PERSONNEL QUALIFICATIONS

Matthew F. Fadden | Associate Principal

EDUCATION

- University of Illinois at Urbana-Champaign
  - Bachelor of Science, Civil Engineering, 2007
- University of Michigan
  - Master of Science in Engineering, Civil Engineering, 2008
  - Doctor of Philosophy, Civil Engineering, 2013

PRACTICE AREAS

- Failure/Damage Investigation
- Repair and Rehabilitation
- Steel Structures
- Concrete Structures
- Structural Analysis
- Structural Testing
- Litigation Consulting

REGISTRATIONS

- Professional Engineer in AL, FL, KS, and LA

PROFESSIONAL AFFILIATIONS

- American Institute of Steel Construction
- American Society of Civil Engineers
- Cold-Formed Steel Engineers Institute

CONTACT

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EXPERIENCE

Matthew Fadden joined WJE with ten years of experience in structural engineering research and consulting. His primary areas of expertise include the design, analysis, and evaluation of steel structures (hot rolled and cold formed) and reinforced concrete structures. Additionally, Dr. Fadden has expertise in structural evaluation using finite element modeling and structural testing. His experience also includes seismic design, structural vibrations, offshore structures, and litigation support.

Prior to joining WJE, Dr. Fadden was a professor in the Department of Civil, Environmental, and Architectural Engineering at the University of Kansas. There, his research areas included modular systems and connections for steel buildings, bolted and welded connections, ancillary sign structures, structural vibrations, and additive manufacturing for civil infrastructure. Dr. Fadden has authored many technical publications in refereed journals and has given numerous conference presentations.

REPRESENTATIVE PROJECTS

Failure/Damage Investigations

- Hurricane Michael Structural Evaluations - Panama City, FL: Assessment of schools, churches, retail, and office buildings for structural safety
- Lincoln Pointe Sea Wall - Aventura, FL: Corrosion investigation and repair recommendations of a precast concrete seawall
- Apartment Stair Failure - Mission, KS: Litigation consulting regarding the failure of concrete stair resulting in personal injury *

Steel Structures

- International Airport - Southwest FL: Litigation support regarding the fabrication of steel plate girders for automated people mover system
- Lightweight Modular Two-Way Flooring Systems for Steel Structures - Lawrence, KS: Development of a new flooring system that allows for rapid and modular construction considering structural vibrations and diaphragm behavior **
- Dynamic Performance of Cantilever Sign Trusses - Lawrence, KS: Computational fluid dynamics and wind tunnel testing study to understand loading characteristics and fatigue performance **
- Offset Derrick Optimization Study - Lafayette, LA: Finite element modeling optimization of derricks to reduce material and fabrication costs **
- HSS-to-HSS Seismic Moment Frame System - Ann Arbor, MI: Large-scale experimental testing and finite element modeling studies of hollow structural section connections under seismic loads **

Concrete Structures

- Cargo Port - Southwest FL: Litigation support regarding post-installed reinforcement capacity and development
- Wolf Creek Nuclear Power Plant Substation - Burlington, KS: Structural investigation and repair recommendations of foundations
- Austin-Bergstrom International Airport - Austin, TX: Evaluation of isolation joint and repair recommendations
- Lightweight Modular Reinforced Concrete Structural Walls Optimized for Additive Manufacturing - Lawrence, KS: Development, analysis, and testing of a modular wall system using 3D-printed formwork **
- Development and Characterization of Self-Sensing Carbon Nanofiber High-Performance Fiber Reinforced Cementitious Composite - Lafayette, LA: Development and evaluation of a high-ductility cement composite with improved strain sensing **

** Indicates prior consulting experience*
*** Indicates as a faculty member or graduate researcher*

TECHNICAL COMMITTEES

- American Iron and Steel Institute Committee on Framing Standards, corresponding member
- American Society of Civil Engineers Structural Engineering Institute Structural Connections Committee, chair