WJE

Kenneth P. Marley | Senior Associate

EDUCATION
- University of Illinois at Urbana-Champaign
  - Bachelor of Science, Civil Engineering, 2005
  - Master of Science, Civil Engineering, 2007

PRACTICE AREAS
- Structural Analysis
- Failure/Damage Investigations
- Concrete Structures
- Bridge Engineering
- Parking Structures
- Foundations and Retaining Walls
- Repair and Rehabilitation Design

PROFESSIONAL AFFILIATIONS
- American Concrete Institute

CONTACT
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EXPERIENCE

Since joining WJE in 2011, Kenneth Marley has specialized in structural analysis and repair. He has experience with conventionally reinforced, prestressed, and post-tensioned concrete structures, including parking garages, plazas, and high-rise towers. His bridge engineering projects include built-up steel trusses, precast and prestressed plank bridges, prestressed and post-tensioned girders, cable-stayed bridges, and steel plate and concrete culverts. Mr. Marley performs condition evaluations and failure investigations, including the use of nondestructive test methods. He also performs assessment of tensile membrane structures.

Prior to joining WJE and as a doctoral candidate at the University of Illinois at Urbana-Champaign, Mr. Marley studied the behavior of boundary regions in large-scale cyclically loaded structural walls.

REPRESENTATIVE PROJECTS

Structural Analysis
- Great River Bridge - Burlington, IA: Finite element modeling of cable-stayed bridge for assessment of performance under observed concrete distress
- Rogers Place Arena - Edmonton, Alberta: Stability analysis of erection procedure for construction of steel-framed arena roof
- Cavalia Traveling Circus - North America: Structural evaluation using nonlinear tensile membrane analysis software to evaluate performance of tents under site wind conditions

Failure/Damage Investigations
- Haymarket Pedestrian Bridge - Lincoln, NE: Determination of cause of failure of prestressed, post-tensioned concrete girder during erection and development of repair procedure
- LaCygne Station Bridge - LaCygne, KS: Determination of cause of failure of highly skewed steel structural plate arch bridge during construction through 3-D finite element analysis with soil-structure interaction effects

Concrete Structures
- Loews Santa Monica - Santa Monica, CA: Structural evaluation of pool rehabilitation and evaluation and repair of observed distress in post-tensioned, reinforced concrete structure
- John Hancock Center - Chicago, IL: Load rating of reinforced concrete plaza for maximum uniform and point loading

Bridge Engineering
- Reed's Island Bridge - Hilo, HI: Nonlinear, time-history finite element analysis of multispan bridge to aid in the design of a replacement bridge superstructure for compliance with AASHTO LRFD traffic load requirements
- South Dakota Department of Transportation (SSDOT): Load rating of six corrugated steel railroad tunnels (culverts) per *AASHTO Manual of Bridge Evaluation* and additional SDDOT legal load vehicles

Parking Structures
- U.S. Bank Center - Milwaukee, WI: Assessment of structural performance and investigation of failure of welded flange connectors of precast, prestressed parking garage
- Trustmark Group Benefits - Lake Forest, IL: Annual assessment and repair of precast, prestressed parking structure

Foundations and Retaining Walls
- 800 North Clark Street - Chicago, IL: Unreinforced masonry foundation wall underpinning design to support existing floor loads and new roof deck loads
- The Moorings of Arlington Heights - Arlington Heights, IL: Foundation underpinning and soil stabilization design for existing structure during adjacent expansion of living facility

Repair and Rehabilitation Design
- Martin Olav Sabo Pedestrian Bridge - Minneapolis, MN: Design of replacement cable anchorages for steel bridge pylon
- Alamosa Elementary School - Alamosa, CO: Steel, reinforced concrete, and masonry retrofit design for seismic and gravity loads

WJE | ENGINEERS ARCHITECTS MATERIALS SCIENTISTS