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BRAD A. LAURITSEN, P.E.
SENIOR CONSULTANT & TEAM LEAD

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Mr. Lauritsen is a Senior Consultant with Engineering Systems Inc. (ESi) and a licensed professional engineer in several states. He has 25 years of experience in various fields of mechanical engineering.

Mr. Lauritsen has 16 years of experience as a forensic engineer where he is involved in investigation of construction defects, storm damages, fires, design errors & omissions, air/water infiltration, indoor air quality, product defects, as well as mechanical, HVAC, and plumbing failures. He has testified in deposition and in court as a recognized expert in the field of mechanical engineering.

Mr. Lauritsen also has experience as an A/E design project manager, involving mechanical and plumbing design, contract administration and construction observation for renovations and new construction of educational, commercial, and government facilities.

Prior to working in forensics, Mr. Lauritsen worked in the field of ATFP (anti-terrorism force protection), researching explosive entry (breaching) and blast effects on structures.

Mr. Lauritsen also has experience in the aircraft industry, performing structural analysis and testing of aircraft components.

Areas of Specialization

- Construction Defects
- Storm Damage
- Design Errors & Omissions
- Air/Water Infiltration
- Building Envelope
- Indoor Air Quality
- Mechanical Failures
- HVAC System Failures
- Plumbing Failures
- Product Defects

Education

M.S., Mechanical Engineering (Materials Science), Wichita State University, 2004

B.S., Mechanical Engineering, University of Nebraska – Lincoln, 2001

January 2025



Licensed Professional Engineer (P.E.)

State of Iowa	License No. P24415
State of Kansas	License No. 18158
State of Nebraska	License No. E-12388
State of North Dakota	License No. PE-9933
State of South Dakota	License No. 12717
State of Missouri	License No. PE-2021013551
State of Oklahoma	License No. 32582
State of Illinois	License No. 062.073112
State of Tennessee.....	License No. 125116
State of Arkansas.....	License No. 20306
State of Colorado.....	License No. PE.0059452
State of Texas.....	License No. 144797
State of Indiana.....	License No. PE12300549
State of Ohio.....	License No. PE.89999

Certifications

United States Green Building Council (USGBC), LEED Accredited Professional
Level II Certified Thermographer

Professional Affiliations/Honors

National Academy of Forensic Engineers (NAFE)

Member

National Society of Professional Engineers (NSPE)

Member

American Society of Heating, Refrigerating, & Air Conditioning Engineers (ASHRAE)

Member

American Society of Mechanical Engineers (ASME)

Member

International Institute of Building Enclosure Consultants (IIBEC)

Member

ASM International

Member

Failure Analysis Society (FAS)

Member

Positions Held

Engineering Systems, Inc., St. Peters, Missouri
Senior Consultant, 2021 – Present

KPE-Consulting Engineers, Omaha, NE
Senior Mechanical / Forensic Engineer, 2008-2021

Duncan Aviation, Lincoln Nebraska
Senior Mechanical Engineer, 2007-2008

Applied Research Associates, San Antonio, TX
Senior Mechanical Engineer, 2004 – 2007

Boeing Commercial Airplanes, Wichita, KS
Structural Analyst, 2001-2004

Specialized Training / Continuing Education

Roof Technology and Science II
IIBEC, 2024

Expansion Joints & Sealants: Types, Applications, Failure Analysis
IIBEC, 2024

Exterior Wall Technology and Science I
IIBEC, 2024

Reroofing
IIBEC, 2024

Roof Technology and Science I
IIBEC, 2023

Ethics for Engineers: Doing the Right Thing When No One is Looking
ASME, 2022

Engineering Ethics – Conflicts of Interest, Licensure, Confidentiality, & Public Criticism
NSPE, 2022

Fire Protection in Property Management
NSPE, 2022

Tools to Ensure Effective Litigation Preparation and Testimony as an Engineering Professional
NSPE, 2022

Professional Standard of Care (Ethics)
ESi, 2022

How to Organize and Run a Failure Investigation
ASM International (Virtual), 2022

Introduction to Abaqus
Dassault Systems Simulia, 2021

Ethics for Forensic Engineers
Remote Forensic Inspections in the Age of Covid 19
Report Writing
Building Credentials through Publication and Review
Current Assessment of Stand-Up Forklift Underride Accidents
Goals, Methodology, and Tools for Investigating Electric Shocks
Forensic Engineering of Pedestrian and Worker Fall Incidents
Overheating Poor Electrical Connections
Forensic Engineering Analysis of a Collision Involving Aftermarket Bumper and Grille Guard Structure
National Academy of Forensic Engineers Winter Conference (Virtual), 2021

Introduction to Forensic Engineering
Deposition and Court Testimony
Evidence Handling, Labeling, Preparation and Storage
Depositions, Rights and Responsibilities
Expert Credibility and Persuasion in Court
National Academy of Forensic Engineers Summer Conference (Virtual), 2020

Ethics (Hard Conversations)
Leadership at All Levels
Ownership Transition
Why are PMs Late and Overbudget?
American Council of Engineering Companies Conference (ACEC), Chicago, IL, 2019

Level II Infrared Thermography
Infraspection Institute Omaha, NE, 2018

Building Code Questions with Commercial Loss Adjustments
Faulty Construction Coverage Disputes
Hail Damage to Building Components, Cladding, & HVAC
Water Mitigation, Mold & Wind-Driven Rain Issues
Drones and Remote Sensing for Claims
PLRB Claims Conference, Indianapolis, IN, 2019

Appraisal Clauses
Claims Strategies with Public Adjusters
Claims with Emerging Building Technologies
Construction Defect Claims
Drones and Their Use in Claims
Large Commercial Hail Claims

PLRB Claims Conference, Orlando, FL, 2018

Advanced NFPA 921 and 1033 Recertification Class
Investigative Engineering Association Conference, Atlanta, GA, 2016

2015 Training Update/Review— The Scientific Method and NFPA 921
Vehicle Hydroplaning Investigations
Investigative Engineering and Insurance Fraud
Key Points of Vehicular Crash Reconstruction
How Insurance Carriers Use Engineers in Fraud Investigations
Structural/Geotechnical Case Investigations
Effective Methods for Addressing Structural Defects
Ethics and Business Practices
Roof Damage/Assessment Investigations
Flood Control and Drainage Investigations
Use of Drones in Investigative Engineering Photography in Investigative Engineering
Investigative Engineering Association Conference, Phoenix, AZ, 2015

Central Plant Optimization
Insuring Energy Efficient and Healthy Buildings – Effective Control of Outside Air
Anticipating the Challenges of Modern Mechanical Systems Approaches
Indoor Environmental and Air Quality
ASHRAE 90.1 Updates
American Society of Heating, Refrigeration, and Air Conditioning Engineers,
(ASHRAE), Omaha, NE, 2014

Energy Saving Strategies for Water-Source and Ground-Source Heat Pump Systems
Air & Water Systems
Air Conditioning Systems & Components – Heat Transfer Equipment
Air Conditioning Systems & Components – Pumps, Valves, Piping, Ductwork
Air Conditioning Systems & Components – Source Equipment
HVAC Selection Issues
American Society of Heating, Refrigeration, and Air Conditioning Engineers
(ASHRAE), Omaha, NE, 2013

Heat Recovery from Virtually any type of heating Plant
Sub-Metering for Sustainability and Performance Monitoring
Commercial Kitchen Ventilation, Performance, Efficiency, Fire Safety and Prevention
Airflow Control in High Performance Buildings
Variable Speed Compressor Technology
American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE), Omaha,
NE, 2012

Ethics for Engineers
Design-Build Risks –Contracting & Succeeding with Contractor-Led Projects
Green Design: New Liabilities, Risks, and Insurance Strategies

American Council of Engineering Companies Conference (ACEC), Las Vegas, NV, 2011

The Scientific Method for Fire & Explosion Investigations
Structural Investigations
Electrical Wire Fires
Equipment Failure and Fire Investigations
New Investigative Technologies using Structural Monitoring
Storm Damage Assessments
Fire Investigations for Total Burnout and Total Burn-down

Investigative Engineering Association Workshop, Atlanta, GA, 2010

Level I Infrared Thermographer Certification

Infrared Training Institute, North Billerica, MA, 2010

Trane TRACE Load Design Seminar

Trane Systems, Omaha, NE, 2009

Chilled Water Systems

Trane Systems, Omaha, NE, 2/12/09

“Forensic Engineering Training” (Certified in Fire Investigations By Peter Vallas Associates)

Investigative Engineers Association, Ft Lauderdale, FL, 2009

Mold Origin & Cause Testing & Investigation
Vehicular Black Box and Air Bag Investigating
Human Factor Aspects of Investigation
Infrared Technology
Fire Alarm/Fire Protection Systems Investigations Mechanical
Equipment Investigations
Catastrophic Response

Investigative Engineering Association Workshop, Dallas, TX, 2008

“Tactical Explosive Entry Course”

Olive Security Training Center, West Memphis, AR, 2006

“Tactical Explosive Entry”

National Security Associates, Atlanta, GA, 2006

“Special Entry Technicians Course”

Rapid Entry Systems Technology, Prescott, AZ, 2005

Publications

“Developing an Explosive Breaching Handbook,” **B. A. Lauritsen**

National Tactical Officers Association (NTOA) Trade Journal *The Tactical Edge*, January 2008

“Explosive Breaching Characterization Handbook,” **B. A. Lauritsen**

Combating Terrorism Technology Support Office/Technical Support Working Group (CTTSO/TSWG), 2008

“Human Lethality from a Suicide Bomber Bus Event,” **B. A. Lauritsen**

International Association of Bomb Technicians and Investigators (IABTI) Trade Journal *The Detonator*, December 2007

“Dynamic Breaching Characterization Report,” **B. A. Lauritsen**

Combating Terrorism Technology Support Office/Technical Support Working Group (CTTSO/TSWG), 2007

“Design and Evaluation of Novel Counter-Mobility Barrier Systems,” **B. A. Lauritsen**

ARA Technology Review, June 2006

Technical Teaching and Presentations

“How Laboratory Analysis and Metallurgy Assist in Some Common Insurance Claims”

Greater Kansas City Claims Association, Kansas City, KS, 2022

“Construction Defects Investigations Overview”

South Dakota Claims Association Seminar, Larchwood, Iowa, 2018

“Roofing Assessments and Damage Identification”

Nebraska Claims Association Fall Seminar, Omaha, NE, 2016

“Construction Defects Investigations”

Upper Red River Valley Claims Seminar, Fargo, ND, 2015

“Construction Defects Investigations”

Investigative Engineers Association Annual Conference, Phoenix, AZ, 2015

“Use of Infrared Thermography in Engineering Investigations”

Nebraska Claims Association Fall Seminar, Omaha, NE, 2010

“Developing an Explosive Breaching Handbook - Part 2”

International Breachers Symposium, Memphis, TN, 2007

“Developing an Explosive Breaching Handbook”

International Breachers Symposium, Tucson, AZ, 2006