



#### EDUCATION

- University of Illinois at Urbana-Champaign
  - Bachelor of Science, Civil Engineering, 2012
  - Master of Science, Civil Engineering, 2014

#### PRACTICE AREAS

- Bridges and Civil Infrastructure
- Laboratory Evaluations
- Structural Analysis
- Nondestructive Evaluation
- Service Life Modeling
- Instrumentation/Monitoring/Load Testing
- Precast/Prestressed/Post-Tensioned Concrete

#### REGISTRATIONS

- Professional Engineer in IA and IL

#### PROFESSIONAL AFFILIATIONS

- American Concrete Institute - Illinois Chapter (ACI-Illinois)
- American Society for Nondestructive Testing (ASNT)

#### CONTACT

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#### EXPERIENCE

Stephen Garrett joined WJE in June 2014 and has been involved in a various projects ranging from field inspection, materials testing, and structural analysis of both new and existing structural systems. He has an interest in applying nondestructive testing in new and innovative ways to aid in condition assessment and repair of steel and concrete structures.

Prior to joining WJE, Mr. Garrett was a graduate research assistant at the University of Illinois, where he developed a quality control plan for steel fiber reinforced concrete using nondestructive methods. His research was published in a thesis and he presented related findings at several technical conferences including ACI and ASNT.

#### REPRESENTATIVE PROJECTS

##### Bridges and Civil Infrastructure

- Poplar Street Bridge Complex - East St. Louis, IL: Field investigation, nondestructive testing, laboratory analysis, and service life modeling to evaluate condition of concrete bridge decks and support structures, and to provide repair recommendations and to develop repair drawings and specifications for the Illinois Department of Transportation
- Sherman Minton Corridor Bridges - Louisville, KY: Deck condition survey of corridor bridges, including NDT and laboratory analysis, to develop corridor repair program for Indiana DOT (IndOT)
- US-50, US-52, & SR-63 over Wabash River, IN - Bridge deck condition surveys for IndOT
- Third Ave. Bridge - Minneapolis, MN: Elemental and in-depth inspection of historic concrete arch bridge for Minnesota DOT

##### Laboratory Evaluations

- ASTM A775 Material Testing: Epoxy-coated reinforcing materials compliance testing
- AASHTO T253/PennDOT RC-20M Material Testing: Coated dowel bar and pavement joint assembly compliance testing
- Silane Treatment Evaluation: Evaluation of commercial silane treatments for mitigation of alkali-aggregate deterioration in a historic concrete bridge structure

##### Structural Analysis

- High-Rise Penthouse Evaluation - Chicago, IL: Evaluation of roof penthouse for compliance with modern wind loads; repair period services for retrofit repairs
- McCormick Place Event Center - Chicago, IL: Design of snow guard and facade access systems for curved roof structure

##### Nondestructive Evaluation

- Steel Column Assessment - Aurora, IL: Ultrasonic testing (UT) to assess section loss of corroded steel columns for load rating
- Concrete Pile Foundations: Impulse response testing of concrete pile foundations of varying construction and degree of quality issues
- ASTM C1583 Pull-off Testing: Bond and tensile strength testing of various components including bridge deck overlays, concrete substrates, and flooring systems
- ASTM C876 Half-Cell Potential Testing: Corrosion evaluation of parking structures and bridge decks

##### Service Life Modeling

- Port of Houston - Houston, TX: Service life modeling and data analysis for wharves of different vintage and construction
- Peace Bridge - Buffalo, NY: Evaluation of mix designs to verify conformance to project specified service life requirements
- Prestressed Bridge Girders (Oklahoma DOT): Service life modeling of prestressed concrete girders for a variety of exposure and deterioration conditions; development of repair recommendations

##### Instrumentation/Monitoring/Load Testing

- 5200 N. Sheridan and 400 N. LaSalle - Chicago, IL: Installation of new roof anchorages and load testing of new and existing dedicated anchorages and davit bases for facade access
- Parking Garages - Various: Deflection surveys of precast double-tee parking structures, before and after repairs

##### Precast/Prestressed/Post-Tensioned Concrete

- American Concrete Pipe Association: Audits of precast concrete plant manufacturing processes and quality control testing