Kevin K. Mesyef

PE, SE, CWI, RRC

Principal & Regional Operations Manager

Mr. Mesyef is a Principal and Regional Operations Manager with ESi, based in New Jersey. He specializes in investigation, analysis and planning of lifting and rigging operations, lift plans involving cranes or other load handling equipment, and evaluation, design and repair of structures in industrial facilities.

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

Mr. Mesyef also has extensive experience in the investigation, evaluation and repair of damaged and distressed structures including residential, commercial, and industrial facilities, including refineries, gas plants, and chemical plants. Mr. Mesyef is regularly involved with and responsible for the development of repair plans and specifications, and preparation and / or implementation of quality control procedures.

Education

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

B.S., Civil Engineering (Structural), University of Illinois-Chicago, 2009

Licenses & Certifications

Registered Structural Engineer (SE)

- State of Illinois…….. No. 081007828
- State of Alaska…….. No. 107331

Certified Welding Inspection (CWI)

- Certificate No……..... No. 16081801

Registered Roof Consultant (RRC)

- Certificate No……..... No. 1039

Contact Information

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ESi New Jersey

6 Frassetto Way, Suite E
Lincoln Park, NJ 07035

Areas of Specialization

- Investigation and Failure Analysis of Lifting, Rigging, and Hauling Operations
- Development of Engineered Lifting and Rigging Plans
- Construction Defects Investigation
- Structural Evaluation of Buildings (Residential and Commercial) and Industrial Structures
- Property Condition Assessments
- Collapse and Structural Failure Investigations
- Repair and Retrofit Design
- Building Envelope / Roofing Consulting and Water Intrusion Testing
- Roof System Investigation and Consulting
- Photovoltaic (PV) / Solar Panel Design, Inspection, and Failure Investigation

Registered Professional Engineer (PE)

- State of Colorado……. No. PE.0061466
- State of Connecticut……. No. PEN.0037639
- District of Columbia……. No. PES40000347
- State of Florida…… No. 82626
- State of Hawaii…….. No. 18685
- State of Iowa…… No. P26327
- State of Illinois…….. No. 062.066096
- State of Indiana…… No. PE11400457
- State of Kentucky……. No. 38129
- State of Louisiana…… No. PE.0050057
- State of Maryland……. No. 66789
- State of Massachusetts.. No. 60053
- State of Michigan……. No. 6201309984
- State of Minnesota..... No. 62033
- State of Missouri…… No. 2020030503
- State of Nebraska……. No. E-17224
- State of New Hampshire No. 20770
- State of New Jersey…. No. 24GE06105200
- State of New York……. No. 101029
- State of Ohio…….. No. PE.86453
- State of Oregon……. No. 103480PE
- Comm. of Pennsylvania No. PE096124
- State of Tennessee No. 135344
- State of Texas……..... No. 138851
- State of Vermont…… No. 018.0135995
- State of Virginia……. No. 0402070735
- State of West Virginia… No. 27758
- State of Wisconsin……. No. 45734-6

Industry / Safety Certifications

- Transportation Worker Identification Credential (TWIC)
- Chicago Registered Self-Certification Professional (SCP)
- ITI Overhead Crane Inspector – Qualified
- OSHA 30-Hour & 10-Hour
- eRailSafe Certification
- Scaffold User & Erector Hazards Training
- Fall Protection Competent Person
- Aerial Boom Lift & Scissor Lift Operator Certification
- ANST NDT Level 1, Ultrasonic Testing
- ACI Level 1 Certified Field Technician (Expired)

Positions Held

Engineering Systems Inc., Aurora, Illinois

- Principal & Regional Operational Manager, 2026-Present
- Senior Managing Consultant & Regional Operations Manager, 2025
- Senior Managing Consultant, 2023-2024

- 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

Continuing Education

- 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 – AISC, 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
- Polymer Technology for Infrastructure Repair Polyurethane And Acrylic Chemical Grouts – Alchtek, 2024
- Reimagine the Outdoor Experience: Understanding Rooftop Deck Systems – CEC, 2024
- Designing and Constructing Solar PV Energy Systems: Residential/Small Commercial – HalfMoon Education, 2024
- Designing to Withstand Tornadic Loads on Buildings – HalfMoon Education, 2024
- IBC 2021 Code Conforming Wood Design – AWC, 2024
- Durable Construction with Preservative-Treated Wood – AWC, 2025
- New Insights to Safeguarding Buildings During Construction: Fire & Life Safety Best Practices – AWC, 2025
- Swimming Pool Design and Construction – HalfMoon Education, 2025
- 80 Hours of preparation training for the AWS CWI 9 Year Renewal – AWS 2025
- Deep Foundations and Ground Improvements – Halfmoon Education, 2026

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

ITI Overhead Crane Inspector – Qualified, 2024

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 & 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
- 2021 IECC: Simplifying Energy Code Compliance – SEDAC, 2024
- 2021 IECC: Existing Buildings – Commercial – SEDAC, 2024
- Effective Moisture Detection in Roofing – IIBEC, 2024
- Roof Technology and Science I – IIBEC, 2024-2025
- 2024 International Energy Conservation Code (IECC) Updates – SEDAC, 2025
- Crushing the Code NYS: Demonstrate Compliance – Urban Green Council
- Roof Technology and Science II – IIBEC, 2025
- Lessons Learned from Electronic Leak Detection Testing and Continuous Monitoring – CEC, 2026
- Loss Mitigation Through Building Design – CEC, 2026

Professional Affiliations/Honors

ASM International

- 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)

Project Experience

Cranes, Rigging, and Hauling

- Performed failure investigation and analysis for collapsed bridge girder involving tandem crane lift during demolition of major tollway bridge overpass in Chicago, IL. Operation involved two mobile hydraulic cranes with respective capacities of 550t and 350t.
- Performed failure investigation and analysis for collapsed 100t lattice boom crawler crane with installed luffing jib due to wind loads in New Jersey.
- Performed inspection, structural analysis, and specification of repairs for damaged overhead semi-gantry crane with attached flipper crane in manufacturing facility in Illinois.
- Assisted in development of critical lift plan for barge operations at a well site to install injector head and extract pilings in Louisiana.
- Prepared rigging plan and design of temporary lifting lugs and specification of weld procedure for removal of deteriorated 10-ft. diameter, refractory lined, stainless steel stack lid assembly at industrial manufacturing plant in Illinois.
- Prepared rigging plan and design of permanent lifting lugs and specification of weld procedure for installation of new 10-ft. diameter, refractory lined, stainless steel stack lid assembly at industrial manufacturing plant in Illinois.
- Assisted with investigation and analysis of premature wire rope failure on overhead crane at large automotive manufacturing plant in South Carolina.
- Performed investigation and analysis of failed rigging operation during unloading of hanger doors from delivery truck in California.
- Performed failure investigation and analysis for collapsed barge mounted crane boom performing sheet piling installations for dam repairs in Wisconsin.
- Performed investigation and analysis of marine gantry crane hoist failure resulting in the dropping of a 135-ft. yacht during crane lift in Seattle.
- Assisted with investigation and analysis of wire rope failure on deck crane during lift while load was suspended at manufacturing plant in South Carolina.
- Design of hoist trolley beam associated with roof framing repairs and modifications at a manufacturing plant in Illinois.
- Performed failure investigation of custom-built barge crane failure during pile driving activities in Florida.
- Investigated crane lift accident during concrete piling cutting and removal resulting in a fatality in Florida.
- Performed failure investigation and analysis of toppled tower crane installed on a concrete matt foundation during erection at construction site in Florida.

- Performed forensic investigation and analysis of fallen locomotive fan housing removed by overhead gantry crane in diesel shop in Louisiana.
- Performed forensic investigation of failed rigging supporting steel brace during construction of multistory hotel in Chicago, IL.
- Performed analysis and design of retrofits for upgrading capacity of existing overhead hoist system from 7.5t to 10t in manufacturing facility in Nebraska.
- Performed analysis of existing structure and designed required retrofits and new supporting structure for installation of new overhead trolley system at manufacturing plant in Nebraska.
- Performed optimization analysis and designed various length lifting beams for repetitive use, rated for up to 50t and up to 40-ft. long.
- Performed forensic investigation of collapsed 600t crawler crane due to mechanical failure of superlift counterweight linkage component during lift in Illinois.
- Investigation and analysis of 60t mobile hydraulic crane boom buckle during lift of concrete pile during demolition and removal in Georgia.
- Forensic investigation and analysis of load shifting of rigged bundle of light poles using truck mounted crane to remove load from a flatbed trailer resulting in injury in Minnesota.
- Performed forensic investigation and accident reconstruction of disengagement of blower motor from overhead crane hoist hook during removal from locomotive at diesel shop in Louisiana.
- Performed forensic investigation of failed rigging supporting steel brace during construction of multistory hotel in Chicago, IL.
- Performed analysis and design of retrofits for upgrading capacity of existing overhead hoist system from 7.5t to 10t in manufacturing facility in Nebraska.
- Performed analysis of existing structure and designed required retrofits and new supporting structure for installation of new overhead trolley system at manufacturing plant in Nebraska.
- Performed optimization analysis and designed various length lifting beams for repetitive use, rated for up to 50t and up to 40-ft. long.
- Performed forensic investigation of collapsed 600t crawler crane due to mechanical failure of superlift counterweight linkage component during lift in Illinois.
- Investigation and analysis of 60t mobile hydraulic crane boom buckle during lift of concrete pile during demolition and removal in Georgia.
- Forensic investigation and analysis of load shifting of rigged bundle of light poles using truck mounted crane to remove load from a flatbed trailer resulting in injury in Minnesota.
- Performed forensic investigation and accident reconstruction of disengagement of blower motor from overhead crane hoist hook during removal from locomotive at diesel shop in Louisiana.

Publications

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

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

“Evaluation and Repair of Tornado Damage to a Large Manufacturing Plant,” **Kevin Mesyef**; Randall Bernhardt, Joseph Riddle, Dan Turner, Eighth Congress on Forensic Engineering, November 2018

Presentations

“Introduction to Lifting and Rigging Engineering,” **Kevin Mesyef**, Site Operations and Construction Safety (CAE 472), Illinois Institute of Technology, Apr. 2022, Apr. 2023, Apr. 2025, Feb 2026.

“Engineering Considerations for Photovoltaic Panel (PV) Installations,” **Kevin Mesyef**, Site Operations and Construction Safety (CAE 472), Illinois Institute of Technology, Feb. 2024.

“Forensic Examination of Structures,” **Kevin Mesyef**, December 2017.

“Building Codes – Related to Construction Defects, Premises Liability and Professional Liability,” **Kevin Mesyef**, November 2017; December 2017.

“Evaluation and Repair of Tornado Damage to a Large Manufacturing Plant,” **Kevin Mesyef**, Eighth Congress on Forensic Engineering, Austin, Texas, December 2018.

“Photovoltaic Panel Installations and Building Codes,” **Kevin Mesyef**, November 2020.

“Rapid Response to Construction Failures,” **Kevin Mesyef**, DTCI Employment Law & Construction Law Section Seminar, October 2023.

“Forensic Examination of Structures,” **Kevin Mesyef**, October 2025.

“Rapid Response to Construction Failures,” **Kevin Mesyef**, ABA Forum on Construction Law 2025 Regional (New York), November 2025.

“From Wind to Flood: Overlapping Coverages and Concurrent Causation Disputes,” **Kevin Mesyef,** DRI Association of Lawyers Defending Business’s 2026 Insurance Coverage & Claims Institute (ICCI) Chicago, March 2026.