4215 Campus Drive
Aurora, IL 60504

KEVIN K. MESYEF, P.E., S.E., C.W.I.
SENIOR MANAGING CONSULTANT

kkmesyef@engsys.com

Mr. Mesyef is a Senior Managing Consultant with ESi. He specializes in the investigation, evaluation, repair, and quality assurance of damaged and distressed structures in industrial facilities including refineries, gas plants, and chemical plants. Mr. Mesyef has extensive experience in the investigation, evaluation and repair of damaged and distressed structures including residential, commercial, and industrial buildings and facilities. Mr. Mesyef is regularly involved with and responsible for the development of repair plans and specifications, and preparation and implementation of quality control procedures.

Mr. Mesyef also specializes in the development of engineered lift plans and rigging plans involving cranes, hoists, and other lifting or hauling equipment. His experience includes the specification, review, analysis, and / or investigation of failures for lifting and rigging activities for bridge construction, oil and gas facilities, renewable energy projects, manufacturing facilities, commercial construction, and communication towers.

Areas of Specialization

Development and Failure Analysis of Engineered Lifting and Rigging Plans
Structural Evaluation of Buildings (Residential and Commercial) and Industrial Structures
Structural Damage Investigations
Property Condition Assessments
Collapse and Structural Failure Investigations
Repair and Retrofit Design
Building Envelope Consulting and Water Intrusion Testing
QA/QC and ITP Development and Implementation
Photovoltaic (PV) / Solar Panel Structural Support / Attachment Design and Failure Investigation

Education

M.S., Civil Engineering (Structural), University of Illinois-Urbana-Champaign, 2011
B.S., Civil Engineering (Structural), University of Illinois-Chicago, 2009

Registered Professional Engineer (PE)

State of Colorado….	License No. PE.0061466	State of Missouri……	License No. 2020030503
State of Florida…….	License No. 82626	State of Nebraska…..	License No. E-17224
State of Illinois……..	License No. 062.066096	State of New York….	License No. 101029
State of Indiana……	License No. PE11400457	State of Ohio……..	License No. PE.86453
State of Iowa…….	License No. P26327	State of Oregon…….	License No. 103480PE
State of Kentucky….	License No. 38129	State of Texas……...	License No. 138851
State of Michigan….	License No. 6201309984	State of Wisconsin….	License No. 45734-6
State of Minnesota...	License No. 62033		

Registered Structural Engineer (SE)

State of Illinois……..	License No. 081007828
State of Alaska…….	License No. 107331
State of Hawaii…….	License No. 18685

Certified Welding Inspector (CWI)

Certificate No……...16081801

Training and Certifications

Credentials

Transportation Worker Identification Credential (TWIC)

Industry / Safety Certifications

OSHA 30-Hour & 10-Hour
eRailSafe Certification
Scaffold User & Erector Hazards Training
Confined Space Hazards
Aerial Boom Lift & Scissor Lift Operator Certification
ANST NDT Level 1, Ultrasonic Testing
ACI Level 1 Certified Field Technician (Expired)

Technical Training

CE 263 Basic Surveying – Southern Illinois University of Carbondale, 2008
ASME PD442 – BPV Code, Section VIII, Div. 1: Design and Fabrication of Pressure Vessels, 2012
Fundamentals of Arctic Engineering – University of Alaska Anchorage, 2015
Structural Fire Engineering – ASIC, 2016
Fire Retardant-Treated Wood: The Basics – WoodWorks, 2016
RSMeans Facilities and Construction Estimating, 2017
Structural Building Condition Surveys: Looking for Trouble – ASCE, 2018
Interior Concrete Slabs-on-Ground Design – Half-Moon, 2019
Indiana Limestone Specifications & Detailing – ILIA, 2019
Extended Joint Systems for Slabs-on-Ground – WOC, 2019
Concrete Repair Fundamentals II: Waterproofing, General Protection & Corrosion Prevention – WOC, 2019
Completing Residential Foundation Systems for Ensuring Performance – WOC, 2019
Advanced Concrete Repair: Structural Distress, Assessment & Strengthening Solutions – WOC, 2019
Legal Aspects of Code Administration – ICC, 2020
Best Practices for Steel Joist + Steel Deck Construction – AISC, 2020
Performance-Based Structural Fire Engineering for Steel Buildings – AISC, 2020
Design + Detail Issues That Add Cost to Steel Projects – AISC, 2020
Evaluation of Foundation Distress and Causation for Distress off Building Structures, 2020
Assessment & Repair of Fire Damaged Concrete Structures, 2020
Practical Application of Non-Destructive Testing, 2020
Geotech Engineering and Testing, 2020
2019 Chicago Construction Codes – ICC, 2020
Adjacent Construction: Managing Risks in Dense Urban Environments, 2020
Externally Bonded FRP Composites for Strengthening Concrete Structures – Simpson Strong-Tie, 2022
Wood Construction & The Fire Investigator – AWC, 2022
Parking Structure Design, Construction and Maintenance – Halfmoon Education, 2023
Geo-Structural Investigation of Existing Structures (AWI092019) – ASCE, 2023
Scope Creep: Identifying and Reducing this Huge Project Management Pitfall – BQE, 2023
Fundamentals of Anchorage to Masonry (MAS101) – HILTI, 2023

Lifting and Rigging

CROSBY Comprehensive Eight Hour Fundamentals of Rigging, 2014
ITI Lift Director & Critical Lift Planning, 2016
ITI Fundamentals of Rigging Engineering, 2020-2022
- Engineering Principles for Rigging and Load Handling Activities
- Lift Planning Procedure, Considerations and Execution
- Crane and Derrick Engineering, Installation and Planning
- Specialized Transport Planning and Engineering Considerations
- Rigging & Load Handling Equipment Engineering & Applications
- Alternative Load Handling Equipment Engineering and Applications
- Standards & Regulations for Load Handling Equipment

Building Envelope / Waterproofing Systems

Structural Thermal Bridging in the Building Envelope – ASIC, 2018
Design Considerations for the Modern Building Envelope, 2016
Roofing & Waterproofing Forensics – CEC, 2019
Retrofit Single-Ply Roof Systems over Metal Panel Roofs – CEC, 2019
Avoid Leaks in Single-Wythe Masonry Walls – WOC, 2019
Addressing Moisture Durability and Energy Performance in Roof Assemblies – CEC, 2020
Deck Ledger Flashing and Stair Solutions – AWC, 2020
Key Requirements in Illinois: 2018 IECC – SEDAC, 2020
Introduction to Weather Resistant Barriers, 2020
Thermal Bridging: Small Details with a Large Impact, 2021
Moisture Control in Buildings: Designing, Constructing and Remodeling for Wet Weather – Half-Moon, 2021
Overview of 2022 Chicago Energy Transformation Code – SEDAC, 2023
Best Practices for Single-Ply Roofs – CEC, 2023
DON'T GO THERE: Navigating the Real Air Barrier Details – ABAA, 2023
Tips for Detailing Masonry Assemblies: Lessons Learned from IMI's Drawing Review – IMI (IIBEC), 2023

Professional Affiliations

American Society of Civil Engineers (ASCE) / Structural Engineering Institute (SEI)
Structural Engineers Association of Illinois (SEAOI)
American Society of Mechanical Engineers (ASME)
American Institute of Steel Construction (AISC)
American Welding Society (AWS)
American Wood Council (AWC)
International Institute of Building Enclosure Consultants (IIBEC)

Positions Held

Engineering Systems Inc., Aurora, Illinois

Senior Managing Consultant, Civil-structural Engineering, 2023 – Present
Senior Consultant, Civil-structural Engineering, 2018 – 2022
Senior Staff Consultant, Civil-structural Engineering, 2016 – 2017

Brindley Engineering Corporation, Lisle, Illinois

Project Lead / Reliability Engineer, 2013 – 2015

Citgo Lemont Refinery, Lemont, Illinois

Reliability Engineer, 2011 – 2013

US Army Corps of Engineers, Champaign, Illinois

Structural Engineering Research Assistant / Engineer, 2010 – 2011

Accurate Group, Inc., Lincolnshire, Illinois

Field Engineer, 2010 – 2010

Technical Publications

“Structural Inspection of Corpus Christi Army Depot: Vol. 1-3” – November 2010
US Army Corp of Engineers, Construction Engineering Research Laboratory
Authors: Dr. Ghassan K. Al-Chaar, Vito Cinfio, Dominick Dowds, Sean Guzik, Dr. Moussa A. Issa, Kevin Mesyef, Yadira Perez, and Steve Sweeney

"Structural Evaluation of Heavy Wood Trusses at Corpus Christi Army Depot, Texas” – October 2010
US Army Corp of Engineers, Construction Engineering Research Laboratory
Authors: Dr. Ghassan K. Al-Chaar, Vito Cinfio, Dominick Dowds, Dr. Moussa A. Issa, Lisa Kallemeyn, Kevin Mesyef, and Steve Sweeney

“Evaluation and Repair of Tornado Damage to a Large Manufacturing Plant” – November 2018
Eighth Congress on Forensic Engineering
Author: Kevin Mesyef;
Co-authors: Randall Bernhardt, Joseph Riddle, Dan Turner
This paper discusses the methods used to evaluate the damage to the building including the use of drones to evaluate roofing damage. Additionally, discussion is provided regarding temporary protection methods to facilitate a compressed schedule with multiple trades literally working on top of each other and around plant activities while partially in operation. The paper also covers the required analysis of the existing structural systems and design and implementation of repairs.

Teaching & Technical Presentations

"Forensic Examination of Structures" – December 2017

This presentation included a discussion of structural engineering investigations of different types of material failures. Discussion was provided of the differences in the investigation for steel, concrete, masonry and wood structures. A case study for each material type was presented.

"Building Codes – Related to Construction Defects, Premises Liability and Professional Liability" – November 2017; December 2017

This presentation discussed what building codes are and why the codes are important to society. The presentation covered why knowledge of the codes is important to insurance professionals. A history of building codes in the United States was presented along with discussion of why various codes existed prior to the current unified codes and how codes and laws are enforced.

"Evaluation and Repair of Tornado Damage to a Large Manufacturing Plant" – Eighth Congress on Forensic Engineering – December 2018; Austin, Texas

This presentation covered the methods used to evaluate the damage to the building including the use of drones to evaluate roofing damage. Additionally, discussion is provided regarding temporary protection methods to facilitate a compressed schedule with multiple trades literally working on top of each other and around plant activities while partially in operation. The presentation also covered the required analysis of the existing structural systems and design and implementation of repairs.

"Photovoltaic Panel Installations and Building Codes"

This presentation covers the applicable building code requirements and what is required when there is no locally adopted building code for the installation of photovoltaic (solar) panels on existing buildings. The presentation discusses the necessary inspection and engineering processes to ensure the installations are done properly and meet code. Several examples of what to look out for when purchasing or insuring a building with installed panels.

"Introduction to Lifting and Rigging Engineering", April 2022, April 2023

Guest Lecturer – Site Operations and Construction Safety (CAE 472), Illinois Institute of Technology.

"Welding for Engineers: What They Don't Teach you in School", April 2019, April 2022, April 2023

Guest Lecturer – Site Operations and Construction Safety (CAE 472), Illinois Institute of Technology.

"Rapid Response to Construction Failures" – DTCI Employment Law & Construction Law Section Seminar, October 2023

This presentation discussed the role of the forensic engineer and construction attorney in responding to construction failures. The importance of mobilizing for rapid response, collecting evidence (using a variety of methods such as simple observations, photographs, laser scanning, and drone flights), and applying the scientific method to draw legitimate and defendable conclusions were discussed. Case studies and lessons learned were shared to help attorneys who represent design professionals, contractors, and owners be prepared for these high consequence events.