



#### EDUCATION

- University of Illinois at Urbana-Champaign
  - Bachelor of Science, Engineering, 2001
  - Master of Science, Engineering, 2003
  - Doctor of Philosophy, Engineering, 2007

#### PRACTICE AREAS

- Construction Troubleshooting
- Construction Materials Assessment
- Nondestructive Evaluation
- Fire Damage
- Computer Modeling

#### REGISTRATIONS

- Professional Engineer in AL, GA, IL, LA, MS, and TX
- ICRI Concrete Slab Moisture Testing Technician
- ICRI Concrete Surface Repair Technician
- FACE F-Number Dipstick Technician

#### PROFESSIONAL AFFILIATIONS

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

#### CONTACT

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#### EXPERIENCE

Jacob Borgerson joined WJE in 2017. He leads and performs forensic investigations on the failure, distress, and damage of concrete caused by corrosion, fire, atmospheric, and other conditions. Dr. Borgerson has evaluated concrete problems concerning low strength, cracking, and finishing-related defects. He has prepared thermal control plans for mass concrete placements. He has also assessed numerous concrete slabs for moisture-related distress of floor coverings. In addition to his concrete consulting, Dr. Borgerson is experienced utilizing a variety of NDE methods (e.g., impact-echo, ultrasonic pulse velocity, ground penetrating radar, CAPO-testing) to assess building materials and civil infrastructure.

#### REPRESENTATIVE PROJECTS

##### Construction Troubleshooting

- White Box for Killeen Mall - Killeen, TX: Evaluation of concrete floor flatness and levelness; review of specifications\*
- Memorial City Parking Garage - Houston, TX: Investigation of low compressive strength grout\*
- CGG Phase 3 - Houston, TX: Assessment of rain-impacted concrete slab\*
- Lone Star Recycling and Disposal - Houston, TX: Evaluation of concrete slab delaminations\*
- Imperial Boulevard - Sugar Land, TX: Evaluation of concrete pavement plastic shrinkage cracking\*
- Walgreens Baytown - Baytown, TX: Evaluation of concrete slab drying shrinkage cracking\*

##### Construction Materials Assessment

- 806 Main Street - Houston, TX: Condition survey of 100-year-old high-rise building\*
- 5515 Yes Prep School - Houston, TX: Determined as-built conditions for a two-story reinforced concrete building\*
- Yale Street Bridge - Houston, TX: Condition survey of eighty-two-year-old reinforced concrete structure\*
- Willow Creek Apartments - Houston, TX: Evaluation and recommendations for distress caused by concrete slab moisture\*

- Planet Fitness Westfield - Houston, TX: Evaluation and recommendations for distress caused by concrete slab moisture\*
- CATcng Concrete Bunker - Houston, TX: Determination of as-built conditions of a cast-in-place reinforced concrete structure located partially below the ground\*

##### Nondestructive Evaluation

- Sugar Land SWTP - Sugar Land, TX: Detection and location of voids in structurally reinforced concrete slab using impact-echo\*
- Arabella - Houston, TX: Estimation of in-place strength of concrete columns using CAPO-test\*
- Capitol Tower - Houston, TX: Evaluation of CMU wall using ground penetrating radar\*

##### Fire Damage

- Mason Road Bridge - Katy, TX: Fire damage assessment of prestressed concrete box beam bridge\*
- Savoy Parking Garage - Houston, TX: Fire damage assessment of cast-in-place reinforced concrete parking garage\*

##### Computer Modeling

- FM 1488 Overpass at FM 149 Intersection - Magnolia, TX: Thermal control plan for TxDOT mass concrete bents\*
- ExxonMobil Energy Center - Spring, TX: Thermal analysis and temperature monitoring for two ten-foot thick mass concrete foundations\*
- IH-45 and White Oak Bayou - Houston, TX: Thermal control plan for TxDOT mass concrete columns\*

\* Indicates with previous firms

##### TECHNICAL COMMITTEES

- ACI 117 - Specification for Tolerances for Concrete Construction and Materials
- ACI 228 - Nondestructive Test Methods for Evaluation of Concrete in Structures
- ACI 330 - Concrete Parking Lots and Site Paving