

Joseph K. Riddle

PE SE

Director, Senior Managing Consultant



Mr. Riddle is a Senior Managing Consultant & Director with ESi. He specializes in the assessment, investigation, and repair of damaged or distressed structures, as well as building code review, structural analysis, and structural design.

Mr. Riddle has worked on a wide variety of projects, including residential, commercial, and industrial buildings, with a variety of material types including wood, steel, heavy timber, light-gauge metal, reinforced concrete, precast concrete, and masonry. In many cases, Mr. Riddle has designed retrofits or repairs for structures that he has assessed. He has extensive experience in the detailing of repairs to fit unique or complex situations.

Additionally, Mr. Riddle has performed numerous investigations related to building envelope, structural condition assessment and load rating, temporary shoring and scaffolding design, and emergency stabilization. He has also performed research involving long-term structural monitoring of integral abutment bridges and detailed finite element modeling.

Mr. Riddle volunteers his time as a judge at the annual regional and national level Student Steel Bridge Competitions, sponsored by the American Institute of Steel Construction. He also actively pursues opportunities to speak to students about possible careers in the field of engineering and has been a guest lecturer at the Illinois Institute of Technology and Judson University on multiple occasions.

Mr. Riddle served as a member of the ASCE 11 Committee – Structural Condition Assessment of Existing Structures and currently serves as the Chapter 2 Chair of the ASCE 37 Committee – Design Loads on Structures during Construction.

Education

BS, Computer Science. Western Governors University. 2022

MS, Civil Engineering (Structural). University of Illinois Urbana-Champaign. 2014

BS, Civil Engineering (Structural/Transportation). University of Illinois Urbana-Champaign. 2012

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ESi Aurora

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Areas of Specialization

- Building Code Review & Analysis
- Structural Failure Analysis
- Structural Analysis & Design
- Repair Design
- Retrofit & Strengthening Design
- Structural Condition Assessment
- Damage Assessment
- Building Envelope Assessment
- Emergency Stabilization
- Temporary Shoring Design
- Scaffolding Design
- Balcony Assessment
- Structural Health Monitoring
- Construction Administration

Licenses & Certifications

- State of Illinois S.E. License 081-008109
- State of Florida P.E. License 87574
- State of Illinois P.E. License 062-069542
- State of Indiana P.E. License PE11800640
- State of Iowa P.E. License P27128
- State of Michigan P.E. License 6201316668
- State of South Carolina P.E. License 43992
- State of Virginia P.E. License 0402068622
- State of Wisconsin P.E. License E-46836
- OSHA 30-Hour Construction Safety Training Certification
- OSHA Suspended and Supported Scaffold Training Certification
- Transportation Worker Identification Credential (TWIC) Card
- Mobile Elevating Work Platform Operator Certification
- City of Chicago Self Certification Professional
- International Code Council Property Maintenance and Housing Inspector Certificate No. 9436390

Positions Held

Engineering Systems Inc., Aurora, Illinois

- Senior Managing Consultant, Civil/Structural Engineering, 2024 – Present
- Senior Consultant, Civil/Structural Engineering, 2018–2024
- Senior Staff Consultant, Civil/Structural Engineering, 2017–2018

University of Illinois, Urbana, Illinois

- Graduate Research Assistant, Dept. of Civil & Environmental Engineering, 2012–2014

Engineering Systems Inc., Aurora, Illinois

- Engineering Intern, Civil/Structural Engineering, Summer 2012

Professional Affiliations/Honors

American Society of Civil Engineers

- Member, ASCE 11 Guideline for Structural Condition Assessment of Existing Buildings Committee
- Chapter 2 Chair, ASCE 37 Design Loads on Structures During Construction Committee

Structural Engineering Institute

- Member

International Institute of Building Enclosure Consultants

- Member

American Institute of Steel Construction

- Volunteer Judge for Regional and National Student Steel Bridge Competitions

Publications

“Structural Condition Assessment of Existing Buildings,” G. Mulholland, **J. Riddle**, et al., ASCE Manuals and Reports on Engineering Practice No. 158, 2024.

“Evaluation and Repair of Tornado Damage to a Large Manufacturing Plant,” K. Mesyef, **J. Riddle**, et al., Eighth Congress of Forensic Engineering Conference Proceedings, November 2018.

“Integral Abutment Bridges Under Thermal Loading: Field Monitoring and Analysis,” J. LaFave, L. Fahnestock, G. Brambila, **J. Riddle**, et al., Illinois Center for Transportation Research Report No. FHWA-ICT-17-017, August 2017.

“Numerical Simulations of Steel Integral Abutment Bridges Under Thermal Loading,” J. LaFave, **J. Riddle**, M. Jarrett, B. Wright, J. Svatora, H. An, and L. Fahnestock, Journal of Bridge Engineering, Vol. 21, No. 10, October 2016.

“Integral Abutment Bridges under Thermal Loading: Numerical Simulations and Parametric Study,” J. LaFave, L. Fahnestock, B. Wright, **J. Riddle**, et al., Illinois Center for Transportation Research Report No. FHWA-ICT-16-014, June 2016.

“Numerical Simulations and Field Monitoring of Integral Abutment Bridge Behavior,” J. LaFave, L. Fahnestock, M. Jarrett, B. Wright, **J. Riddle**, and J. Svatora, ASCE Structures Congress Proceedings, April 2015.

Presentations

“Structural Damage, Repair Requirements, and Repair Examples,” **J. Riddle**, CLE Presentation, RGA Claims Management Adjuster Annual Meeting, Glen Ellyn, IL, December 2025.

“Striking the Balance: AI Efficiency Meets Information Integrity,” **J. Riddle** and C. Yanikoski, CLE Presentation, ESI Open House, Aurora, IL, November 2025.

“Building Enclosures: Overview and Common Problems,” **J. Riddle**, Site Operations and Construction Safety (CAE 472), Illinois Institute of Technology, Chicago, IL, March 2025.

“Snow Loading Code Provisions and Calculations,” **J. Riddle**, Site Operations and Construction Safety (CAE 472), Illinois Institute of Technology, Chicago, IL, March 2025.

“Structural Design of Steel Open Web Bar Joist Framing Systems,” **J. Riddle**, Structures II (ARC 441), Judson University, Elgin, IL, October 2024.

“Building Enclosure Requirements and Common Problems,” **J. Riddle**, Site Operations and Construction Safety (CAE 472), Illinois Institute of Technology, Chicago, IL, April 2024.

“Structural Damage and Repair Requirements,” **J. Riddle**, CLE Presentation, Remote, December 2023.

“What Went Wrong with My New Building,” **J. Riddle**, RAC Adjustments Adjuster Training Seminar, Rockford, IL, March 2023.

“Design and Detailing of Wood Framing Connections,” **J. Riddle**, Site Operations and Construction Safety (CAE 472), Illinois Institute of Technology, Chicago, IL, February 2023.

“Common Structural Failure Points of Agricultural Buildings,” **J. Riddle**, Mutual Loss Prevention and Adjusting Seminar, Wisconsin Dells, WI, March 2022.

“Design and Detailing of Wood Framing Connections,” **J. Riddle**, Site Operations and Construction Safety (CAE 472), Illinois Institute of Technology, Chicago, IL, April 2019.

“Building Response to Wind Forces and Related Code Requirements,” **J. Riddle**, CLE Presentation, Chicago, IL, March 2019.

“Evaluation and Repair of Tornado Damage to a Large Manufacturing Plant,” K. Mesyef and **J. Riddle**, Eighth Congress of Forensic Engineering, Austin, TX, November 2018.

“Integral Abutment Bridges: Behavior, Design, and Ongoing Research,” **J. Riddle**, SEI Day, Structural Engineering Institute, St. Louis, MO, October 16, 2015.