

Fangzhou (Jack) Dai | Senior Associate



EDUCATION

- University of Wyoming
 - Bachelor of Science, Civil Engineering, 2011
- University of Illinois at Urbana-Champaign
 - Master of Science, Structural Engineering, 2014

PRACTICE AREAS

- Structural Testing
- Instrumentation/Monitoring/Load Testing
- Vibration and Noise Monitoring
- Nondestructive Evaluation
- Health Monitoring
- Repair and Rehabilitation
- Structural Analysis

REGISTRATIONS

- Professional (Civil) Engineer in CA

PROFESSIONAL AFFILIATIONS

- American Concrete Institute
- American Society of Civil Engineers

TECHNICAL COMMITTEES

- Structural Engineering Institute (SEI) - Methods of Monitoring Structural Performance

CONTACT

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EXPERIENCE

Since joining WJE in 2018, Jack Dai has been involved in a broad range of projects, that have included the evaluation, testing, instrumentation and monitoring, vibration analysis, and nondestructive evaluation of a variety of structures. His background and interests include structural dynamics, condition assessment of historic structures, load testing, nondestructive evaluation, and full-scale laboratory testing.

Prior to joining WJE, Mr. Dai was a project associate and manager for the design and implementation of full-scale structural health monitoring systems. He is an active member in several professional societies and technical committees. He has authored publications and has made presentations on structural instrumentation and monitoring.

REPRESENTATIVE PROJECTS

Structural Testing

- Salt Lake City Airport - UT: Full-scale testing of concrete beams to quantify strengths of various bar reinforcing details
- Mid-Rise Condominium Building - Miami, FL: Wind tunnel testing of building envelope components with analyses of vibration, strain, and displacement
- Ultra-High Performance Concrete (UHPC): Full-scale laboratory testing to investigate shear behavior of UHPC beams
- Hotel - Miami Beach, FL: Testing and analysis of decayed timber framing members

Instrumentation/Monitoring/Load Testing

- Sunshine Bridge Emergency Repair - Convent, LA: Strain, load, and displacement monitoring during the replacement of a damaged component
- Chicago Public School District - IL: Structural condition assessment; instrumentation and load testing of reinforced concrete roofs
- Multiple Manufactured Gas Plant Sites: Structural condition assessment; vibration and tilt monitoring of key surrounding structures near the excavation

Vibration and Noise Monitoring

- Frist Art Museum - Nashville, TN: Vibration measurement and analysis to protect critical art collection during construction at an adjacent site
- Birmingham Museum of Art - Birmingham, AL: Analysis of vibration propagation and attenuation for risk management during the reconstruction of an adjacent highway
- Ohio State University, Psychology Building - Columbus: Vibration testing and analysis to study the impact of facade demolition and replacement on sensitive medical devices
- High-Rise Building - Chicago, IL: Vibration analysis to locate source of abnormal noise/vibration activities along the elevator shaft to guide remediation work

Nondestructive Evaluation

- River City - Chicago, IL: Assessment of reinforced concrete roof with complex geometry using ground penetrating radar
- Plainfield High School - Plainfield, IL: Assessment of athletic field concrete slab using ground penetrating radar
- High-Rise Building - Chicago, IL: Condition assessment of post-tensioned slabs and concrete facade using ground penetrating radar and ultrasonic tomography

Health Monitoring

- Governor Mario M. Cuomo Bridge (Tappan Zee Bridge Replacement) - Tarrytown, NY: Full-scale structural health monitoring system *
- Michigan Statewide Bridges - Michigan Department of Transportation: Long-term monitoring of carbon fiber prestressed and post-tensioned bridge components *

* Indicates with previous firms