PERSONNEL QUALIFICATIONS

Todd Nelson | Principal

EDUCATION

- University of Minnesota
  - Bachelor of Science in Civil Engineering, Structural Engineering, 1997

PRACTICE AREAS

- Construction Materials
- Repair and Rehabilitation
- Concrete Structures
- Laboratory Evaluations
- Durability Assessment
- Research and Product Development

REGISTRATIONS

- Professional Engineer in IL

PROFESSIONAL AFFILIATIONS

- American Concrete Institute (ACI)
- American Concrete Pavement Association (ACPA)
- American Concrete Pipe Association (ACPA)
- ASTM International

TECHNICAL COMMITTEES

- ACI 302 - Guide for Concrete Floor and Slab Construction
- ACI 360 - Design of Slabs on Ground
- ASTM C09 - Concrete and Concrete Aggregates

CONTACT

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EXPERIENCE

Since joining WJE in 2000, Todd Nelson has extensive experience in a wide variety of field, laboratory, and analytical investigations of new and existing structures. His experience includes construction materials evaluation, durability assessments, litigation support, laboratory test programs, repair and rehabilitation, and research and development of construction materials.

Mr. Nelson's project work has included investigations of concrete slab-on-ground and pavement distress, concrete durability and deterioration, low and variable concrete strength, alkali-silica reactivity, chemical and environmental attack of concrete, utilization of petrographic, chemical, and analytical diagnostic methods. His specialization areas include troubleshooting, investigation, and repairing of concrete distress and deterioration; specifying, proportioning, and testing of concrete with an emphasis on high-performance concrete and self-consolidating concrete (SCC); precast concrete, including architectural precast, cast stone, and pipe; custom and routine laboratory testing of construction materials; and development and implementation of quality control programs.

In addition to concrete, Mr. Nelson's experience includes grout, mortar, brick, terra cotta, cement board, stone, slate, masonry, coatings, and proprietary material systems.

REPRESENTATIVE PROJECTS

Construction Materials

- Skywest Hanger - Colorado Springs, CO: Investigation and litigation support for epoxy coating failure
- WE Energies, Glacier Hills Wind Park - WI: Evaluation and recommendations for low-strength concrete wind farm foundations and pedestals
- Cement Board Panels: Investigation and testing of performance properties on numerous projects
- Milwaukee City Hall - WI: Investigation and repair design of terra cotta failures
- Niles North Pool - Skokie, IL: Evaluation of long-term durability of cementitious pool overlay (plaster application)

Repair and Rehabilitation

- USG Manufacturing Facility - Washingtonville, PA: Investigation and repair recommendations for slab-on-ground joint distress
- Prairie Medical Facility - Westchester, IL: Investigation, assessment, and repair monitoring of corrosion-damaged structure
- Gulf Chemical and Metallurgical Company - Freeport, TX: Development of unique slab repairs for exposure to heavy metals and high temperatures

Concrete Structures and Laboratory Evaluations

- Zion Nuclear Plant - IL: Development and testing of self-consolidating concrete for construction of highly congested reinforced walls
- Wacker Drive Reconstruction - Chicago, IL: Development and testing of high-performance concrete for seventy-five-plus-year service life
- Various Precast Manufacturers: Troubleshooting of concrete problems; assistance with mix development; testing of products for accreditation; assessment of effectiveness of production practices; and implementation of quality control processes
- Precast Concrete Panels - CO: Investigation and rehabilitation of precast wall panels for freeze-thaw durability issues
- Concrete Technology Corporation - Tacoma, WA: Consulting, testing, and development of numerous concrete mixes for high-strength, SCC, and lightweight