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J. MICHAEL THOMPSON, P.E.

SUMMARY

Mr. Thompson is a registered Fire Protection Engineer with over 39 years of specialized experience and directly applicable experience in the fire protection engineering field. In addition to his recent project experience found below, Mr. Thompson has acted as Project Manager for fire protection upgrade designs on a number of large, historic and monumental modernization projects. Specialty areas of expertise include: Building and Fire Code Analysis, Life Safety Assessments, Fire Risk Evaluations, Fire Protection and Life Safety Systems Design, Computer Fire Modeling, Hydraulic Analysis and Litigation Support.

EDUCATION

University of Maryland, College Park, MD - B.S. Fire Protection Engineering, 1977

REGISTRATION

Professional Engineer - Virginia, Maryland, Delaware, Pennsylvania, North Carolina

PROFESSIONAL AFFILIATIONS

Professional Member, Society of Fire Protection Engineers (SFPE)
Member, National Fire Protection Association (NFPA)
Life Member, Past Board Member and President, Manassas Volunteer Fire Company, Inc.
Member, Technical Correlating Committee, Installation of Sprinkler Systems, National Fire Protection Association

SPECIALTY FIELDS

- Fire Protection Systems Design
- Building/Fire Code and Life Safety Analysis
- Building Construction Evaluations
- Performance Based Design Analysis
- Computer Egress and Fire Modeling
- Fire Protection and Alarm System Testing
- Forensic Investigation and Litigation Support

CAREER HISTORY

FORCON International - Conducts forensic investigation/expert witness services regarding fire incidents and performance of fire protection systems.

GHD, Inc., Richmond, VA - Sr. Project Manager - Fire Protection. Manage large fire protection and life safety design projects involving cultural, industrial, residential, commercial, storage and residential facilities. Conducted forensic investigation/expert witness services regarding fire incidents and performance of fire protection systems. Responsibilities also include overall office Quality Assurance/Quality Control Manager. GHD merged with The Protection Engineering Group in 2014.

The Protection Engineering Group, Inc., Chantilly, VA - Secretary and Partner. Project fire protection engineer responsible for fire protection, life safety, and code consultation to owners, architects, engineers, and contractors. Responsible for design projects involving cultural, industrial, residential, commercial, storage and residential facilities. Conducted forensic investigation/expert witness services regarding fire incidents and performance of fire protection systems.

Manassas Volunteer Fire Company, Inc., Manassas, VA; former active volunteer firefighter, past line officer and President.

Gage Babcock & Associates, Washington, DC Area - Senior Engineer, Project Manager and Principal responsible for fire protection and life safety engineering, consulting and design projects in various institutional, cultural, industrial, special hazard processes, storage, commercial, retail, higher education and residential projects. Conducted forensic investigation/expert witness services regarding fire incidents and performance of fire protection systems.

Montgomery College, Rockville, MD - Instructor for college course titled "Fire Suppression and Detection Systems" offered through the Department of Engineering Technologies.

Department of Fire Rescue Services, Bureau of Fire Prevention, Montgomery County, MD - Fire protection engineer responsible for technical review of commercial and residential building projects for compliance with building and fire codes. Also responsible for the field inspection, testing and acceptance of fire protection systems as well as field inspections for building and life safety code compliance.

General Services Administration, National Capitol Region, Washington, DC - Project fire protection engineer responsible for providing detailed fire protection and life safety surveys of Federally-occupied spaces, development of original fire protection systems and life safety design concepts, review of shop drawings and contract documents for compliance with fire and building code requirements, and acceptance testing of fire protection systems.

General Services Administration, Central Office, Washington, DC - Project fire protection engineer responsible for providing fire protection consultation to regional fire protection engineers, performed detail reviews of fire protection and life safety plans, assisted in providing evaluation of smoke control systems in Federal building nationwide and the development of engineering recommendations.

University of Maryland, Department of Fire Protection Engineering. - Research assistant responsible for assisting in research study on the development of sprinkler patterns based on various flows and sprinkler orientations.

College Park, (Prince Georges County) Volunteer Fire Department, Inc. College Park, MD; Part time paid and volunteer firefighter, Prince Georges County, MD.

Metropolitan Washington Council of Governments, Washington, DC. - Part time intern acting as liaison between local fire departments and new subway system, including the development and coordination of fire protection features and emergency response between various jurisdictions.

Hyattsville Volunteer Fire Department, Inc., Prince Georges County, MD; Volunteer firefighter.

REPRESENTATIVE EXPERIENCE

(GSA) U.S. Department of Homeland Security (DHS) Headquarters and National Operations Center, Washington, DC - Project Principal for code consulting and the lead engineer for the design of automatic sprinklers and voice fire alarm and mass notification sys-tem for the three story below grade 420,000 GSF DHS Operations Center on the St. Elizabeth's campus.

The George Washington University, Ames Hall Renovation and Addition, Washington, DC - Project Principal responsible for fire protection system design, voice fire alarm system design and fire protection/life safety consulting services for the complete renovation of the existing 16,000 square foot, three-story Ames Hall structure and a new 56,000 square foot, five-story addition.

DHS Headquarters Adaptive Reuse of 18 Buildings, Washington, DC - Project Manager responsible for fire protection and life safety code consulting for this Project principal and lead engineer for the retrofit design of automatic sprinklers and voice fire alarm systems in 18 buildings compromising the U.S. Department of Homeland Security (DHS) Headquarters on the East campus of St. Elizabeths, Washington, DC. Project Principal for code consulting and the lead engineer for the design of automatic sprinklers and voice fire alarm and mass notification system for the three story below grade 420,000 GSF DHS Operations Center on the St. Elizabeths campus.

(GSA) Potter Stewart Courthouse Renovation & Modernization, Cincinnati, OH - Principal-in-Charge of fire protection upgrades and code consulting as part of this $40 million renovation and modernization effort. Services include building and fire code consulting and sprinkler and fire alarm design. Construction administration included review of all fire protection submittals and field acceptance testing (witnessing) of fire protection systems. This historic building has approximately 500,000 gsf and various historic areas/features.

Architect of the Capitol, Washington, DC - Project Manager for the performance of all fire protection and life safety projects under an Indefinite Delivery Contract with the Architect of the Capitol (AoC). Services included the assessment and evaluation of fire protection and life safety systems, design of automatic fire suppression, alarm and detection, and special hazard systems, egress evaluations, building and fire code reviews and witnessing acceptance testing of fire

protection systems. Provided full time on-site (night work) construction administration for retrofit sprinklers and fire alarm systems in the Library of Congress Thomas Jefferson and John Adams Buildings. Buildings under the jurisdiction of the AoC include the U.S. Capitol, Senate, House of Representatives, Botanical Gardens, U.S. Supreme Court, and Library of Congress Buildings.

Weapon Test Facility, Dahlgren, VA (NAVFAC), Washington, DC - Project engineer for building and fire code consulting and fire protection systems design for the new high-tech rail gun test facility. Work included the an evaluation of the on-site water supply including flow testing, development of building code and egress analysis, fire suppression and addressable fire alarm system design for the control and support building as well as designer of a combination addressable and hard-wired fire alarm design for the firing building. The weapons firing building had unique issues with electromagnetic field interference that was evaluated and addressed in the fire alarm design. Work included the review of all contractors' shop drawings as well as field inspections and acceptance testing of fire protection systems. This project was one of several fire protection task orders completed for a NAVFAC IDIQ contract.

Explosive Development Facility, Indian Head, MD (NAVFAC) - Project manager and engineer for building and life safety code consulting and fire protection systems design for eight buildings, including 3 high hazard explosive process buildings, magazine storage facility, new office building, renovation of a laboratory building and 2 industrial facilities. Work included the fire protection designs for 30 high speed deluge systems, 24 overhead deluge systems, several wet- and dry-pie sprinkler systems, high-speed detection systems, and mass notification systems in the buildings. Fire protection system designs included full pipe layouts and hydraulic calculations for this design/build project. As the NAVFAC designer of record, work includes a review of all fire protection shop drawings as well as witnessing all fire protection systems acceptance testing and conducting occupancy inspections.

National Zoological Park, Washington, DC - Project manager and engineer for multiple tasks thru an IDIQ contract. Task orders included a site wide water supply analysis including numerous fire water flow tests, determination of sprinkler and non-sprinklered fire demands for buildings in the park, the evaluation of underground fire mains, and the development of recommended improvements. Other tasks include the designs for the retrofit sprinklers and addressable voice fire alarm systems in 10 animal exhibit and support buildings. Most designs include full pipe layouts supported with hydraulic calculations.

H.D. Cooke Elementary School, Washington, DC - Provided general building and fire code consulting for renovation of historic school.

The College of William & Mary Fire Protection Study, Williamsburg, VA - Lead Fire Protection Engineer for a fire protection systems assessment of CWM residence halls and other facilities. Developed a detailed Inspection, Testing & Maintenance Manual for a variety of fire protection systems on campus to be used to support long term fire protection maintenance activities and planning.

New American University School of International Service (SIS), Washington, DC - Project Engineer for code consulting services for this new 220,000 sq-ft academic facility.

Pennsylvania State University - Project Manager and lead design engineer for the retrofit of sprinkler and fire alarm systems in 27 dormitories, totaling 1.65 million square feet and ranging from two to ten stories in height. Design included full sprinkler layout and pipe routing as well as construction period services, including acceptance testing.

National Institutes of Health (Building 10), Bethesda, MD - Project manager, designer and preparer of bid plans and specifications for a retrofit sprinkler system in 1.3 million square feet of hospital, laboratory, business, assembly and shop space at the NIH Clinical Center, Building 10. Design included extensive phasing for the installation to minimize the impact on the facility occupants (24 hour operation) and down time of existing fire protection systems.

National Institutes of Health (Natcher Building), Bethesda, MD - The William H. Natcher Building is a 1.4 million square foot, seven story high-rise office building. Features include a 1,000 seat auditorium, large conference center, kitchen and dining facilities, a fitness center, travel agency, employee credit union, self service store, employee health unit and a four level, 585,000 square foot underground parking garage. Designed fire protection systems and provided construction period services to include inspection of passive fire protection features of the complex as well as full acceptance testing of the fire protections systems in the buildings. The building design includes three separate atriums and included several challenging life safety issues, such as the successful egress of over 1,500 people from a below grade conference center.

U.S. Department of Labor Building, Washington, DC - Project manager and fire protection systems designer for 1.4 million sq. ft. retrofit sprinkler installation, building fire alarm system replacement, architectural lobby upgrades and building lighting replacement at the U.S. Department of Labor Headquarters (Francis C. Perkins Building). Design included extensive phasing documents to insure minimal impact on this fully occupied building.

Federal Trade Commission, Washington, DC - Project engineer for the design of a retrofit sprinkler system and a fire alarm system upgrade in the historic Federal Trade Commission Building in Washington, D.C. Work included unique design challenges to provide proper sprinkler coverage and maintain the historical fabric of the building.

Virginia Polytechnic Institute and State University, Blacksburg, VA - Project manager and lead engineer for study, design and post design services for the retrofit installation of automatic sprinklers and fire alarms throughout five high-rise dormitories. Buildings range from 7 to 12 stories in height for a total of 820,000 square feet. Work included full sprinkler placement and pipe routing, pipe concealment details, hydraulic calculations and construction period services.

Instructor / U.S. Army Corp of Engineers, Various Locations - One of two instructors for a 36-hour fire protection PROPOSPECT training course. Course was focused on basic fire protection engineering with twelve courses taught in various locations throughout the U.S.

Department of Fire/Rescue Services, Montgomery County, MD - As a former plans review official of the Department of Fire/Rescue Services, Bureau of Fire Prevention, Montgomery Co., MD, reviewed and performed acceptance testing on over 1000 fire protection systems in both

high- and row-rise buildings. Responsibilities included coordinating the reviews and acceptance of the fire protection systems with the local fire departments to insure harmonization with operational procedures of the county's fire service.

National Archives, Washington, DC - Project Manager responsible for development of retrofit sprinkler design in the historic national Archives. Work included the design of fire protection for the historic charter documents and rotunda, including both gaseous and sprinkler suppression systems.

New and Old Executive Office Buildings, Washington, DC - Conducted engineering study and fire and Life Safety Code consulting for development of three tunnel alternatives between the New and Old Executive Office Buildings. Work included the development of dynamic exit calculations due to the length of the tunnel and security requirements.

High-rise Office Building, Bethesda, MD - Developed calculations and design criteria for interior water curtain equivalence for exposure protection in a high-rise office building in Maryland.

Burton Tower, University of Michigan - Project Fire Protection Engineer responsible for developing equivalencies for the 11-level Carillon Tower. The tower is approximately 191 feet tall with occupancy levels varying from floor to floor but mainly consisting of small classrooms and offices. The building has only one exiting stairway.

Hotel DuPont, Wilmington, DE - Project Manager and lead engineer responsible for developing feasibility study for the installation of automatic sprinklers in the historic Gold Ballroom of the Hotel DuPont. The hotel (circa 1913) had undergone an extensive retrofit sprinkler effort with the exception of the Gold and DuBarry ballrooms and their supporting lobbies and foyers. This effort was to provide the required retrofit sprinklers in the ballrooms and support spaces. Challenges in maintaining the historic fabric of the ornate interior finishes (walls and ceilings) and avoiding asbestos containing materials were overcome.

Ronald Reagan National Airport, Washington, DC - Project Engineer responsible for providing code consulting services for the new underground pedestrian tunnel connecting the main terminal and the south parking structure. Exit calculations and egress analysis was performed for this 650 foot tunnel.

National Building Code Revisions, Nationwide - Developed and processed revisions to the nationally recognized building and fire safety codes to include revisions to the National Building Code (BOCA), International Building Code (ICC), and the Life Safety Code (NFPA).

Open-end Fire Protection Services, James Madison University, Harrisonburg, VA - Project Manager for indefinite delivery contract. Task include such projects as the retrofit design of full automatic sprinkler protection throughout the eight-story high-rise Eagle Hall dormitory, determination of existing fire resistive structural requirements in Gibbons Hall, an analysis of problems associated with a site-wide fire pump and the design of new dormitory fire pumps.

White House Press Room, Washington, DC - Project engineer responsible for developing code equivalencies for egress deficiencies for the basement pressroom of the West Wing of the White House. Work also included the retrofit design of automatic sprinklers and fire alarm into the basement offices and first floor press room.

Dorchester County Jail, Dorchester, MD - Prepared and submitted an expert's report to the U.S. District Court for the District of Baltimore, MD, regarding fire safety issues in the historic Dorchester Count jail. The effort was in support of a suit brought by the inmates claiming that the jail, built in the late 1800s, did not provide adequate life safety protection.

Virginia State Penitentiary, Richmond, VA - Prepared and submitted an expert's report to the U.S. District Court for the Eastern District Court of Virginia (Richmond, VA) regarding fire safety issues in the Virginia State Penitentiary. This effort was in support of a suit filed by the inmates claiming that the state prison, which was eventually closed, did not provide adequate life safety protection.

Nursing Home, Norfolk, VA - Investigated a multi-death nursing home fire. Developed expert's analysis and prepared a report in support of a suit stemming from the fire. Suit claimed gross negligence in that residents were not adequately protected and that staff did not react properly at the onset and throughout the fire emergency. Report and testimony was presented before the Medical Malpractice Review Board of the Commonwealth of Virginia.

EPA Research and Administration Facility, Research Triangle Park, NC - Project engineer responsible for all fire protection and life safety for new one million square foot laboratory, office, computer, and research facility. Project site included six wing high-rise office/laboratory building, computer center, daycare building, two parking structures and a high-bay laboratory facility. Code consulting include the development of building and fire code equivalencies to allow high-tech laboratory spaces to be intermingled with office and atrium spaces.

Washington Metropolitan Area Transit Authority (WMATA), Greenbelt, MD - Project engineer for code analysis and construction document review for new rail car maintenance facility.

GMU-Prince William-Manassas Recreational Center, Manassas, VA - Project engineer for code consulting and design for automatic sprinklers in this two-story 111,000 square foot aquatic and recreational center. Construction period services included site visits to resolve several construction issues related to egress, fire resistance construction and fire protection system installations.

Building and Fire Safety Code Equivalencies, Various Jurisdictions Nationwide - Negotiated and processed over 200 building and fire safety code equivalencies in many jurisdictions, including local, state and federal levels over the past 20 years. Written reports for equivalencies were accompanied with substantiations ranging from literature research to fire modeling.

National Archives and Records Administration, Archives II, College Park, MD - Project engineer for full acceptance testing of high-rise voice fire alarm system in this high-rise archival

storage and research facility. Work included the testing and acceptance of the multiplex addressable system containing over 6,000 devices.

National Archives and Records Administration, Archives I, Washington, DC - Project engineer for code consulting and fire protection systems design for the renovation of this historic high-rise archival and research facility. Work included development of several significant code equivalencies fore egress and fire resistance requirements for the historic and architectural sensitive building. Work also included both the passive and active protection of the historic charter documents, including the U.S. Constitution and Declaration of Independence.

Office of Compliance Consultants, U.S. District Court, New York City, NY - Fire protection expert for the District Court of New York on matters related to fire safety issues in numerous detention facilities in New Your City, including the Bronx jail and seven separate jails on Riker's Island. Work included fire protection system evaluations and life safety surveys of each facility and the development of expert reports. Work also included the providing of a deposition and testimony at hearing.

Warehouse, Brownsville, TX - Expert for defense of sprinkler contractor in litigation involving sprinkler system failure in clothing warehouse. Support also provided deposition in support of the defense.

Department of Treasury Headquarters Building, Washington, DC - Project engineer for code consulting on this high-rise office and laboratory building. Work included unique code equivalencies due to the high security requirements and challenging design need to allow laboratory spaces in the high-rise building.

National Zoological Park Water Supply Study, Washington, DC - Project engineer for a water supply analysis at the National Zoological Park. Study included numerous fire flow water tests, determination of sprinkler and non-sprinklered fire demands for buildings in the park, the evaluation of underground fire mains, and the development of recommended improvements.

U. S. Department of Agriculture Headquarters, Beltsville, MD - Project engineer for code consulting on the new four building headquarters complex.

The College Park Aviation Museum, College Park, MD - Project engineer for code consulting and construction period services for this new aviation museum on the grounds of the historic College Park Airport. In addition to providing the design team building and fire safety code consulting, work included witnessing and acceptance testing of the fire protection systems and other fire protection features in the building.

Good Practice Safety Manual - Participated as fire protection consultant in the development of a good practice fire protection safety manual for a large worldwide pharmaceutical company.

Potomac Annex Building #2, Washington, DC - Project engineer for the fire protection and life safety existing conditions assessment, code evaluation, and the development of a concept design

for improvements to this architecturally sensitive building. Potomac Annex Building #2 is the original Naval Observatory.

Hirshhorn Museum and Sculpture Garden, Washington, DC - Project engineer for the fire protection and life safety existing conditions evaluation for this four-story Smithsonian Institute art gallery.

Patterson and Cleveland Elementary Schools, Washington, DC - Project engineer for code consulting on the renovation of two elementary schools. Among general code evaluations, the projects included evaluation of existing structural fire resistance and means of egress improvements.

Wheaton High School, Wheaton, MD - Project engineer for code consulting on the renovation and addition to a two-story high school. Among general building and fire code evaluations, the project included an evaluation of the impact on the existing building due to the addition of several new building wings.

Letterkenny Army Depot, Chambersburg, PA - Lead engineer in the survey and evaluation of over 300 sprinkler systems in over 40 storage and industrial buildings. Work included fire flow testing, hydraulic analysis, destructive investigation of the fire protection systems as well as determination of sprinklered and nonsprinklered fire flow demands.

Defense General Supply Center, Richmond, VA - Project manager for the survey and evaluation of over 50 sprinkler systems in 20 storage, industrial and office buildings. Work included fire flow testing, hydraulic analysis, destructive investigation of the fire protection systems and determination of both sprinklered and nonsprinklered fire flow demands.

General Services Administration, Franconia, VA - Project engineer for the evaluation of the site water distribution system. Work included fire flow testing of the site underground system to determine friction coefficients and the determination of fire flow demands.

Virginia Baptist Hospital, Lynchburg, VA - Project engineer for the development of a fire protection Master Plan for this 317 bed licensed facility. Work on this project included a thorough survey and site investigation to identify the extent and condition of all fire protection systems, and to identify the location and condition of all fire rated partitions and smoke barrier walls. Drawings were developed to depict all findings for current programmed improvements and future renovation projects

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Veterans Affairs Medical Center, Saginaw, MI - Project manager and engineer for performing a Fire Safety Evaluation System (FSES) assessment on this 114 Veterans Affairs hospital.

Various Nursing Homes, Nationwide - Project engineer for evaluating and assessing the levels of fire protection and life safety in several nursing homes nationwide. Work ranged from simple evaluation of construction type and responding to specific deficiencies identified under certification programs, to developing fire and life safety equivalencies through utilizing the Fire Safety Evaluation System (FSES).

Howard T. Markey National Courts Building, Washington, DC - Project manager and design engineer for the retrofit design of sprinkler protection and fire alarm replacement in this occupied high-rise court building. Design included phased installation to minimize disruption of occupants and court proceedings as well as development of specialized installation procedures to avoid disruption of asbestos containing fire proofing materials. Building houses the U.S. Courts of Federal Claims.

Norfolk Southern Railroad, Norfolk, VA - Project manager and lead engineer for the study and design of retrofit sprinklers in industrial coal transfer facility. Work included the retrofit sprinklers along parallel high speed coal carrying conveyor belts, belt tunnels, and transfer house as well as renovations to a 1,800 foot long pier standpipe system. Work also included the design of retrofit sprinklers protecting the ship loaders utilizing a limited self contained water supply on the loaders.

Cargill Inc., Chesapeake, VA - Project engineer for the study and evaluation of a large existing deluge sprinkler system and the design of improvements protecting a hexane extraction plant. Work included the hydraulic analysis of the existing system to develop cost effective design approaches for required modifications to comply with current standards.

Washington Navy Yard, Washington, DC - Evaluated delamination of structural fire proofing material in three (3) four story office buildings (240,000 sq-ft) and developed recommendations for corrective action.

General Services Administration (Central Office / NCR) - As a fire protection engineer employed by GSA (over a 4 year period from 1977 through 1981), conducted a wide variety of fire protection engineering services including building surveys, plan reviews, building and fire code consulting, fire investigations and policy development.

Bolling Air Force Base (Blanchard Barracks), Washington, DC - Project Manager and Lead Engineer for the retrofit of fire sprinkler and fire alarm systems in this high-rise BEQ residential building. Implemented unique sprinkler pipe routing design due to low ceiling/slab conditions.

Federal Bureau of Prisons, Washington, DC - Conducted fire and life safety analysis and code consulting for detention and correctional facilities, including historical jails in Dorchester County and Talbot County, MD; the Virginia State Prison in Richmond, VA, and seven jails on Riker's Island and the Bronx jail in New York City.

National Museum of American History (Smithsonian Institution) - Code evaluation and sprinkler and fire alarm design for the West Wing and Halls 8,9 & 10.

U.S. Army Defense General Supply Center (DGGS), Richmond, VA - Project manager for the survey and evaluation of over 50 sprinkler systems in 20 storage, industrial and office buildings. Work included fire flow testing, hydraulic analysis, destructive investigation of the fire protection systems and determination of both sprinklered and non-sprinklered fire flow demands.

Social Security Administration, Baltimore MD - Project manager and fire protection systems designer for a sprinkler system in high rise facility on the Woodlawn Campus. Effort included code consulting, water flow testing and fire pump design.

Alice Deal Middle School, Washington, DC - Provided general building and fire code consulting for renovation of historic school.

Dulles Airport Parking Deck (Daily Lot #1), Dulles, VA - Project Engineer for the design of fire protection systems (suppression, alarm and standpipe) for this free-standing, 5-story building. Facility interfaces with Main Terminal via tunnels.

Rockledge Elementary School, Woodbridge, VA - Prepared basis for design report for the installation of a new automatic sprinkler system.

George Mason University (Phase 2 Academic Building), Arlington, VA - Performing on-call building and fire code consulting for this new 225,000 gsf academic building. (BCOM Project)

USDA Headquarters Office Complex, Beltsville, MD - Project Engineer for building and fire code consulting services for this new, multi-building headquarters complex. Provided code consulting for 300,000 sq-ft of office and administrative space in 4 buildings as part of this $37 million design-build procurement.

Wolf Trap Filene Center (National Park Service), Vienna, VA - Performed on-site review of existing sprinkler and fire alarm installations to determine appropriateness of systems, the need for the systems based on past and current code requirements and recommendations for improvements/ replacement of the systems and maintenance.

Montgomery County Circuit Courthouse, Rockville, MD - Survey the existing facility to identify major issues that may impact the design for the planned annex addition. Prepare a Code Analysis Report of the facility, which includes discussion on applicable codes, construction requirements, occupancy and vertical separation, egress, identification of any chemical or flammable liquids use or storage, and fire protection system requirements.

Academy Art Museum - Easton, MD - Provided code consulting for renovation and addition to existing museum in Easton, Md. Work included negotiations with State Fire Marshall to resolve smoke control requirements and means of egress deficiencies in two- story atrium.

Architect of the Capitol Senate Childcare Center, Washington, DC - Project Engineer for fire alarm and sprinkler system testing and structural fire protection assessment and reporting.

Bolling Air Force Base Youth Center Washington, DC - Project Manager for sprinkler and fire alarm systems design for this childcare facility with classrooms, recreation facilities and a gymnasium. Project also included building and fire code consulting services.

Mount Vernon Distillery, Mt. Vernon Ladies Association - Project manager for code consulting and fire alarm design for new "historic" distillery originally located on Mount Vernon property.

George Washington University International House, Washington, DC - Prepared a building code analysis of the facilities, including determining code criteria and requirements for fire alarm system, fire control room, firefighter communication system, wet sprinkler system, stair pressurization system, basement exit analysis, and possible rearrangement of exits to accommodate new fire control room.

Durant Community Center, Alexandria, VA - Provided fire protection consulting services to resolve issues related to firewall construction in this City if Alexandria facility.

Hunter Holmes McGuire VAMC, Richmond, VA - Performed an atrium smoke control and life safety study to evaluate a change in occupancy in the hospital atrium. Developed contract documents to modify sprinkler and fire alarm system to accommodate atrium changes. Prepared fire pump study to evaluate circumstances behind fire protection system over pressurization and developed contract documents for fire pump modifications to resolve issue.

Fauquier Hospital, Warrenton, VA - Provided building and fire code consulting during construction of new wing and the overall renovation of the Hospital. Resolved issues related to construction classification, fire resistance rating equivalencies of structural members, and development of fire/life safety plans.

World Bank Headquarters, Washington, DC - Project manager for retrofit design and construction technical supervision of a pre-action sprinkler system and associated fire detection and alarm system in the Bank's main data center in this high-rise office and conference center.

The Sulgrave Club, Washington, DC - The Sulgrave Club is a historic women's club in Dupont Circle, Washington, DC. The building has a mixed occupancy consisting of a hotel, business offices, and banquet facilities. Design services provided included detailed retrofit sprinkler system design throughout the building and full replacement of the existing fire detection and alarm system. The designs were developed for phased construction over multiple summers.

Georgetown University (Reiss Science Building), Washington, DC - Project Manager for comprehensive feasibility study and design for sprinkler retrofit. Services included building and fire code consulting, hazard assessment, hydraulic analysis and design, and assessment of existing fire alarm system and options for re-use. Prepared contract drawings and specifications.

Washington Metropolitan Area Transit Authority (WMATA), Greenbelt, MD - Project engineer for code analysis and construction document review for new rail car maintenance facility.

Wilbur J. Cohen Building, Washington, DC - Project Engineer for this comprehensive fire protection system retrofit design for this high-rise Government administration building with over 750,000 sq-ft of space. Project engineer for the analysis of building water supply and booster fire pump to resolve water supply issues and review of sprinkler and fire alarm systems designs.

Architect of the Capitol, Longworth House Office Building, Washington, DC - Previous studies had identified egress deficiencies in the Longworth House Office Building including insufficient exit enclosure, travel distance to exits, exit discharge, and exit capacity. Principal in

charge responsible for assisting in the development of construction documents to eliminate the egress deficiencies. Responsibilities included development of a code analysis identifying requirements for the egress components, establishing equivalencies where prescriptive code requirements could not be obtained due to the historic nature of the building, and offering miscellaneous consulting to the team developing the construction documents.

Mundy Building Fire Resistive Ceiling Replacement, Lynchburg, VA - Project Manager for design of upgrades to the existing ceiling systems in the Mundy Building at Virginia Baptist Hospital in order to provide a 1-hour fire resistive floor/ceiling assemblies in building, which would change the construction classification of the building from Type 2 (000) to Type 2 (111) construction. Increased construction type required in order to pass FSES.

Rayburn House Office Building Prescriptive Egress Study, Washington DC - Project Manager responsible for the development of study. Previous studies had identified egress deficiencies in the Rayburn House Office Building including insufficient travel distance to exits, exit discharge, and exit capacity. Previous studies have attempted to resolve these deficiencies through the use of performance based design. Responsible for the development of an egress study to develop corrective actions that could be utilized to eliminate these deficiencies in a prescriptive manner, utilizing equivalencies where strict compliance with the code was not possible.

George Mason University, Fine Arts Building, Fairfax, VA - The Protection Engineering Group provided fire protection and life safety code consulting for the renovation of the two story Fine Arts Building on the Fairfax Campus of George Mason University. Work included a review of the original construction drawings and historic code requirements to identify the original requirements pertaining to occupancy, construction type, egress and adjacent building separations and the development of a course of action to address the current code requirements and how they impacted the proposed renovation.

Cafeteria Kitchen Fire Protection Inspections in General Services Administration's Buildings, MD, DC, VA - Lead Project Engineer/Manager responsible for technical inspections of over 175 commercial cooking hoods and 87 engineered and pre-engineered fire suppression systems in kitchens in 35 federally owned buildings in the Washington, D.C. metropolitan area. Responsibilities included code compliance inspection of the hoods and associated fire suppression systems. Fire suppression systems were inspected for installation compliance with codes, manufacturer's design and installation requirements and listing authorities. Work also include a review to determine if proper service and maintenance techniques were being performed.

TECHNICAL ARTICLES AND PRESENTATIONS

- "Room Smoke Detectors for Nursing Homes?" American Health Care Association Provider Magazine - March, 1987.
- "Complying with the Americans with Disabilities Act', presented at four separate American Society of Hospital Engineers' symposiums, 1991.
- "ADA Compliance Checklist for Long-Term Care Facilities ", manual prepared for the American Health Care Association, December 1991.
- Technical advisor for the film "Fire Safety in Health Care Facilities", National Fire Protection Association, 1991.
- Technical reviewer for the film "Emergency Planning in Residential Care Homes for Older Adults", Bonnie Walker & Associates, Inc., 1992.
- "Integrating Security and Life Safety into Courthouse Designs", Consulting Specifying Engineer- June, 1996.
- "Campus Fire Safety Today", Facilities Manager - November/December 2001
- "Campus Fire Protection", presentation to joint meeting of Maryland/District of Columbia Chapter of Eastern Region Association of Physical Plant Administrators (MD/DC ERAPPA) and Maryland Chapter International Facilities management Association, September 2001.
- "Retrofit of Fire Protection Systems in High-rise Dormitory Buildings: Virginia Tech, - A Case History", presentation to Eastern Regional Association of Physical Plant Administrators (ERAPPA) Educational Conference and Annual Meeting, October 1999.
- "Fast Track Sprinkler Installation", co-presenter, presented to the New Jersey Chapter Association of Physical Plant Administrators (NJAPPA), October, 2000.
- "Retrofit Sprinklers", presented to Association of College and University Housing Officials, International, June 2000 Annual Conference.