John Helwig, PE

Licensed to practice engineering in PA, NY, NJ, DE, MD, VA, DC, WV, NC, CT, MA, & ME

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Twenty-four years experience as a practicing licensed professional engineer. Experienced in fire protection, fire sprinkler, fire alarm, fire suppression systems, forensic engineering, & security systems. This includes design, engineering, construction, checkout, certification, testing, maintenance and inspection. Knowledgeable of NFPA 13, 25, 2001, International Building Codes and related codes.

Professional Engineering Licensure in the following states:

- Pennsylvania
- New York
- New Jersey
- Delaware
- Maryland
- Virginia
- District of Columbia
- West Virginia
- North Carolina
- Connecticut
- Massachusetts
- Maine
- National Council of Examiners for Engineering and Land Surveying (NCEES) designated Model Law Engineer. Because I am a NCEES Model Law Engineer, I can obtain professional engineer licenses in additional states, often on an expedited basis (a week or two). I am a NCEES Council Record Holder.

Contractor License Credentials in the following states:

- Virginia – Designated Employee status for Class A state contractor license – passed State of Virginia Class "A" contractor license exams
- West Virginia – passed State of West Virginia contractor business and law license exams.

- Delaware State Fire Marshal Office Class 1 fire alarm signaling and fire suppression certificates.
- Maryland State Fire Marshal Office Designated Qualified Individual (DQI) for fire sprinkler.
- I can obtain additional state and municipal contractor licenses and credentials as needed. I already have the technical qualifications - professional engineering licenses - and I have the educational background (MBA) to pass the state contractor business and law exams.

Education

- Bachelor of Science in Mechanical Engineering (BSME)- Lehigh University, Bethlehem, Pa.
- Master of Business Administration (MBA)– Concentration in Finance - Lehigh University, Bethlehem, Pa.
- Former Adjunct Professor – Department of Civil Engineering - Drexel University, Philadelphia, Pa. Taught undergraduate courses in construction planning / scheduling, estimating, and systems analysis and design. This included construction code interpretation, analysis, research, NFPA, BOCA and International Building Codes.

Fire Protection Systems Training

- Attended and completed an NFPA Life Safety Code 4 day training course including sprinkler design and layout, components of a sprinkler system, hydraulics, inspection and testing criteria.
- Attended and completed International Facilities Manager Association (IFMA) 2-day training course including sprinkler design and layout and maintenance.
- Training courses in the Fike Cheetah XI addressable control panel, Fike SHP Pro control panel, Fike CyberCat addressable fire alarm control panel. This training included inputs, outputs, devices, annunicators, RID, wiring Diagrams, Detectors, Sensors, Modules, Relays, Response times, delays, programmable functions, connecting panel to laptop PC, download functions.
- Attended and completed an explosion protection seminar. Explosion requirements- enclosure, fuel, oxidant, ignition, Explosion vent, suppression, isolation, Kst - bar/ meter/second, Pst – pressure
- Attended and completed a two-day Vesda air sampling smoke detection seminar. Types of Vesda analyzers, piping layout, troubleshooting, programming.
- Retrotec Level 2 certified pressurized room door fan tester.

Fire Sprinkler Experience Includes, but not limited to, the following projects:

- 800 3rd Ave., New York City. Provided design input, reviewed and approved design drawings and specifications for preaction sprinkler systems for a 4th floor computer room, telecom room, HVAC chiller, electrical, and battery

rooms. Inspected and approved installation / construction of sprinkler system including control panel, alarms, piping and sprinkler heads. Directed relocation of sprinkler heads located too close to walls, directed sprinkler head types be changed in rooms where drop ceilings had been designed, but were later eliminated during construction. Field verified the proper electrical and mechanical connections and operation of main water solenoid valve, low air, tamper, and water flow switch connections to the control panel. Inspected and approved system checkout and placed system into operation.

- General Public Utilities (GPU) material distribution center, Bethel, Pa. Provided design input, reviewed and approved the sprinkler system design drawings and specifications including hydraulics. Inspected and approved the sprinkler system installation including all piping, electrical and mechanical components. Inspected and approved system checkout, test and acceptance.
- Preferred Freezer – Westfield, Ma. Preaction sprinkler system. Design, review, approval, and professional engineer's seal of drawings and specifications including Vesda detection, system sequence of operations, control panel wiring including, pre action solenoid valves, tamper, water flow and low air switch controls.
- Johnson and Johnson- Piscataway, NJ. Preaction system for Tele / Data room measuring 19' x 21' 3". Design, specifications, sequence of operations, review, approval, and NJ professional engineer's seal for drawings and specifications.
- Woodcock Washburn – Philadelphia, Pa. Preaction sprinkler system for room measuring 13' 9" x 28' 6". Design, specifications, sequence of operations, review, approval, and PA professional engineer's seal for drawings and specifications.
- Wal-Mart Distribution Center- Lewiston, ME. Preaction system with Protectowire detection (100,000'). Design, review, approval and ME professional engineer's seal for drawings and specifications.
- Time, Inc., Parsippany, NJ. Preaction system for a UPS room measuring 14' 6" x 26'. Design, specifications, sequence of operations, control panel wiring including, pre action solenoid, water flow, low air, tamper switches, review, approval, and NJ professional engineer's seal for drawings and specifications.
- UBS, Jersey City, NJ. Preaction system for MDF / IDF rooms measuring about 32' x 54' total. Design, specifications, sequence of operations, control panel wiring including pre action solenoid, water flow, low air, tamper switches, review, approval, and NJ professional engineer's seal for drawings and specifications.

Fire Alarm Experience

Design, review, approval, professional engineering sealing of fire alarm system design documents including drawings and specifications for the following projects: (includes but not limited to:)

- Icon Clinical Research, Lansdale, Pa. 3 story building.
- Rittenhouse Regency, Rittenhouse Square, Philadelphia, Pa. 23 story condominium conversion project.

- Jetpro Warehouse, Philadelphia, Pa. 174,720 sq. ft. warehouse.
- Triumph Baptist Church, Philadelphia, Pa. 8,745 sq. ft. church meeting and classrooms.
- Aronimink Country Club, Newtown Square, Pa. 4 story country club house

Fire Suppression Experience

Prepared FM-200, HFC-125 (DuPont) and other clean agent flow calculations and sealed as a professional engineer, design drawings and electrical, structural, and mechanical specifications for hundreds of projects including:

- Verizon, Branchburg, NJ. 233 lbs of FM-200. Electric room and sub floor.
- Sun Trust, Nashville, TN. 130 lbs of HFC-125 for protected space.
- Archives One, Albany, NY. 288 sq. ft. vault.
- TCIM, Piney Flats, TN. 320 sq. ft. vault.
- Adhesive Research, Glen Rock, Pa. 322 sq. ft. IT room
- City Hall computer room, Reading, Pa. 872 sq. ft. computer room with 6" raised floor and a 9' ceiling.

Forensic Engineering Experience

- Investigation, analysis and project management for replacement of spauling concrete floors in a warehouse.
- Investigation, analysis and project management for wall cracking of a warehouse. Among other problems, the concrete paste mix in selected areas was found to be 90% sand.
- Investigation, analysis and emergency actions including design of temporary “stilt” beams to prevent the structural collapse of a warehouse roof due to snow load. Testified in a mediation leagal proceeding.
- Investigation, analysis, and project management for a structural redesign of a roof support system for a middle school. Gathered evidence and assisted legal counsel in an American Arbitration Association (AAA) arbitration proceeding.
- Investigation, analysis and project management for a mold (Stacky Botrus) remediation project in a middle school. Prepared evidence and detailed time line of activities / events to support a successful insurance claim.
- Investigation, analysis and locating and retaining the services of a paint and finishes analysis expert for contracted painting of a school.
- Insurance claim investigation, analysis and preparation of a written report on the causes of mechanical failure of a mortar mix pump and hoses damaged by the quick set up of mortar. Interviewed participants, prepared an analysis of facts, prepared cost estimates for replacement parts and labor, submitted findings and recommendations to the insurance carrier, the Erie Insurance Co.

Security Systems Experience

Experienced in security systems, design, engineering, programming, construction, checkout, certification, testing, maintenance and inspection.

- Hard wired security systems – residential and commercial. Designed, systems, designed electrical circuits, specified components, wrote software, wrote installation and operation instruction manuals, sold systems. For a magazine article on some of my earliest work, se the October 1983 issue of **Personal Computing** magazine, page 110.
- Wireless security systems – residential and commercial. Designed, systems, designed electrical circuits, specified components, wrote software, wrote installation and operation instruction manuals, sold systems.
- Designed residential energy control systems. Includes "Time of Day" electrical metering and load shedding to negate electric utility load demand surcharges. Used X-10 power line carrier signal transmission technology.
- Smart homes. Personal computer based control panels. Designed software programs.
- Low voltage. Audio and video systems design and installations.

Other

- Inactive US Government Department of Energy "Q" level security clearance.