



JENSEN HUGHES

Advancing the Science of Safety

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BUYER Linda Harper
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DISQUALIFIED

STATE OF WEST VIRGINIA
DEPT. OF ADMINISTRATION
PURCHASING DIVISION

EXPRESSION OF INTEREST

Solicitation No.
CEOI 0211 GSD180000003

April 26, 2018
1:30PM

WEST VIRGINIA STATE CAPITOL BUILDING FIRE PROTECTION AND SPRINKLER DESIGN SERVICES



04/26/18 14:52:24
WV Purchasing Division

SUBMITTED TO:
Ms. Linda B. Harper
Department of Administration, Purchasing Division
State of West Virginia
2109 Washington Street East
Charleston, WV 25305-0130

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April 26, 2018

Ms. Linda B. Harper
Department of Administration, Purchasing Division
State of West Virginia
2109 Washington Street East
Charleston, WV 25305-0130

**RE: Expression of Interest (Solicitation No. CEOI 0211 GSD180000003)
A/E Services: Fire Protection and Sprinkler Design
West Virginia State Capitol Building
Charleston, WV**

Dear Ms. Harper:

JENSEN HUGHES expresses our interest in developing a phased approach for fire protection and sprinkler system design for the West Virginia State Capitol Building.

As demonstrated in the enclosed qualifications, JENSEN HUGHES is a global firm of fire protection engineers and life safety professionals. We are a firm with demonstrated experience in assessing historic buildings for protection from fire and developing construction documents for the retrofit installation of fire protection and life safety systems that are respectful to a building's historic fabric.

For this project, we are partnering with Preservation Design Partnership, LLC (PDP), a nationally recognized firm specializing in planning and design services for historic sites and buildings and International Consultants, Inc. (ICI), construction cost consultants specializing in historic preservation. Throughout the past 30 years, JENSEN HUGHES, PDP, and ICI have successfully developed fire protection and safety solutions for over 15 structures on the U.S. National Register of Historic Places (including three National Historic Landmark structures); two Cass Gilbert design buildings; and two state capitol buildings.

JENSEN HUGHES, in collaboration with PDP and ICI, believe we have the experience and knowledge that is essential to guide the State of West Virginia in identifying the most appropriate and practical solutions to improve life safety and property protection of the West Virginia State Capitol Building.

If you have any questions, please contact me at +1 410-737-8677 or via email at jdevlin@jensenhughes.com.

Sincerely,

JENSEN HUGHES



John F. Devlin, PE
Vice President

Enclosure

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JENSEN HUGHES

Advancing the Science of Safety

TABLE OF CONTENTS

INTRODUCTION	1
TECHNICAL APPROACH	2
PHASE I – CURRENT CONDITIONS ASSESSMENT	2
PHASE II – DESIGN CONSTRUCTION DOCUMENTS	3
PROJECT TEAM	4
ABOUT THE TEAM	5
JENSEN HUGHES, INC.	5
PRESERVATION DESIGN PARTNERSHIP, LLC (PDP).....	6
INTERNATIONAL CONSULTANTS, INC. (ICI)	7
THE TEAM’S RELEVANT PROJECT EXPERIENCE	8
KEY PERSONNEL RESUMES	17
ADDITIONAL STAFF BIOS	26
REQUIRED FORMS, LICENSES, AND CERTIFICATE OF INSURANCE	28

INTRODUCTION

The West Virginia State Capitol is a significant public monument that symbolizes the sovereign state of West Virginia. The Capitol's large gilded dome which, visible from much of Charleston, serves as a civic beacon marking the Peoples' Building.

Designed in the early 20th century by Cass Gilbert, the prominent American architect who designed many state capitol buildings and architectural icons like the United States Supreme Court building, the West Virginia Capitol building is classic Beaux-Arts architecture. The building's tall rotunda and domed ceiling; open exit stairs; and lack of compartmentation, long corridors, and no active fire suppression systems create conditions that are not consistent with today's modern building and fire codes.

JENSEN HUGHES, a global firm of fire protection engineers and life safety professionals, in collaboration with Preservation Design Partnership, a nationally recognized firm specializing in planning and design services for historic sites and buildings, expresses our interest in developing the phased approach for fire protection and sprinkler system design of the West Virginia Capitol Building. JENSEN HUGHES and Preservation Design Partnership are experts in assessing historic buildings for protection from fire, and developing construction documents for the retrofit installation of fire protection and life safety systems that are respectful to the building's historic fabric. The project team will also include International Consultants, Inc., construction cost consultants specializing in historic preservation.

JENSEN HUGHES' team will be led by John F. Devlin, P.E. – Vice President. Preservation Design Partnership's team will be led by George C. Skarmeas, Ph.D., FAIA, FAPT, NCARB. Mr. Devlin and Dr. Skarmeas' professional relationship began in 1988 with the restoration of the Bellevue – Stratford Hotel and the Reading Terminal Trainshed, both in Philadelphia, PA, and has spanned 30 years in developing fire protection and life safety solutions for:

- Over 15 structures on the National Register of Historic Places, including three National Historic Landmark structures
- Two Cass Gilbert designed buildings – United States Supreme Court building and St. Louis Public Library building
- Two state capitol buildings – Virginia State Capitol building and New Jersey Executive State House.

Dr. Skarmeas, founding Principal and Director of the Preservation Studio at RMJM (formerly Hillier Architecture), brings to our team a keen knowledge of the West Virginia State Capitol building. Dr. Skarmeas served as lead historic preservation architect for the West Virginia State Capitol Complex Master Plan completed in 2010 and documented the existing conditions of the capitol building.

JENSEN HUGHES' experience in developing fire protection and life safety solutions for historic state capitol buildings also includes Illinois, Kansas, Michigan, and Wyoming. Mr. Devlin served as JENSEN HUGHES' lead fire protection engineer for both the Michigan and Wyoming State Capitol Building projects, and many other landmark structures including Grand Central Terminal, New York City; American Red Cross Headquarters, Washington, DC; and Philadelphia City Hall, Philadelphia, PA.

In each of the referenced projects, state-of-the-art fire protection engineering methodologies were employed. These include: risk assessments, fire modeling analyses, occupant evacuation modeling analyses, and assessment of novel fire detection and fire suppression strategies. Our team of fire protection engineers and historic preservation architects, including Dr. Skarmeas' intimate knowledge of the West Virginia State Capitol building as well as Cass Gilbert's architecture, brings to this project demonstrated success in developing solutions that provide for occupant fire safety and property preservation while preserving the iconic features of these historic and landmark structures.

TECHNICAL APPROACH

PHASE I – CURRENT CONDITIONS ASSESSMENT

The JENSEN HUGHES and Preservation Design Partnership team propose a performance-based fire protection and life safety analysis (PBA) of the West Virginia Capitol building to determine the appropriate fire protection and life safety strategy for this historic structure.

The Current Conditions Assessment would be an interactive approach involving all project stakeholders, to include the authorities having jurisdiction and the State Historic Preservation Officer, to agree upon life safety and historic preservation goals specific to the West Virginia Capitol building.

Project life safety goals would be to provide an environment that is reasonably safe from death or injury in fire and similar perils for:

- Protection of occupants not intimate with the initial fire development.
- Improvement of the survivability of occupants who are intimate with the initial fire development.

The project historic preservation goal is to provide a reasonable level of protection against damage to and loss of building, its unique characteristics, and its contents to include:

- Minimize damage to historic structures or materials from fire and fire suppression.
- Maintain and preserve original space configurations of the historic building.
- Minimize alteration, destruction, or loss of historic fabric or design integrity when incorporating fire protection system improvements.

The basis of the PBA will be NFPA 914, *Code for Fire Protection of Historic Structures*, in correlation with NFPA 550, *Guide to the Fire Safety Concepts Tree*, and NFPA 101, *Life Safety Code*.

NFPA 914 provides a framework that consists of both prescriptive requirements and a performance-based approach to evaluate the structure's fire safety performance to achieve specific life safety and historic preservation goals.

NFPA 550 applies a systems-based methodology that examines the interrelation of fire safety features and their effect on achieving fire and life safety goals. NFPA 550 examines the reliability or availability and success of building systems and their effects on overall life safety. NFPA 550 would be used to identify specific fire safety features / systems that could be retrofitted into the West Virginia Capitol building to achieve the life safety and historic preservation goals.

NFPA 101, Chapter 5, *Performance-Based Options*, is proposed for determining the design fire scenarios to be evaluated. The design fire scenario evaluated would be as challenging as any that could occur in the building, but shall be realistic, with respect to at least one of the following scenario specifications: 1) initial fire location, 2) early rate of growth in fire severity, and 3) smoke generation.

Various excursions using fire modeling and occupant evacuation modeling analyses will be performed to:

- Understand how the building's current conditions influence occupant safety in a fire condition.
- Identify specific fire protection features / subsystems, current and proposed, necessary to achieve the life safety and historic preservation goals defined by NFPA 914.

The PBA approach described above follows the procedure defined by the Society of Fire Protection Engineers *SFPE Engineering Guide to Performance-Based Fire Protection*. The findings will provide the stakeholders an overview to understand the contribution that each of the specific fire safety features / subsystems provides to the overall building fire safety. The PBA might reveal that existing building features, such as the open exit stairs, can exist without enclosure when other fire safety features / subsystems are provided.

In Phase I, a series of workshops with the project stakeholders would be held to present the PBA findings and recommendations for building fire safety improvement. The outcome of these workshops will be agreement upon the fire safety system improvements that would be incorporated into Phase II – Design Construction Documents.

A detailed report will be issued at various milestones during Phase I for stakeholder review and comment. Construction cost estimates, with consideration for the building's age and existing construction materials and methods, will be provided starting at approximately 50-percent complete submission and as part of the final report.

PHASE II – DESIGN CONSTRUCTION DOCUMENTS

JENSEN HUGHES has significant experience in preparing design construction documents of fire protection and life safety systems for all types of occupancies and buildings including historic structures. JENSEN HUGHES' employees are involved in writing the National Fire Protection Association standards that will be used to design the fire safety systems in Phase II of this project. These standards include NFPA 13, *Sprinkler Systems*; NFPA 14, *Standpipe Systems*; NFPA 20, *Fire Pumps*; NFPA 72, *Fire Alarm Code*; and NFPA 101, *Life Safety Code*. This knowledge provides for complete design drawings to achieve complete and competitive construction bids.

During Phase II, Preservation Design Partnership and International Consultants, Inc., will assist JENSEN HUGHES in preparing the associated design reports, drawings, specifications, and construction cost estimates required by the State of West Virginia design guidelines.

Preservation Design Partnership will assist JENSEN HUGHES in determining the appropriate routing and placement of fire protection systems components to be respectful of the building's historic fabric and character.

As demonstrated in our relevant project experience contained hereinafter, the JENSEN HUGHES and Preservation Design Partnership team proposed for the West Virginia Capitol building have extensive experience in design, specification, construction period administration, and final systems acceptance testing of fire protection and life safety systems in historic buildings. In addition, JENSEN HUGHES has experience specific to the State of West Virginia owned and managed properties including:

State Capitol Complex, Building 6, Charleston, WV (as a subconsultant to ZMM, Inc., Charleston, WV)
Fire Sprinkler and Fire Alarm Retrofit Services

West Virginia University, Coliseum, Morgantown, WV
Performance-Based Design Services

West Virginia University, Student Recreation Center and Natatorium, Morgantown, WV
Fire Sprinkler System Design, Bid Period, and Construction Administration Services

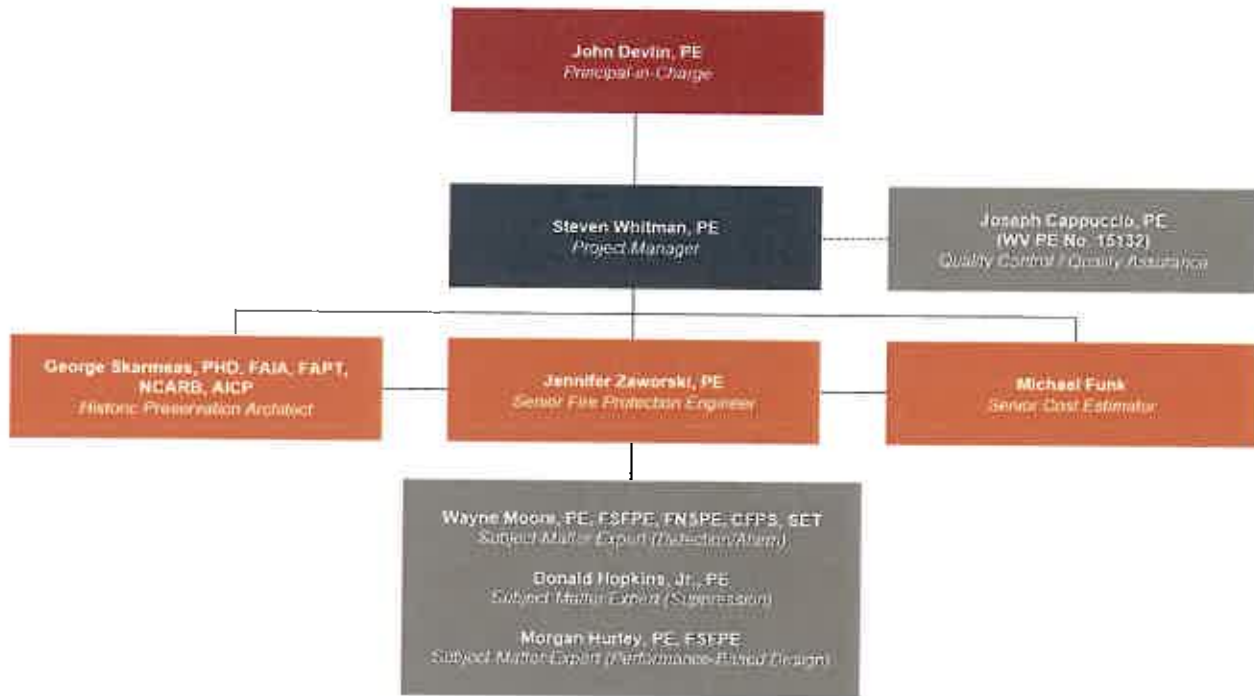
West Virginia University, Vandalia Hall, Morgantown, WV
Property Condition Assessment Services

West Virginia University, Agricultural Sciences Building, Morgantown, WV
Fire Sprinkler System Consulting Services

West Virginia University, CPASS/Student Health Center, Morgantown, WV
Code Consulting Services

PROJECT TEAM

JENSEN HUGHES, in collaboration with Preservation Design Partnership, believe we have the experience and knowledge that is essential to guide the State of West Virginia in identifying the most appropriate and practical solutions to improve life safety and property protection of the West Virginia State Capitol building. The proposed team members for the West Virginia State Capitol building are shown in the organizational chart below. Resumes of key personnel are included in the resumes section of this EOI.



JENSEN HUGHES, a firm of over 1,250 employees including nearly 200 fire protection engineers, offers the deep bench of technical expertise this project requires. We also offer several fire protection engineers who are licensed in the State of West Virginia.

ABOUT THE TEAM

JENSEN HUGHES, INC.

JENSEN HUGHES offers a broad range of safety, security, and risk assessment and mitigation services to protect people, property, and the environment. We provide expert consulting, design, construction support, forensic engineering and investigation, research and development, software solutions, and training throughout the world, across every industry. Our experts work diligently to provide a data-driven, forward-thinking approach to risk prevention and mitigation. Whether solving a code compliance challenge or security master planning, every project begins with a rigorous, in-depth analysis and understanding of the client's needs and desired outcomes, followed by developing a set of recommendations aligned with established industry and regulatory standards, and then facilitating the implementation of optimal solutions.

JENSEN HUGHES is the global leader in safety, security, and risk-based engineering and consulting services. We are engineers, scientists, and consultants committed to helping our clients evaluate, address, and mitigate risk.

Addressing Challenges with Historic Structures...

Renovation, modernization, and adaptive re-use of historic structures present some of the most difficult challenges to the architectural and engineering community. Designers are faced with the task of applying current building codes and construction standards while maintaining a building's historic fabric. While prescriptive code requirements provide some guidance, particularly with respect to the life safety issues, the property-protection issues are often unique and not adequately addressed through the narrow lens of a standard building code.

Our firm has successfully balanced the fire protection and life safety objectives of today's current codes while maintaining the historic features of countless projects. For many of these projects, we have offered performance-based design alternatives, and fire hazard and evacuation analyses.

Industry Participation

JENSEN HUGHES has established a reputation for expertise, ethics, and competency in fire protection engineering and research. We have achieved this through years of active participation with regional, national and international building and fire code committees and regulatory bodies. We continue to contribute to the development of such codes through our representation both on and before many of these committees. Our engineers, scientists and consultants actively participate in 150+ committees for numerous industry associations including, but not limited to, the National Fire Protection Association (NFPA), the Society of Fire Protection Engineers (SFPE), and the International Code Council (ICC).

>1250

Engineers, Consultants, Scientists, and Professionals providing innovative solutions

>100

Countries we've worked in, providing comprehensive safety, security and risk-based engineering and scientific solutions

>70

Global office locations located in key metropolitan areas to better serve our clients

PRESERVATION DESIGN PARTNERSHIP, LLC (PDP)

In 1995, Dominique M. Hawkins, AIA, NCARB, LEED AP, founded Preservation Design Partnership [PDP], as a small “boutique” practice specializing in planning and design services for historic sites and buildings. Since its inception, the firm has selected its projects and clients carefully and collaborated closely with the country’s foremost experts in the field, providing excellence in preservation planning, design and architecture.

Currently, through a series of carefully organized and managed alliances and synergistic opportunities, PDP has been able to lead multi-discipline teams on major projects throughout the country, including Main Hall at the Virginia School for the Deaf and Blind, the New Jersey Executive State House, the Arlen Specter Center for Public Service at the Roxboro House at Philadelphia University, and the Alamo Plaza Master Plan, involving several blocks of the city’s downtown area, as well as the World Heritage Site of the Alamo mission.

The hallmarks of the firm are the direct involvement of its partners in all projects, commitment to design and preservation excellence, attention to detail, and collaboration with the country’s foremost experts in specialized areas of heritage planning and design. These principles have remained as guiding forces that shape the firm’s philosophy and methodology.

Today, PDP continues to create sensible, sensitive and sustainable solutions with a long-term value, through the careful treatment of architectural, cultural and historic resources.

PDP is certified by the National Minority Business Council [#215047] and is an MBE / WBE entity.

Philosophy

Intervening in historic settings and buildings requires specialized knowledge and technical expertise, but, most of all, it demands design sensitivity combined with an in - depth understanding of the cultural and historic significance of our built environment.

PDP’s philosophy is based on a simple premise: the site and the building will always provide us with the right answers, if we look carefully and we ask the right questions. While ephemeral trends fade very quickly, timeless and sustainable design endures and creates long - lasting value.

Their personal attention to detail, commitment to planning and design excellence, expert knowledge, and collaboration with the country’s foremost leaders in specialized areas of heritage planning and design have been the pillars of their practice. This philosophy produces sensitive, sensible, and sustainable solutions with inveterate worth for their clients.

THE LEADERSHIP OF PDP BRINGS TO THIS PROJECT:

Over 100 years of experience in planning, designing and delivering projects involving significant historic sites and buildings

Over 15 successfully completed projects involving monumental National Historic Landmarks

Nationally recognized expertise and leadership in successfully planning and designing monumental National Historic Landmarks involving State Capitols (Pennsylvania, New Jersey, Virginia, and West Virginia)

Over \$1 billion of aggregate construction value successfully completed and in place, involving historic landmarks throughout the Eastern seaboard

Over 40 national, regional, state and local awards of preservation and design excellence

Several projects involving museums housed in historic buildings

INTERNATIONAL CONSULTANTS, INC. (ICI)

International Consultants, Inc. (ICI) is a professional consulting firm for the design and construction industries. ICI's areas of expertise include cost estimating, and owner's representative or project management services.

ICI is experienced in all levels of cost estimating, from preliminary feasibility estimates to bid document cost estimates. Other estimating services tailored to meet the individual client's needs include: cost control systems, value engineering studies, bid negotiation and analysis, change order consultation, and capital reserve studies.

As the Owner's Representative, ICI provides a comprehensive design and construction managerial service. From the inception of a proposed project, ICI assumes an active role in guiding its clients through the many, often complex avenues of the design and construction processes.

In the early stages of the development of a proposed project, ICI offers services for feasibility studies, preliminary budgets, and value management options. As the project evolves, we monitor the cost and schedule implications and provide hands-on coordination within the project team to maintain a thorough and consistent progression toward a successful completion.

Their management program is based on scrutiny of each phase of a project as to its economic impact and scheduling on the total project. Their ability to deliver unbiased and objective information in these areas enables the client to maintain firm control over the entire design and construction process.

ICI's objective is to assist its clients in controlling construction costs and completing projects within a scheduled period while attaining the highest degree of quality. They offer a broad base of experience and have successfully acted as the Owner's Representative and applied its various components to a diverse client base.

Projects for which they provide services include a full range of construction projects; new construction, renovations, restorations, additions and adaptive reuse for residential, institutional, commercial, monumental, LEED certified, and everything in between. Projects range in construction value from a few thousand dollars to hundreds of millions of dollars.

ICI's clientele consists of many architectural, interior design, and engineering firms. Also, they provide professional services to owners of all kinds, such as: private corporations, developers, healthcare, educational and financial institutions, capital investment firms, governmental agencies and authorities, insurance companies, condominium associations, and nonprofit organizations.

Located in Old City, the historic district of Philadelphia, ICI was a pioneer and continues to be a leader in its specialized market. Founded in 1970, ICI has a proven track record of providing quality professional design and construction consulting services across the nation.

THE TEAM'S RELEVANT PROJECT EXPERIENCE

New Jersey Executive Statehouse, Trenton, NJ

Exterior and Interior Renovation Project

Built in 1790, the New Jersey Executive Statehouse is the third-oldest state house in continuous legislative use in the United States. It is an existing historic structure and it is listed on the U.S. National Register of Historic Places.

JENSEN HUGHES worked closely with the Design Team, led by Nelson in association with the Preservation Design Partnership, LLC (PDP) to provide architectural / engineering design and construction administration services to repair the Executive Statehouse exterior building envelope. Our firm's scope of work included exterior emergency egress stairs and other items related to life safety improvements. Although originally intended to exclusively renovate the exterior, it soon became clear that the project would need to address the building's inefficient interior space utilization and the its archaic infrastructure to ensure the success of the project.

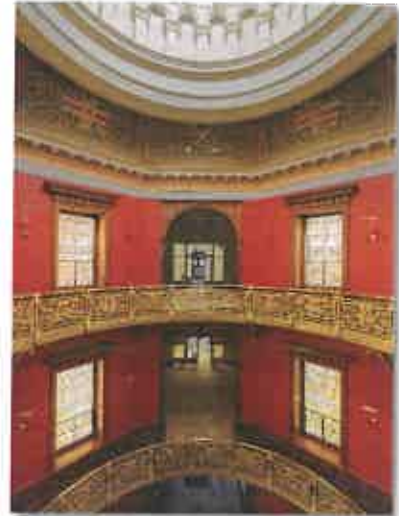
Following the exterior renovation project, JENSEN HUGHES continued to work closely with the Design Team, providing fire protection and life safety consulting and engineering services for interior renovations to the New Jersey Statehouse. The scope of work included pre-design services and a Level I and Level II Study (i.e., a comprehensive Master Plan / Pre-Design effort) for renovation and modernization of the building. Included in the Level I and Level II Study were review and assessment of the existing building conditions and recommendation of fire protection and life safety improvements to achieve compliance with the applicable building and fire codes.

Services also included Level III design, bid period, and construction administration services for the building's automatic sprinkler system and smoke detection systems.

At this juncture, the Design Team has submitted the 100% Design Development package and is preparing the Construction Documents. Award of the project to a general contractor is anticipated in early 2019.



*New Jersey Executive Statehouse
Trenton, NJ
Credit: Wikimedia/Niagara*



*New Jersey Executive Statehouse,
Rotunda, Trenton, NJ
Credit: Preservation Design Partnership,
LLC*

Services Provided:

- Fire protection, life safety, and building code consulting
- Exit review and analysis
- NFPA 914 analysis
- Fire alarm system design
- Fire sprinkler system design
- Bid period services
- Construction administration services
- Consultation / negotiation with authority having jurisdiction

Reference:

Mr. Raymond Arcario*
Executive Director
New Jersey Building Authority
Division of Building Management & Construction
50 West State Street, 2nd Floor
Trenton, NJ 08608

**Former Director, State of New Jersey Division of Property Management and Construction*

Virginia State Capitol, Richmond, VA
Restoration and Expansion Project

Designed in 1785, the Virginia State Capitol is one of the most historic structures in America, in continuous use since 1788. One of four buildings designed by Thomas Jefferson, it is considered the first major public project constructed after the signing of the Declaration of Independence and the first to introduce the classical vocabulary to American architecture, the appropriate architectural expression of America's fledgling democracy.

The Virginia State Capitol Building is a four-story structure consisting of approximately 91,000 gsf of floor area with the construction of a new two-story below-grade visitor's center.

JENSEN HUGHES worked closely with the multi-discipline team of nationally recognized experts in all areas of historic preservation including Dr. George C. Skarmeas (then with Hillier Architecture / RMJM) and Dominique M. Hawkins of PDP. JENSEN HUGHES was the fire protection engineer and building code consultant on the project team providing fire/life safety consultation and analysis, building code and accessibility consultation, and fire suppression system design services for the approximately \$105.1 million restoration and expansion of this historic structure.

Our work included preparation of a building code and accessibility requirements report; a fire hazards analysis of the building consisting of computer fire modeling and timed-egress analysis, evaluation of smoke spread, and establishing emergency ventilation capacities; developing alternate means of code compliance options; assisting in negotiations with building officials; and general life safety and building code consultation.

The design followed the highest standards of historic preservation, extending the life of the building and its support systems for approximately 30 more years. All work was planned in a manner that respects the integrity of the historic structure without loss of valuable building fabric. This approach also allowed for future renovations and systems replacements to be undertaken without impacting the building's historic architecture.

The project has won several national, regional, state, and local awards for preservation and design excellence.

Services Provided:

- Fire protection, life safety, and building code consulting
- Exit review and analysis
- NFPA 914 analysis
- Performance-based analysis
- Fire alarm system design
- Fire sprinkler system design
- Bid period services
- Construction administration services
- Code conflict resolution / code equivalency documentation
- Consultation / negotiation with authority having jurisdiction

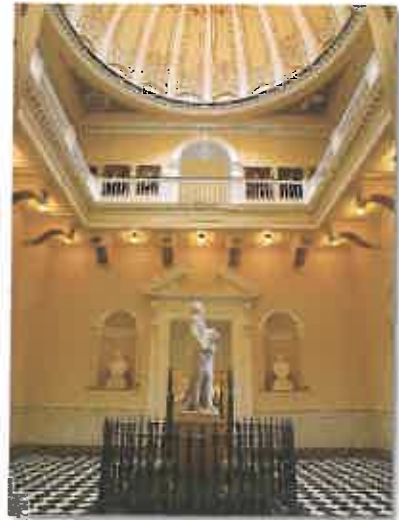
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Mr. Richard F. Sliwoski, PE*
Associate Vice President
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Virginia Commonwealth University
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**Former Director, Department of General Services,
Commonwealth of Virginia*



*Virginia State Capitol, Exterior Extension
Richmond, VA
Credit: Tom Crane Photography, Inc.*



*Virginia State Capitol, Rotunda
Richmond, VA
Credit: Tom Crane Photography, Inc.*

Michigan State Capitol, Lansing, MI
Restoration / Infrastructure Upgrade Project

The State of Michigan recently commenced the first comprehensive infrastructure upgrade to the 138-year-old State Capitol Building since the major Capitol restoration project that took place from 1987 through 1992. The Capitol Building was listed on the U.S. National Register of Historic Places January 25, 1971, and was designated as a National Historic Landmark on October 5, 1992.

The Michigan State Capitol is 267 feet from the ground to the tip of finial/spire above the dome. The building is 420 feet long and 274 feet wide (including approaches). The existing fire protection systems were installed during the last Capitol's restoration period.



*Michigan State Capitol
Lansing, MI
Credit: Wikimedia/Brian Charles Watson*

At the onset of the project, JENSEN HUGHES performed a fire protection and life safety assessment of the existing building against the requirements of NFPA 914, *Code for Fire Protection of Historic Structures*, 2015 Edition; and other applicable codes. The assessment included review of the existing building conditions and recommendation of fire protection and life safety improvements to achieve compliance with the applicable building and fire codes while maintaining the historic fabric of the building. The following features were addressed: fire compartments, means of egress, fire suppression, fire detection/alarm, and smoke exhaust/control.

Following the fire protection and life safety assessment, JENSEN HUGHES worked closely with the Design Team, led by EYP Architects + Engineers, to provide design services for sprinkler system component replacement and a complete replacement of the existing fire alarm system. Our firm prepared egress drawings with pertinent building code and life safety codes information as well as floor plans documenting occupant loads, exit access travel distance, and exit capacity information. Our services also included participation in weekly project conference calls, monthly design coordination meetings, on-board review meetings, and meetings with the authority having jurisdiction.

Services Provided:

- Fire protection, life safety, and building code consulting
- Exit review and analysis
- NFPA 914 analysis
- Fire alarm system design
- Fire sprinkler system design
- Code conflict resolution / code equivalency documentation
- Consultation / negotiation with authority having jurisdiction

Reference:

Mr. Matthew Chalifoux, FAIA
Principal, Historic Preservation and Design
EYP Architects + Engineers
The Flour Mill
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mchalifoux@eypae.com

Wyoming State Capitol Renovation and Modernization, Cheyenne, WY
Restoration and Renovation Project

The Wyoming State Capitol Building is an existing 4-story above-grade building with one level below grade and consists of approximately 240,000 sf in building area. The building is a single-volume space with open interior monumental stairs. The building was constructed circa 1890 and is on the U.S. National Register of Historic Places.

As part of the Level I and Level II Study (i.e., a comprehensive Master Plan / Pre-Design effort) for renovation and modernization of the building, JENSEN HUGHES reviewed/assessed the existing building conditions and provided recommendations for fire protection and life safety improvements to achieve compliance with the applicable codes while maintaining the historic fabric of the building. We also conducted a performance-based analysis of the building to identify the impact of a fire within the building on occupant evacuation and property preservation.



*Wyoming State Capitol
Cheyenne, WY
Credit: Flickr/David Jones*

Following the Level I and Level II Study, JENSEN HUGHES provided Level III engineering design services for all three phases of the restoration and renovation: Capitol Restoration and Renovation (inclusive of Building and Grounds); Herschler Tenant Improvement (inclusive of Building Net Assignable Square Feet); and Herschler Building (inclusive of Building, Addition, Connector, Central Utility Plant, Parking, and Grounds). We also provided construction administration services which included contractor-prepared shop drawing and equipment submittal reviews for compliance with the construction design documents. The Herschler Building will be 50-percent occupied during construction and will occur in two phases. Construction is estimated to be complete in May 2019.

Services Provided:

- Fire protection, life safety, and building code consulting
- NFPA 914 analysis
- Performance-based analysis
- Fire alarm system design
- Fire sprinkler system design
- Construction administration services
- Code conflict resolution / code equivalency documentation
- Consultation / negotiation with authority having jurisdiction

Reference:

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Associate Vice President
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Omaha, NE 68114
+1 402-399-4825
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United States Supreme Court, Washington, DC

Master Plan and Comprehensive Renovation / Modernization Project

The United States Supreme Court Building was designed by Cass Gilbert, one of the most significant American architects of the first half of the 20th century. The United States Supreme Court is a five-story above-grade building with a basement consisting of approximately 390,000 sf of gross floor area. The building is a national historic structure and is provided with open monumental egress creating a single building volume.

JENSEN HUGHES worked closely with the multi-discipline team of nationally recognized experts in all areas of historic preservation including Dr. George C. Skarmas (then with Hillier Architecture / RMJM). Dr. Skarmas was the Planning, Design, and Preservation Principal leading this complex multi-year modernization initiative.

The planning and design effort began with a fact-finding phase, the Master Plan, which created the foundation of the work, outlining a series of initiatives, including an off-site facility, a below-grade addition and a comprehensive program of interior enhancements. The Plan was ultimately organized, planned, designed, and executed in three phases. In the first phase, an off-site facility was created and non-essential functions were removed from the building. The second phase involved the design and construction of the below-grade support facility. The final phase, i.e. the renovation and modernization of the Supreme Court Building was undertaken in four stages, one for each quadrant of the structure, allowing the Court to remain in operation during construction, without any interruptions of the Judicial Calendar. The project was completed under budget in the summer of 2011.

JENSEN HUGHES served as the project's fire protection engineer and building code consultant. Numerous issues/building features required the development of code equivalencies to maintain the historic fabric of the building, while maintaining an acceptable level of life safety. We also provided standpipe and sprinkler system design. Fire sprinkler design services included the placement of sprinklers in highly ornamented and decorative spaces, with the extensive use of archaic materials. Throughout the project, we provided the technical support for code equivalencies and has been involved in negotiations with the authority having jurisdiction (AHJ), the Architect of the Capitol (AOC), and the Justices of the Supreme Court.

Services Provided:

- Fire protection, life safety, and building code consulting
- NFPA 914 analysis
- Performance-based analysis
- Fire alarm system design
- Fire sprinkler system design
- Construction administration services
- Code conflict resolution / code equivalency documentation
- Consultation / negotiation with authority having jurisdiction

Reference:

Mr. Michael G. Turnbull, FAIA
Assistant to the Architect of the Capitol
Architect of the Capitol
U.S. Capitol Building
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United States Supreme Court
Washington, DC



United States Supreme Court. Spiral Stair
Washington, DC
Credit: Preservation Design Partnership,
LLC

Virginia School for the Deaf and Blind, Staunton, VA

Master Plan for Main Hall and Chapel / Renovation of Main Hall

The Virginia School for the Deaf and the Blind (VSDB), located in Staunton, VA, represents one of the earliest examples of a specialized educational institution in the United States. Main Hall, designed in the Greek Revival style and completed in the mid-19th century, has served as the campus' historic core for over 150 years, and is one of Virginia's most important historic architectural icons.

Preservation Design Partnership (PDP) prepared a Master Plan for both Main Hall and the neighboring Chapel. Following completion of the Master Plan, JENSEN HUGHES collaborated with PDP to provide professional architectural and engineering services for a comprehensive Renovation and Restoration of Main Hall including, but not limited to: comprehensive repair and restoration of the exterior building envelope, accessibility upgrades, restoration of select areas of the historic interiors (corridors and monumental stairs), comprehensive replacement of MEP systems and site infrastructure, and sustainable design in compliance with the Virginia High-Performance Buildings Act.

The historic VSDB relied on an existing sprinkler system installed in 1936 to protect it from fire. As part of the renovation scope, it was proposed to replace the existing dry sprinkler system with a new combination wet and dry sprinkler system in accordance with the 2010 NFPA 13. Accordingly, we provided fire protection design and code consulting services to PDP for the project.

Consulting services included a fire protection and life safety assessment of the building including documentation of the project's fire protection/life safety and historic preservation goals and objectives. Design services included drawings and specifications for the retrofit installation of automatic sprinkler and standpipe systems.



*The Virginia School for the Deaf and Blind
Staunton, VA*



*The Virginia School for the Deaf and Blind
Staunton, VA
Credit: Preservation Design Partnership,
LLC*

Services Provided:

- ▣ Fire protection, life safety, and building code consulting
- ▣ NFPA 914 analysis
- ▣ Fire sprinkler system design
- ▣ Bid period services
- ▣ Construction administration services
- ▣ Code conflict resolution / code equivalency documentation
- ▣ Consultation / negotiation with authority having jurisdiction

Reference:

Mr. Erich Thomas
Bureau of Facilities Management
Commonwealth of Virginia
1100 Bank Street, 10th Floor
Richmond, VA 23219
+1 804.225.7292
erich.thomas@dgs.virginia.gov

United States Capitol Building, Washington, DC
Fire Protection Design and Code Consulting Services

The U.S. Capitol building, one of the nation's most recognizable structures, was completed in 1800, allowing Congress to meet there for the first time. Construction started again in 1803, which led to completion of its north and south wings.

JENSEN HUGHES served as the fire protection engineer and building / life safety code consultant as part of the U.S. Capitol building fire protection and life safety improvements masterplan. Project work included development of the fire protection and life safety master planning, computer based fire and egress modeling, code consulting, and master plan implementation. An NFPA 914 analysis was performed to identify strategies to improve occupant fire safety while being respectful of the building's historic fabric.

Solutions developed included leveraging the building's features including the Grand Stairs and tall Rotunda for passive smoke control to provide for occupant safe evacuation in a fire condition. An innovative solution, using a high-fidelity audio system throughout aesthetically sensitive areas of the building, interfaced with the fire alarm/voice communication system, resolved a challenge of providing fire alarm system voice intelligibility in spaces prone to acoustic reverberation.



*U.S. Capitol Building
Washington, DC*



*U.S. Capitol Building
Washington, DC*

Services Provided:

- Fire protection, life safety, and building code consulting
- NFPA 914 analysis
- Performance-based analysis
- Fire alarm / voice communication system design
- Fire sprinkler system design
- Construction administration services
- Code conflict resolution / code equivalency documentation
- Consultation / negotiation with authority having jurisdiction

Reference:

Mr. Lawrence Gutterman*
Senior Associate
Urbahn Architects
306 West 37th Street, Ninth Floor
New York, NY 10018
+1 212-239-0220

(Formerly with Bayor Blinder Belle (JENSEN HUGHES was contacted with EBD for Master Plan work)

Statue of Liberty National Monument and Museum™, New York, NY
Fire Risk Assessment, Fire System Design, and Code Consulting Services

Following the events of September 11, 2001, the National Park Service (NPS) closed the Statue of Liberty. Steps were taken prior to the re-opening of the monument in 2004 to reduce risks in the areas of life safety, fire safety, and emergency evacuation in the lower levels of the monument. But due to the difficulty in identifying how to meet code requirements for the Crown portion of the monument, that section remained closed.



*Statue of Liberty
New York, NY*

JENSEN HUGHES was engaged by NPS to determine whether there was a way to meet life safety code requirements to enable the Crown section to be made available to the public. Accordingly, we conducted a comprehensive code analysis and fire risk assessment for the monument including the museum and statue resulting in recommended modifications to the monument to improve visitor fire safety and security including exiting and fire system upgrades.

Based on the results and recommendations of the study, the Crown was re-opened for public visitation on July 4, 2009, for a period of two years, after which it was closed for a period of two years. During this time, we provided construction administration services for fire protection, life safety, and security upgrades to the monument.

We are also providing fire protection, life safety, and accessibility code consulting services for the design phases of the new, \$25 million, 26,000-sf Statue of Liberty Museum. The new museum replaces the existing museum currently located at the base of the statue. The museum will convey the history and inspiring message of Lady Liberty to a new generation of visitors. This project marks the first new building project to be undertaken by the Statue of Liberty – Ellis Island Foundation, which has overseen the preservation of the Statue since the 1980's. Designed to withstand hurricane force winds, the museum is scheduled to open in 2019.

Services Provided:

- Fire protection, life safety, and building code consulting
- Accessibility code consulting
- Emergency management consulting
- Construction administration services
- Code conflict resolution / code equivalency documentation

Reference:

Ms. Heidi Blau, FAIA (Museum Project)
Partner
FX Collaborative (formerly FX Fowle)
22 West 19th Street
New York, NY 10011
+1 212-627-1700

Ms. Anne Weber, FAIA
Partner
Mills+Schnoering Architects, LLC
200 Forrestal Road, Suite 3A
Princeton, NJ 08540
+1 609-681-2480
annew@msarchitectsllc.com

Central Library, St. Louis Public Library, St. Louis, MO

Master Plan Renovation Project

The St. Louis Central Library was built in 1912 as the flagship of the St. Louis Public Library system, and was designed by Cass Gilbert. The 215,000-sf building has numerous unusual features, most notably a seven-level (three-story) book stack shelving system utilizing inch-thick glass as flooring. The second level of the Library is comprised almost entirely of the Great Hall, an open area including open exit stairs.

JENSEN HUGHES served as the building code consultant for the Renovation Master Plan project. Recommendations for improved life safety and property protection were developed, balancing the concern of minimizing the impact to the building's historic fabric with the achievement of fire protection and life safety goals.

We conducted a fire hazards analysis of the building to determine potential/probable fire scenarios and their impact on life safety and property. A computational fluid dynamics (CFD) model was used to predict the impact of a fire within the book stack area, and smoke transport within the building and open stairs.

Services Provided:

- Fire protection, life safety, and building code consulting
- NFPA 914 analysis
- Code conflict resolution / code equivalency documentation

Reference:

Dr. George C. Skarmeas, AIA, NCARB
Principal, Design Director
Preservation Design Partnership
One S. Broad Street, Suite 1702
Philadelphia, PA 19107
+1.215.842.3388
gskarmeas@pdparchitects.com

West Virginia State Capitol Complex, Office Building Complex, Charleston, WV

Fire Protection Design, Building Code and Life Safety Evaluation Services

The West Virginia State Capitol Office Building complex is comprised of numerous buildings which house offices for operations and maintenance, architectural and engineering, asbestos coordination, health and safety coordination, custodial services, and grounds maintenance services for the State of West Virginia.

JENSEN HUGHES provided fire protection design, building code, and life safety evaluation services for the renovation of Buildings 5, 6, and 7 within the complex. Surveys were conducted to identify the existing arrangement of the buildings' fire protection and life safety systems, resulting in the detailing of necessary improvements to replace the buildings' systems. We prepared fully engineered design drawings and specifications to accommodate revisions to the automatic sprinkler systems, fire pump system, evacuation alarm system, fire department two-way phone system, and special hazards extinguishing systems; assisted with the contractor bidding process; and provided construction period services.

Services Provided:

- Fire protection, life safety, and building code consulting
- Fire alarm system design
- Fire sprinkler system design
- Bid period services
- Construction administration services

Reference:

Mr. Robert Doeffinger
Engineer / Principal
ZMM, Inc.
222 Lee Street, West
Charleston, WV 25302
+1.304.342.0159
rcd@zmm.com

KEY PERSONNEL RESUMES

Resumes of key personnel are included on the following pages.

JOHN F. DEVLIN, PE

Principal-in-Charge

Mr. Devlin has 32 years of experience in fire protection engineering and building code consulting. Work responsibilities include building code and life safety consultation, fire modeling and egress analysis, fire detection and suppression systems design, performance-based analyses, risk analyses, and expert testimony/litigation support. Facility types include historic and monumental structures, transportation facilities, sports complexes and stadiums, hospital and healthcare facilities, residential, retail, high-rise and super tall buildings, industrial, and government facilities.

Mr. Devlin has extensive expertise in the difficult challenges that renovation, modernization, and adaptive re-use of historic structures present to the architectural and engineering community. Throughout his career, Mr. Devlin has worked on several projects requiring performance-based design alternatives as a means to minimize the impact to a building's historic fabric.

PROJECT HIGHLIGHTS

New Jersey Executive Statehouse Renovation, Trenton, NJ

Principal-in-Charge. Provided fire protection and life safety code consulting and design services for the renovation of the New Jersey Executive Statehouse, an existing historic structure listed on the U.S. National Register of Historic Places. Services included conducting a Level I and Level II study which encompassed review and assessment of the existing building conditions and recommendation of fire protection and life safety improvements to achieve compliance with the applicable building and fire codes, providing design services for the building's automatic sprinkler system and smoke detection systems, and providing support during construction.

Virginia State Capitol Renovation / Modernization, Richmond, VA

Principal-in-Charge / Lead Consultant. Provided fire protection / life safety consulting services related to \$70 million building modernization and construction of a new underground visitor's center extension of this historic structure. Services included developing recommendations for improved life safety and fire protection that maintained the building's historic interior and open monumental stairs, and design for the retrofit installation of fire suppression systems in the existing building.

United States Supreme Court Renovation / Modernization, Washington, DC

Principal-in-Charge / Lead Consultant. Provided fire protection and life safety services as part of the \$110 million building renovation and modernization program. Services included developing recommendations for improved life safety and fire protection that maintained the building's historic interior and open monumental stairs, and design for retrofit installation of sprinkler systems. Numerous issues and building features required the development of code equivalencies to maintain the historic fabric of the building, while maintaining an acceptable level of life safety.



EXPERIENCE

32 Years

EDUCATION

MS, Fire Protection Engineering,
University of Maryland 1999

BS, Fire Protection Engineering,
University of Maryland 1999

REGISTRATIONS/CERTIFICATIONS

PE: DC, DE, MD, NJ, NY, PA, VA

ASSOCIATIONS

Member, National Fire Protection
Association (NFPA)

Member, Society of Fire Protection
Engineers (SFPE)

Professional Member, International Code
Council (ICC)

Principal, Fixed-Guideway Transit and
Passenger Rail Systems (NFPA 130)

Principal, Fire Code (NFPA 1)

Chair, Fire Protection Features,
Life Safety Code (NFPA 101)

CONTACT

John Devlin
+1 410-737-8677
jdevlin@jensenhughes.com



JENSEN HUGHES

jensenhughes.com

STEVEN WHITMAN, PE

Project Manager

Steven Whitman, PE, is a Senior Consultant with 14 years of experience. As part of the JENSEN HUGHES team, he provides clients with a multitude of different services including sprinkler system design, fire alarm system design, building and fire code evaluations, and facility condition assessments. He has experience with government facilities; commercial real estate; large-scale residential buildings; large assembly facilities; healthcare occupancies; and academic, residential, and assembly buildings on college and university campuses. Mr. Whitman also has experience with computer fire and egress modeling analysis, including Fire Dynamics Simulator (FDS) and PathFinder.

PROJECT HIGHLIGHTS

West Virginia University (WVU), Coliseum, Morgantown, WV

Project Manager. Provided performance-based design services to justify the current smoke-protected seating and smoke management system arrangements in the school's basketball arena (330,000-sf). This analysis involved the comparison of a timed evacuation model to the results of a computer fire/smoke model to determine whether building occupants can egress from the building before the effects of a fire become untenable.

West Virginia University (WVU), Student Recreation Center, Morgantown, WV

Project Manager. Provided fire sprinkler system design, bid period services, and construction administration services for the the 177,000-sf Student Recreation Center.

The Catholic University of America (CUA), Caldwell Hall, Washington, DC

Project Manager. Provided engineering design and construction administration services for the Caldwell Hall sprinkler retrofit and fire pump installation project. Services included shop drawing reviews, RFI administration, and progress inspections for this project which involved the retrofit of sprinklers into combustible attic spaces of an occupied historic building.

U.S. Capitol Master Plan, Washington, DC

Consultant/Engineer. Provided fire protection and life safety consulting engineering services. Services included evaluating the existing facility for code compliance issues and assisting the Master Plan team with developing remediation for non-code compliant issues. Performance analysis using computer fire and egress modeling were incorporated in the analysis to find the least intrusive methodologies for correcting prescriptive code-based deficiencies in this historic structure.

National Museum of American History, Washington, DC

Consultant/Engineer. Provided code consulting, fire alarm and sprinkler design, and construction administration services for the major renovation to the center core of the museum and parking garage infill. Assisted with unique protection features for the new state-of-the-art gallery for the Star-Spangled Banner (one of our nation's most valued treasures) and a new atrium with skylight connecting the first three above-grade levels.



EXPERIENCE

14 Years

EDUCATION

BS, Fire Protection Engineering
University of Maryland, 2005

REGISTRATIONS

PE: MD

ASSOCIATIONS

Member, National Fire Protection Association (NFPA)

Associate Member, Society of Fire Protection Engineers (SFPE)

Member, Society of American Military Engineers (SAME)

CONTACT

Steven Whitman
+1 410-737-8677
swhitman@jensenhughes.com



JENSEN HUGHES

jensenhughes.com

JENNIFER ZAWORSKI, PE

Senior Fire Protection Engineer

Jennifer Zaworski, PE, has 12 years of experience in fire protection engineering and building code consulting. She serves as project manager and lead code consultant on various projects involving complex building code, life safety, and fire protection features. In this capacity, she is responsible for team leadership on developing strategies for achieving code compliance and the project/client's risk management objectives. Project responsibilities include building code plan reviews, computer-based fire modeling, timed egress analysis, and risk-based analysis for various building types.

Most notably, Mrs. Zaworski is also a panelist at the upcoming AIA Conference on Architecture 2018 in NYC. Using a historic state capitol infrastructure upgrade as a case study, she is part of a team of architects and engineers, presenting successful digital documentation and assessment tools for the renovation and rehabilitation of historic structures.

PROJECT HIGHLIGHTS

Michigan State Capitol, Infrastructure Improvement Project, Lansing, MI

Project Manager / Lead Consultant. Provided fire protection engineering and life safety code consulting services. Services include engineering design and specifications for the fire suppression systems; basis of design report for fire detection; and a fire protection/life safety assessment of the building's openness to identify potential strategies to achieve the project's fire protection, life safety, and historic preservation goals and objectives.

Wyoming State Capitol Building Restoration / Renovation, Cheyenne, WY

Project Manager / Lead Consultant. Provided fire protection, life safety, and building code consulting; and fire alarm and fire suppression system design services for the renovation and modernization of the Wyoming State Capitol Building, an existing historic structure listed on the U.S. National Register of Historic Places. Services include, but are not limited to, review and assessment of the existing building conditions and recommendation of fire protection / life safety improvements to achieve compliance with the applicable building and fire codes.

New Jersey Executive Statehouse Renovation, Trenton, NJ

Project Manager / Lead Consultant. Provided fire protection and life safety code consulting and design services for the renovation of the New Jersey Executive Statehouse, an existing historic structure listed on the U.S. National Register of Historic Places. Services included conducting a Level I and Level II study which encompassed review and assessment of the existing building conditions and recommendation of fire protection and life safety improvements to achieve compliance with the applicable building and fire codes, providing design services for the building's automatic sprinkler system and smoke detection systems, and providing support during construction.



EXPERIENCE

12 Years

EDUCATION

MS, Fire Protection Engineering,
University of Maryland, 2006

BS, Fire Protection Engineering,
University of Maryland, 2005

REGISTRATIONS/CERTIFICATIONS

PE DC MD WY

Member, National Fire Protection
Association (NFPA)

Member, Society of Fire Protection
Engineers (SFPE)

Alternate, Healthcare Facilities Code
(NFPA 99)

Certified Building Plans Examiner,
International Code Council (ICC)

CONTACT

Jennifer Zaworski
+1 410-737-8677
jzaworski@jansenhughes.com



JENSEN HUGHES

jensenhughes.com

GEORGE C. SKARMEAS, PhD, FAIA, FAPT, NCARB, AICP

PARTNER, PLANNING + DESIGN DIRECTOR

**EDUCATION**

Doctor of Philosophy in Architecture [PhD],
University of Pennsylvania [1983]

Master of City and Regional Planning
[MCRP], The Ohio State University School of
Architecture [1980]

Master of Architecture [MArch], The Ohio State
University School of Architecture [1978]

Bachelor of Architectural Engineering [BArch-
Eng], The National Technical University of
Athens, Greece [1977]

PROFESSIONAL ASSOCIATIONS

The Association of Preservation Technology
International, College of Fellows [2015]

US/ICOMOS

Board Member [2005-2013]

Chair [2010-2013]

US National Commission of UNESCO
Commissioner [2011-2013]

Preservation Alliance of Greater Philadelphia
Advisory Board Member [1992-1994]

Delaware Valley Chapter, The Association for
Preservation Technology
Board Member [1991-1993]

PROFESSIONAL REGISTRATIONS

PA, NJ, KY, TX, OH, WY

AIA
NCARB
AICP

Registered Architect, Greece - National
Registration

George C. Skarmees was born in Athens, Greece, where he completed his undergraduate studies in Architecture at the **National Technical University of Athens**. In 1978, he came to the United States to pursue his graduate studies, where he completed a series of graduate degrees [MArch and MCRP at **The Ohio State University** and PhD at the **University of Pennsylvania**], all focusing on architecture, preservation and sustainable design.

His doctoral work was completed under **Professor James Marston Fitch**, the leading educator of his era in the field of Historic Preservation. While at Penn, Dr. Skarmees taught graduate level courses and assisted Professor Peter McCleary in establishing the new Graduate Program in Historic Preservation.

Following the completion of his doctoral work, Dr. Skarmees moved to the Midwest, where he accepted a position as the lead faculty member in the fledgling preservation program at **Ball State University's School of Architecture** and also started a consulting practice.

In 1986, he joined the **Vitetta Group** [now VITETTA], as the project architect of the preservation, restoration and adaptive reuse of the historic **Bellevue Stratford - Hotel** in Philadelphia. The project became an opportunity to reorganize an important practice focusing on preservation architecture and sustainable design. Beginning with six individuals, the practice matured to a studio of forty professionals. As Studio Director, Dr. Skarmees was responsible for an annual budget of \$5 to \$6 million in net fees [1986 - 1996], overall organization, direction and design leadership, and undertaking major design and preservation projects including **Independence Hall**.

In 1996, Dr. Skarmees joined **HillierARCHITECTURE** [now RMJM] as Director of Preservation Architecture to create a new studio specializing in preservation with the goal of becoming a national practice. Through a carefully crafted strategic plan, the Preservation Design Studio met and exceeded its goals with national commissions, including the **United States Supreme Court Building**, the **Virginia State Capitol**, the **West Virginia Capitol Complex**, the **Lincoln Cottage**, the **Cincinnati Museum Center** and the **Payne Whitney Gymnasium at Yale University**, as well as numerous other award - winning projects. He was elevated to Principal in 1998, served on the Board of the firm and was a member of its Executive Committee until 2007. That same year, the firm was sold to RMJM, and from 2007 - 2010, Dr. Skarmees completed his contractual obligations to all of his clients.

In June 2010, Dr. Skarmees joined **Preservation Design Partnership, LLC, [PDP]**. As a Partner and Planning & Design Director, he is continuing his lifelong commitment to achieving design excellence; creating sensitive, sensible and sustainable solutions and advancing the field through research, academic engagements and writing.

Currently, he is working as the lead planner, architect and preservation architect on the restoration of **Main Hall** at the **Virginia School for the Deaf and the Blind**, the exterior restoration of the **New Jersey Executive State House** [in collaboration with Nelson]; and multiple improvements at the **Washington Crossing Historic Park**.

In 2010, he was elected Chair of the **US National Committee of the International Council on Monuments and Sites [US / ICOMOS]** for a three - year term [2010 - 2013] and in 2011 was appointed, by the US State Department, as Commissioner of the **US National Commission of UNESCO** [2011 - 2013]. In 2015, he was elevated to the College of Fellows of the Association for Preservation Technology International.

His work has been recognized with over 35 national, regional, state and local awards for planning, preservation and design excellence and has been featured in all major architectural, planning and preservation publications, as well as the Washington Post and the Wall Street Journal.

SELECTED PROJECTS



Virginia State Capitol



US Customs House



Ritz Carlton*



Virginia State Capitol

- Virginia School for the Deaf and the Blind - Staunton, VA
Restoration and Rehabilitation of Main Hall [2014 - 201]
- Master Plan for the Main Hall and Chapel [2012 - 2013]
- Fayette County Historic Courthouse - Lexington, KY
Preservation Plan [2014 - 2015]
- New Jersey Executive State House - Trenton, NJ
Exterior Envelope Restoration [2013 - present]
- Seminary Building, Jefferson Community & Technical College - Louisville, KY
Courtyard Rehabilitation & Restoration [2013 - present]
- Washington Crossing Historic Park - Bucks County, PA
Restoration and Site Improvements [2013 - present]
- General Motors Technical Center - Warren, MI
National Historic Landmark Nomination [2011 - 2012]
- Arlen Specter Center for Public Service at the Roxboro House, Philadelphia University - Philadelphia, PA
Construction Documents and Construction Administration [2012 - 2014]
- Schematic Design and Planning Report [2010 - 2011]
- Cincinnati Museum Center at the Cincinnati Union Terminal - Cincinnati, OH
Sustainability Workshop [2010 - 2011]
- Phase I: Restoration of Historic Dining Rooms and Exterior Envelope [2008 - 2010]
- Master Plan [2005 - 2007]
- West Virginia Capitol Complex - Charleston, WV
Master Plan for Long - Term Preservation and Use [2009 - 2010]
- William J. Nealon Federal Building - Scranton, PA
Façade Masonry Restoration [2008 - 2010]
- United States Supreme Court Building - Washington, DC
Modernization and Expansion; Master Plan [1998 - 2010]
- Medical Center of New Orleans, Charity Hospital - New Orleans, LA
Charity Hospital Feasibility Study [2009]
- Payne Whitney Gymnasium and Ray Thompkins House at Yale - New Haven, CT
Comprehensive Exterior Envelope Restoration [2005 - 2009]
- Navy Arctic Research Laboratory - Barrow, AK
Preliminary Planning Report for the Barrow Arctic Science Consortium [2007 - 2008]
- President Lincoln's Cottage and Visitor Education Center - Washington, DC
Restoration of Cottage, Adaptive Reuse of Visitor Education Center [2003 - 2008]
- John Hay Estate - Newbury, NH
Feasibility Study and Long - Term Plan Update [2004 - 2008]
- Virginia State Capitol - Richmond, VA
Restoration and Expansion [2003 - 2007]
- St. Louis Public Library - St. Louis, MO
Restoration & Rehabilitation, Schematic Design and Master Plan [2001 - 2007]
- Capitol Square Historic Properties at 8th, 9th, Grace & Broad Street - Richmond, VA
Master Plan [2006]
- Decatur House - Washington, DC
Renovation as Historic House Museum [2002 - 2006]



Virginia School for the Deaf and Blind



Arlen Specter Center, Roxboro House



United States Supreme Court



Cincinnati Museum Center

- The Pennsylvania Farm Show - Harrisburg, PA
Preservation and Rehabilitation of the Convention Facility & Arena [2002 - 2006]
- Kline Biology Tower, Yale University - New Haven, CT
Existing Conditions Analysis and Exterior Preservation / Rehabilitation Plan [2002 - 2005]
- The Patrick Henry Building [Old State Library] - Richmond, VA
Renovation and Adaptive Re - Use as the Executive Office Building [2001 - 2005]
- Brown University - Providence, RI
Campus - Wide Preservation Planning [2002 - 2003]
- The US Custom House - Philadelphia, PA
Condition Assessment / Exterior Restoration Study [2002 - 2003]
- Oldfields at the Indianapolis Museum Of Art / J.K. Lilly House - Indianapolis, IN
Historic House Museum Master Plan & Restoration [1997 - 2002]
- Girard Trust/Ritz - Carlton Hotel - Philadelphia, PA
Restoration & Adaptive Reuse as a Luxury Hotel [1997 - 2001]
- Undine Barge Club - Philadelphia, PA
Restoration of Historic Boathouse [1996 - 1998]
- Genesee Country Museum - Mumfords, NY
Livingston - Backus House Restoration and Addition [1996 - 1998]
- Pennsylvania State Capitol - Harrisburg, PA
Multiple Projects [1994 - 1996]
- Philadelphia City Hall - Philadelphia, PA
Multiple Projects [1992 - 1996]
- Grey Towers National Historic Landmark - Milford, Pennsylvania
Master Plan [1993 - 1996]
- Independence National Historical Park - Philadelphia, PA
IDIQ for Historic Architecture [1992 - 1996]
- Reading Terminal Train Shed, Pennsylvania Convention Center Authority - Philadelphia, PA
Restoration / Preservation / Adaptive Use [1989 - 1994]
- William Conner House, Conner Prairie Pioneer Settlement - Fishers, IN
Restoration [1991 - 1993]
Restoration Study and Long - Range Master Plan [1988 - 1989]
- Saint Mark's Episcopal Church - Philadelphia, PA
Long - Range Planning for Exterior Restoration [1989]
- The Bellevue - Philadelphia, PA
Restoration and Adaptive Reuse [1986 - 1989]
Restoration Plan and Tax Certification Application [1988 - 1989]
- Saint Luke's Episcopal Church - Granville, OH
Emergency Stabilization, Phased Restoration and Long - Range Restoration Study [1983 - 1984]

SELECTED DESIGN & PRESERVATION AWARDS



Oldfields, Indiana



Virginia State Capitol

The Arlen Specter Center for Public Service at the Roxboro House

Preservation Alliance for Greater Philadelphia Preservation Achievement Grand Jury Award [2015]

SARA, Pennsylvania Chapter - Professional Special Recognition Award for Design [2015]

Cincinnati Museum Center

AIA Ohio, Excellence in Architectural Design [2011]

Cincinnati Design Awards, Honor Award - Architectural Advancement [2010]

Virginia State Capitol Restoration and Expansion

Style Magazine, Richmond, Virginia - Building of the Decade [2009]

AIA Virginia Design Awards, Excellence in Architecture [2008]

National Trust For Historic Preservation, Honor Award [2008]

Palladio Award, Adaptive Re - Use/Sympathetic Additions [2008]

Project of the Year Award, Greater Richmond Association for Commercial Real Estate, Best Institutional Project [2008]

AIA Virginia, Award of Excellence in Architecture [2008]

Building Design and Construction, Reconstruction Award [2007]

Mid - Atlantic Construction, Best Of 2007

AIA Pennsylvania, Citation of Merit [2007]

AIA New Jersey, Honor Award of Excellence in Architecture - Built Category for Design and Sustainability [2007]

President Lincoln's Cottage and Visitor Education Center

Victorian Society Award [2009]

Mid - Atlantic Construction, Best of 2008, Project of the Year: Restoration [2008]

The Patrick Henry Building [Old State Library]

AIA Pennsylvania, Architectural Excellence Honor Award [2007]

AIA Philadelphia Design Awards [2006]

Mid - Atlantic Construction Overall, Project of the Year [2005]

Oldfields Lilly House and Gardens

American Society of Landscape Architects, Vermont Chapter, Professional Award of Merit [2003]

Midwest Construction, Historic Preservation, Best Overall Project [2002]

Girard Trust / Ritz - Carlton Philadelphia

AIA Philadelphia [2001]

18th Annual Reconstruction Awards, Building Design and Construction [2001]

Philadelphia Chapter, AIA "Award of Recognition for Completed Projects." [2000]

Underline Barge Club

AIA Philadelphia, Recognition Award [1998]

MICHAEL C. FUNK / Senior Cost Estimator

Areas of Expertise

Cost Estimating
 Life-Cycle Cost Analysis
 Value Engineering
 Change Order Review and Negotiation
 Claims Preparation and Expert Witness Testimony

- o 30 years of experience in the development of budgetary, schematic, design development and construction document cost estimates.
- o Coordinator of all in-house cost consulting assignments.
- o Extensive background in value engineering and life-cycle cost analysis for projects implemented by private building owners as well as public agencies.

Representative Experience

Senior Cost Estimator for multiple construction projects for Yale University, such as the comprehensive renovations to *Calhoun College*, the new construction of the *Sculpture School Building* and the *Silliman College, Van Shef* academic conversion.

Senior Cost Estimator for the demolition and reconstruction of *Abraham Lincoln High School* for the School District of Philadelphia, and the new laboratory and classroom buildings at the University of Pennsylvania *School of Veterinary Medicine* in Philadelphia, Pennsylvania, along with numerous projects at the *New Bolton Campus* in Newtown, Pennsylvania.

Senior Cost Estimator for the new 480,000 SF *Temple University Health System Medical School*, in Philadelphia, Pennsylvania and for the 430,000 SF *Bayhealth Medical Center*, Kent Campus, in Dover, Delaware, which included Emergency Department, Radiology, Central Plant Upgrades, Conference Center, Parking and Site Development.

Senior Cost Estimator for the extensive façade repairs to the *US Custom House*, and for virtually every facility within *Independence National Historical Park*, including *Independence Hall*, in Philadelphia, Pennsylvania.

Professional Positions

Memberships/Associations

1979 - Present International Consultants, Inc.
 Senior Estimator/President

American Association of Cost Engineers
 Community Design Collaborative

1977 - 1979 American Medical Affiliates

National Trust for Historic Preservations
 Preservation Alliance of Greater Philadelphia
 Project Management Institute

Education

1977: B.S. Construction Management, Spring Garden College
 1975: A.S. Construction Engineering, Spring Garden College

ADDITIONAL STAFF BIOS

Bios for subject-matter experts and additional staff are included below.

Joseph Cappuccio, PE (WV PE No. 15132)

Quality Control / Quality Assurance



Joseph Cappuccio, PE, has more than 25 years of experience in fire protection engineering. He has extensive experience in code review, code equivalencies, and fire risk analyses using state-of-the-art fire modeling. Types of projects in which he has been involved include higher education, assembly buildings, laboratory facilities, residential buildings, office buildings, and special use facilities. Mr. Cappuccio has utilized computer fire modeling to analyze fire protection and life safety related building code issues, such as structural fire resistance and occupant tenability as well as fire protection system response and dynamic egress. He has also utilized computer modeling in litigation support and evaluation.

Notable project experience development of the fire protection and life safety master planning, computer based fire and egress modeling, code consulting, and master plan implementation for the United States Capitol Building in Washington, DC.

Wayne Moore, PE, FSFPE, FNSPE, CFPS, SET

Subject-Matter Expert, Detection/Alarm



Wayne Moore, PE, is a Principal and Vice President with 45 years of experience assisting clients in developing overall fire protection goals and objectives, conducting fire protection and compliance needs analyses, providing oversight for fire protection system installations, investigating system failures, and serving as a technical expert for the legal profession. He also develops and presents training, education, and certification programs for federal agencies, the National Fire Protection Association, building code officials, property owners, and fire department personnel.

He currently serves as a member and Chairman of the NFPA 72-2013 Emergency Communications Systems (ECS) Technical Committee and is the Editor of the five editions of the National Fire Alarm Code Handbook ®. In December of 2012, NFPA published his new book, "Designing Mass Notification Systems – A Pathway to Effective Communications." He is the 2009 recipient of the NFPA Standards Medal. Most notably, Mr. Moore serves as a member of the Technical Committee on the Protection of Cultural Resources (NFPA 909 and 914).

Donald Hopkins, Jr., PE

Subject-Matter Expert, Suppression



Donald Hopkins, PE, is a Senior Fire Protection Engineer with more than 23 years of experience. His expertise includes designing water-based fire suppression, gaseous suppression, fire alarm and emergency communication systems; conducting performance-based assessments including fire/smoke modeling and timed-egress analysis; and preparing code and life safety evaluations for new and existing buildings. He oversees fire protection system installations, system failure investigations, and serves as a technical expert for legal cases.

Mr. participates on the NFPA Technical Committees on Sprinkler System Discharge Criteria (NFPA 13) and Records Storage (NFPA 232). He has managed fire protection projects for numerous Government agencies, such as the Department of Defense, the U.S. Architect of the Capitol, and the Department of the Interior.

Notable project experience includes engineering and code consulting services for fire and life safety upgrades to the Library of Congress' James Madison Memorial Building, John Adams Building, and Thomas Jefferson Building; engineering services for several Smithsonian Institution projects; and engineering design and code consulting services for the expansion and renovation of the Philadelphia Museum of Art.

Morgan Hurley, PE, FSFPE

Subject-Matter Expert, Performance-Based Design



Morgan Hurley, PE, FSFPE, is a Director with 28 years of experience in fire protection engineering and code consulting. He is also a member of the firm's specialty modeling group in Baltimore, MD. Mr. Hurley is responsible for staff development and technical oversight and delivery of engineering team production. His expertise includes fire modeling and egress analysis, fire detection and suppression systems design, performance-based fire safety design, risk analyses, and building code and life safety consultation.

Mr. Hurley also serves as adjunct faculty at the University of Maryland and California Polytechnic State University, where he teaches graduate courses on advanced fire protection engineering topics. Prior to joining the firm, Mr. Hurley served as the Technical Director of the Society of Fire Protection Engineers. In this role, he was responsible for

identifying new and innovative methods of fire protection engineering and implementing them into practice. He chaired the NFPA Life Safety Code technical committee responsible for NFPA 101, Chapter 5 for nine years (2000 – 2009) and was a member of the committee during development of the current (2015) edition of the code. He is co-author of the textbook, "*Performance-Based Fire Safety Design*," published in 2014.

Notable project experience includes quality control reviews for the Michigan State Capitol and Wyoming State Capitol Buildings. He is also providing performance-based fire protection analysis and design services for the Smithsonian Arts and Industries Building: Center for Innovation, a historically significant building (constructed circa 1881) on the National Mall in Washington, DC.

Marco Virgili, AIA, NCARB, LEED AP

Associate, Project Architect



Marco Virgili has extensive experience in advancing the design documentation of historic buildings, including the Virginia School for the Deaf and Blind and the New Jersey Executive State House. He has also been leading efforts to procure advanced documentation services [such as laser scanning, digital orthophotography, and scan-to-BIM], establishing Quality Assurance / Quality Control procedures, and developing ways to integrate these services into complex project workflows. He is currently a key member of the Alamo Plaza Master Plan team, focusing on these aspects along with advancing the project's visualization components.

Notable project experience includes an exterior assessment report involving the surveying and documentation of the U.S. Custom House in Philadelphia and was also part of the design team for the restoration and renovation of the Cincinnati Museum Center's Historic Dining Rooms ["Project One"].

REQUIRED FORMS, LICENSES, AND CERTIFICATE OF INSURANCE

- Addendum Acknowledgement Form
- ☐ Designated Contact / Certification and Signature Form
- Disclosure of Interested Parties to Contracts
- ☐ Purchasing Affidavit
- ☐ State of West Virginia Certificate of Authority for Engineering Services
- ☐ Certificate of Insurance

ADDENDUM ACKNOWLEDGEMENT FORM

SOLICITATION NO.: *CE01 0211 GSD00000003*

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.

JENSEN HUGHES, Inc.

Company

John F. Stalri

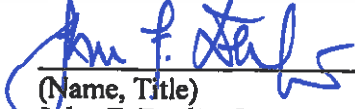
Authorized Signature

April 24, 2018

Date

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

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



(Name, Title)
John F. Devlin, PE, Vice President

(Printed Name and Title)
3610 Commerce Drive, Suite 817, Baltimore, MD 21227

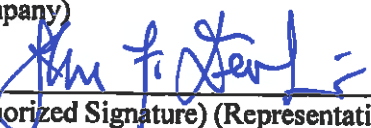
(Address)
+1 410-737-8677 / +1 410-737-8688

(Phone Number) / (Fax Number)
jdevlin@jensenhughes.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.

JENSEN HUGHES, Inc.

(Company)


(Authorized Signature) (Representative Name, Title)
John F. Devlin, PE, Vice President

(Printed Name and Title of Authorized Representative)
April 24, 2018

(Date)
+1 410-737-8677 / +1 410-737-8688

(Phone Number) (Fax Number)

West Virginia Ethics Commission
Disclosure of Interested Parties to Contracts

(Required by W. Va. Code § 6D-1-2)

Contracting Business Entity: JENSEN HUGHES, Inc. **Address:** 3610 Commerce Drive, Suite 817
Baltimore, MD 21227
Authorized Agent: Linda B. Harper **Address:** 2019 Washington Street East
Charleston, WV 25305
Contract Number: CEOI 0211 GSD180000003 **Contract Description:** WV State Capitol Building
Fire Protection & Sprinkler Design
Governmental agency awarding contract: State of West Virginia, Department of Administration, Purchasing Division

Check here if this is a Supplemental Disclosure

List the Names of Interested Parties to the contract which are known or reasonably anticipated by the contracting business entity for each category below (attach additional pages if necessary):

1. Subcontractors or other entities performing work or service under the Contract

Check here if none, otherwise list entity/individual names below.

Preservation Design Partnership, LLC
International Consultants, Inc.

2. Any person or entity who owns 25% or more of contracting entity (not applicable to publicly traded entities)

Check here if none, otherwise list entity/individual names below.

3. Any person or entity that facilitated, or negotiated the terms of, the applicable contract (excluding legal services related to the negotiation or drafting of the applicable contract)

Check here if none, otherwise list entity/individual names below.

Signature:  Date Signed: April 24, 2018

Notary Verification

State of Maryland, County of Baltimore County:

I, John F. Devlin, the authorized agent of the contracting business entity listed above, being duly sworn, acknowledge that the Disclosure herein is being made under oath and under the penalty of perjury.

Taken, sworn to and subscribed before me this 24th day of April, 2018.


Notary Public's Signature

To be completed by State Agency:

Date Received by State Agency: _____
Date submitted to Ethics Commission: _____
Governmental agency submitting Disclosure: _____

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 OTHER 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: JENSEN HUGHES, Inc.

Authorized Signature:  Date: April 24, 2018

State of Maryland

County of Baltimore County, to-wit:

Taken, subscribed, and sworn to before me this 24th day of April, 2018.

My Commission expires May 19th, 2019.

AFFIX SEAL HERE

NOTARY PUBLIC 
Purchasing Affidavit (Revised 07/07/2017)

CERTIFICATE OF *Authorization*

STATE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS

*The West Virginia State Board of Registration for Professional Engineers
having verified the person in responsible charge is registered in
West Virginia as a professional engineer for the noted firm, hereby certifies*

JENSEN HUGHES, INC.

C02884-00

Engineer in Responsible Charge: ARTHUR J PARKER - WV PE 016967

*has complied with section §30-13-17 of the West Virginia Code governing
the issuance of a Certificate of Authorization. The Board hereby notifies you of its
certification with issuance of this Certification of Authorization for the period of:*

January 1, 2018 - December 31, 2019

providing for the practice of engineering services in the State of West Virginia.

IF YOU ARE REQUIRED TO REGISTER WITH THE SECRETARY OF STATE'S OFFICE,
PLEASE SUBMIT THIS CERTIFICATE WITH YOUR APPLICATION.



IN TESTIMONY WHEREOF, THE WEST VIRGINIA STATE BOARD OF
REGISTRATION FOR PROFESSIONAL ENGINEERS HAS ISSUED THIS COA
UNDER ITS SEAL AND SIGNED BY THE PRESIDENT OF SAID BOARD.

BOARD PRESIDENT

