

## Christopher M. Swan, P.E. | Senior Forensic Electrical Engineer

*Field Office: Braintree, MA*

*Cell Phone: 339-235-5465*  
[christopher.swan@efiglobal.com](mailto:christopher.swan@efiglobal.com)

### Professional Summary:

Mr. Swan has over four (4) decades of professional experience in the electrical consulting industry. He has practiced electrical engineering for new and remodeled residential, commercial, light industrial, and public projects for over three decades. He has experience in forensic investigations, insurance claims, lightning and fire investigations, equipment failures, litigation support, accidents, injuries, fatalities, shock and electrocutions, arc flash, illumination level analysis, construction cost disputes, arc flash studies, power quality, equipment evaluations, code reviews, peer reviews, engineering studies, and other engineering services.

Mr. Swan's expertise includes:

- Shock and Electrocutions
- Arc Flash and Injuries
- Equipment Failures
- Lightning Damage
- Water Damage to Electrical Equipment
- Construction Cost Disputes
- Fire Scenes
- Fire Evidence Examinations
- Scope of Repair and Cost Reviews
- Electrical Engineering for Buildings
- Drawing Review - Errors and Omissions

### Licenses:

Professional Engineering Licenses:

Massachusetts, 40178

North Carolina, 27656

New Hampshire, 14537

Connecticut, 32210

New York, 98183

Vermont, 018.0134430

Maine, PE15541

### Project Experience:

Mr. Swan has investigated hundreds of fires as an electrical engineer assisting in the fire investigation process. The projects outlined here are just some of the assignments Mr. Swan has worked on. For additional project experience contact Mr. Swan directly.

**Jet Blue Airways, Logan International Airport, East Boston, MA  
Electrocution**

Analysis of the fatal electrocution and litigation support.

**Louis Brum vs Sasso Construction, Inc., Woburn, MA  
Electric Shock**

Analysis of the alleged shock injury and litigation support.

**Wendy's Restaurant, Boston, MA  
Arc Flash Injury**

Analysis of the incident, the neon sign, and litigation support.

**Fortis Property Group, State Street Bank, Boston, MA  
Busway Failure Explosion**

Analysis of existing conditions that lead to the failure, acted as Owner's representative, insurance claim support.

**Northeastern University, Boston, MA  
Automatic Transfer Switch Failures**

Determine cause of failure to multiple automatic transfer switches and acted as Owner's representative in negotiations with automatic transfer switch manufacturer.

**Hingham Woods, Condominium Development, Hingham, MA  
Lightning Damage**

Analysis of repeated lightning damage and specified mitigation solution.

**Vineyard Golf Club, Martha's Vineyard, MA  
Lightning Damage**

Lightning damage assessment of electronic components of irrigation system, insurance claim support.

**Albany Street Apartments, Boston MA  
Water Damaged Busway Riser**

Analysis of water damaged equipment, extent of damage assessment, insurance claim support.

**Framingham Public Library, Framingham, MA  
Water Damaged Fire Alarm Control Panel**

Analysis of water damaged equipment, scope of repair assessment, insurance claim support.

**Black Rock Realty, Residential Development, Norwood, MA  
Exterior Lighting Analysis – Accident Injury**

Analysis of exterior lighting illumination levels, insurance claim support.

### Project Experience (Continued):

**Famous Dave's, Metuchen, NJ**

**Exterior Lighting Analysis – Alleged Trip & Fall**

Analysis of the exterior lighting illumination levels, insurance claim support.

**Taco Bell Restaurant, Leominster, MA**

**Fire Damage Scope Assessment**

Analysis of the electric system after the fire and smoke damage, scope of repair assessment, insurance claim support.

**Boston Yacht Haven, Boston, MA**

**Fire Damage Scope Assessment**

Analysis of the electric system after the fire and smoke damage occurred, scope of repair assessment, insurance claim support.

**Goodwin Residence, Sturbridge, MA**

**Fire Investigation Scene Processing**

Fire scene investigation, evidence processing, and follow-up laboratory examination of evidence.

**Penn Plax, Fish Tank Heater, Manassas, VA**

**Laboratory Examination**

Attend laboratory examination of evidence, manufacturer's liability insurance claim support.

**Green Mountain Coffee, East Hampton, CT**

**Laboratory Examination**

Attend laboratory examination of evidence, ruled out coffee maker as the cause of the fire by review of x-ray images.

**Renaissance Gateway Hotel, Saint Louis, MO**

**Construction Cost Dispute**

Analysis of conceptual estimate, review of actual construction cost, review of plans and specifications for errors & omissions, litigation support.

**Nantucket Boat Basin, Hurricane, Nantucket, MA**

**Scope Assessment and Construction Cost Analysis**

Review the scope of repairs, review the electrical construction cost, insurance claim support.

**Greenfield Community College, Greene House, Greenfield, MA**

**Plans and Specifications Errors & Omissions**

Review the electrical plans and specifications for errors & omissions, litigation support.

### Expert Witness Testimony (Depositions):

Alleged electric shock injury, Superior Court, Civil Action, Lincoln, ME, Docket #CV-10-40

Residential fire investigation involving lithium polymer batteries, US District Court of Connecticut, C.A. No. 3:22-cv-00310-MPS, 2023

Electric service, open neutral, fire investigation, Superior Court, State of Rhode Island, C. A. No.: KC-2022-0062, 2024

Deposition for a sump pump controller failure & fire, United States District Court for the District of Massachusetts, Civil Action No.: 1:22-CV-11136-MJJ, 2024

Deposition for a Canon printer failure & fire, United States District Court for the District of Massachusetts, Civil Action No.: 1:24-cv-10940-ADB, 2025

### Professional Experience:

EFI Global Inc., Sr. Forensic Electrical Engineer, 2017 – Present  
(Formerly Unified Investigations and Sciences)

Swan Engineering, Inc., Principal Electrical Engineer Owner, 1989 – 2017

S. B. Sager & Associates, Inc., Design Engineer, 1986 – 1989

Ganteaume & McMullen, Inc., Electrical Design & Drafting, 1979 – 1986

### Formal Education:

Power Systems Analysis I, II, III, Northeastern University, Boston, MA, 1994

Electrical Engineering, Associate's Degree, Franklin Institute of Boston, Boston, MA, 1984  
National Electrical Code, Electrical Theory, and Installation

Don Bosco Technical High School (Electrical), Boston, MA, 1980  
National Electrical Code, Electrical Theory, and Installation

### Continuing Education:

Fuses and Circuit Breakers, Noon Pi, 2025

Motor Nameplate Information – Nema vs. IEC, Noon Pi, 2025

Introduction to Printed Circuit Board Prototyping, Noon Pi, 2025

Power Quality Measurements – Essential Theory, NoonPi, 2025

Harmonics and UPS, NoonPi, 2025

Variable Frequency Drives, NoonPi, 2025

Alternating Current Motors and Generators, NoonPi, 2024

Revisions for the 2023 National Electrical Code, Part III, NoonPi, 2024

Revisions for the 2023 National Electrical Code, Part II, NoonPi, 2024

Revisions for the 2023 National Electrical Code, Part I, NoonPi, 2024

Revisions to the 2020 National Electrical Code, Part III, NoonPi, 2024

ABCs of Engineering Ethics, The Project Management Triangle, NoonPi, 2023

Revisions to the 2020 National Electrical Code, Part II, NoonPi, 2023

Revisions to the 2020 National Electrical Code, Part I, NoonPi, 2023

Static Electricity in Industry: Preventing Explosions of Dusts and Volatile Fluids, NoonPi, 2023

Introduction to Area Classification, NoonPi, 2023

Power System Neutral Grounding Fundamentals, NoonPi, 2023

Grounding System Theory and Practice, NoonPi, 2023

### Continuing Education (Continued):

Application of Capacitors on Electric Power Systems, NoonPi, 2023  
Distributed Energy Resources Grid Impact – Solar – Part 1, NoonPi, 2022  
Secondary Surge Protection, NoonPi, 2022  
Lithium-Ion Batteries for Electric Vehicles and Transport Decarbonization, NoonPi, 2022  
Electrical Forensics Engineering, NoonPi, 2021  
E-041 Power System Transient Stability, PDH Star, 2021  
Lithium-Ion Battery Fires, CFI Trainer, IAAI, 2021  
OSHA, 29 CFR 1910 Subpart S Regulations and NFPA, Boston Safety Training Inc, 2021  
E-1675 Power Cable Testing, PDH Source, LLC, 2020  
Basic Electrical Connecting, PDH Source, LLC, 2020  
Ethics 1 for Professional Engineers, PDH Now, 2020  
Arc Mapping Basics, CFI Trainer, IAAI, 2019  
Forensic Investigation, EFI Global Inc., 2018  
Small Appliance Fires, International Assoc. Arson Investigators, 2018  
NEC 2017 Code Changes Generators, International Association of Electrical Inspectors, 2017  
Professional Licensing, Standard of Care, Indemnity, Donovan Hatem LLP, 2017  
NEC 2017 Code Changes Hazardous Locations, Int'l Association of Electrical Inspectors, 2017  
NEC 2017 PV Best Practices and MA Fire Code, Solar Energy Business Assoc. of NE, 2017  
NEC 2017 Code Update Short Circuit Current Ratings, Int'l Assoc. of Elec. Inspectors, 2016  
NEC 2017 Code Changes, Massachusetts Electrical Contractors Association, 2016  
Elec. Safety, Risk Assessment, Safety in Mfg, Dust Explosions, Am. Soc. of Safety Eng., 2016  
Solar Inverters, International Association of Electrical Inspectors, 2016  
Design Build Case Studies, Donovan Hatem, LLP, 2016  
OSHA 30 Construction, IBEW Local 103 Joint Apprentice Training Center, 2016  
Electrical Safety, International Association of Electrical Inspectors, 2015  
Elec. Safety Audits, Voltage Testing, Safety Certifications, Am. Soc. of Safety Eng., 2015  
Arc Flash Calculations and Mitigation, ElectroLearn, 2015  
Intellectual Property, Institute of Electrical and Electronics Engineers, 2014  
Fire Protection and Life Safety Seminar, Society of Fire Protection Engineers, 2014  
Ground Resistance Testing, AEMC Instruments, 2013  
National Electrical Code Update 2014, Int'l Association of Electrical Inspectors, 2013  
Bussmann Selective Coordination, International Association of Electrical Inspectors, 2013  
Focus Achieving Your Highest Priorities, Franklin Covey, 2011  
Advanced Power Tools for Windows, SKM Systems Analysis Inc., 2011  
Fire Alarm and Emergency Signal Systems, System Sensor Honeywell, 2010  
Thermography and Power Quality, Flir & Dranetz, 2010  
Fundamentals of Expert Witnessing, Seak, Inc., 2009  
Distributed Generation Interconnections, NSTAR & National Grid, 2008

### Memberships:

National Fire Protection Association (NFPA)  
Institute of Electrical and Electronics Engineers (IEEE)



**Courses Instructed/ Guest Lecturer:**

Basics of an Arc Flash Study Field Survey 2016  
Presented at OSHA 30 Construction Safety and Health – Boston, MA

**Publications:**

Basics of an Arc Flash Study Field Survey 2016