PERSONNEL QUALIFICATIONS

Mohamed ElBatanouny | Associate III

EDUCATION

- Helwan University, Egypt
  - Bachelor of Science, Civil Engineering, 2008
- University of South Carolina
  - Master of Science, Civil Engineering, 2010
  - Doctor of Philosophy, Civil Engineering, 2012

PRACTICE AREAS

- Structural Evaluation
- Health Monitoring and Instrumentation
- Nondestructive Evaluation
- Load Testing
- Research and Testing
- Vibration and Noise Monitoring
- Bridge Engineering
- Repair and Rehabilitation Design

REGISTRATIONS

- Structural Engineer in IL

PROFESSIONAL AFFILIATIONS

- American Concrete Institute
- American Society of Civil Engineers
- Precast/Prestressed Concrete Institute

CONTACT

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EXPERIENCE

Since joining WJE in 2015, Mohamed ElBatanouny has worked on a variety of projects, including structural evaluation, vibration analysis, and health monitoring and instrumentation. He has background and interest in condition assessment of existing structures, nondestructive evaluation, concrete material degradation, load testing, and full-scale experimental characterization.

Prior to joining WJE, Dr. ElBatanouny served as Postdoctoral Fellow and Adjunct Professor at the University of South Carolina, where he participated in a number of sponsored research projects, including a four-year project sponsored by NIST entitled “Self-Powered Wireless Sensor Network for Structural Bridge Health Prognosis.” In this research project, he used acoustic emission monitoring to develop a novel noninvasive approach for corrosion damage detection and classification in prestressed and post-tensioned concrete members.

Dr. ElBatanouny is an active member in several technical committees and has presented numerous lectures on structural evaluation, load testing, nondestructive evaluation, and concrete material degradation. He has authored more than forty significant publications, including two book chapters.

REPRESENTATIVE PROJECTS

Structural Evaluation

- Waller Creek Tunnel - Austin, TX: Assessment of reduction in structural capacity due to deviation of as-built conditions
- Floor Vibrations - Various Locations: Field instrumentation and structural modeling of human comfort due to floor vibrations at multiple locations

Health Monitoring and Instrumentation

- Union Station Freight Tunnel Monitoring - Chicago, IL: Monitor vibrations in underground tunnels during pile driving
- CTA Yellow Line Embankment Investigation - Skokie, IL: Emergency tilt monitoring of multiple piles after sudden collapse of embankment

Nondestructive Evaluation

- AUX Sable Middle School - Joliet, IL: Assessment of concrete slab using ground penetrating radar

Load Testing

- Car Stacker Test - Chicago, IL: Load testing of a three-level car stacker

Research and Testing

- Guidelines for Transporting Prestressed Girders - Louisiana Department of Transportation: Analyze transportation data and analytical analysis of girder structural behavior and stability
- Acoustic Emission Sensing System Demonstration at the 105-C Reactor Facility - Savannah River National Laboratory: Wireless, self-powered remote monitoring of concrete members in decommissioned nuclear facility*
- Self-Powered Wireless Sensor Network for Structural Bridge Health Prognosis - National Institute of Standards and Technology: Development of acoustic emission based approaches to detect corrosion damage in prestressed and post-tensioned concrete*
- Acoustic Emission Monitoring of Alkali-Silica Reaction (ASR): Development of noninvasive acoustic emission chart to detect ASR damage; conducted in partnership with WJE*
- Behavior of Pile to Pile-Cap Connections Subjected to Seismic Forces - South Carolina Department of Transportation: Development of analytical and numerical models to evaluate the effect of embedment depth on structural behavior*

TECHNICAL COMMITTEES

- ACI 437 - Strength Evaluation of Existing Concrete Structures
- ACI 444 - Structural Health Monitoring and Instrumentation

**Indicates work while at the University of South Carolina*