

Madison Monaghan is a Staff Consultant at Engineering Systems Inc. (ESi), specializing in forensic structural engineering. Ms. Monaghan's expertise includes structural analysis, repair and renovation design, code compliance and construction defect investigations. She has performed structural failure assessments and collapse investigations to determine the extent of damage and develop remediation plans.

Education

MS, Civil Engineering. Purdue University. Current
BS, Civil Engineering. Purdue University. 2025

Licenses & Certifications

- State of Illinois EIT License 061-043497
- FARO Focus Scanner User Certification Program

Positions Held

Engineering Systems Inc., Aurora, Illinois

- Staff Consultant, 2025 – Present
- Intern, 2024

Bechtel Innovation & Design Center, West Lafayette, Indiana

- Teaching Assistant, 2024–2025

Tigerbrain Engineering, Oviedo, Florida

- Intern, 2023

Giffels Webster, Birmingham, Michigan

- Intern, 2022

Contact Information

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ESi Aurora

4215 Campus Drive
Aurora, IL 60504

Areas of Specialization

- Civil & Structural Engineering
- Failure Analysis
- Structural Analysis
- FARO 3D Modeling
- Risk Assessment & Mitigation
- Geotechnical Investigations
- Construction Defect Investigations

Professional Affiliations/Honors

American Society of Civil Engineers

- Member, 2025 – Present

Project Experience

Investigations

Damage Assessments

- Balcony structural assessment and risk mitigation
- Investigation and assessment on extent of fire damage on structural components
- Remediation design on fire damage
- Investigation of lift collapses and total structural collapses
- Hurricane damage assessments

Construction

- Investigations of construction accidents and root causes
- Inadequate construction investigations and risk mitigation

Teaching & Technical Presentations

- Monaghan, M. "Visualization Research Project" ESi Company Presentation. July 2024.
- Riddle, J., Kierpiec, D., Monaghan, M. "Scaffolding, Shoring, Fires, Collapses, and Everything in Between." ASCE General Meeting, University of Illinois at Urbana-Champaign Student Chapter. November 2025.
- Monaghan, M. "Smokin' Joists" Live demonstration at the ESi Continuing education event. November 2025.
