

### Beth L. Brueggen | Senior Associate



#### EDUCATION

- University of Oklahoma
  - Bachelor of Science, Civil Engineering, 2003
  - Master of Science, Civil Engineering, 2004
- University of Minnesota
  - Doctor of Philosophy, Civil Engineering, 2009

#### PRACTICE AREAS

- Concrete Structures
- Structural Metals
- Failure/Damage Investigation
- Masonry
- Wood Structures
- Nondestructive Evaluation

#### REGISTRATIONS

- Professional Engineer in TX
- Structural Engineer in AZ and OK
- NHI Course 130078 - Fracture Critical Inspection Techniques of Steel Bridges
- Certified Welding Inspector

#### PROFESSIONAL AFFILIATIONS

- American Society of Civil Engineers (ASCE)
- Structural Engineers Association of Southern California (SEAoSC)
- Structural Engineers Association of Texas (SEAoT)

#### TECHNICAL COMMITTEES

- ASCE/SEI Athletic Field Lighting Standards Committee

#### EXPERIENCE

Beth Brueggen conducts condition assessments and structural analyses, and designs repairs for steel, concrete, masonry, and wood structures. Several of these assessments include evaluation of the foundation system and the effects of postconstruction soil movements. She also has significant experience with structural analysis, including finite element analysis of structures and elements.

Prior to joining WJE, Dr. Brueggen worked as a research assistant in the Multi-Axial Subassemblage Testing (MAST) Laboratory at the University of Minnesota. Her work focused on the behavior and seismic detailing of nonrectangular reinforced concrete shear walls under multidirectional lateral loads.

#### REPRESENTATIVE PROJECTS

##### Concrete Structures

- Multistory Office Building and Parking Garage - Houston, TX: Evaluation of precast concrete members with deterioration due to alkali-silica reaction and delayed ettringite formation
- Multistory Office Building - Irving, TX: Evaluation and structural analysis of precast concrete tilt-up panel cracking
- Mesquite Memorial Stadium - Mesquite, TX: Structural evaluation and design of modifications to existing concrete structure in support of major renovations

##### Structural Metals

- Heavy industrial facility - Tarrant County, TX: Structural evaluation and design of repairs to steel framing damaged by equipment impact

##### Failure/Damage Investigation

- State Highway 332 Bridge - TX: Evaluation of steel bridge girder instability during construction
- Elementary School - North TX: Evaluation of damage following tornado
- Elementary School - Quanah, TX: Evaluation of historic masonry building and shoring design following tornado
- Hillcrest Hospital - Cushing, OK: Evaluation of damage following earthquake

##### Masonry

- Church - Dallas, TX: Evaluation and structural analysis of exterior masonry walls and retaining wall
- Middle School - Central TX: Evaluation of damaged historic masonry structure
- Hospital Parking Garage - Dallas, TX: Evaluation and repair design of masonry cladding

##### Wood Structures

- Major Retail Bank - Multiple Locations, TX: In-place reinforcement of metal plate connected wood trusses
- Condominiums - Dallas, TX: Evaluation of wood studs and trusses following fire

##### Nondestructive Evaluation

- McKinney North High School - McKinney, TX: Nondestructive testing of recently constructed concrete slab to determine thickness and bar placement

#### CONTACT

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