermal Analysis



The Engineering Sciences Building is an 11-story academic structure that houses classrooms, offices, and research space. The brick veneer façade experienced distress and was displaced at numerous locations around the building.



WDP was retained to perform an investigation of the problems reported in the facility and provide repair / replacement recommendations. The primary focus of the evaluation was to determine the cause of the problems and the immediate repairs needed to stabilize the façade while also determining the potential options to replace the entire façade. The work generally consisted of:

- A survey of the exterior façade at floor levels to document displacement of exterior brick wythe and corresponding interior clay facing tile.
- General review of the conditions of the exterior masonry, mortar joints, counter flashing, and sealants.
- A survey of the existing masonry bonded headers to determine the extent to which failure occurred. This involved a combination of nondestructive testing and exploratory openings to document the condition of bonded masonry headers.
- Exploratory openings at the steel spandrel beams to review the condition of the steel plates supporting the exterior glazed brick wythe and the spandrel beams as well as assessment of the masonry flashing and collection of material samples for asbestos and lead content analysis.
- Exploratory openings to verify the condition the inner structural clay tile wythe.

Erie Federal Courthouse Complex

A/E Services and Historic Building Envelope Repair Design
Erie, Pennsylvania

GSA IDIQ Term Contract for Roofing, Façade, and Building Envelope Engineering & Design Services – Mid-Atlantic

Owner

United States General Services
Administration (GSA)

WDP's Client

United States GSA
100 S. Independence Mall West
Philadelphia, PA 19106

Reference

Matthew Wilson
GSA COR
(215) 446-4618
matthewl.wilson@gsa.gov

WDP's Role

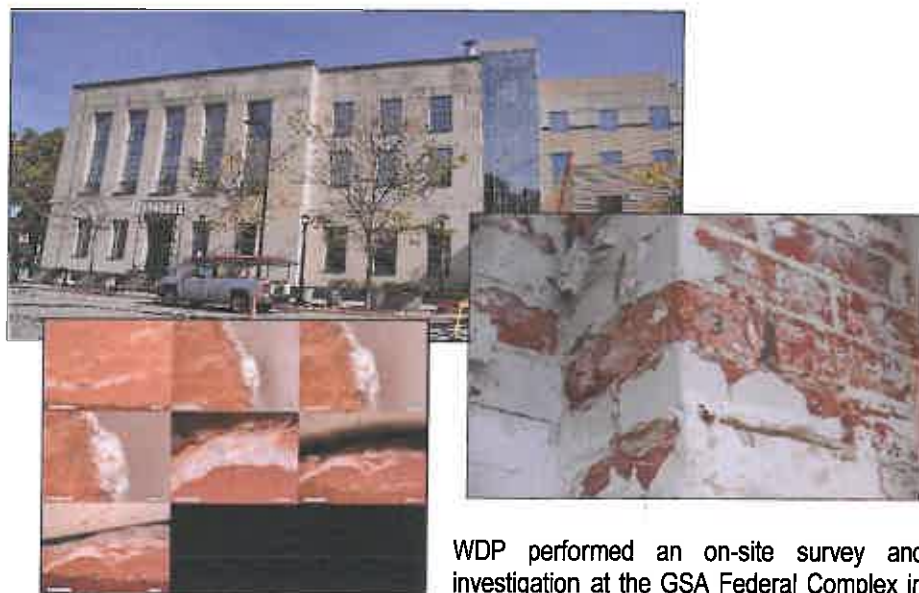
- Investigation & Repair Recommendations
- A/E of Record
- Construction Administration

Construction Cost

\$1,933,500 (estimated)

Project Details

- Full Investigation of Complex Completed July 2018
- Federal Office Building Design Services Anticipated Completion October 2018
- Federal Office Building Construction Administration Services Anticipated in 2019



WDP performed an on-site survey and investigation at the GSA Federal Complex in Erie, Pennsylvania, to document relevant

dimensions for the development of repair drawings, to assess existing conditions and known façade and building enclosure issues with three of the four buildings at the complex, all of which are listed on the National Register for Historic Places. The investigation also included diagnostic water testing to identify potential sources of interior infiltration, exploratory probe openings to investigate underlying construction, materials sampling and laboratory testing, and other methods such as the installation of interstitial temperature and relative humidity dataloggers at various depths through select exterior walls, and infrared thermography.

The first step in the design services phase of work was to address the repairs for the Federal Office Building and Courthouse. The scope of repairs undertaken by WDP for this building primarily consists of repairs to masonry façade components such as limestone veneer, bluestone parapet copings, slate window sills, suspended stucco, and soapstone spandrel panels, whose weathering and distress have created a pathway for accelerated deterioration. A complete window replacement program is also included in the scope at the request of the building Owner to address locations of failed glazing, and to improve interior conditions, occupant comfort, and heating/cooling loads.

Currently, WDP has progressed the design package through a 95% submission to-date and is working to finalize the construction contract documents to implement repairs that have been evaluated for addressing these areas of concern with thoughtful, long-term repair solutions that also comply with the Secretary of the Interior's *Standards for Historic Preservation*. Existing materials and architectural components will be salvaged and repaired to the greatest extent feasible, while replacement components will be required to match the existing in color, profile, and texture. Pointing mortar mix design, for instance, will be proportioned to match the existing mortar, as determined through preconstruction testing in accordance with ASTM C1324, *Standard Test Method for Examination and Analysis of Hardened Masonry Mortar*. Due to the nature of historic construction, WDP retained a hazardous materials subconsultant for the investigation and design to assist with locating and testing potentially hazardous materials, and to prepare specification sections that address work adjacent to materials positively identified to contain lead or asbestos.

SECTION 4.3 - PROJECT EXPERIENCE



Judge Advocate General School, UVA

Structural Repair & Façade Replacement

Charlottesville, VA

Owner

University of Virginia

WDP Client

University of Virginia

Reference

Mr. Joseph B.F. Phillips
(434) 982-4371

WDP's Role

- Building Envelope/Structural Investigations
- Engineer of Record
- Bid Assistance
- Construction Administration

Construction Cost

\$1,586,616

Project Details

- Condition Assessment
- Document Review
- Repair Recommendations
- Simultaneous construction projects in progress



Judge Advocate General (JAG) School is a concrete framed structure with brick infill constructed in the early 1970s. The University owns the facility and leases it to the Army's Judge Advocate General School. The third and fourth floors of the building serve as temporary living quarters for students attending classes at the school. WDP was contacted after a major interior renovation of the facility's fourth floor revealed significant deterioration of the light gage framing, exterior wall assemblies, and structural steel framing system. An evaluation of the condition of the exterior wall systems, structural steel framing, and concrete structure was performed. The evaluation involved reviewing the condition of the exterior metal stud walls, exterior sheathing, exterior veneer, exterior veneer structural attachments, structural steel framing, and the concrete structure as it related to the exterior walls. Test cuts were made in the exterior veneer and the interior drywall to evaluate the wall system components.

WDP's findings and recommendations for repair were presented to the University. The University made the decision to execute a major renovation program to replace portions of the exterior wall systems and rehabilitate the structural steel and concrete framing system. WDP performed structural analysis on the exterior light gage framing system, structural steel framing, and concrete structure of the building. Full contract documents were created, and construction administration and monitoring services were provided for the project. The overall scope of repairs included removal and replacement of the brick veneer, exterior light gage framing, exterior sheathing, sliding glass doors, flashing, and weather barrier systems. Repairs to the structural steel framing, steel guards, and concrete structure were also included as part of the project.

The JAG School renovation was an emergency procurement project for the University and presented many unique design and construction obstacles. Major interior renovations were ongoing during the discovery of deterioration of the exterior wall systems, which could not be stopped or delayed. WDP assisted the University in developing a plan to allow the interior renovations to continue while the design for repairs to the exterior walls was developed.

In order to meet the needs of the University, the design documents had to be completed on a compressed schedule to turn the facility back over to JAG School personnel. Additionally, portions of the building remained occupied while the renovations were completed, so WDP helped create a phasing plan to minimize disturbances to the occupants.

SECTION 4.3 - PROJECT EXPERIENCE



South Agricultural Sciences Building West Virginia University

Exterior Cladding Replacement
Morgantown, West Virginia

Owner

West Virginia University

WDP's Client

West Virginia University

Reference

John Thompson
Associate Director
(304) 293-3625
john.thompson@mail.wvu.edu

WDP's Role

- Designer of Record

Construction Cost

\$1,500,000

Project Details

- Façade Replacement
- Structural Repairs
- Cost Estimate
- Design/ Drawings/ Specifications
- Owner Contract Support
- Construction Administration
- Occupied Building



The South Agricultural Sciences Building at West Virginia University is a classroom space consisting of a 250-seat lecture hall, 8 research micro-biology/plant pathology labs, 2 teaching labs, as well as numerous faculty support areas, classrooms, and offices. Failures of the existing below grade waterproofing and existing insulated metal panel system resulted in water infiltration and damage to the interior finishes as well as interior biological growth.

WDP performed hygrothermal and structural analyses to assess the exterior cladding of the newly constructed building suffering from extensive water infiltration and interior mold growth. WDP conducted a feasibility study that examined the energy code and hygrothermal implications of replacing the existing cladding and provided veneer replacement options for the University to choose and a schematic design to outline the scope of work. The design selected included removing the existing metal panel cladding and installing a new wall assembly with sheathing, air and water barrier, insulation, and brick veneer as well as installing new windows with accent stonework. WDP analyzed the existing metal framing structure for the building and determined supplemental strengthening would be required to support the new cladding and window configuration. Because the building was to remain fully occupied during the construction process, WDP developed a phasing plan to sequence work and temporary protection measures to allow construction to progress simultaneously with building occupancy. WDP developed Drawings, Specifications, and other Contracts Documents and assisted the University in the procurement and Contractor selection process. WDP continued to provide construction administration services during the execution of the work. A number of unforeseen structural deficiencies were uncovered when the metal panel cladding was removed, and WDP was able to develop unique repair designs for each condition.

SECTION 4.3 - PROJECT EXPERIENCE



Public Service Commission of West Virginia

Façade Replacement Project

Charleston, West Virginia

Owner

Public Service Commission of West Virginia

Client

Public Service Commission of West Virginia

Reference

Cheryl Ranson
Director of Administration
201 Brooks Street
Charleston, West Virginia 25301
(304) 340-0356
cranson@psc.state.wv.us

WDP's Role

- Designer of Record

Construction Cost

\$4,000,000

Project Details

- Condition Assessment / Field Investigation
- Structural and Building Envelope Deficiencies
- Architectural / Structural Design
- Construction Administration
- Occupied Building



Originally constructed in 1984, the headquarters for the Public Service Commission of West Virginia is a steel-framed structure supported by spread footings that provides office space for various public divisions such as Utilities and Administration. In 2015 the Public Service Commission issued a request for proposals for a Design-Build renovation of the building's façade, indicating the possibility of replacing the structure's brick exterior. The Design-Build team proposed replacing brick with brick due to the longevity of brick, its aesthetic compatibility with neighboring buildings, and overall value of using brick. Additionally, the thermal performance of the wall assembly could be improved with the addition of exterior cavity insulation and continuous air and water barrier. Furthermore, the new design called for the addition of improved glazing and eye-catching metal work logos of the Public Service Commission for the exterior. Demolition and construction process began in March of 2016 with the requirement of maintaining building occupancy throughout the entirety of the project.

WDP conducted an initial field investigation prior to developing the design documents for the project. The field investigation provided the opportunity to uncover some of the existing conditions so the design details could be developed based on actual construction. The design involved a complete removal of the building's exterior, providing temporary enclosures to protect interior finishes and building occupants, and replacement with new

brick, air barrier and thermal insulation on a phased demolition and construction plan to ensure minimal disruption to the building occupants. WDP designed a new structural framing system that was integrated into an existing structural element to provide the framework for a new monumental limestone arch feature at the front of the building. During demolition, unforeseen conditions were identified that included unreinforced and unsupported CMU-masonry backup walls and existing walls that were not in alignment. WDP developed specific details to strengthen the existing walls and accommodate the unique existing conditions.

SECTION 4.4 - REFERENCES

References

WDP has provided building envelope and structural failure consulting services throughout the United States for a wide variety of clients including educational institutions, government, private developers, insurance companies, lending institutions, condominium associations, contractors, attorneys and federal agencies. Below are several references for projects presented in this proposal as relevant experience.

West Virginia Public Service Commission – Public Service Commission of West Virginia Headquarters Building Façade Replacement

Client Name:	West Virginia Public Service Commission	Contact Name:	Cheryl Ranson Director of Administration
Address:	201 Brooks Street Charleston, West Virginia 25301	Telephone No.:	(304) 340-0356
		Email Address:	cranson@psc.state.wv.us

West Virginia University – Engineering Sciences Building

Client Name:	West Virginia University	Contact Name:	Joe Patten Executive Director, Design and Construction
Address:	PO Box 6572 – 979 Rawley Lane Morgantown, West Virginia 26505-6572	Telephone No.:	(304) 293-5876
		Email Address:	Joe.Patten@mail.wvu.edu

United States General Services Administration – Poff Building

Client Name:	United States General Services Administration	Contact Name:	Amanda Smith Project Manager
Address:	100 S. Independence Mall West 2nd Floor Philadelphia, PA 19106	Telephone No.:	215 446 4983
		Email Address:	amanda.smith@gsa.gov



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

State of West Virginia
Centralized Expression of Interest
02 – Architect/Engr

Proc Folder: 531424

Doc Description: EOI: WV State Capitol Clay Tile Repairs Project

Proc Type: Central Contract - Fixed Amt

Date issued	Solicitation Closes	Solicitation No	Version
2018-12-28	2019-01-23 13:30:00	CEOI 0211 GSD1900000003	1

BID RECEIVING LOCATION

BID CLERK

DEPARTMENT OF ADMINISTRATION

PURCHASING DIVISION

2019 WASHINGTON ST E

CHARLESTON

WV 25305

US

VENDOR

Vendor Name, Address and Telephone Number:

WDP & Associates Consulting Engineers Inc.
335 Greenbrier Drive
Suite 203
Charlottesville, VA 22901
434-245-6117

FOR INFORMATION CONTACT THE BUYER

Michelle L Childers

(304) 558-2063

michelle.l.childers@wv.gov


Signature X

FEIN # 541763349

DATE 1/21/19

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.

 Principal
(Name, Title)
Rex A. Cyphers Principal
(Printed Name and Title)
335 Greenbrier Dr. Suite 205, Charlottesville, VA 22901
(Address)
434-245-6117
(Phone Number) / (Fax Number)
rcyphers@wdpa.com
(email address)

CERTIFICATION AND SIGNATURE: By signing below, or submitting documentation through wvOASIS, I certify that I have reviewed this Solicitation 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 for that product or service, unless otherwise stated herein; that the Vendor accepts the terms and conditions contained in the Solicitation, unless otherwise stated herein; that I am submitting this bid, offer or proposal for review and consideration; that I am authorized by the vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration.

WDPA's Associates Consulting Engineers Inc.
(Company)


(Authorized Signature) (Representative Name, Title)

Rex A. Cyphers Principal
(Printed Name and Title of Authorized Representative)

11/21/19
(Date)

434-245-6117
(Phone Number) (Fax Number)

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.:

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. 2
- ☐ Addendum No. 3
- ☐ Addendum No. 4
- ☐ Addendum No. 5

- ☐ Addendum No. 6
- ☐ Addendum No. 7
- ☐ Addendum No. 8
- ☐ Addendum No. 9
- ☐ 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.

WDP Associates Consulting Engineers Inc
Company


Authorized Signature

11/21/19
Date

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

STATE OF WEST VIRGINIA
Purchasing Division
PURCHASING AFFIDAVIT

CONSTRUCTION CONTRACTS: Under W. Va. Code § 5-22-1(i), the contracting public entity shall not award a construction contract to any bidder that is known to be in default on any monetary obligation owed to the state or a political subdivision of the state, including, but not limited to, obligations related to payroll taxes, property taxes, sales and use taxes, fire service fees, or other fines or fees.

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

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

DEFINITIONS:

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

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

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

AFFIRMATION: By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (W. Va. Code §61-5-3) that: (1) for construction contracts, the vendor is not in default on any monetary obligation owed to the state or a political subdivision of the state, and (2) for all other contracts, that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

WITNESS THE FOLLOWING SIGNATURE:

Vendor's Name: WDP & Associates Consulting Engineers, Inc.

Authorized Signature: [Signature] Date: 01/04/2019

State of Virginia

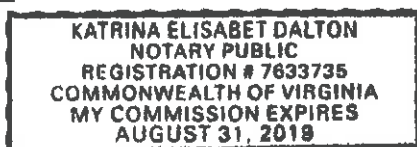
County of Albemarle, to-wit:

Taken, subscribed, and sworn to before me this 4 day of January, 2019.

My Commission expires August 31, 2019

AFFIX SEAL HERE

NOTARY PUBLIC Katrina Elisabeth Dalton



Purchasing Affidavit (Revised 01/19/2018)