

**Zachary D. Kates, P.E., LEED AP BD+C
Vice President**

Mr. Kates joined Thornton Tomasetti in 1998 and has specialized in the management and structural design of complex building structures, including new building design and the renovation of existing and historic structures. He has performed structural forensic investigations, peer reviews, property loss consulting services, and has provided litigation support and expert witness services.

AREAS OF TECHNICAL EXPERTISE INCLUDE

- Structural Engineering - Healthcare
- Structural Engineering - Commercial
- Historic Preservation
- Forensic Structural Engineering

EDUCATION

- M.S., Civil Engineering, 1998, The University of Texas at Austin
- B.S., Civil Engineering, 1997, University of Illinois at Urbana-Champaign

REGISTRATIONS AND CERTIFICATIONS

- Licensed Professional Engineer (California, District of Columbia, Maryland, Virginia)
- Safety Assessment Program (SAP) Evaluator, Post-Earthquake Evaluation of Buildings, California Emergency Management Agency (Cal EMA)
- LEED Accredited Professional, Building Design and Construction

PROFESSIONAL ACTIVITIES

- Structural Engineers Association of Metropolitan Washington (SEA-MW)

TEACHING

- Catholic University of America, Department of Civil Engineering Advisory Board, 2012
- Architectural Studio Jury Member, University of Maryland School of Architecture, Fall Semester 2006 and 2007
- Visiting Faculty, *Structures 3*, Catholic University of America, Washington, DC, 2001-2004
- Graduate Teaching Assistant, The University of Texas at Austin, 1997

SELECT PROJECT EXPERIENCE**Structural Engineering - Healthcare**

- Martin Army Community Hospital, Fort Benning, GA. Structural design of a 745,000-square-foot design-build facility for the U.S. Army Corps of Engineers. Includes a 70 bed hospital, three-story grand concourse and a clinic building.
- The Johns Hopkins Hospital, Bloomberg Children's Center and Sheikh Zayed Tower, Baltimore, MD. Structural design of a 1.6-million-square-foot hospital that includes an eight-level podium joining a 12-story children's and maternal health tower with a 12-story critical care adult tower.

Structural Engineering - Commercial

- Reston Station, Building OB1, Reston, VA. Structural design of a 15-level, 620,000-square-foot building with noted designer Helmut Jahn that includes post-tensioned, two-way concrete slabs with 15-foot cantilevers, 40-foot spans, and a diagonalized, exposed concrete exoskeleton system.

Historic Preservation

- St. Elizabeths Center Building Renewal, Washington, DC. Modernization of a historic five-story, 250,000-square-foot masonry building, built in the late 1800s.
- Capitol Hill Office Building Renewal, Washington, DC. Modernization of a historic six-story, 800,000-square-foot office building, built in 1908.

Forensic Structural Engineering

- Roof Mezzanine Structural Evaluation, MD. Structural investigation and load testing of an interstitial mechanical mezzanine at a manufacturing plant.
- South Norfolk Jordan Bridge Construction Collapse, Chesapeake, VA. Structural investigation of a 5,375-foot-long, 35-span, precast segmental bridge to determine the cause and origin of the steel truss support system's collapse.
- Dulles International Airport, Dulles Jet Center Investigation, Dulles, VA. Structural investigation of three pre-engineered metal hangars that collapsed during a record-breaking snowfall in early 2010.

SWORN TESTIMONY

- Bain and Associates Inc. et al vs. John C Flood of Virginia Inc., Alexandria, VA. Litigation support and structural investigation of a historic wood-framed structure to determine structural impacts of added rooftop mechanical equipment. Alexandria VA Circuit Court Case No. CL04001476, July 2004.

LITIGATION

- Commercial Office Building, Washington, DC. Litigation support and structural investigation of impacts of new construction adjacent to an existing building.
- Intermodal Transportation Facility, WV. Litigation support and structural investigation of a project involving standard of care of construction administration services.
- EZ Storage, South Bowie, MD. Litigation support and structural investigation to determine the cause of concrete slab delamination at a 40,000-square-foot storage facility.
- Home Depot Warehouse, Brooklyn, NY. Litigation support and structural investigation to determine the cause of cracking in a pile-supported two-way concrete structural floor slab at a warehouse facility. Analysis included 3D modeling, nondestructive testing by ground-penetrating radar, and evaluation of slab repair techniques.

ALTERNATIVE DISPUTE RESOLUTION

- Commercial Office Building Renovation, Washington, DC. Structural investigation of impact of construction on an existing building tenant. Work included presentation during mediation proceedings.
- Pedestrian Bridge, MD. Litigation support and structural investigation of impacts of steel detailing and sequencing during bridge construction. Work included presentation during mediation proceedings.
- University of Connecticut, Biology / Physics Building Investigation, Storrs, CT. Litigation support and structural investigation into a claim by the structural steel subcontractor relating to the cause of construction delays. Work included a review of the structural drawings for clarity, completeness, selection of suitable structural system, and participation in mediation sessions.

PAPERS, PUBLICATIONS AND PRESENTATIONS

- “Building Up the Fort, Fort Benning Martin Army Community Hospital,” *Modern Steel Construction*, February 2014 (Co-author)
- “Sea and Space, Port Canaveral Visitors Center,” *Modern Steel Construction*, October 2013 (Co-author)
- “The Healing Power of In-Model Review,” AISC Shop Model Review and Approval Workshop, Washington, DC, March 14, 2013 (Presenter)
- “Engineering the NCB,” Johns Hopkins Society of Engineering Alumni, Baltimore, MD, March 18, 2012 (Presenter)
- “The Two Towers, Johns Hopkins Hospital New Clinical Building,” *Modern Steel Construction*, November 2008 (Co-author)
- “Five Things You Should Know About Structural Engineering,” Cardozo High School Construction Academy, Washington, DC, November 28, 2007 (Presenter)
- “Waclaw Zalewski - Shaping Structures,” University of Maryland, Gallery Talk, September 27, 2007 (Panel Member)
- 2007 Steer Conference at The University of Texas at Austin, March 23, 2007 (Presenter)
- “Structural Failures: Past, Present, and Future,” Catholic University of America, School of Architecture and Planning, Alumni Continuing Education Program, November 12, 2004 (Presenter)
- “Construction Methods at Station Place Building One,” ASCE / Iraqi Delegation of Construction Officials, October 19, 2004 (Presenter)
- “Overview of Structural Systems for High-Rise Buildings,” 2003 Boston Society of Civil Engineers / ASCE Structural Group Lecture Series, 2003 (Co-author and Presenter)