WJE

Braden Boyd | Associate II

EDUCATION
- Oklahoma State University
  - Bachelor of Science, Civil Engineering, 2019
  - Master of Science, Civil Engineering, 2022

PRACTICE AREAS
- Construction Troubleshooting
- Mass Concrete
- Construction Materials
- Construction Materials Assessment
- Condition Assessment
- Laboratory Evaluations

REGISTRATIONS AND CERTIFICATIONS
- ACI SCC Test Technician
- ARSC Basic Orientation Plus
- OSHA 10-Hour Construction

PROFESSIONAL AFFILIATIONS
- American Concrete Institute (ACI)
- American Society of Civil Engineers (ASCE)

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EXPERIENCE

Since joining WJE, Braden Boyd has provided consulting on the failure, distress, and damage of concrete. Mr. Boyd has evaluated concrete problems concerning low strength, cracking, and finishing-related defects. He has prepared thermal control plans for mass concrete placements and also has experience assessing concrete slabs for moisture-related distress of floor coverings.

Prior to joining WJE, Mr. Boyd worked as a graduate research assistant at Oklahoma State University, where he studied the use of reclaimed coal ash in concrete. He investigated how reclaimed coal ash impacted the fresh and hardened properties of concrete to help develop performance-based classification methods for reclaimed coal ash.

REPRESENTATIVE PROJECTS

Construction Troubleshooting
- Gaylord Water Treatment Plant - Houston, TX: Evaluation of concrete slab foundation delaminations
- Port Freeport - Freeport, TX: Evaluation of lower-than-specified compressive strength concrete
- Caney Creek Junior High School - Houston, TX: Evaluation of potential cold joint in concrete slab due to delay of placement

Mass Concrete
- Louisiana Department of Transportation and Development Airport Road and Bridge - Galliano: Thermal control plan for pile cap elements
- Oregon Health and Science University Hospital Expansion Project - Portland: Mass concrete analysis and thermal control plan for various mass concrete foundation elements
- Waller Creek - Austin, TX: Mass concrete analysis and thermal control plan for mat foundation for high-rise building
- HMH Centennial Tower - Houston, TX: Mass concrete analysis and thermal control plan utilizing cooling pipe systems for mass concrete foundation elements

Construction Materials
- U.S. Consulate - Lagos, Nigeria: Development and evaluation of concrete mixture designs
- Ismaili Center Houston - TX: Evaluation of architectural white self-consolidating concrete mixture design

Construction Materials Assessment
- Pasadena Police Academy - Pasadena, TX: Evaluation and recommendations for the distress caused by concrete slab moisture
- Condominium - Houston, TX: Evaluation of concrete slab moisture
- Concrete Air Void Analysis - Sapulpa, OK: Evaluation of air content and distribution using Super Air Meter and hardened air void analysis *
- The Westmore - Houston, TX: Fire damage assessment of concrete slab and wall

Condition Assessment
- Port of Houston Authority - La Porte, TX: Inspection and condition assessment of multiple maritime assets
- Liquified Natural Gas Tank Foundation - LA: Condition assessment of concrete piles and pile coatings

Laboratory Evaluations
- Geopolymer Concrete Testing - Houston, TX: Evaluation of concrete compressive strength, modulus of elasticity, and freeze-thaw durability
- Internal Research: Quantification of the freeze-thaw performance of air-entrained concrete *
- Internal Research: Evaluation of drying shrinkage of concrete *
- Internal Research: Development of concrete for use in 3D printing applications *

PUBLICATIONS
- Kang, Shinhyu, Boyd, B., et al. "Performance and prediction of non-traditional coal-ash in concrete with the Particle Model." *Construction and Building Materials*, v. 345, 2022, Article 128170, https://doi.org/10.1016/j.conbuildmat.2022.128170.
- Baral, A., Roesler, J. R., Ley, M. T., Boyd, B. Kang, S., Lloyd, Z., Cook, M. D. (2021). "High-volume Fly Ash Concrete for Pavements Findings," v. 1. FHWA-ICT-21-025.

Indicates with previous employer

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