

### Gabriel Carrera | Associate Principal



#### EDUCATION

- University of Texas at El Paso
  - Bachelor of Science, Civil Engineering, 2000
  - Master of Science, Civil Engineering, 2005

#### PRACTICE AREAS

- Structural Evaluation and Analysis
- Repair and Rehabilitation Design
- Failure/Damage Investigations
- Precast/Prestressed/Post-Tensioned Concrete
- Litigation Consulting

#### REGISTRATIONS

- Professional Engineer in TX
- NHI Course 130078 - Fracture Critical Inspection Techniques of Steel Bridges

#### PROFESSIONAL AFFILIATIONS

- American Concrete Institute (ACI)
- American Institute of Steel Construction (AISC)
- American Society of Civil Engineers (ASCE)
- International Concrete Repair Institute (ICRI)
- Precast/Prestressed Concrete Institute (PCI)

#### TECHNICAL COMMITTEES

- PCI - FRP Composites
- ACI 564 - 3-D Printing with Cementitious Materials

#### CONTACT

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#### EXPERIENCE

Since joining WJE in 2009, Gabriel Carrera has been involved in the investigation, evaluation, design, and rehabilitation of various structural projects. His project work experience includes concrete, steel, masonry, and wooden structures.

Prior to joining WJE, Mr. Carrera worked as a structural design engineer for a private consulting firm specializing in low to mid-rise commercial and residential buildings. As a research assistant in graduate school, he performed a dynamic characterization of a composite missile fin for Raytheon Missile Systems.

#### REPRESENTATIVE PROJECTS

##### Structural Evaluation and Analysis

- La Frontera Shopping Center - Round Rock, TX: Foundation assessment of multiple buildings, repair and French drain system design, and construction administration services
- Mustang Island State Park - Port Aransas, TX: Structural assessment of hurricane-related damage and repair design
- Texas State University, Alkek Library - San Marcos: Structural assessment and repair design
- Seaholm Vault - Austin, TX: Vault structural evaluation and related load testing
- Turner Roberts Recreation Center - Austin, TX: Load testing of concrete building
- IH-345 - Dallas, TX: Fracture-critical inspection of fatigue-critical bridge construction details

##### Repair and Rehabilitation Design

- Icon - Austin, TX: Structural testing and design of 3D-printed concrete buildings in Texas and Mexico
- La Frontera Shopping Center - Round Rock, TX: Design of structural element modifications to combine adjoining tilt-wall buildings with differing floor elevations
- Plaza Hotel - El Paso, TX: Limited structural assessment of exterior facade and windows for restoration; peer review and repair design
- Regional Water Treatment Plant - TX: Concrete and coating repairs for poor construction and water leakage

- Chase Bank San Pedro - San Antonio, TX: Assessment and repair design of foundation-related distress, including French drain design and construction observation
- Palo Verde Water Reclamation Facility - Tonopah, AZ: Design of repair and rebuild documents for comprehensive concrete repair and maintenance plan
- Port Houston, Turning Basin Terminal Wharf 23 - TX: Wharf rehabilitation design

##### Failure/Damage Investigations

- BMC Road - Cedar Park, TX: Forensic assessment of steel roof collapse on tilt-wall building
- ARTZ Pedregal Shopping Mall - Mexico City: Investigation of structural steel cantilever collapse
- Johnny Carino's, - Austin, Texas: Failure investigation and repair of timber trusses
- 3rd Street Bridge - Austin, TX: Corbel failure investigation

##### Precast/Prestressed/Post-tensioned Concrete

- University of Texas Southwestern Medical Center - Dallas: Condition assessment, evaluation, and phased repairs of thirteen cast-in-place and post-tensioned (PT) parking structures
- Blue Cross Blue Shield Parking Garage - Little Rock, AR: Assessment and repair design of PT concrete parking garage structure
- University of Arkansas Medical School, Parking Garages - Little Rock: Structural assessment and analysis of PT concrete, repair and augmentation design, parking deck design, and construction administration services

##### Litigation Consulting

- Municipal Tunnel - TX: Condition assessment and litigation support
- Blue Skies of Texas: Structural evaluation, piezometer monitoring, conceptual repairs, and litigation support
- Roosevelt Elementary School - TX: Litigation support for alleged construction-related defects