PERSONNEL QUALIFICATIONS

W. Robert Hannen | Associate Principal

EDUCATION

- Northern Illinois University
  - Bachelor of Science, Geology, 1975
- University of Illinois
  - Master of Science, Geotechnical Engineering, 1983

PRACTICE AREAS

- Testing and Instrumentation
- Expert Testimony
- Nondestructive Evaluation
- Stadiums and Arenas
- Vibration and Noise Monitoring

REGISTRATIONS

- Professional Engineer in IL

PROFESSIONAL AFFILIATIONS

- American Society of Civil Engineers (ASCE)
- ASTM International (ASTM)

TECHNICAL COMMITTEES

- ASTM F12 - Security Systems and Equipment
- ASTM F12.10 - Systems, Products and Services

CONTACT

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EXPERIENCE

Since joining WJE in 1976, Robert Hannen has concentrated his experience in the measurement and analysis of vibrations and the development of data acquisition systems and techniques for measuring dynamic stress conditions in structures. He has conducted condition documentation surveys, construction vibration surveillance projects, and the investigation of several structural failures and collapses. Mr. Hannen has also been instrumental in developing procedures to test material properties of such things as security glazing products, cardboard, marble, granite, and plastics.

Mr. Hannen developed an analysis program to measure residual stresses with the blind-hole drilling method for an ongoing heat exchanger tube quality control program. He has also developed several PC-based static and dynamic data acquisition systems for monitoring vibrations, strain, deflection, tilt, temperature, humidity, and pressure in buildings. He has successfully used vibration sensors to measure load in bridge cables and to locate the origin of popping noises in walls and windows. Mr. Hannen has also implemented a video webcam with a remote vibration monitoring system to identify sources of traffic-related vibrations.

REPRESENTATIVE PROJECTS

Testing and Instrumentation

- Weber Metals - Paramount, CA: Strain gage instrumentation and development of monitoring system for 36 MN forging press
- Dutra Dredge - Miami, FL: Development and installation of permanent strain monitor system on an operation barge-mounted excavator
- Turner Construction - Newark, NJ: Strain measurements on Passaic Valley Sewage Commission; twelve-foot-diameter screw pumps
- Y.Y. Lin - Panama: Strain gage and vibration testing on the Bridge of the Americas
- Vulcan Materials - Sycamore, IL: Vibration investigation, recommendation, and design repairs on crusher pedestal at Sycamore Quarry

Expert Testimony

- Meijer Stores - Nationwide U.S.: Investigation of foundation failure and litigation support
- Fontana Steel - Costa Mesa, CA: Representation of contractor in defense of damage claim from construction vibrations
- The Pierre Condominiums - Chicago, IL: Expert witness for plaintiff in construction-related building settlement

Nondestructive Evaluation

- Lefebre and Barron Oasis RV Park - Las Vegas, NV: Measurement of concrete slab thickness

Stadiums and Arenas

- University of Texas at Austin, Royal Stadium: Measurement and evaluation of crowd-induced vibrations on stadium's upper deck during football game
- Gillette Stadium: Measurement and evaluation of vibrations produced by pedestrian traffic on 120-foot-tall exit ramp
- Aloha Stadium - Honolulu, HI: Measurement and evaluation of crowd-induced vibrations stadium seating area

Vibration and Noise Monitoring

- Art Institute of Chicago - IL: Vibration consultant during several construction projects
- Iowa Department of Transportation: Construction vibration expert providing condition assessments and vibration monitoring on projects in Des Moines, Bellevue, Fort Madison, Sioux City, and Maynard