



## PERSONNEL QUALIFICATIONS

### Nathaniel S. Rende | Senior Associate



#### EDUCATION

- University of Illinois at Urbana-Champaign
  - Bachelor of Science, Civil Engineering, 2004
  - Master of Science, Structural Engineering, 2005

#### PRACTICE AREAS

- Condition Assessment
- Nondestructive Evaluation
- Repair and Rehabilitation Design
- Structural Evaluation
- Testing and Instrumentation
- Vibration Analysis
- Vibration and Noise Monitoring

#### REGISTRATIONS

- Professional Engineer in IA and MO
- Structural Engineer in IL

#### PROFESSIONAL AFFILIATIONS

- American Concrete Institute
- Structural Engineers Association of Illinois
- International Concrete Repair Institute

#### TECHNICAL COMMITTEES

- ACI 228 - Nondestructive Testing of Concrete

#### CONTACT

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#### EXPERIENCE

Since joining WJE in 2005, Nathaniel Rende has been a project associate for a broad range of assignments, including condition assessment of existing structures, structural testing and instrumentation, quality assurance inspections, and the development of repair plans and specifications. He specializes in applying nondestructive evaluation (NDE) techniques, specifically impact-echo, ground penetrating radar, impulse-response, and ultrasonic pulse velocity to evaluate concrete and masonry structures and has developed and applied NDE to many unique situations. Mr. Rende has investigated concrete-related problems in numerous structures, including historic buildings, prestressed and post-tensioned structures, bridges, parking garages, slab-on-grade and pavements, concrete liners and shafts, and foundations. He is also involved in the measurement and analysis of vibrations and has conducted several condition documentation surveys and construction vibration surveillance projects.

Mr. Rende is affiliated with several professional societies, is a member of technical committee ACI 228, and has given technical presentations and seminars in nondestructive evaluation throughout the nation.

#### REPRESENTATIVE PROJECTS

##### Condition Assessment/Field Inspection

- Major Retail Chain - Various Locations  
Nationwide: Structural steel roof assessment and repairs; uplift brace inspection and analysis
- National Precast Concrete Association and American Concrete Pipe Association: Plant inspection, evaluation of precast production and quality control procedures, and ongoing inspection programs nationwide

#### Nondestructive Evaluation

- Horse Hollow Wind Farm - Abilene, TX: Impact-echo (IE) testing of grout beds at the base of wind-powered generators; repair design and evaluation
- Iowa City Municipal WTP - IA: Condition assessment and GPR testing of double-tee roof beams, structural capacity analysis, design and implementation of FRP repairs, and quality assurance testing
- Ninety-First Avenue Waste Water Treatment Facility - Phoenix, AZ: Impact-echo evaluation of repaired reinforced concrete walls and pilasters; concrete slab on grade evaluation using ground penetrating radar (GPR)
- Route 880 Collapse/Fire Damage Investigation - Oakland, CA: Impact-echo evaluation of fire-damaged concrete bridge deck; ultrasonic pulse velocity (UPV) testing of concrete bridge columns

#### Testing and Instrumentation

- Chicago Public School District - IL: Structural condition assessment; instrumentation and load testing of reinforced concrete roofs
- Various Manufacturers: Static and dynamic testing of mechanical and adhesive concrete anchoring systems

#### Vibration Monitoring and Analysis

- Art Institute of Chicago - IL: Preconstruction and post-construction condition assessment surveys; vibration monitoring and analysis during Jackson Street bridge demolition and interior renovations,
- Lurie Children's Memorial Hospital - Chicago, IL: Vibration monitoring and analysis (five surrounding buildings) during construction