

EDUCATION

2004 **Bachelor of Science, Mechanical Engineering**
The Pennsylvania State University, State College, Pennsylvania

EXPERIENCE

March 2011 **Engineering Design & Testing Corp.**
to Present **Maitland, Florida (Present)**
Charleston, South Carolina (March 2011 to January 2016)

Consulting and Forensic Engineer.

Specialized consulting in the areas of mechanical systems, equipment specification, repair/replacement cost estimation, project management, and mechanical design. Examination and evaluation of industrial, commercial, and residential building exteriors and roofing systems. Evaluation of applicable mechanical code and building code compliances. Investigation of fire origin and cause for both vehicle and structure fires. *(Listed in no particular order.)*

May 2008 **Lafarge North America**
to March 2011 **Harleyville, South Carolina**

Project Engineer III.

Management of large industrial capital projects through the entire project lifecycle including feasibility studies, conceptual design, engineering design, construction management, and closure/post auditing. Process equipment specification and installation, rotary kilns, crushing and grinding equipment, conveying equipment, alternative fuels systems. Project management involving steel framed building installation, roofing system installation, concrete foundation installation, low-/high-pressure pipeline installation, environmental compliance monitoring and control devices, and industrial/commercial safety equipment (including fall restraint and arrest systems). Design review of mechanical systems, interpretation and application of codes (NFPA, API, ASME, ANSI), and knowledge of OSHA and MSHA regulations for workplace safety.

February 2008 **FLSmidth Inc.**
to May 2008 **Bethlehem, Pennsylvania**

Design Engineer.

Experience with the design of cement plant expansions, process equipment selection, process line design, and detailed AutoCAD drawings. Knowledge of design review for equipment compatibility, and compilation of structural and mechanical drawings for spatial compatibility.

October 2004
to February 2008

**Lafarge North America
Alpena, Michigan**

Project Engineer/Maintenance Engineer.

Designed components for limestone crushing and rotating equipment, along with rendering AutoCAD drawings for shop fabrication. Experience with commissioning new mechanical systems including bulk loading of railcars, pulverized coal burners, solid alternative fuel systems, dust collection systems, and pneumatic pumps. Managed industrial projects for plant expansions and equipment installations, along with supervision of construction activities and installation of cementitious products. Knowledge of ISO 9001 and ISO 14001 safety and environmental best practices.

EXPERIENCE (partial list)

Storage and Shipping Terminal — Tampa, Florida

Consultation regarding the evaluation of the cause of a collapsed roofing system – conduct on-site examination, participate in selective demolition of roofing system, evaluate damages and determine cause of failure, evaluate damage to steel flooring.

Condominium Building — Ormond Beach, Florida

Consultation regarding the evaluation of the damage scope resulting from a hurricane – conduct on-site examination, evaluate building envelope and determine causation for water intrusion in multiple locations.

Commercial Building — Daytona Beach, Florida

Consultation regarding the evaluation of the damage scope resulting from a hail event – conduct on-site examination, evaluate large commercial sloped roofing system and determine the extent of damages resulting from hail impact.

Food Processing Plant Evaluation — Dawson, Georgia

Consultation regarding the evaluation of the damage scope and repairability of damages at food processing and handling due to fire – conduct on-site examination, examine damaged equipment, determine feasibility of repair vs. replacement.

Commercial and Condominium Resort — Kissimmee, Florida

Consultation regarding the evaluation of the damage scope and repairability of a low-slope roofing system and exterior finishes of a commercial building and condominium units after a hurricane event – conduct on-site examination, evaluate the scope and cause of damages, determine the cause of interior water intrusion.

Chiller Damage Evaluation — Miami, Florida

Consultation regarding the evaluation of the damage scope to two commercial chiller systems – conduct the on-site examination, review repair documentation, procure and review maintenance records, determine the cause of failure.

Condominium Complex Elevator — Ft. Lauderdale, Florida

Consultation regarding the cause of a failure to the hydraulic power unit for an elevator – conduct on-site examination, examine damaged components, evaluation of oil contamination, determine the cause of failure.

Weaving Loom — Sugar Valley, Georgia

Consultation regarding the evaluation of the damage scope to weaving loom that was damaged by fire – conduct on-site examination, evaluate the scope of the damage, determine the viability of repair, procure alternative manufacturer for equipment bidding.

Commercial Resort — Orlando Florida

Consultation regarding the determination of a piping fracture – conduct on-site examination, evaluate piping installation and mode of failure, perform hydrostatic testing to determine burst pressure of piping, determine cause of failure.

Storage Warehouse — Charleston, South Carolina

Consultation regarding the determination of the cause of a mechanical collapse of metal rack shelving units holding inventory – conduct on-site examination, review product literature, examination of fractured weld surfaces of vertical supports.

Shipping Terminal — Savannah, Georgia

Consultation regarding the evaluation of the damage scope to shuttle conveyor system damaged by vessel – conduct on-site examination, review construction drawings of damaged equipment, review, and catalog invoices, procure equipment quotations, render an opinion of repair and replacement costs.

New Broadcast Facility — Charleston, South Carolina

Consultation regarding the evaluation of potential design defects to wet pipe sprinkler system – conduct on-site examination, review mechanical piping drawings, review of applicable codes and standards, render opinion of repair and replacement costs.

Shipping Terminal — Brunswick, Georgia

Consultation regarding the evaluation of the damage scope to conveyor systems and structures damaged by fire – conduct on-site examination, review bid proposals and scope of work documents from multiple general contractors, analyze and compare costs and repair scopes provided.

Multiple Historic Buildings Fire — Charleston, South Carolina

Consultation regarding the determination of fire origin and cause of a fire which damaged multiple historic building in the downtown area – conduct multiple on-site examinations, examine fire damaged areas and analyze burned debris, review witness statements, and fire reports – render an opinion of origin and cause of the fire.

Large Transport Trailer — Waynesboro, Georgia

Consultation regarding the evaluation of the damage scope to a transport trailer carrying a turbine casing at a nuclear power facility – conduct on-site examination, review photographs and other documents related to incident, review mechanical drawings of casing and analyze lifting procedure, render opinion of the repair and replacement costs as well as an opinion of the cause of the damage.

Trailer Mounted Injection Silo — Atlanta, Georgia

Consultation regarding the cause of a tip-over of a hydraulically articulated silo mounted atop a trailer – conduct on-site examination, review construction drawings, and OEM specifications, calculate loading conditions and position of the center of gravity, evaluate the appropriateness of the design, render an opinion regarding the cause of the tip-over.

Feller Buncher Fire — White Plains, Georgia

Consultation regarding the determination of fire origin and cause of a fire which damaged a Tigercat feller buncher – conduct on-site examination, speak with witnesses, examine fire damage and analyze fire debris, examine on board fire suppression system, render an opinion of origin and cause of the fire.

Marine Vessel Launch System — Hollywood, South Carolina

Consultation regarding the evaluation of the damage scope to a rail system used to launch barges as well as the cause of damage – conduct on-site examination, review archival mechanical inspection reports, examine damage to the rail system, render an opinion regarding the cause of the damage.

Damage to Backup Diesel Generators at Hospital — *Fairfax, Virginia*

Consultation regarding the evaluation of the damage scope to four diesel generators used for backup power at a hospital facility – conduct on-site examinations, coordinate with repair contractors and electrical engineer to conduct load bank testing and mechanical tear-down of generators, examine the mechanical condition of generators, procedure, render an opinion of the repair and replacement costs.

Manufacturing Facility Fire — *Sumter, South Carolina*

Consultation regarding the evaluation of the damage scope to natural gas boiler, melting pots, and furnace which was damaged during a fire – conduct on-site examinations, coordinate with electrical engineer to test condition of generator, coordinate with repair contractor to conduct testing of boiler, review repair proposals and quotations, render an opinion regarding damage scope.

Concrete Silo Roof Collapse — *Miami, Florida*

Consultation regarding the evaluation of the damage scope to a concrete silo that was damaged when the roof cap and structure collapsed, conduct on-site examination; review original construction drawings; review contractor repair and replacement proposals; render an opinion of repair and replacement costs.

Manufacturing Facility Furnace Fire — *Lake City, South Carolina*

Consultation regarding the evaluation of the damage scope to a furnace and of origin and cause the fire which damaged the furnace – conduct on-site examination, speak with witnesses; examine fire damage; evaluate mechanical condition of the furnace; procure replacement quotations for damaged components, render an opinion of repair and replacement costs.

Storage Warehouse Copper Theft — *North Charleston, South Carolina*

Consultation regarding the evaluation of the damage scope to electrical power distribution system which was damaged when copper was stolen – conduct on-site examination; review contractor repair and replacement proposals; compare proposals to observations made during the examination; render an opinion of repair and replacement costs.

Tip-over of End Dump Trailer and Truck-Tractor — *Garden City, Georgia*

Consultation regarding the cause of a tip-over of a hydraulically articulated end dump trailer and truck-tractor – conduct examination of end dump trailer, take measurements of the trailer and conduct tip-over analysis; speak with OEM regarding specifications of the trailer, render an opinions regarding the condition of the trailer.

REGISTRATIONS and CERTIFICATIONS

Registered Professional Engineer in Florida (#76367)

Registered Professional Engineer in Georgia (#036328)

Registered Professional Engineer in North Carolina (#038276)

Registered Professional Engineer in South Carolina (#28695)

Registered Professional Engineer in Virginia (#0402051246)

HAAG Certified Inspector (201809210)

NAFI Certified Fire and Explosion Investigator (#16631-9039)

NAFI Certified Vehicle Fire Investigator (#16631-9039v)

National Council of Examiners for Engineering and Surveying (#45670)

Mine Safety & Health Administration, Part 46 Miner Certification (Oct. 2004 - Feb. 2012)

PROFESSIONAL ORGANIZATIONS

American Society for Metals (ASM)
American Society of Mechanical Engineers (ASME)
National Association of Fire Investigators (NAFI)
National Fire Protection Association (NFPA)
National Roofing Contractors Association (NRCA)

CONTINUING EDUCATION

- 2020 “*Standard of Care Examined Through a Warehouse Roof Collapse*”, EDT Seminar
 “*Concrete Roof Tile: Installation Guidelines and Storm Damage Assessment*”, EDT Seminar
 “*Rules of Professional Conduct*”, EDT Seminar
- 2019 “*HCI-Residential Roofs*”, HAAG
- 2018 “*Brewing, Fermentation, and Common Problems in the Brewing Process*”, EDT Seminar
 “*HCI-Commercial Roofs*”, HAAG
 “*Heat, Air, and Moisture Components of Building Envelopes*”, EDT Seminar
 “*Industrial Plant Process Controls*”, EDT Seminar
 “*Metallurgy for the Non-Metallurgist and Its Use in Root Cause/Damage Assessments*”, EDT Seminar
- 2017 “*A Review of Typical Motorcycle-Vehicle Collision Scenarios*”, EDT Seminar
 “*Engineering Analysis of Failure: Determination of Cause in a Legal Environment*”, EDT with Yates Law Firm
 “*Large Loss Report Writing*”, EDT Seminar
- 2016 “*Active Safety Solutions for Next Generation Automobiles*”, SAE International & ON Semiconductor
 “*Advanced Fire, Arson and Explosion Investigation Training Program, 1033 & 921: Putting It Together*”,
 NAFI & IAFI
 “*Large Loss Forum – Engineering Economics: Actual Cash Value (ACV) Definitions and Calculations*”,
 EDT Seminar
 “*Pumps and Piping: Design & Operation for Continued Reliability*”, EDT Seminar
 “*Sales Training*”, ED&T Seminar
- 2015 “*Acoustic Soot Agglomerations on Residential Fire Alarms – Indications of Functionality*” EDT Seminar
 “*Federal Rules of Civil Procedure (FRCP) Rule 26 – Expert Reports*”, EDT Seminar
 “*Florida Law and Rules*”, Engineer Educators
 “*Glass Fractography*”, EDT Seminar
 “*Increasing Fire Investigator Awareness on Potential Alternative Fueled Vehicles Safety Hazards*”, NFPA
 “*Vehicle CDR Training Update*”, Ruth Consulting
- 2014 “*Additive Manufacturing: Changing Future Product Development, Manufacturing*”, ASME

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- “Commercial Braking Systems”*, SAE International
- “Investigating Electric and Hybrid Vehicles”*, EDT Seminar
- “Machine Tools 101”*, ED&T Seminar
- “Passenger Car – Motorcycle Collision Analysis”*, EDT Seminar
- “Presentation of Credentials in Litigation”*, EDT Seminar
- 2013 *“Filing Rules in a Judicial System”*, McAngus Goudelock & Courie
- “Safety on the Job”*, EDT Seminar
- “Social Networking and the Consulting Engineer”*, McAngus Goudelock & Courie
- “Tire Construction and Defects”*, EDT Seminar
- 2012 *“Advanced Crash Reconstruction-Utilizing Human Factors Research”*, Northwestern University
- “Ethical Challenges for the ED&T Engineer”*, EDT Seminar
- “Event Data Recorder Use in Traffic Crash Reconstruction”*, IPTM, University of North Florida
- “Hot Wheels: Investigating Vehicle Fires”*, EDT Seminar
- “Macro Photography”*, Charleston Center for Photography
- “Quantitative Measurement of LP/Natural Gas Pipe Systems”*, EDT Seminar
- “The Daubert Decision: Where Have We Come Since 1993”*, EDT Seminar
- “Tire and Wheel Safety Issues”*, SAE
- 2011 *“Advanced Fire, Arson, & Explosion Investigation”*, NAFI & NFPA
- “Ammonia Injection – Emissions Control”*, Tanner Ind.
- “Confined Space Entry”*, MSHA
- “Raising the Bar of Fire Investigation: NFPA 921 2011 Ed. & NFPA 1033”*, SCIAAI
- “South Carolina Insurance Fraud Investigator’s Training Seminar”*, SCIFI
- “Vehicle Fire, Arson, & Explosion Investigation”*, NAFI & NFPA
- 2010 *“Use, Care, & Maintenance of Respiratory Devices”*, Lafarge Harleyville Seminar
- 2009 *“Confined Space Entry”*, MSHA
- “Recognition & Avoidance of Hazards”*, MSHA
- 2008 *“Ball Mill Operation & Maintenance”*, FLSmidth Institute
- “Confined Space Entry”*, MSHA
- “Large Gear Maintenance”*, FLSmidth Institute
- “Pumps and Compressor Maintenance”*, FLSmidth Institute
- “Pyroprocessing: Rotary Cement Kiln”*, FLSmidth Institute
- “Recognition & Avoidance of Hazards”*, MSHA
- 2007 *“Project Management – Basics”*, PMI Project Management Institute
- “Radial & Helical Gear Inspection”*, Lafarge Alpena Seminar
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2006 *"Centrifugal Fans & Gas Processing"*, Lafarge Alpena Seminar
 "RCA: Root Cause Analysis", Apollo

2005 *"Cement Plant Maintenance"*, Lafarge Exshaw Seminar
 "Failure Analysis", RCI